INFLATION REPORT

December 2022

Recent trends and macroeconomic forecasts 2022-2024

CENTRAL RESERVE BANK OF PERU
100 YEARS | 1922 - 2022

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Recent Trends and Macroeconomic Forecasts 2022 - 2024

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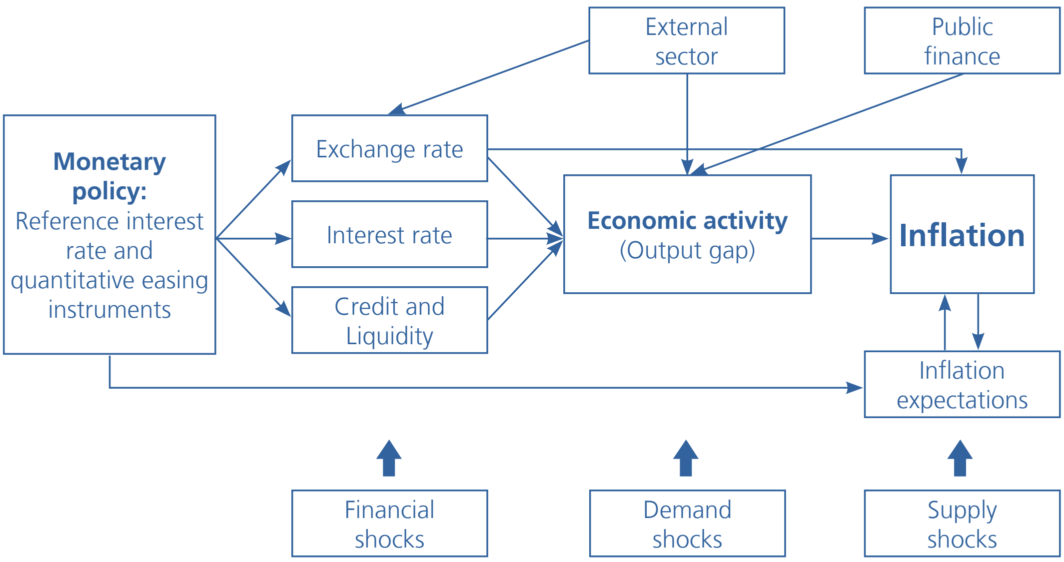

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CENTRAL RESERVE BANK OF PERU

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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 third quarter of 2022; information on monthly GDP and monetary accounts as of October 2022; and information on Non-Financial Public Sector operations, inflation, financial markets and exchange rate as of November.

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 returning them to this range within a reasonable timeframe if deviations are observed due to some economic shock.

- In addition, 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 2022-2024 that support the monetary policy decisions of BCRP, as well as the risk factors that may deviate from these forecasts.

- The Inflation Report was approved at the Board of Directors' meeting held on December 7, 2022.

- The following Inflation Report will be released on Friday, March 24, 2023.

Summary

i. **Global economic activity** continued to be affected by high energy prices, China's "zero COVID" policy, the reduction of surplus savings generated during the pandemic, geopolitical uncertainty and tightening monetary conditions. While the global growth estimate for 2022 is maintained at 2.8 percent, the projection for 2023 has been revised down from 2.7 percent to 2.3 percent. A recovery to 2.9 percent is expected for 2024, following the reversal of supply shocks.

ii. The **terms of trade** would remain above pre-pandemic levels, although they would be lower than those forecast in the previous Report. They are projected to decrease by 10.1 percent in 2022 and 4.2 percent in 2023 –more than estimated in the September Report (-7.2 and -2.4 percent, respectively)– due to the downward correction in metal prices. The projected drop of 4.2 percent in 2023 takes into account a gradual normalization of oil and natural gas supply, which would reduce import prices, as well as lower world growth, which would continue to put downward pressure on industrial metal prices. On the other hand, a 1.0 percent increase is expected in 2024, led by a recovery in export prices.

iii. The accumulated **current account** in the last four quarters went from showing a deficit of 2.3 percent of GDP at the end of 2021 to showing a deficit of 4.4 percent in the third quarter of 2022. This was associated with the increase in the value of imports, higher profits of companies with foreign direct investment in the country and the high deficit of the services account. Since lower primary production is estimated for 2022, along with lower terms of trade and the slowdown in the world economy, the current account deficit has been revised up to 4.5 percent of GDP for 2022 and to 2.7 percent for 2023. The gradual reduction of the current account deficit over the projection horizon is aligned with the recovery of private savings, lower import freight rates and the recovery of exports of services (international tourism).

iv. **Economic activity** between January and September 2022 grew 2.9 percent year-on-year, led by the dynamism of private consumption, which was reflected in the expansion of the trade and services sectors, as well as by the recovery of exports.

In 2022, the economy is estimated to grow 2.9 percent, a lower rate than that projected in the previous Report, due to a lower expected growth of the primary sectors mainly because of the lower mining production observed until September. Similarly, the growth forecast for 2023 has been revised from 3.0 to 2.9 percent, due to lower growth in private spending, associated with a less favorable international context and a more gradual recovery of business confidence in a context of social stability. In 2024, the economy is expected to grow at a rate of 3.0 percent with domestic demand as the main component of growth. Without significant inflationary pressures on the demand side, GDP is estimated to be close to its potential level in the projection horizon,

v. The cumulative **fiscal deficit** over the last twelve months decreased from 2.5 to 1.6 percent of GDP between December 2021 and November 2022, reflecting the increase in current revenues due to the recovery of economic activity and to favorable mineral prices. The deficit is projected to be equivalent to 1.6 percent of output in 2022 and 2023 and to 1.5 percent in 2024.

   The **net debt** of the non-financial public sector (NFPS) is expected to decline from 21.8 to 21.6 percent of GDP between 2021 and 2022, and to remain at the same level towards the end of the projection horizon. **Gross debt** is foreseen to go from 35.9 to 34.1 percent of GDP between 2021 and 2022, and to finally stand at 32.1 percent in 2024, this decreasing dynamics being explained by the evolution of public deposits.

vi. Between October and December 2022, the Board of Directors of BCRP continued with the adjustment of the monetary policy stance initiated in August 2021, increasing the **benchmark rate** by 25 basis points each time. As a result, the benchmark rate rose from 6.75 percent in September to 7.50 percent in December 2022. The real benchmark rate stands at 2.82 percent in December 2022 (above the estimated neutral real rate of 1.50 percent), after having reached a historic low of -2.53 percent in August 2021.

   In GDP terms, the balance of **liquidity injection operations** on December 12 was equivalent to 4.6 percent of GDP (6.4 percent of GDP in December 2021), with S/ 19.8 billion corresponding to government-secured repos of credit portfolio (S/ 38.8 billion in December 2021).

vii. The growth of **credit to the private sector** accelerated from a year-on-year rate of 4.4 percent in December 2021 to 5.6 percent in October 2022, mainly due to the credit to individuals component. With this performance, the projection for the growth rate of credit to the private sector remains at 5.5 percent in 2022.

viii. After reaching a peak of 8.81 percent in June, the **inflation** rate has been gradually decreasing with some fluctuations, recording a rate of 8.45 percent in November. Inflation excluding food and energy prices rose from 4.95 to 5.71 percent in the same period, above the target range. The different indicators of trend inflation are also above the target range.

   On the other hand, inflation is projected to register 3.0 percent next year and 2.4 percent in 2024, within the target range. 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 remains around its potential level.

ix. The **balance of risks to the inflation projection** remains skewed to the upside. The risks in the forecasts mainly consider the following contingencies: (i) slowdown in global growth, which would imply lower demand for our exports; (ii) 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; (iii) intensification of geopolitical tensions, which could exacerbate and prolong the current energy and food crisis; 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*		2023*		2024*
		IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
Real % Change						
1. Gross Domestic Product	13.6	3.0	2.9	3.0	2.9	3.0
2. Domestic demand	14.7	2.5	2.7	2.7	2.5	3.1
a. Private consumption	12.4	4.2	4.4	3.1	3.0	3.0
b. Public consumption	10.6	1.5	-1.6	2.0	2.0	3.0
c. Fixed private investment	37.4	0.0	0.0	1.8	1.0	2.5
d. Public investment	24.9	2.1	6.0	0.0	0.0	4.0
3. Exports (good and services)	13.7	5.5	5.0	7.7	6.4	2.5
4. Imports (good and services)	18.6	3.8	4.3	6.5	4.6	2.9
5. Global economic growth	6.0	2.8	2.8	2.7	2.3	2.9
Memo:						
Output gap 1/ (%)	-0.4	-0.5 ; 0.5	-0.5 ; 0.5	-0.5 ; 0.5	-0.5 ; 0.5	-0.5 ; 0.5
% change						
6. Inflation	6.4	7.8	8.2	3.0	3.0	2.4
7. Expected inflation 2/	3.5	7.3	7.8	4.0	4.2	3.3
8. Expected depreciation 2/	12.1	-3.5	-1.7	-0.6	-0.5	-0.4
9. Terms of trade	11.8	-7.2	-10.1	-2.4	-4.2	1.0
a. Export prices	30.3	5.4	2.3	-4.3	-6.6	0.9
b. Import prices	16.6	13.6	13.7	-2.0	-2.4	-0.2
Nominal % change						
10. Currency in circulation	16.0	1.5	0.0	1.5	1.2	0.0
11. Credit to the private sector	4.4	5.5	5.5	5.2	5.2	6.0
% GDP						
12. Gross fixed investment	25.2	25.0	25.5	24.6	25.0	24.9
13. Current account of the balance of payments	-2.3	-3.8	-4.5	-1.8	-2.7	-2.0
14. Trade balance	6.6	5.0	3.8	4.6	2.9	2.8
15. Long-term external financing of the private sector 3/	7.4	3.9	5.4	1.1	1.8	1.7
16. Current revenue of the general government	21.0	21.8	22.2	20.9	21.2	21.0
17. Non-financial expenditure of the general government	22.2	22.1	22.0	21.4	21.2	21.1
18. Overall balance of the non-financial public sector	-2.5	-1.9	-1.6	-1.8	-1.6	-1.5
19. Balance of total public debt	35.9	33.8	34.1	32.8	33.1	32.1
20. Balance of net public debt	21.8	21.3	21.6	21.5	21.6	21.6

RI: IR: Inflation Report
* Forecast.
1/ Differential between GDP and Potential GDP (in % of Potential GDP).
2/ Survey on expectations to the analysts and financial entities carried out at the time of publication of the respective Inflation Report. Data observed in the case of depreciation for 2021, and the average of expectations throughout year in case of inflation has been considered.
3/ Includes net direct investment, foreign assets investment from residents (AFP), foreign net portfolio investment, and private sector's long term disbursement. Positive sign indicates net inflow of foreign capital.

I. External sector

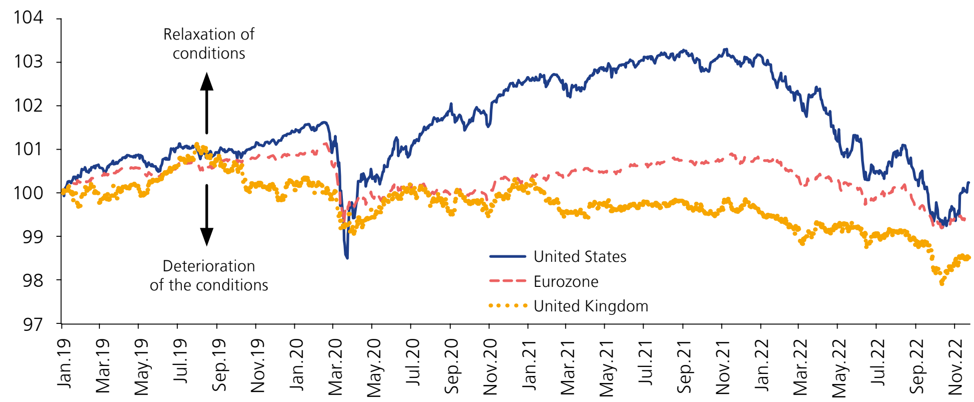
1. Global growth prospects have continued to deteriorate throughout the year as a result of high energy prices, tightening global financial conditions, the "zero tolerance" policy toward COVID-19 in China, and the reduction of surplus savings generated during the pandemic. Geopolitical uncertainty associated with the continuing conflict in Ukraine has also played a role. In contrast with this trend, a slight normalization has been observed in global supply chain conditions. In this context, several developed economies are expected to show low or even negative growth rates between the fourth quarter of 2022 and the first quarter of 2023. In line with this, global growth forecasts for 2023 have been further revised downward (from 2.7 to 2.3 percent).

   For the emerging economies, this scenario has implied a reduction in the price of several commodities and the tightening of international and local financial conditions. Capital flows continue to record low levels compared to the previous year, both for fixed income and equity markets.

Recent developments in global economic activity

2. The world economy has been affected by several **shocks** outlined in the September Inflation Report.

Graph 1
FINANCIAL CONDITION INDEX
(January 1, 2019 =100)



Source: Goldman Sachs.

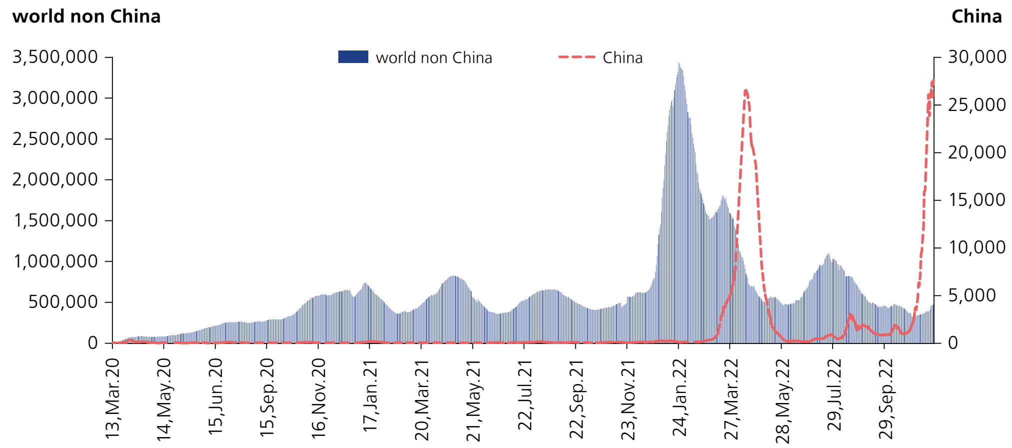
First, financial conditions have continued to tighten as a result of the almost generalized increase in interest rates aimed at reversing inflationary pressures. Although price increases have somewhat moderated at the global level, inflation rates remain at high levels and above the targets set by the respective central banks. Therefore, additional rate adjustments are expected in the coming months, although they are likely to be of a lesser magnitude than those made recently.

This adjustment in financial conditions, coupled with the decline in private savings surpluses and the impact of inflation on purchasing power, has led to a fall in aggregate demand at the global level.

On the supply side, the persistence of the conflict in Ukraine is keeping the energy market tight, which has an impact on business costs and household spending. It should be pointed out that, in view of the approaching winter, several countries have built up inventories in order to reduce the risks of supply shortages in the coming months.

A third factor affecting global growth has been China's adoption of containment measures in response to the resurgence of COVID-19 cases. Although this factor had a more severe impact in the second quarter, new cases have been recorded in recent months, in response to which Chinese authorities have maintained their zero tolerance policy. Other countries, such as Japan, France and the United States (US), have also recorded an increase in cases, but hospitalization and death rates have remained stable.

Graph 2
AVERAGE DAILY NUMBER OF COVID-19 CASES

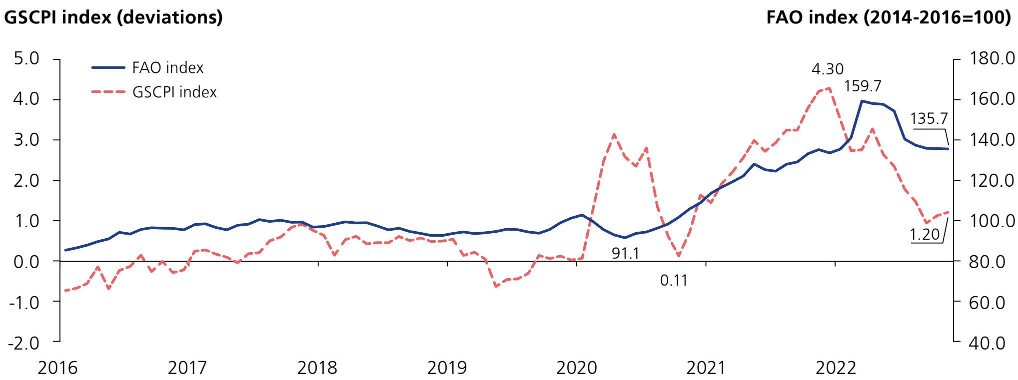


Data as of November 27. Moving average 7 days.
Source: Johns Hopkins University and Oxford.

In contrast, two of the shocks affecting the global economy since last year have been partially reversed. Supply chain pressures have continued to fall (although they remain above their historical average), while food prices have been recording seven consecutive months of declines due in part to the slowdown in the global economy and agreements allowing exports across the Black Sea.

Graph 3

GLOBAL SUPPLY CHAIN PRESSURES INDEX AND FAO PRICE INDEX



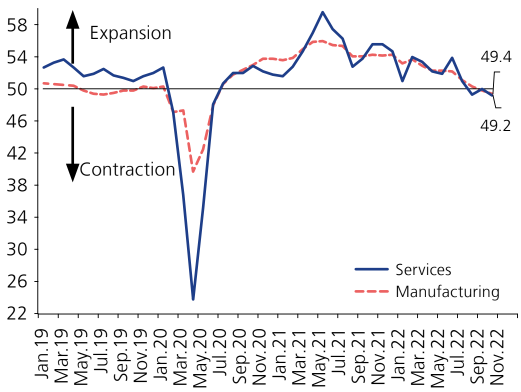
*The GSCPI is constructed from transportation costs (Baltic Dry Index, the Harpex index and BLS air freight cost indices) and PMI components from the United States, China, Eurozone, Japan, United Kingdom, South Korea and Taiwan.
Source: New York Federal Reserve.

3. In line with these developments, after recovering in the third quarter, the global economy has been showing marked signs of **slowing down** in both developed and emerging economies.

The factors outlined above have affected the performance of the world economy. Aggregate manufacturing and services indicators have been in contraction in recent months, with a generalized deterioration being observed in practically all the main countries. The fall in business confidence, new orders and international trade flows stand out among the items that make up these indices.

Graph 4

Global PMI: World economic activity index for manufacturing and services sectors
Diffusion index



Global Activity Index
(JP Morgan)

I. Services

	Dec.20	Dec.21	Mar.22	Jun.22	Sep.22	Nov.22
Global	51.8	54.7	53.4	53.9	50.0	49.2
USA Markit	54.8	57.6	58.0	52.7	49.3	47.8
China Caixin	56.3	53.1	42.0	54.5	48.8	48.2
Eurozone	46.4	53.1	55.6	53.0	48.8	48.2
United Kingdom	49.4	53.6	62.6	54.3	50.0	48.8
Japan	47.7	52.1	49.4	54.0	52.2	53.0

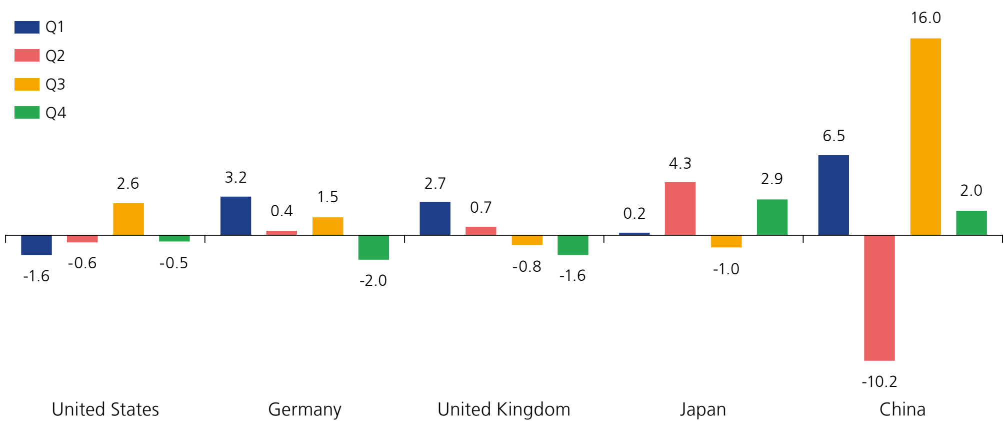
II.Manufacturing

	Dec.20	Dec.21	Mar.22	Jun.22	Sep.22	Nov.22
Global	53.8	54.3	52.9	52.2	49.8	49.4
USA Markit	57.1	57.7	58.8	52.7	52.0	50.4
China Caixin	53.0	50.9	48.1	51.7	48.1	49.2
Eurozone	55.2	58.0	56.2	52.1	48.4	46.6
United Kingdom	57.5	57.9	55.2	52.8	48.4	46.2
Japan	50.0	54.3	54.1	52.7	50.8	50.7

Source: JPMorgan.

These developments are consistent with a deterioration in **growth forecasts** for the fourth quarter of this year. A marked slowdown is expected in the **developed economies** in the fourth quarter and even a contraction is foreseen in the first quarter of next year in the cases of Germany and the United Kingdom. Most developed economies are affected by the global factors mentioned above: tightening financial conditions, lower private savings surpluses, reduced consumption capacity and energy supply constraints, among others. The correction of the real estate market stands out In the particular case of the U.S. due to the increase in mortgage rates (which are at the highest levels since 2001) and the high cost of construction materials.

Graph 5
QUATERLY GDP GROWTH 2022: MAIN ECONOMIES
(Annualized seasonally adjusted quarterly rate,%)

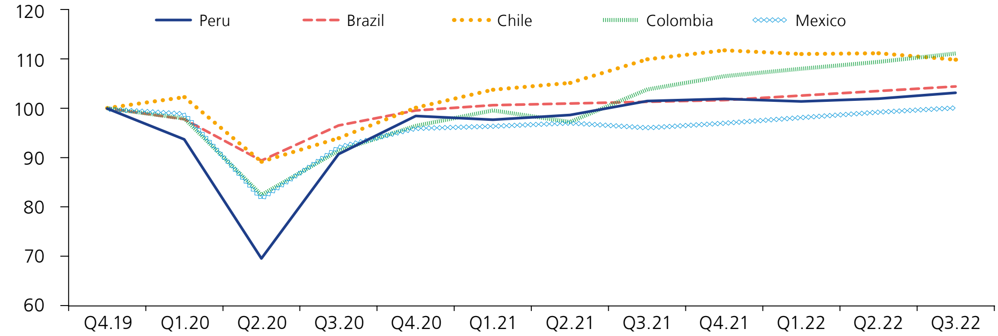


Source: Estimated from the medians of banks and investment houses.

In the **emerging economies**, **China** is expected to slow its growth rate this quarter. Although the Chinese economy recovered in the third quarter, in part due to the reopening of the economy after the COVID-19 outbreaks, it has been affected by new contagions, by the lower dynamism of external demand and by the crisis in the real estate sector. In this context of slowdown and low inflation, the government has announced stimulus measures, particularly to support the real estate sector and to boost infrastructure spending. In line with this, the central bank has reduced its interest rates.

On the other hand, some **Latin American** economies continued to benefit from the high prices of some commodities (food and oil), from higher spending due to extraordinary revenues and, in some cases, from fiscal measures. This explains the sustained revision on the upside in growth forecasts for 2022. However, in line with recent trends at the global level and with the reversal of some domestic shocks, the region’s economies have been showing signs of slowing down, as reflected in some monthly indicators in October and November (industrial production, leading indicators of activity and retail sales, among other indicators).

Graph 6
LATIN AMERICA: QUARTERLY GDP*
(Index 100 = Q4.19)

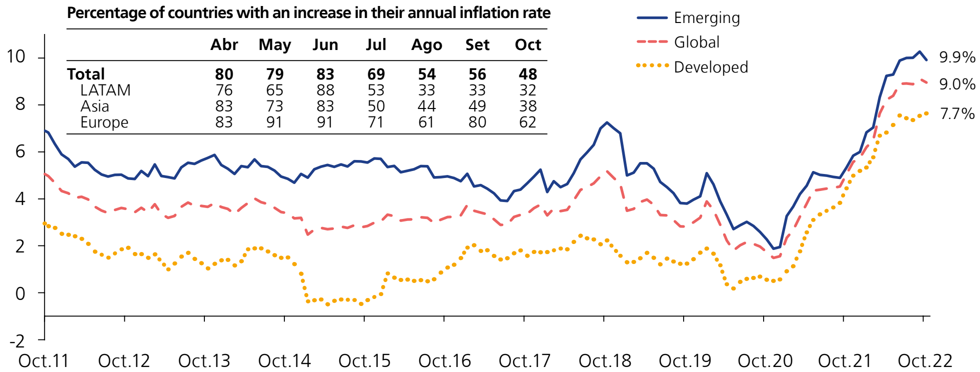


* Seasonally adjusted series.
Source: Statistical institutes and central banks.

4. **Inflation** slightly moderated its upward trend in several countries in the last few months, but remains above central bank targets.

At the global level, inflation went from 9.1 to 9.0 percent between September and October, slightly reversing the sustained upward trend observed since 2020. This relative stability in inflation rates is observed in both developed and emerging economies.

Graph 7
INFLATION: GLOBAL, IN DEVELOPED AND EMERGING ECONOMIES
(Annual % chg)



Percentage of countries with an increase in their annual inflation rate

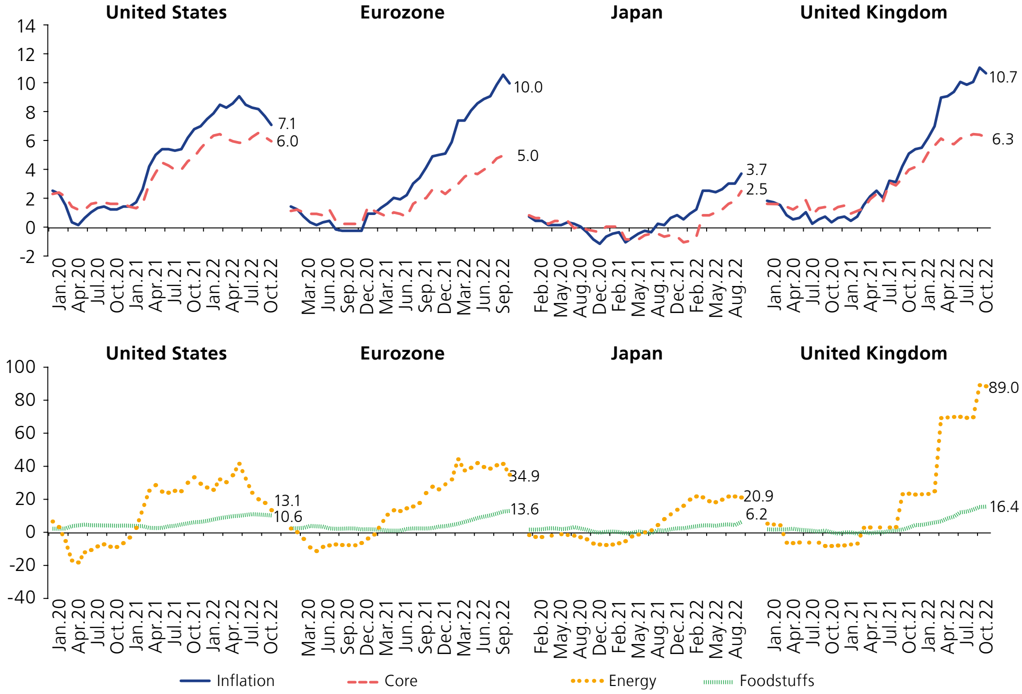
	Abr	May	Jun	Jul	Ago	Set	Oct
Total	**80**	**79**	**83**	**69**	**54**	**56**	**48**
LATAM	76	65	88	53	33	33	32
Asia	83	73	83	50	44	49	38
Europe	83	91	91	71	61	80	62

Source: Trading economics, statistical institutes, and Central banks.

The lower upward trend in inflation is explained, in part, by the reduction of problems in global supply chains and lower international food prices, as well as by the adjustment in monetary conditions, the implementation of sectoral policies (particularly in the energy market) and the lower dynamism of domestic demand.

In most countries, inflation continues to be subject to pressures resulting from the effect of the appreciation of the dollar in the first nine months of the year, the increase in wage pressures and the persistence of shocks in the energy market. Within the **developed economies**, inflation in the U.S. has decreased (from 8.2 to 7.1 percent) due to lower growth in energy, electricity, food and used car prices, whereas on the other hand, it has continued showing an upward trend in the United Kingdom, the Eurozone and Japan, reaching new highs in the first two cases.

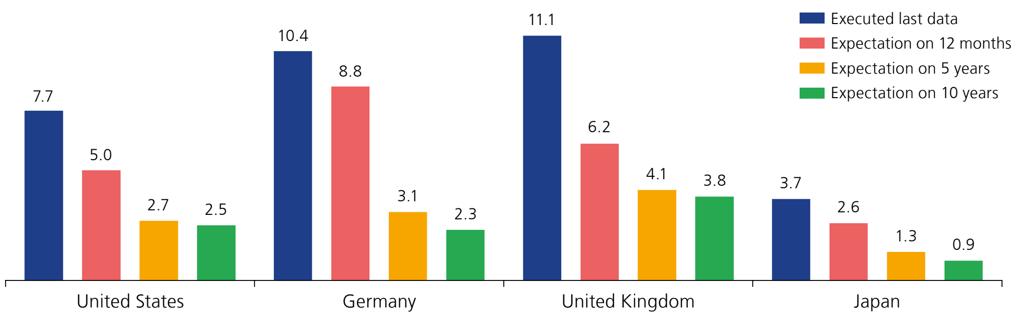
Graph 8
INFLATION IN DEVELOPED ECONOMIES, 2020-2022
(Annual % chg.)



Memo: Eurozone data for November 2022 are preliminary.
Source: Central banks and statistical institutes.

It should be pointed out that inflation expectations for the next twelve months remain above central bank targets in the main economies, although the outlook in the medium and long terms does remain in line with the targets.

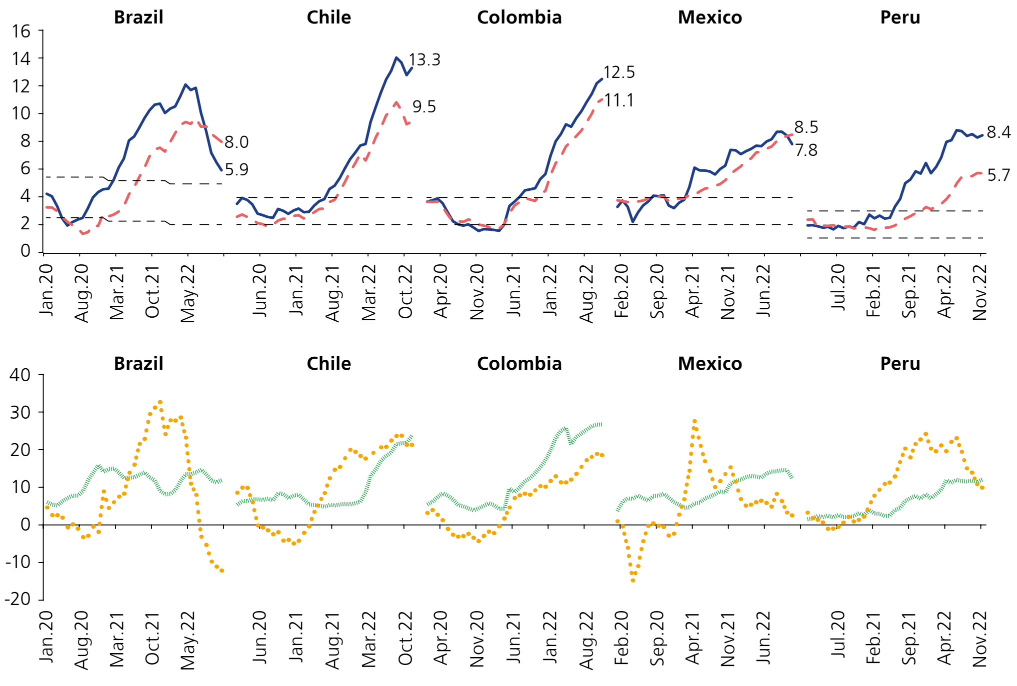
Graph 9
ANNUAL INFLATION AND EXPECTATION ON INFLATION
(%)



Memo: 12-month inflation corresponds to consumer surveys (except Japan, where investors are surveyed). The expectations at 5 and 10 years correspond to break even inflation.
Source: Central banks.

In the case of the **region's economies**, inflation remained above the upper limit of the target range, although it showed a downward trend in some countries. The case of Brazil stands out, because the reduction of state taxes (on gasoline, ethanol and electricity) reduced total inflation even below core inflation. Mexico and Peru also recorded lower inflation, associated in part with lower growth in energy prices, while Colombia's higher core inflation rate would reflect domestic demand pressures and a level of activity above its potential.

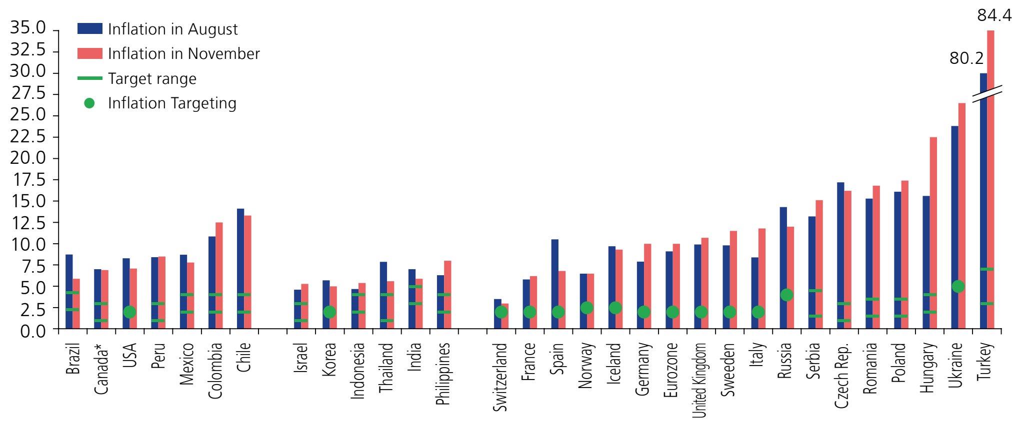
Graph 10
INFLATION IN LATIN AMERICA 2020-2022
(Annual % change)



Memo: In Brazil, the Energy component corresponds to that inside home. The food indices in Brazil and Peru include the subgroup of meals outside home.
Source: Central banks and national statistical institutes of each country.

Similarly, **other economies with inflation targeting** continue recording inflation rates above the target range. This is observed in both developed and emerging economies. The latter is reflected in the high inflation rates of several European economies (such as Serbia, Hungary, Poland, Czech Republic and Ukraine), which have been affected not only by the depreciation pressures of their currencies but also by high energy costs.

Graph 11
GLOBAL INFLATION AND INFLATION TARGETING
(YoY Inflation and inflation target in %)



Memo: Turkey has scale cut. Switzerland's inflation target is less than 2%.
* Latest inflation data available is as of October.
Source: central banks and statistical institutes.

5. In this context of persistent inflationary pressures, most central banks have continued to **withdraw monetary stimulus**. The increases observed in the **main developed economies** are noteworthy.

In November, the **Fed** raised its interest rate by 75 bps, the fourth consecutive increase of this magnitude and the sixth increase since the beginning of the rate cycle in March. An additional hike, but of only 50 bps, was recorded in December, suggesting that future increases would be smaller in magnitude, but the final rate level could exceed 5 percent.

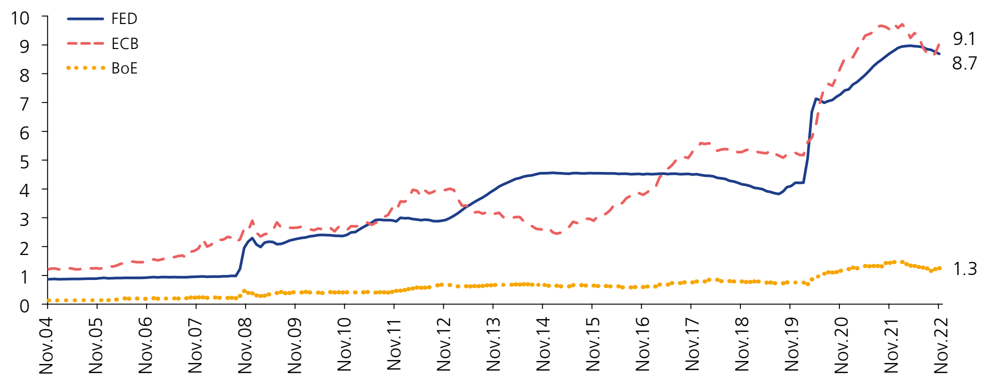
Table 1
FED PROJECTIONS*

	2022		2023		2024		2025		long-term	
	Sep.22	Dec.22	Sep.22	Dec.22	Sep.22	Dec.22	Sep.22	Dec.22	Sep.22	Dec.22
Growth	0.2	0.5	1.2	0.5	1.7	1.6	1.8	1.8	1.8	1.8
Unemployment	3.8	3.7	4.4	4.6	4.4	4.6	4.3	4.5	4.0	4.0
Inflation (PCE)	5.4	5.6	2.8	3.1	2.3	2.5	2.0	2.1	2.0	2.0
Core inflation (core PCE)	4.5	4.8	3.1	3.5	2.3	2.5	2.1	2.1	-	-
Memo: Core PCE excludes food and energy.										
Interest rate (%)	4.4	4.4	4.6	5.1	3.9	4.1	2.9	3.1	2.5	2.5
Interest rate range (%)	3.9-4.6	4.4	3.9-4.9	4.9-5.6	2.6-4.6	3.1-5.6	2.4-4.6	2.4-4.6	2.3-3.0	2.3-3.3

* Includes 19 data from the individual projections of the members of the Fed at the end of the period.

In the same vein, the **European Central Bank (ECB)** continued with the cycle of rate hikes initiated in July with two increases of 75 bps (in September and October) and one of 50 bps (in December). The ECB also reiterated the need for the normalization of monetary policy –which includes the reduction of the bank's balance sheet and the management of liquidity instruments– based on new information and the latest economic data. In addition, the ECB expressed its position on fiscal policy, stressing that it should comprise support measures that are selective, targeted and temporary in nature.

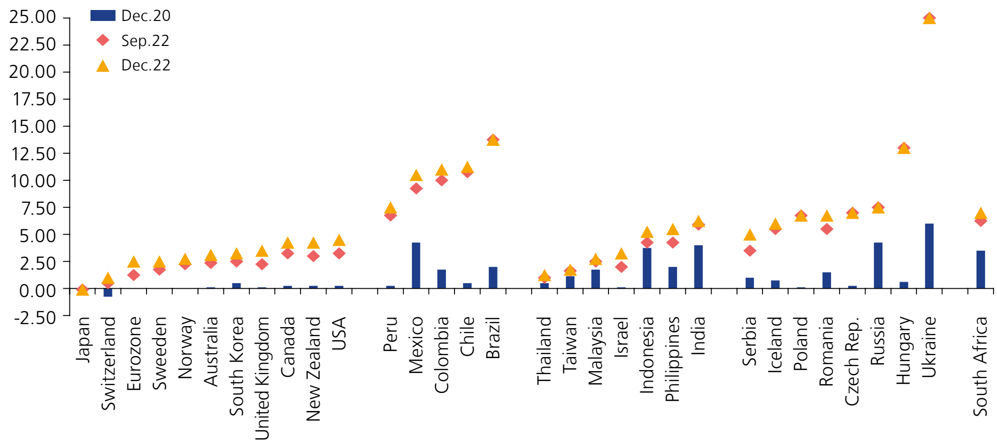
Graph 12
CENTRAL BANKS: TOTAL ASSETS
(Billion US$)



Memo: Fed (Federal Reserve of United States), ECB (European Central Bank), and BoE (Bank of England).
Source: Central Banks and International Monetary Fund.

In **emerging economies**, most central banks continued to adjust rates. Of note were the hikes of 125 bps in Israel and Romania and 100 bps in Colombia, Serbia and Indonesia. It is worth mentioning, however, that in the last two months, a greater number of countries did not change their rates, and that this has been particularly the case in those countries where the adjustment has been significant or where inflationary pressures have been reduced more than expected.

Graph 13
REFERENCE INTEREST RATE
(%)

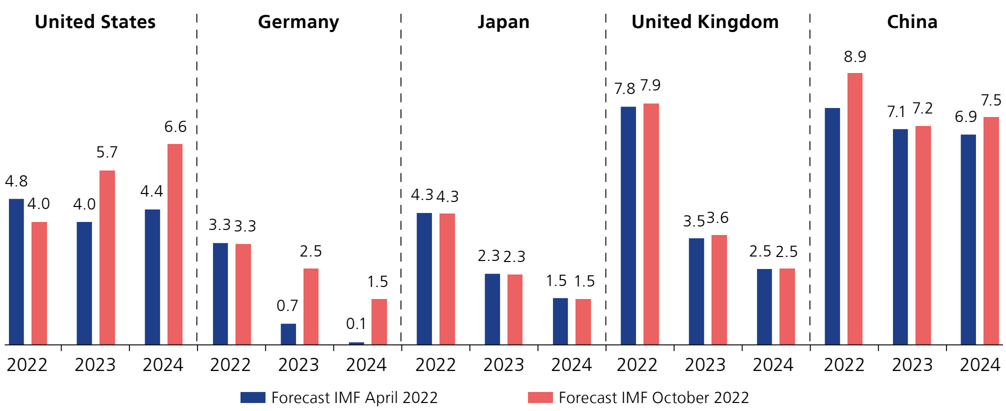


Memo: As of December 16.
Source: Central banks and statistical institutes.

6. With respect to the **fiscal stance**, several countries have shown a slight deterioration in their fiscal positions and recorded somewhat higher deficits than those predicted in previous reports.

The fiscal position of the main economies has been deteriorating in recent months due to, on the one hand, lower economic growth forecasts and, on the other hand, to the fiscal measures that several of the main economies have adopted to reduce the impact of high energy prices. In addition, China has recently announced stimulus plans. IMF forecasts show an increase between its previous projection (April) and the current projection (October) of fiscal deficit estimates between 2022 and 2024.

Graph 14
FISCAL DEFICIT, 2022-2024
(In % GDP)



Source: IMF.

Global economic outlook

7. In line with the developments described above, the global growth forecast for 2022 remains at 2.8 percent, but the forecast for 2023 has been revised sharply down from 2.7 to 2.3 percent. This revision mainly reflects the deterioration in the outlook for developed economies as a result of supply-side shocks, the further tightening of global financial conditions in the context of rising interest rates and the reduction of balance sheets by central banks. Within the emerging economies, the revision of China's growth projection (from 5.0 to 4.8 percent) stands out, in line with the social containment measures taken to face the pandemic, the weakness of external demand and the lower dynamism of real estate investment.

An expansion of 2.9 percent is estimated for 2024. The recovery in the growth rate reflects the normalization of some of the shocks that would affect the economy during 2023.

Table 2
GLOBAL GDP GROWTH
(Annual percentage changes)

	PPP*	2021	2022		2023		2024
			IR Sep.	IR Dec.	IR Sep.	IR Dec.	IR Dec.
Developed economies	**42.2**	**5.2**	**2.2**	**2.4**	**1.3**	**0.6**	**1.4**
Of which							
1. United States	15.9	5.7	1.7	1.9	1.2	0.6	1.2
2. Eurozone	12.0	5.3	2.5	3.0	1.0	0.0	1.3
3. Japan	3.9	1.6	1.8	1.6	1.5	1.2	1.2
4. United Kingdom	2.3	7.4	3.5	4.1	0.1	-0.5	0.7
5. Canada	1.4	4.6	3.6	3.3	2.0	1.1	1.9
6. Others	6.8	5.0	2.4	2.4	1.8	1.4	2.4
Emerging economies	**57.8**	**6.7**	**3.3**	**3.2**	**3.8**	**3.6**	**4.0**
Of which							
1. China	18.7	8.1	3.3	3.0	5.0	4.8	4.8
2. India	7.0	8.9	7.3	7.0	6.0	6.0	5.5
3. Russia	3.1	4.7	-7.0	-3.4	-2.3	-2.9	1.8
4. Latin America and the Caribbean	7.3	6.0	2.3	2.9	1.8	1.5	2.3
Argentina	0.7	10.3	2.8	4.0	0.8	0.5	2.0
Brazil	2.4	4.6	1.8	2.4	1.0	0.9	2.0
Chile	0.4	11.7	1.9	1.9	0.0	-0.5	2.0
Colombia	0.6	10.6	6.0	7.0	2.5	1.8	2.8
Mexico	1.9	4.8	1.8	2.1	1.6	1.3	2.1
Peru	0.3	13.6	3.0	2.9	3.0	2.9	3.0
5. Others	21.7	5.3	4.5	4.3	4.0	3.8	3.8
World Economy	**100.0**	**6.0**	**2.8**	**2.8**	**2.7**	**2.3**	**2.9**

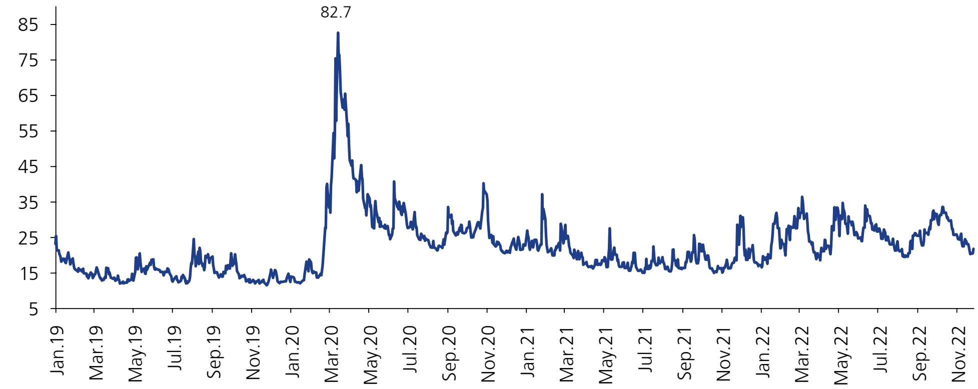
* Base 2021.
Source: IMF, Consensus Forecast.

International financial markets

8. Since the last Inflation Report, **financial markets** have been influenced by conflicting factors. On the one hand, negative news was associated with the persistence of the conflict in Ukraine, as well as with growing fears of a global economic slowdown, the resurgence of COVID-19 cases in China and the crisis in the cryptocurrency markets. On the other hand, the market was favored by Q3 corporate earnings data and, towards the close of this Report, by expectations of a less aggressive rate tightening by the Fed in the coming months.

In net terms, **global risk aversion**, as measured by the VIX index, has declined so far in the fourth quarter. In this context, compared to September, the dollar weakened against most currencies, 10-year US sovereign bond yields fell and most stock markets recorded gains. It should be pointed out that these developments only partially counterbalanced the developments observed in these markets up to the third quarter.

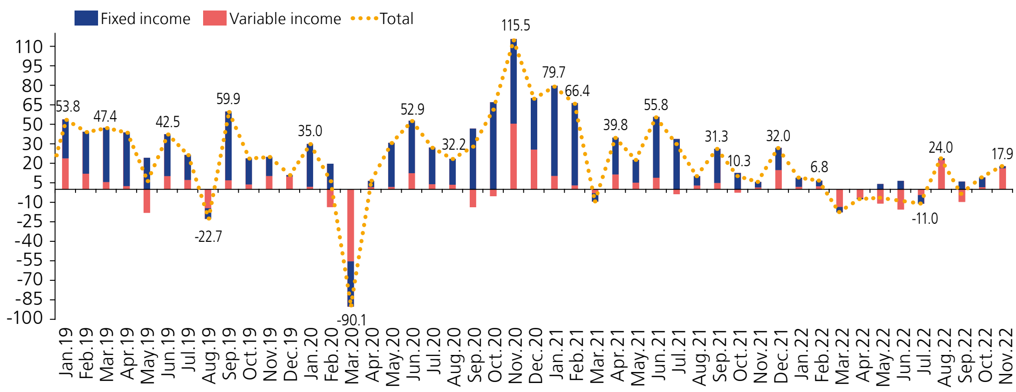
Graph 15
VIX INDEX: VOLATILITY OF THE U.S. STOCK MARKET



Source: Reuters.

In the same vein, **capital flows to emerging economies**, which had registered net outflows in almost every month of the year as a result of geopolitical tensions and expectations of rate adjustments by the main central banks, recorded net capital inflows in both fixed income and equity markets in the last two months.

Graph 16
CAPITAL FLOWS FROM NON-RESIDENTS TO EMERGING MARKETS
(Billion US$)



Memo: Data on November 2022 corresponds to an estimate up to November 28, 2022.
Source: IIF.

9. In **fixed income markets**, US short-term sovereign yields continued to rise in line with the Fed's rate hike trend and with expectations of further increases in the coming

months. However, long-term yields fell following investor demand for sovereign bonds as a hedge against global growth uncertainty. In this context, the yield curve is inverted between the 1-year to 10-year tranches. In Europe, yields fell in line with deteriorating economic data and increased tensions with Russia due to lower energy supplies.

Graph 17
U.S. GOVERNMENT BOND YIELDS
(%)

Source: Reuters.

Emerging market yields also declined over the same period, although Brazilian and Colombian yields were affected by lower oil prices.

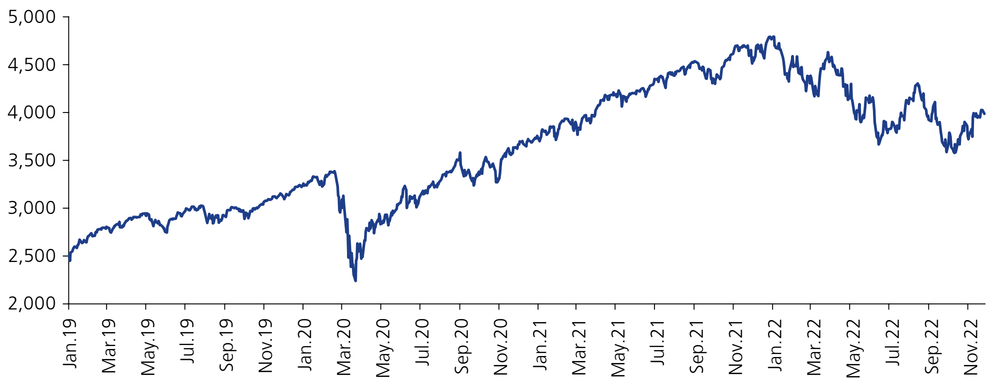
Table 3
YIELDS ON 10-YEAR SOVEREIGN BONDS
(%)

	Dec.21 (a)	Sep.22 (b)	Nov.22 (c)	Differences (bps) (c) - (b)	Differences (bps) (c) - (a)
United States	1.51	3.83	3.61	-23	210
Germany	-0.18	2.11	1.93	-18	211
France	0.20	2.72	2.40	-32	221
Italy	1.17	4.51	3.87	-64	270
Spain	0.56	3.28	2.94	-34	238
Greece	1.32	4.84	4.13	-71	281
United Kingdom	0.97	4.08	3.16	-93	219
Japan	0.07	0.24	0.25	1	18
Brazil	10.84	12.02	12.74	72	190
Colombia	8.19	12.78	13.07	28	487
Chile	5.65	6.73	5.42	-131	-23
Mexico	7.56	9.65	9.21	-44	166
Peru	**5.90**	**8.77**	**7.72**	**-105**	**181**
South Africa	9.80	11.34	10.79	-55	100
India	6.45	7.40	7.28	-12	83
Turkey	23.54	10.08	9.30	-78	-1,424
Russia	8.29	9.90	9.27	-63	98
China	2.78	2.75	2.92	17	14
South Korea	2.26	4.08	3.68	-40	143
Indonesia	6.36	7.35	6.91	-43	55
Thailand	1.89	3.18	2.72	-46	83
Malaysia	3.59	4.42	4.11	-31	52
Philippines	4.71	6.74	6.89	15	218

* Prepared as of November 30, 2022.
Source: Reuters.

10. In **equity markets**, developed stock markets advanced, favored by corporate results for the third quarter, which outweighed expectations. In addition, this was accompanied in recent weeks by expectations of a more moderate monetary stance of the Fed following the release of lower-than-expected inflation data. Following this global trend, most emerging stock markets showed positive gains, even though in many cases they recorded declines compared to December 2021.

Graph 18
U.S.: INDEX S&P500



Source: Reuters.

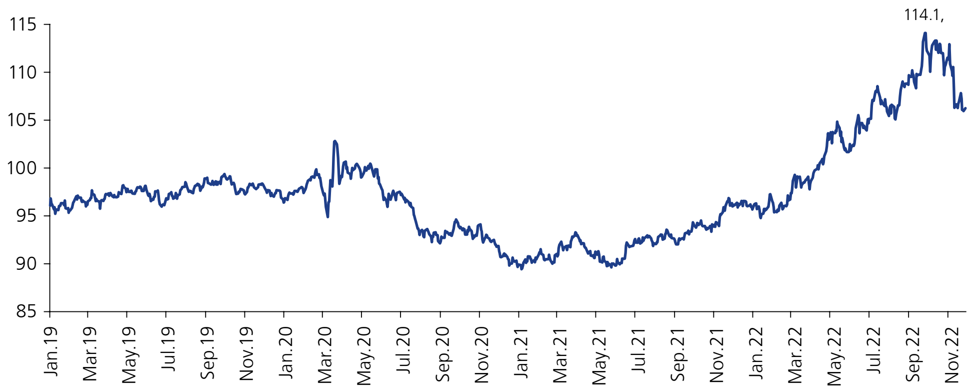
Table 4
STOCK EXCHANGE *
(Index)

		Dec.21 (a)	Sep.22 (b)	Nov.22 (c)	% chg.	
					(c) / (b)	(c) / (a)
VIX**	S&P 500	17.22	31.62	20.58	-11.0	3.4
United States	Dow Jones	28,538	32,733	34,590	5.7	21.2
United States	S&P 500	4,766	3,586	4,080	13.8	-14.4
Germany	DAX	15,885	12,114	14,397	18.8	-9.4
France	CAC 40	7,153	5,762	6,739	16.9	-5.8
Italy	FTSE MIB	27,347	20,649	24,610	19.2	-10.0
Spain	IBEX 35	8,714	7,367	8,363	13.5	-4.0
Greece	ASE	893	793	912	15.1	2.1
United Kingdom	FTSE 100	7,385	6,894	7,573	9.9	2.6
Japan	Nikkei 225	28,792	25,937	27,969	7.8	-2.9
Brazil	Ibovespa	104,822	110,037	112,486	2.2	7.3
Colombia	COLCAP	1,411	1,128	1,243	10.1	-11.9
Chile	IPSA	4,308	5,114	5,283	3.3	22.6
Mexico	IPC	53,272	44,627	51,685	15.8	-3.0
Argentina	Merval	83,500	139,115	168,525	21.1	101.8
Peru	**Ind.Gral.**	**21,112**	**19,448**	**22,455**	**15.5**	**6.4**
South Africa	JSE	73,709	63,726	74,828	17.4	1.5
India	Nifty 50	17,354	17,094	18,758	9.7	8.1
Turkey	XU100	1,858	3,180	4,978	56.5	168.0
Russia	RTS	1,596	1,056	1,125	6.6	-29.5
China	Shangai C.	3,640	3,024	3,151	4.2	-13.4
South Korea	KOSPI	2,978	2,155	2,473	14.7	-17.0
Indonesia	JCI	6,581	7,041	7,081	0.6	7.6
Thailand	SET	1,658	1,590	1,635	2.9	-1.3
Malaysia	KLCI	1,568	1,395	1,489	6.8	-5.0
Philippines	Psei	7,123	5,741	6,781	18.1	-4.8

* Prepared as of November 30, 2022.
** Data and variations are expressed in points.
Source: Reuters.

11. In **foreign exchange markets**, the dollar depreciated against major currencies during the fourth quarter of the year (after reaching in September its highest level since May 2002) due to the slowdown in U.S. economic activity and the Fed's less aggressive stance.

Graph 19
INDEX DOLLAR DRY



Source: Reuters.

As for the currencies of the emerging economies, several of them appreciated, with the exception of some that were affected by the fall in the price of some commodities (oil) or idiosyncratic factors.

Table 5
EXCHANGE RATE *
(In monetary units per dollar, except for euro and pound sterling)

		Dec.21 (a)	Sep.22 (b)	Nov.22 (c)	% chg.**	
					(c) / (b)	(c) / (a)
Dollar Index***	US Dollar Index	95.97	112.12	105.95	-5.5	10.4
Euro	Euro	1.137	0.980	1.041	6.2	-8.5
United Kingdom	Pound sterling	1.353	1.116	1.206	8.0	-10.9
Japan	Yen	115.08	144.75	138.03	-4.6	19.9
Brazil	Real	5.570	5.415	5.185	-4.3	-6.9
Colombia	Peso	4065	4604	4827	4.8	18.7
Chile	Peso	851	967	889	-8.0	4.4
Mexico	Peso	20.49	20.14	19.25	-4.4	-6.0
Argentina	Peso	102.68	147.31	167.28	13.6	62.9
Peru	**Sol**	**3.991**	**3.984**	**3.857**	**-3.2**	**-3.4**
South Africa	Rand	15.99	18.15	17.17	-5.4	7.4
India	Ruppe	74.47	81.51	81.36	-0.2	9.3
Turkey	Lira	13.32	18.50	18.59	0.5	39.6
Russia	Ruble	74.56	59.20	60.50	2.2	-18.9
China	Yuan (onshore)	6.352	7.114	7.088	-0.4	11.6
South Korea	Won	1188	1440	1302	-9.6	9.6
Indonesia	Rupee	14250	15225	15730	3.3	10.4
Thailand	Bath	33.23	37.77	35.11	-7.0	5.7
Malaysia	Ringgit	4.164	4.635	4.443	-4.1	6.7
Philippines	Peso	50.99	58.75	56.47	-3.9	10.7

* Prepared as of November 30, 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.

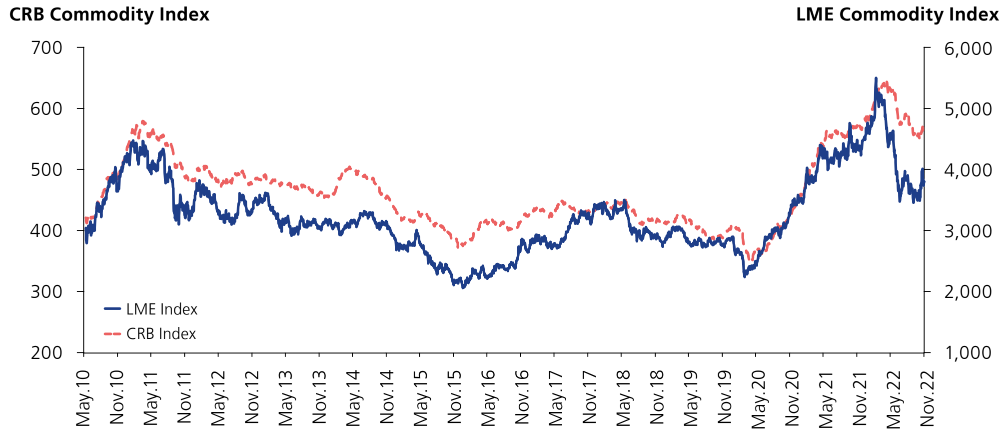
Commodity prices

12. The prices of most industrial commodities have been revised down with respect to those estimated in the September Inflation Report. The outlook for global growth has been revised on the downside, affected by the withdrawal of monetary stimulus at the global level at a faster pace than expected in recent months. Fears of a slowdown in China –the main consumer of commodities– have also increased, as China maintains its zero tolerance policy towards COVID-19. However, in recent weeks, the dollar depreciated in response to expectations of a less aggressive adjustment by the Fed, which together with tight supply led to an increase in non-commercial positions in most commodities.

    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. It is worth pointing out that the price rise in energy prices has implied higher smelting costs that have affected the supply of some metals.

Graph 20

LME AND CRB COMMODITY INDEX



Source: Reuters.

Copper

13. In the last two months, copper prices rose 4 percent, from US$ 3.51 the pound in September to US$ 3.64 in November. The price of copper accumulates a drop of 16 percent compared to December 2021,

    The average price of copper increased in the last two months, supported by solid Chinese demand associated with exponential growth in the green economy, including higher sales of electric vehicles and investment in renewable energy. In addition, there was significant government stimulus for infrastructure spending and demand for inventory replenishment. This higher demand was seen in a context of a tight physical market, reflected in a drop in inventories at the London Metal Exchange to levels very close to those observed in 2005. Other factors that supported the recovery of the copper price were the depreciation of the dollar and increased disruptions in mine production, which is delaying the growth of the mining supply in the short term.

On the fundamental side, the supply shortage is expected to be offset by new projects that would soon enter the market and would contribute to a surplus market next year, according to estimates by the International Copper Study Group (ICSG). However, the rapid growth in demand associated with green energy and pending inventory replenishment are likely to continue supporting the price of copper next year.

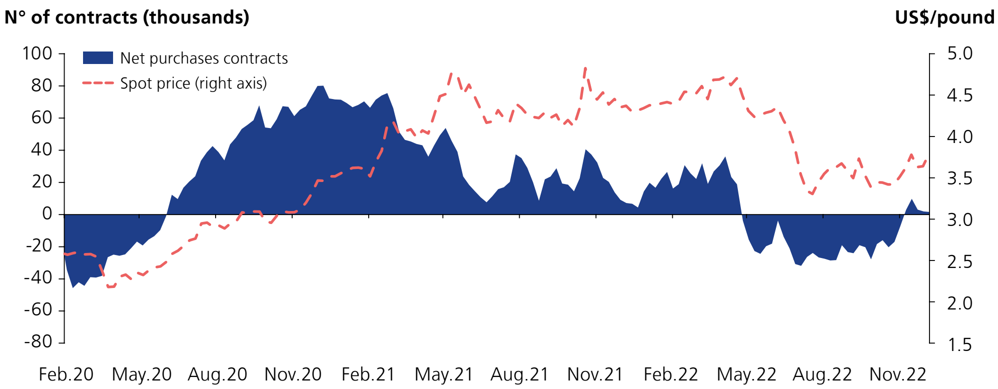
Table 6
SUPPLY AND DEMAND FOR REFINED COPPER 1/
(Thousand metric tons of copper)

	2019	2020	2021 (a)	2022 (b)	2023 (c)	% chg. (b) / (a)	% chg. (c) / (b)
Global Mining Production	20,630	20,662	21,069	21,897	23,062	3.9%	5.3%
Global Refining Production (Primary + Secondary)	24,086	24,546	24,798	25,495	26,344	2.8%	3.3%
Global Use of Refined Copper	24,350	24,963	25,256	25,823	26,189	2.2%	1.4%
Refined Balance 1/	-264	-417	-458	-328	155	--	-

1/ The balance of refined products is calculated as the subtraction between the global production of refined products (supply) and their use (demand).
2/ ICSG Report on November 2022 and Copper Market Forecast 2022/2023 on October 2022.
Source: The International Copper Study Group (ICSG).

These developments have coincided with a recovery in non-commercial demand. The number of non-commercial net purchase contracts for copper has moved back into positive territory since November, reflecting positive speculative investor sentiment on the more balanced copper market outlook.

Graph 21
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.

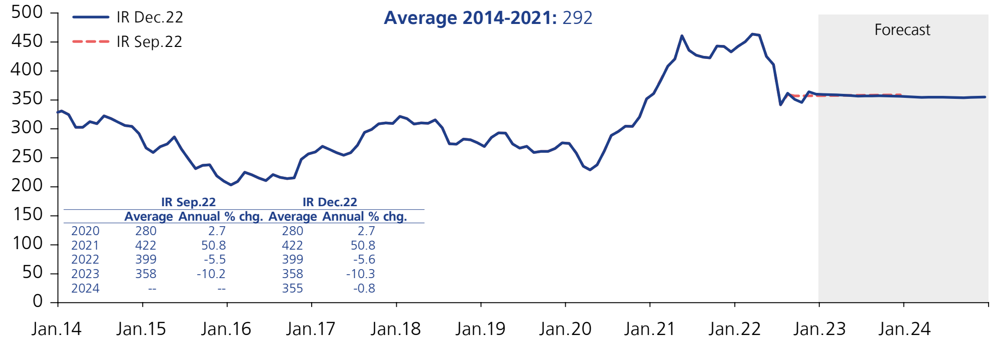
In line with these developments, the copper price projection of the September Inflation Report is maintained in this report. This projection reflects a balanced market in the short term where the deterioration of the global demand outlook, particularly in China and the Eurozone, is counterbalanced by a tight supply. On the other hand, an increase in copper refining capacity in China and the expansion of world mine capacity are expected for next year, which will contribute to a surplus market.

Uncertainty factors include future developments in the conflict between Russia and Ukraine, the evolution of COVID-19 in China, and the monetary policy decisions of the main central banks in response to inflation. Other factors of uncertainty are linked to the impact of the magnitude that the stimulus measures that China will implement to recover its economy from the confinement measures that have been applied during the year will have on copper demand.

Graph 22

COPPER: JANUARY 2014 - DECEMBER 2024

(US$. cents/pd.)



	IR Sep.22		IR Dec.22	
	Average	Annual % chg.	Average	Annual % chg.
2020	280	2.7	280	2.7
2021	422	50.8	422	50.8
2022	399	-5.5	399	-5.6
2023	358	-10.2	358	-10.3
2024	--	--	355	-0.8

Source: Reuters and BCRP.

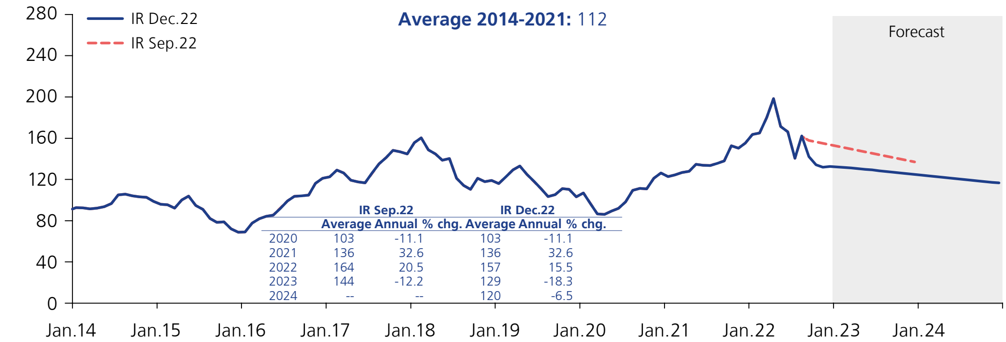
Zinc

14. The average international price of zinc fell to US$ 1.33 the pound in November 2022, 7 percent below the level recorded in September 2022 and 15 percent below the December 2021 level. It should be pointed out that the quotation reached a year-low on November 3, the lowest price level observed since February 9, 2021.

The price of zinc was affected by the deterioration of the macroeconomic outlook, associated with the aggressive response of central banks to control inflation and with growing fears of a recession in Europe due to the energy crisis. The International Lead and Zinc Study Group estimated that European demand would fall this year due to lower consumption in Italy, France, Russia and Ukraine, while China's demand would decrease affected by the COVID-19 control policy and by the energy restriction in parts of the country that affected domestic activity. Despite this, however, the price drop was offset by a reduction in the production of refined zinc, associated with the loss of smelter production in Europe and the low performance of smelters elsewhere because of high energy costs and weather problems. Lower refined zinc production will lead to surpluses in the zinc concentrate market and to higher treatment charges.

In line with the developments described above, the price of zinc is expected to show a downward correction over the forecast horizon with respect to that observed in the previous report, due to the deterioration in the demand outlook. Nevertheless, the market is expected to continue recording a deficit in global supply associated with smelter closures, so prices are foreseen to remain at historically high levels. In the medium term, the normalization of smelter production and the increase in mine supply are likely to generate downward pressure on prices. The main factors of uncertainty in this forecast continue to be the recovery of Chinese demand and the future evolution of energy prices.

Graph 23
ZINC: JANUARY 2014 - DECEMBER 2024
(US$ cents/pd.)



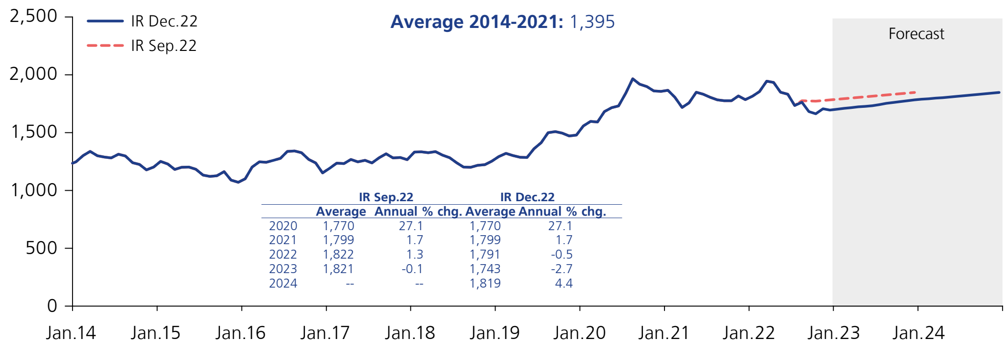
Source: Reuters and BCRP.

Gold

15. In November, the average gold price was US$ 1,726 the ounce, 3 percent higher than in September 2022 and 3 percent lower than in December 2021.

The price of gold increased as a result of the depreciation of the dollar and higher global demand for gold by central banks in emerging economies. Another upward factor was higher global demand for safe-haven assets since Russia invaded Ukraine, despite the slowdown in investor inflows into Exchange Traded Funds (ETFs) in recent months. The price increase was offset by central banks' decision to tighten monetary policy more aggressively than expected. Higher interest rates have weakened the upward pressure on the gold price as investors seek other assets with higher yields.

Graph 24
GOLD: JANUARY 2014 - DECEMBER 2024
(US$/tr. ounce)



Source: Reuters and BCRP.

For the forecast horizon, the 2023 gold price projection has been revised slightly down compared to that estimated in the September Report, considering higher than expected interest rates and a gradual correction in global inflationary pressures.

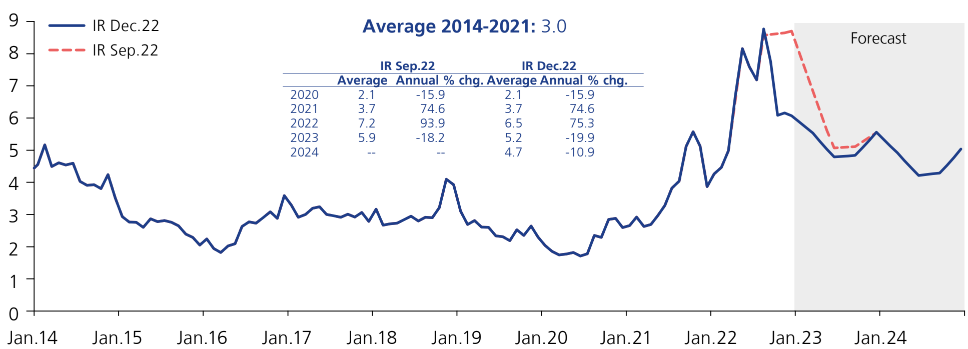
Gas

16. The average price of **Henry Hub natural** gas was US$ 5.5 MMBtu in November, 31 percent lower than in September, and thus accumulated an increase of 47 percent with respect to December 2021. It should be pointed out that prices in the European market remain well above the Henry Hub natural gas quotation despite the fact that the price reduction was greater in Europe than that recorded in the North American market. The price in the European market (UK BNP) decreased 42 percent in November compared to the September 2022 level.

    The fall in the Henry Hub natural gas price was associated with a rapid build-up of inventories in the United States, reaching near the average levels registered in the last five years. This was possible due to a drop in demand for liquefied natural gas (LNG) following the Freeport terminal fire and due to an increase in U.S. production, particularly at Haynesville in northern Louisiana, which is an important source of supply of natural gas for LNG plants and heavy industry. A major factor in the reduction in the Henry Hub natural gas price was the sharp drop in natural gas quotations in Europe, as stocks in that region were outweighing the levels of the past five years and approaching full capacity. This was reflected in the difficulty for LNG carriers to deliver LNG to European ports. This oversupply stems mostly from a warmer than expected autumn, which favored lower demand for gas for heating, as well as from energy saving measures adopted by the European Union.

    For the forecast horizon, the average Henry Hub natural gas price has been revised down, in line with a less tight market at the global level than forecast in the September Report. Nevertheless, natural gas prices will remain at historically high levels due to the impact of lower supply from Russia to Europe. While Henry Hub gas prices will be supported in the short term by higher European demand and the restart of operations at the Freeport LNG liquefaction plant, risks remain high as they are associated with winter weather conditions and with the development of the war in Ukraine.

Graph 25
NATURAL GAS HENRY HUB: JANUARY 2014 - DECEMBER 2024
(US$/Mbtu)



	IR Sep.22		IR Dec.22	
	Average	Annual % chg.	Average	Annual % chg.
2020	2.1	-15.9	2.1	-15.9
2021	3.7	74.6	3.7	74.6
2022	7.2	93.9	6.5	75.3
2023	5.9	-18.2	5.2	-19.9
2024	--	--	4.7	-10.9

Source: Reuters and BCRP.

Oil

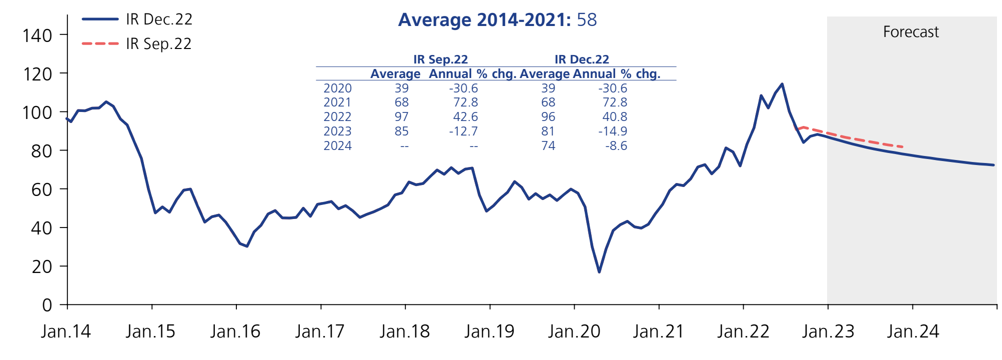
17. The average price of **WTI oil** in November 2022 remained unchanged from the price recorded in September 2022, with a monthly average level of US$ 84 per barrel, but accumulating an increase of 17 percent since December 2021. The oil price held after signs of a tighter market in the face of supply constraints were counterbalanced by prospects of lower demand.

    On the supply side, OPEC+ decided to reduce its production target for October for the first time since May 2020, while for November, the cartel agreed to an additional production cut of 2 million barrels per day, approximately 2 percent of global output, placing the production target at levels below those recorded before the pandemic. This cut added to fears of ongoing supply disruptions and to the possibility of further European Union (EU) and U.S. sanctions on Russian oil exports and low spare capacity in OPEC member countries. This cut was partially counterbalanced by the release of strategic reserves and a higher-than-expected increase in U.S. production in 2022.

    At the same time, demand for crude oil was lower than expected due to fears of a global recession and China's slowdown and, in addition, the sharp rise in oil prices is contributing to a rapid slow down in energy demand in many OECD countries. In this context, the International Energy Agency, the Organization of the Petroleum Exporting Countries (OPEC) and the US Energy Information Administration have revised their forecasts for global oil demand on the downside.

    For the forecast horizon, the oil price projection has been revised downward with respect to that estimated in the September Inflation Report, due to a greater than expected deterioration in the outlook for global demand. However, prices 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). An upside risk in the forecasts is associated with the continuation of the conflict between Russia and Ukraine and possible sanctions that may be adopted by advanced countries against Russian oil. In contrast, a solution to the conflict would imply lower prices.

Graph 26
WTI OIL: JANUARY 2014 - DECEMBER 2024
(US$/bl)



	IR Sep.22		IR Dec.22	
	Average	Annual % chg.	Average	Annual % chg.
2020	39	-30.6	39	-30.6
2021	68	72.8	68	72.8
2022	97	42.6	96	40.8
2023	85	-12.7	81	-14.9
2024	--	--	74	-8.6

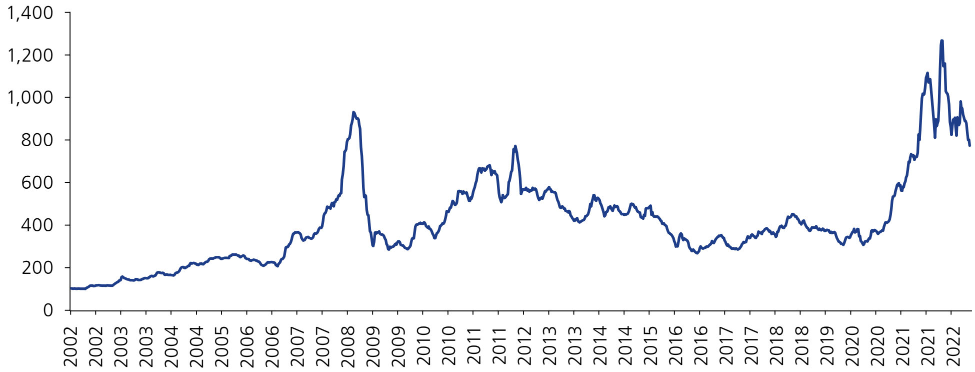
Source: Reuters and BCRP.

Food

18. The FAO food price index fell 0.1 percent in October, slowing the downward trend of the previous six months. The increase in world cereal prices practically offset the decline in the prices of other food products such as dairy, meat and sugar.

After the decline recorded during the northern hemisphere summer, grain prices resumed their upward trend in recent months. Upward pressures were associated with uncertainty over grain shipments from the Black Sea (following Russia's withdrawal and subsequent re-entry into the export agreement, which was subsequently extended for 120 days), as well as with lower plantings and with logistical difficulties faced by Ukraine. Other factors that also put upward pressure were high fertilizer prices; weather conditions which, among other things, have affected U.S. and Argentine winter wheat plantings; and persistently high oil prices (compared to the scenario forecast prior to the conflict in Ukraine).

Graph 27
GREEN MARKETS NORTH AMERICA FERTILIZER PRICES
(Index, 07-Jan-2002 = 100)



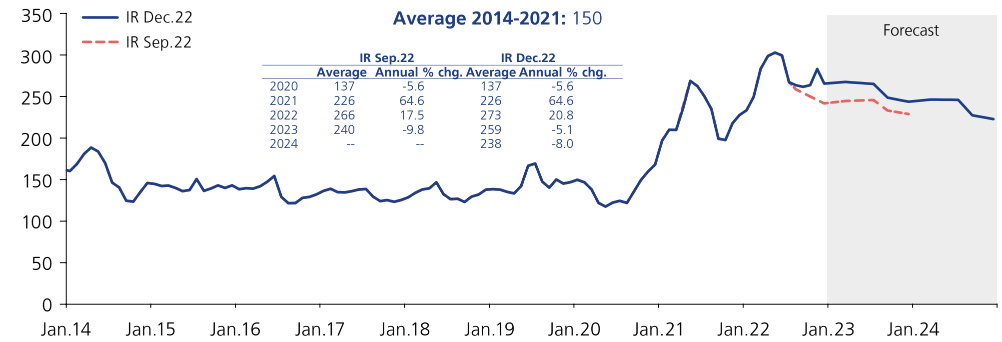
Source: Reuters.

(a) The price of **maize** increased by 8 percent in the last two months, reaching a monthly average price of US$ 282 per MT in November 2022. With this, the price of maize accumulated an increase of 24 percent with respect to December 2021.

Maize prices increased due to the deterioration of production prospects in South America for the 2022/2023 crop season, mostly due to the delay in planting in Argentina associated with the drought caused by La Niña event. In addition, inventories are still tight in the U.S., the world's main producer and exporter of the grain, even though the latest USDA quarterly update reported a slight increase in inventories in comparison to the previous year's levels due to the seasonal arrival of the US harvest. There are also expectations of increased demand for the grain from the biofuels sector due to multi-sector support for legislation that would expand year-round, nationwide use of E-15. The price rise was offset by the 120-day extension (until March 18) of the UN and Turkey-driven agreement to maintain the safe corridor for exports from Ukraine –the world's fourth largest maize supplier–, and by the persistence of restrictions on navigation on the Mississippi River that slow down U.S. exports.

In line with these developments, the average price of maize projected for 2022 and 2023 has been revised up. Despite the reduction, prices are likely to remain at historically high levels because the market is foreseen to remain tight over the forecast 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, coupled with concerns that weather conditions will affect production in South America. Another factor supporting prices is that markets anticipate lower plantings in Ukraine during the 2022/23 season.

Graph 28
MAIZE: JANUARY 2014 - DECEMBER 2024
(US$/ton)



	IR Sep.22		IR Dec.22	
	Average	Annual % chg.	Average	Annual % chg.
2020	137	-5.6	137	-5.6
2021	226	64.6	226	64.6
2022	266	17.5	273	20.8
2023	240	-9.8	259	-5.1
2024	--	--	238	-8.0

Source: Reuters and BCRP.

(b) **Wheat** prices fell 1 percent compared to the price levels recorded in September 2022, reaching a monthly average of US$ 366 the metric ton. With this, wheat prices accumulated an increase of 23 percent compared to December 2021.

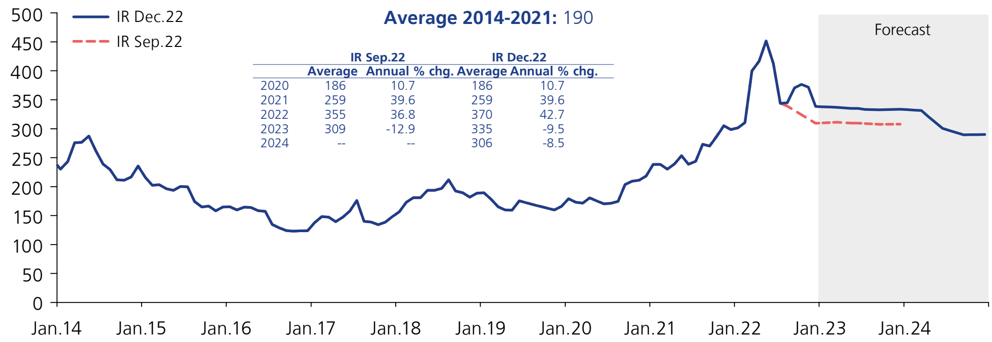
Wheat prices were under downward pressure as the northern hemisphere crops, now completed, confirmed higher than expected production in several countries. In addition, production prospects improved in recent months for Russia, Canada, the European Union and Ukraine. This improvement has also been favored by the extension of the agreement allowing a safe corridor for Ukrainian exports for 120 days. In the same vein, the growth of demand has slowed down due to lingering fears of global economic growth, particularly due to deteriorating indicators in China. However, the price drop was offset by fears of adverse weather conditions affecting production. There are concerns about drought conditions in Argentina, the drop in quality caused by flooding in parts of eastern Australia and the poor condition of winter crops in the US, particularly in Kansas, which is reporting a significant water deficit.

The projection for wheat prices has been revised up from that forecast in the September Report. The world wheat market is not only still tight, but also affected by reduced trade flows from the Black Sea region. World inventories for the 2022/23 season are estimated to fall to a four-year low (despite record levels in China). Inventories in major exporting countries would be at a nine-year low, leaving prices exposed to sharp changes in response to unanticipated variations in market conditions. Risks are mainly associated with the conflict in Ukraine. A resolution of the conflict would release a large flow of inventories held in the area; otherwise, the market could tighten further.

Graph 29

WHEAT: JANUARY 2014 - DECEMBER 2024

(US$/ton)



	IR Sep.22		IR Dec.22	
	Average	Annual % chg.	Average	Annual % chg.
2020	186	10.7	186	10.7
2021	259	39.6	259	39.6
2022	355	36.8	370	42.7
2023	309	-12.9	335	-9.5
2024	--	--	306	-8.5

Source: Reuters and BCRP.

(c) In November, the average price of **soybean oil** was US$ 1,734 the metric ton, 10 percent higher than the level in the previous Inflation Report. With this result, the soybean oil price accumulates an increase of 23 percent with respect to December 2021.

Soybean oil prices increased due to a solid increase in demand from biofuel companies in the U.S. as these companies are executing a planned expansion of renewable diesel capacity. This is taking place against the backdrop of a rise in the price of oil. Another factor that has contributed to this increase is the expected low growth of production in Argentina, affected by the increase in soybean crop rotations, combined with the negative impact of adverse weather in recent years. In addition, strong demand from China and India for vegetable oils supported the price.

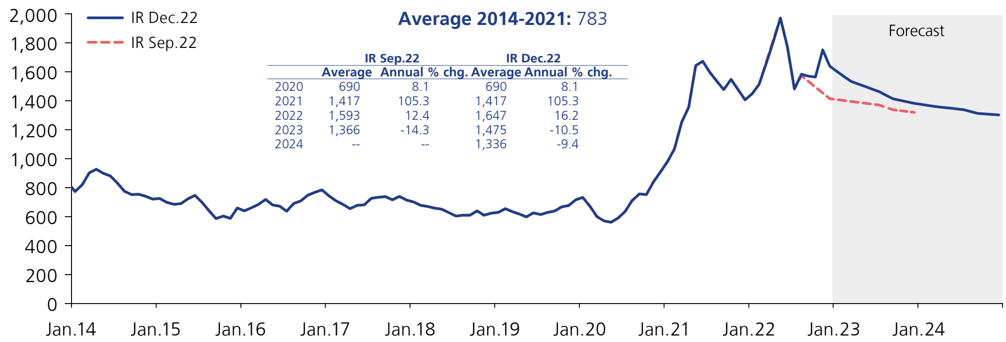
However, the rise was offset by the extension for another 120 days of the agreement that facilitates exports from Ukraine, a key world supplier of sunflower oil. The market also received the seasonal arrival of the U.S. soybean crop and increased supply from Argentina, which took advantage of the preferential exchange rate that the government approved until September 30 to sell its accumulated inventories.

Considering these recent developments, the price of soybean oil is projected to be above the previous report's estimate. The main uncertainties in this forecast are oil prices, protectionist measures in producing countries and the impact of weather on planting in South America.

Graph 30

SOYBEAN OIL: JANUARY 2014 - DECEMBER 2024

(US$/ton)



	IR Sep.22		IR Dec.22	
	Average	Annual % chg.	Average	Annual % chg.
2020	690	8.1	690	8.1
2021	1,417	105.3	1,417	105.3
2022	1,593	12.4	1,647	16.2
2023	1,366	-14.3	1,475	-10.5
2024	--	--	1,336	-9.4

Source: Reuters and BCRP.

Box 1
EPISODES OF DOLLAR APPRECIATION IN INTERNATIONAL MARKETS

The main currencies fluctuate according to market forces and, therefore, show periods of appreciation and depreciation, often in a sustained and pronounced manner. This is the case of the US dollar which, as reflected by the DXY index[1], has recorded eleven episodes of significant appreciation since 1975.

The following chart identify the five episodes where pressures have been most significant: July 1980 - February 1985, December 1987 - June 1989, April 1995 - July 2001, May 2014 - December 2016 and the current episode starting in May 2021. The 1980 - 1985 episode showed the largest cumulative appreciation of the dollar while the 1995 - 2001 episode showed the most sustained appreciation trend.

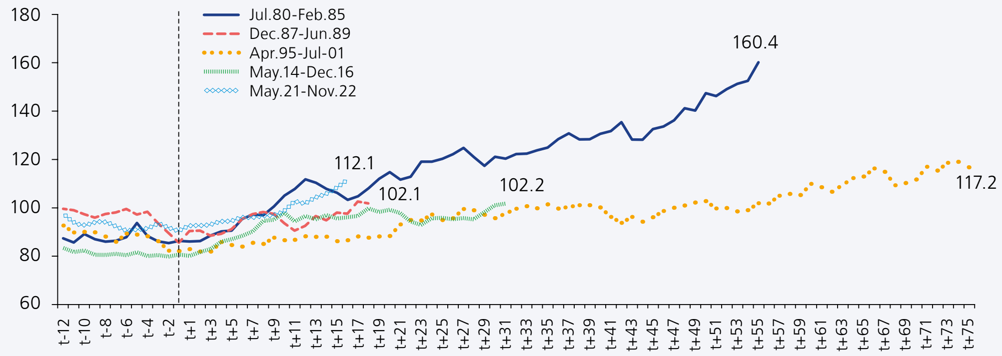
U.S. DOLLAR INDEX DXY, 1970-2022

Episode	Start	End	Duration (years)	Initial index	Final index	Maximum Appreciation %
1	March 1975	June 1976	1.3	93	108	16
2	July 1980	February 1985	4.6	84	165	96
3	December 1987	June 1989	1.5	85	106	24
4	September 1992	January 1994	1.3	78	97	24
5	April 1995	July 2001	6.3	80	121	51
6	December 2004	November 2005	0.9	81	93	15
7	April 2008	March 2009	0.9	71	89	25
8	November 2009	June 2010	0.6	74	88	19
9	May 2014	December 2016	2.6	79	103	31
10	April 2018	March 2020	1.9	89	103	15
11	May 2021	September 2022	1.3	90	114	27

Source: Reuters.

1 The DXY index measures the value of the dollar against several major currencies, such as the euro (with a 57.6 percent weight), the yen (3.6 percent), the British pound (11.9 percent), the Canadian dollar (9.1 percent), the Swedish krona (4.2 percent) and the Swiss franc (3.6 percent).

U.S. DOLLAR INDEX DXY: EVOLUTION SINCE 12 MONTHS BEFORE THE APPRECIATION EPISODE
(In levels)



Source: Reuters.

Determinants of the dollar appreciation process

In some cases, the dollar has appreciated as a result of the Fed's restrictive monetary policy. The period of greatest dollar appreciation occurred in the first half of the 1980s when the Fed raised interest rates to levels of 20 percent to deal with persistently high inflation and to anchor expectations. This episode shows several aspects in common with the current episode of appreciation that began in May 2021.

In the 2004-2005 period, the appreciation of the dollar was also supported by the normalization of monetary policy (after the sharp reduction observed at the beginning of the decade as a result of the stock market correction of 2000-2001, the September 2001 attack and the rise in oil prices). Another episode of appreciation linked to the Fed's monetary policy occurred in 2014-2016 when the Fed tapered its asset purchase program and started the rate hike cycle while the ECB and the Bank of Japan maintained expansionary monetary policies.

In other cases, the appreciation of the dollar is explained more by factors that directly affected the currencies that make up the DXY index. For example, between September 1992-January 1994, the pound sterling depreciated as a result of a series of external imbalances that culminated in the speculative attack of September 1992 and the United Kingdom's subsequent exit from the Exchange Rate Mechanism. In the same period, the yen was affected by the correction of the real estate and stock market bubble.

In addition, because it is considered a safe-haven asset, the dollar also tends to show appreciation pressures during periods of heightened global risk aversion. For example, the dollar showed this tendency during the Global Financial Crisis (April 2008-March 2009) or at the beginning of the COVID-19 pandemic (March 2020), both periods when risk aversion, as measured by the VIX, reached historical highs. Likewise, in the period between April 1995 and July 2001, the appreciation of the dollar reflected a series of crises in emerging economies such as Mexico (1994-1995), Russia (1998) and Asian emerging economies (1997-1998), in addition to the stock market correction associated with the shares of several technology companies.

Other periods of appreciation, such as the one recorded in December 1987-June 1989, followed a sustained depreciation of the dollar. It is worth recalling that in 1985, in the face of trade imbalances, the US, Japan, Germany, the UK and Canada agreed on coordinated interventions that led to a substantial appreciation of the yen and the mark against the dollar. Given the magnitude of the appreciation, an attempt was made to reverse this trend two years later through the Louvre agreement of 1987, which led to a strengthening of the dollar as from the end of 1987. These pressures continued with the subsequent rate hikes by the Fed and the demand for safe assets, including the dollar, following the stock market crash in October 1987.

Behavior of some macroeconomic and financial variables during periods of dollar appreciation

The following table shows the evolution of various macroeconomic variables during the five main appreciation episodes identified above. In the episodes in which the appreciation of the dollar is explained by a restrictive monetary policy on the part of the Fed (July 1980-February 1985 and May 2014-December 2016), there is a decrease in the inflation rate and in inflationary expectations.

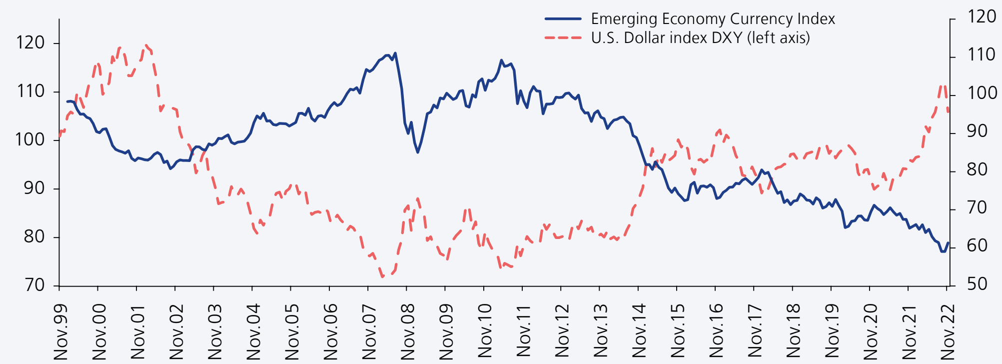
EVOLUTION OF MACROECONOMIC VARIABLES IN PERIODS OF DOLLAR APPRECIATION

Episodes	Periods	Dollar DXY	Trade balance (mill. US$)	Real exchange rate	Quarterly GDP variation 1/	Upper limit of the Fed rate (%)	CPE inflation (%) 2/	CPI inflation (%) 2/	Expectation on inflation at 5 -10 years (%) 3/	Unemployment rate (%)	Non-farm payrolls (var. in thousands)
2	Jul.1980	84	-.-	-.-	-0.5	9.50	10.5	13.1	9.7	7.8	-261
	Feb.1985	165	-.-	-.-	3.9	9.00	3.5	3.5	4.8	7.2	131
3	Dec.1987	85	-.-	-.-	7.0	6.88	3.8	4.4	4.1	5.7	289
	Jun.1989	106	-.-	-.-	3.1	9.63	4.7	5.2	4.1	5.3	114
5	Apr.1995	80	-9,600	98	1.2	6.00	2.3	3.1	3.5	5.8	163
	Jul.2001	121	-29,092	128	-1.6	3.75	2.1	2.7	2.9	4.6	-125
9	May.2014	79	-39,575	99	5.2	0.25	1.9	2.1	2.8	6.3	218
	Dec.2016	103	-40,976	120	2.0	0.75	1.7	2.1	2.3	4.7	214
11	May.2021	90	-66,600	114	7.0	0.25	4.0	5.0	3.0	5.8	447
	Sep.2022	112	73,200	134	2.9	3.25	6.3	8.2	2.7	3.5	269

Memo: Shaded periods correspond to NBER recession dates.
1/ SAAR quarterly growth.
2/ Year-on-year variation of the CPE and CPI index.
3/ University of Michigan
Source: Reuters, Fed and statistical institutes.

On the other hand, as regards financial variables, the data in all episodes show that the appreciation trend of the dollar against the main currencies was similar to that observed in the currencies of emerging economies.

U.S. DOLLAR INDEX DXY VS EMERGING CURRENCY INDEX



Memo: A fall (increase) in the emerging economy currency index implies an appreciation (depreciation) of the dollar.
Source: Reuters and Deutsche Bank.

Likewise, in both the May 2014-December 2016 episode and in the current episode, the appreciation of the dollar coincides with a decrease in the international reserves of emerging economies. This reduction would be associated with three factors: (i) interventions in the foreign exchange market (sale of foreign currency), particularly in Asian economies; (ii) the devaluation of investments due to interest rate increases; and, (iii) a negative valuation effect due to the impact of the appreciation of the dollar on the holding of reserves denominated in other currencies.

EVOLUTION OF FINANCIAL VARIABLES IN PERIODS OF DOLLAR APPRECIATION

Episodes	Periods	U.S. Dollar DXY	S&P 500	10 years Sovereign Yields (%)	Emerging Currency Index	Commodity Index	Emerging Economy Reserves (trillion US$) 1/
2	Jul.1980	84	117	10.2	-	142	-
	Feb.1985	165	179	11.6	-	75	-
3	Dec.1987	85	247	8.9	-	79	-
	Jun.1989	106	324	8.2	-	86	-
5	Apr.1995	80	505	7.0	-	98	-
	Jul.2001	121	1,219	5.4	84	102	0.7
9	May.2014	79	1,868	2.6	94	137	7.0
	Dec.2016	103	2,271	2.6	73	86	5.9
11	May.2021	90	4,188	1.6	70	91	6.4
	Sep.2022	114	3,647	3.9	59	110	6.1

Memo: Shaded periods correspond to NBER recession dates.
1/ Selected sample of 38 emerging economies, including China and the main economies of Latin America.
Source: Reuters, Fed, and statistical institutes.

II. Balance of Payments

Balance of external accounts

19. The increase in the **current account** deficit between the end of 2021 and the third quarter of 2022 was due to higher international food and energy prices, higher demand for imported products, and lower growth in exports. On the other hand, the lower deficit in primary income partially counterbalanced this trend due to lower profits of companies with foreign direct investment (FDI) in the country.

Table 7
BALANCE OF PAYMENTS
(Million US$)

	2021	2022*			2023*		2024*
		Jan.-Sep.	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
I. CURRENT ACCOUNT BALANCE	**-5,273**	**-9,567**	**-9,305**	**-11,145**	**-4,897**	**-7,026**	**-5,772**
% GDP	*-2.3*	*-5.3*	*-3.8*	*-4.5*	*-1.8*	*-2.7*	*-2.0*
1. Trade Balance	14,833	6,902	12,346	9,234	12,226	7,538	7,812
a. Exports	63,151	49,125	68,725	65,914	70,242	65,125	67,027
Of which:							
i) Traditional	*46,585*	*35,747*	*49,417*	*46,896*	*49,266*	*44,901*	*45,119*
ii) Non-Traditional	*16,373*	*13,190*	*19,053*	*18,757*	*20,751*	*19,977*	*21,682*
b. Imports	48,317	42,224	56,379	56,681	58,017	57,587	59,215
2. Services	-7,347	-6,295	-8,704	-8,323	-7,853	-6,831	-5,538
3. Primary income (factor income)	-18,127	-14,256	-18,318	-17,578	-14,783	-13,277	-13,555
4. Secondary income (transfers)	5,367	4,082	5,371	5,523	5,514	5,545	5,509
Of which: Remittances	3,592	2,742	3,720	3,720	3,869	3,869	3,985
II. FINANCIAL ACCOUNT 1/	**-15,627**	**-9,186**	**-6,818**	**-10,481**	**-4,897**	**-7,026**	**-7,172**
1. Private Sector	-37	-9,520	-5,498	-9,882	-2,869	-4,861	-4,837
a. Long-term	*-16,675*	*-12,865*	*-9,638*	*-13,174*	*-2,869*	*-4,861*	*-4,837*
b. Short-term	*16,638*	*3,345*	*4,140*	*3,292*	*0*	*0*	*0*
2. Public Sector 2/	-15,590	334	-1,320	-599	-2,028	-2,165	-2,335
III. NET ERRORS AND OMISSIONS	-5,944	-1,653	0	-1,653	0	0	0
IV. BALANCE OF PAYMENTS IV= (I+III) - II = (1-2)	**4,410**	**-2,034**	**-2,487**	**-2,317**	**0**	**0**	**1,400**
1. Change in NIR balance	3,789	-4,295	-3,783	-4,578	0	0	1,400
2. Valuation effect	-622	-2,260	-1,296	-2,260	0	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.
In this table, the Balance of Payments accounts are presented in a new format, due to the adoption of the Sixth Edition of the Balance of Payments Manual. IMF payments (reclassification of transactions, new items and changes in the name of certain items).
Source: BCRP.

The 2022 current account is projected to show a higher deficit than in 2021 and to what was expected in the previous Report due to a smaller trade surplus, reflecting the contraction in the terms of trade, higher domestic demand and the slowdown in global growth. On the other hand, the current account deficit is foreseen to narrow in 2023 due to the correction of freight costs, higher mining production, lower corporate profits for FDI and the recovery of inbound tourism. It should be pointed out, however, that the deficit reduction would be less than that forecast in the previous Report due to the lower projected level of terms of trade and the slower growth of the global economy. In 2024, the deficit would continue to decrease, considering a recovery of the world economy and the lower incidence of global supply shocks on international trade. The gradual reduction of the current account deficit in both years would be mostly explained by the recovery of private savings and gross domestic investment.

20. The **financial account** for the first three quarters of 2022 showed a net capital inflow of US$ 9,186 million, this flow being composed of higher long-term external private sector financing, offset in part by non-residents' sales of sovereign bonds and by purchases of net short-term external assets. On the other hand, a smaller increase in the financial account debit position is expected for 2022 than the net inflow observed in 2021, although this reduction would be smaller than expected in the September Report: a larger increase in FDI liabilities and higher external disbursements are expected. Additionally, a higher net capital inflow than estimated in September is expected for 2023, mainly to the private sector. and a slight increase in capital inflows, associated with higher external disbursements to the public sector, is expected in 2024.

Terms of trade and goods trade balance

21. in the January-September 2022 period, the **terms of trade** fell 8.5 percent year-on-year due to the higher increase in import prices –especially for imports of oil, food, and industrial inputs– than that obsered in export prices. While the price of oil corrected in September due to fears of global recession and to China's slowdown, the prices of soft commodities –e.g. wheat and maize– increased, mostly as a result of unfavorable planting conditions and geopolitical tensions in the Black Sea area.

    The terms of trade are projected to show a larger contraction in 2022 than that expected in the previous Report (-10.1 percent instead of -7.2 percent) and the current forecasts assume a 4.2 percent drop in 2023 (-2.4 in the previous report). Moreover, export prices have been corrected downward for 2022 and 2023, mainly in the case of some industrial metals, because of current global growth prospects, particularly in China, and because of the expansion of supply expected in the medium term. A downward trend is expected in the case of gold, considering higher interest rates and a gradual correction in global inflationary pressures. In 2024, the terms of trade are expected to show a slight increase (1.0 percent), led by the recovery of export prices.

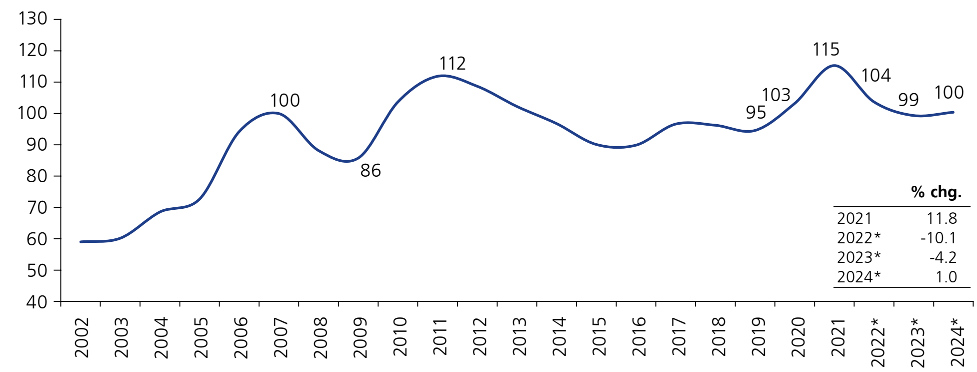
    On the other hand, import prices are expected to grow slightly higher in 2022 due to the upside revision of the prices of foodstuffs such as maize, wheat, and soybean oil. These increases are associated with unfavorable weather prospects for maize and wheat production as well as with higher demand for maize and soybean oil from the biofuels sector. A reduction in import prices is expected for 2023 and 2024, once global supply chain problems and geopolitical conflicts are outweighed. In contrast, oil prices are expected to be lower due to higher production in Russia and the United States, and to lower demand prospects associated with fears of a global slowdown.

Table 8
TERMS OF TRADE: 2021 - 2024

	2021	2022*			2023*		2024*
		Jan.-Sep.	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
Terms of Trade							
Annual average % chg.	11.8	-8.5	-7.2	-10.1	-2.4	-4.2	1.0
Price of exports							
Annual average % chg.	30.3	6.5	5.4	2.3	-4.3	-6.6	0.9
Copper (US$ cents per pound)	422	412	399	399	358	358	355
Zinc (US$ cents per pound)	136	166	164	157	144	129	120
Lead (US$ cents per pound)	100	99	99	97	94	92	86
Gold (US$ per troy ounce)	1799	1825	1822	1791	1821	1743	1819
Price of imports							
Annual average % chg.	16.6	16.4	13.6	13.7	-2.0	-2.4	-0.2
Oil (US$ per barrel)	68	98	97	96	85	81	74
Wheat (US$ per ton)	259	373	355	370	309	335	306
Maize (US$ per ton)	226	274	266	273	240	259	238

* Forecast.
Source: BCRP.

Graph 31
TERMS OF TRADE, 2002-2024
(Index 100 = 2007)

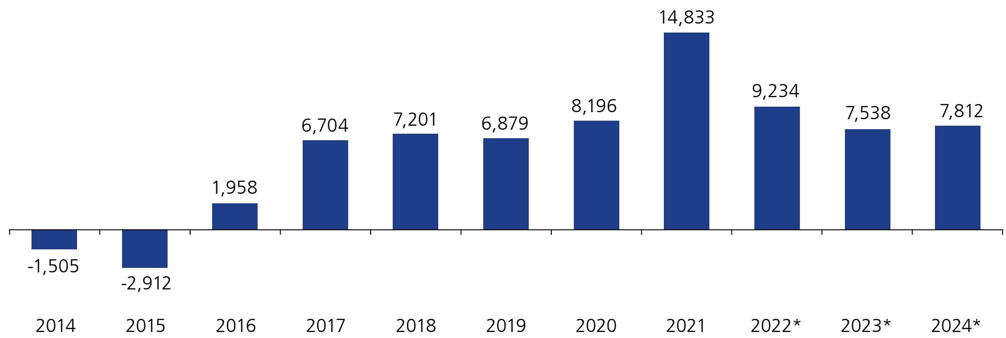


* Forecast.
Source: BCRP

22. During the first three quarters of 2022, the **goods trade balance** surplus totaled US$ 6,902 million, US$ 2,568 million less than the amount recorded in the same period of 2021 (US$ 9 470 million). This year-on-year contraction is explained by the lower increase observed in exports (from US$ 44,778 million to US$ 49,125 million) compared to that recorded in imports (from US$ 35,308 million to US$ 42,224 million).

The trade balance is projected to reach surpluses that would total US$ 9.2 billion in 2022 and US$ 7.5 billion in 2023, lower balances than those forecast in the September Report, this revision is being due to lower terms of trade in both years as well as to lower primary production in 2022 and to a slowdown in world demand in 2023. In 2024, the trade balance would reach a larger surplus (US$ 7.8 billion), driven by the recovery of export prices.

Graph 32
BALANCE OF TRADE IN GOODS, 2014-2024
(Million US$)



* Forecast.
Source: BCRP.

23. **Exports** between January and September 2022 amounted to US$ 49,125 million, a figure US$ 4,347 million (9.8 percent) higher than the value of exports recorded in the same period in 2021. This increase is due to the higher value of both non-traditional and traditional exports (up 15.7 percent and 7.6 percent year-on-year, respectively), mainly associated with the increase in export prices of traditional products (5.6 percent), especially natural gas, crude oil and oil derivatives, coffee, and mining products, such as zinc.

The forecasts for 2023 export volumes take into account the gradual recovery of mining production at Las Bambas and Cuajone and mining projects that have started activities, such as Quellaveco, while the projection for 2024 is consistent with the evolution of world growth. Compared to the previous report, the lower growth foreseen in the value of exports in 2022 and 2023 is explained by lower average prices and by lower export volumes.

24. **Imports** between January and September 2022 totaled US$ 42,224 million, which represents an increase of US$ 6,915 million (19.6 percent) compared to the same period of 2021. This increase is in line with the growth of domestic demand, mainly private consumption, as well as with the rise in the international price of oil, industrial inputs and grains, accentuated after the war in Ukraine, and with unfavorable planting conditions.

While 2022 import value growth will be supported by higher prices paid and by an increase in imported volumes, a gradual correction in input prices is expected from 2023 onwards. On the other hand, the growth of imports projected for 2024 is explained by higher import volumes, in line with domestic demand forecasts. Compared to the September Report, the higher value of imports in 2022 responds to a higher increase in the average price of imports and a higher growth rate in the volume of imports of oil and foodstuffs, such as wheat, soybean oil and maize. In 2023, imports will show a lower value growth due to a faster correction of the average prices of oil and natural gas.

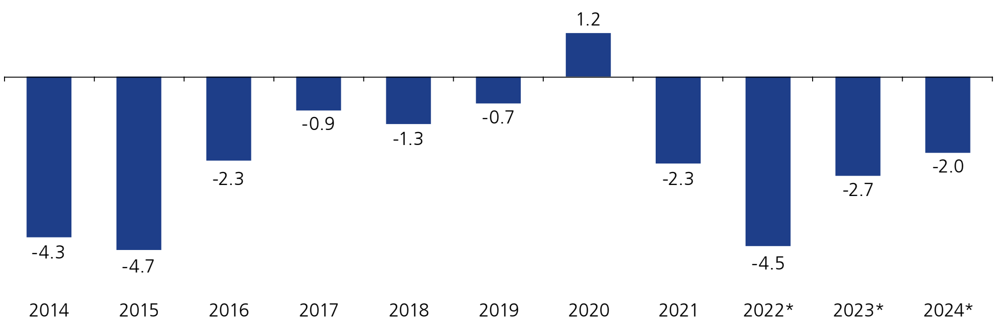
Current account

25. The **current account balance** accumulated over the last 4 quarters went from a deficit of 2.3 percent of GDP in 2021 to a deficit of 4.4 percent in the third quarter of 2022, reflecting: (i) the increase in the value of imports, associated with both high import prices and higher import volumes; (ii) the increase in private companies' profits with FDI, and (iii) the widening of the deficit for services, explained by high shipping prices and the greater number of residents traveling abroad.

Because of the factors described above, the current account deficit in 2022 is expected to be equivalent to 4.5 percent of GDP. On the other hand, in 2023, the deficit is expected to narrow to 2.7 percent of GDP due to lower corporate profits, to the correction of freight costs, and to lower growth in the volume of imports, narrowing further thereafter to 2.0 percent of GDP in 2024. The latter deficit level is lower than the historical average (1980-2021) of 2.5 percent.

Compared to the previous report, the current estimate for 2022 and 2023 incorporates a lower trade surplus, reflecting the greater dynamism of consumer imports, lower export volumes and lower projected growth in export prices.

Graph 33
CURRENT ACCOUNT: 2014-2024
(% GDP)



* Forecast.
Source: BCRP.

26. The year-on-year increase in the current account deficit can be broken down into two main factors; one attributed to domestic absorption (higher nominal demand for foreign goods and services) and the other related to the return paid to factors of production (capital) and to Peru's foreign liabilities (debt instruments).

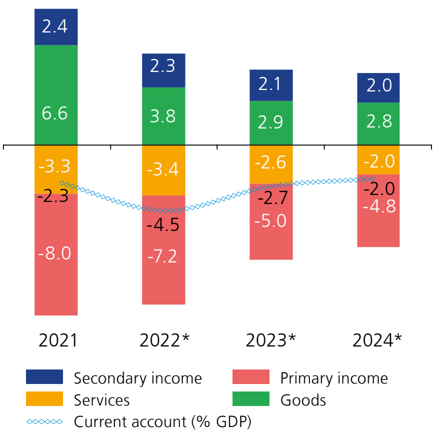
The widening of the deficit in 2022 responds to higher domestic absorption (2.9 percentage points), mainly due to a price effect: 2.2 percentage points related to goods (terms of trade) and 0.5 percentage points related to services (freight). The lower deficit over the forecast horizon is expected to be supported by the reduction of the negative contribution of domestic absorption in 2023 and a positive contribution in 2024: the price effect is likely to be less negative in 2023 (lower decline of the terms of trade and the normalization of freight costs) and to be positive in 2024 (recovery of export prices).

For its part, the return paid on net foreign liabilities would contribute to the deficit reduction over the forecast horizon, in line with the gradual reduction of FDI corporate earnings.

Table 9

DETERMINANTS BEHIND THE INCREASE IN THE CURRENT ACCOUNT DEFICIT, 2021-2024

CURRENT ACCOUNT
(% GDP)



CHANGE ON DEFICIT
(p.p. GDP)

A. Domestic absorption	**-2.9**	**-0.1**	**0.5**
1. Price Effect	**-2.7**	**-0.7**	**0.6**
1.1 Terms of Trade	-2.2	-1.2	0.2
1.2 Freight	-0.5	0.5	0.3
2. Volume effect	**-0.3**	**0.6**	**0.0**
2.1 Goods	-0.6	0.3	-0.3
2.2 Services*	0.3	0.3	0.3
B. Yield paid to external liabilities	**0.4**	**1.4**	**0.2**
1. Foreign Direct Investment	**0.5**	**1.7**	**0.1**
2. Medium- and long-term debt	**-0.1**	**-0.3**	**0.1**
C. Rest **	**0.4**	**0.6**	**-0.1**
TOTAL (A+B+C)	**-2.2**	**1.9**	**0.6**

* Includes changes in the volume of transportation and the volume and price of services that are not transportation.
** Includes changes of current transfers.
Source and Elaboration: Department of Economic Analysis.

27. According to data as of Q3-2022, the current account deficit of most countries in the region has continued to widen. In Chile, Colombia and Mexico, this widening is explained by the increase in the trade deficit and by companies with FDI's increased remittance of profits abroad.

Table 10

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

	2019	2020	2021	Q3.22*	2022**
Brazil	-3.6	-1.9	-2.9	-1.0	-2.5
Chile	-5.2	-1.7	-6.6	-9.9	-6.3
Colombia	-4.6	-3.4	-5.6	-6.5	-6.0
Mexico	-0.3	2.5	-0.4	-0.9	-0.2
Peru	-0.7	1.2	-2.3	-4.4	-4.5

* Accumulated current account for the last 4 quarters to the Q3.22.
** Forecast. For Brazil, approximated using the latest central bank projections in billion dollars for the current account and GDP growth in 2022.
Source: Central banks of each country.

Financial account

28. The **financial account** from January to September 2022 showed a net capital inflow of US$ 9,186 million, equivalent to 5.1 percent of GDP. The inflow for the period was composed of higher long-term financing from the private sector, mainly from FDI liabilities associated with the reinvestment of profits. These capital inflows were

counterbalanced by sales of sovereign bonds by non-residents and purchases of net short-term external assets.

The increase in the financial account debit position in 2022 is expected to be lower than in 2021, which is explained by lower financing to the public sector. A recovery in the acquisition of sovereign bonds by non-residents, offset by lower projected disbursements to the private sector, is expected for 2023 and 2024.

The flow of financing to the private sector in 2022 has been revised up compared to the previous Report due to the increase in direct investment in the country and external disbursements, whereas the flow of financing to the public sector has been revised down due to non-residents' lower purchases of bonds. Compared to September, a higher level of financing, mainly to the private sector, is also expected for 2023.

29. **Long-term private sector external financing** totaled US$ 12,865 million during the January-September 2022 period, a sum US$ 1,009 million higher than that recorded in the same period of the previous year. This result is explained by higher flows of FDI liabilities and net long-term loans. On the assets side, an increase was seen in portfolio investment abroad, offset by the reduction in FDI.

Table 11

FINANCIAL ACCOUNT OF THE PRIVATE SECTOR [1/]

(Million US$)

	2021	2022*			2023*		2024*
		Jan.-Sep.	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
Private Sector (A + B)	**-37**	**-9,520**	**-5,293**	**-9,882**	**-1,449**	**-4,861**	**-4,837**
% GDP	*0.0*	*-5.3*	*-2.1*	*-4.0*	*-0.5*	*-1.8*	*-1.7*
A. Long-term (1 - 2)	**-16,675**	**-12,865**	**-6,957**	**-13,174**	**-1,449**	**-4,861**	**-4,837**
1. ASSETS	**-8,731**	**-3,052**	**-1,063**	**-2,311**	**3,286**	**2,964**	**3,300**
Direct investment	1,735	-448	324	-283	144	868	445
Portfolio investment [2/]	-10,466	-2,604	-1,387	-2,027	3,142	2,096	2,855
2. LIABILITIES [3/]	**7,944**	**9,813**	**5,894**	**10,864**	**4,735**	**7,824**	**8,137**
Direct investment	7,455	9,669	7,239	11,556	6,445	8,404	8,796
Portfolio investment [4/]	1,097	-834	593	-888	1,078	865	900
Long-term loans	-608	978	-1,938	196	-2,789	-1,445	-1,559
B. Short-term	**16,638**	**3,345**	**1,664**	**3,292**	**0**	**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.

The flow of private financing in 2023 would be lower than in 2022 due to the reduction in FDI liabilities, following the projection of terms of trade and export volumes as well as the resumption of portfolio investment abroad by AFPs and mutual funds. In 2024, private capital inflows would remain very close to the 2023 level.

Compared to the previous Report, the 2022 long-term private financial account includes higher FDI liabilities, the lower investment to related companies through debt instruments observed so far this year, and higher long-term loans. The latter would be reinforced by lower purchases of short-term net foreign assets, both from non-bank companies and the non-financial sector. recorded until the third quarter. In addition, a higher increase in the net debtor position is also projected for 2023 due to the expected higher level of FDI liabilities (greater preference for reinvestment over profit sharing given higher interest rates) and a faster recovery of portfolio investment abroad.

30. **Public sector external financing** was US$ 334 million negative from January to September 2022, in contrast to the debit position of US$ 10,828 million recorded in the same period of 2021. The flow for the period is mainly explained by non-residents' sale of sovereign bonds (US$ 1,219 million) and portfolio amortizations (US$ 658 million). The lower financing compared to the same period of 2021 is explained by the issuance of global bonds in dollars for a total of US$ 4 billion and bonds in euros for a total of € 825 million.

Table 12
FINANCIAL ACCOUNT OF THE PUBLIC SECTOR 1/
(Million US$)

	2021	2022*			2023*		2024
		Jan.-Sep.	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
I. ASSETS	**57**	**-302**	**-103**	**-213**	**140**	**140**	**140**
II. LIABILITIES (1 + 2 + 3) 2/	**15,647**	**-636**	**1,828**	**386**	**1,715**	**2,305**	**2,475**
1. Portfolio investment	**11,481**	**-1,259**	**751**	**-664**	**1,530**	**2,147**	**1,466**
Issuance	11,172	600	600	600	0	0	0
Amortizations	0	-658	-627	-658	-650	-173	-391
Other operations (a - b) 3/	310	-1,201	778	-606	2,180	2,320	1,857
a. Sovereign bonds purchased by non-residents	-316	-1,219	668	-627	2,180	2,320	1,857
b. Global bonds purchased by residents	-626	-18	-110	-21	0	0	0
2. Loans	**2,354**	**623**	**1,077**	**1,050**	**185**	**158**	**1,009**
Disbursements	2,789	1,226	2,137	2,099	1,241	1,241	2,031
Amortizations	-435	-602	-1,060	-1,049	-1,056	-1,083	-1,021
3. BCRP: other operations 4/	**1,811**	**0**	**0**	**0**	**0**	**0**	**0**
III. TOTAL (I - II)	**-15,590**	**334**	**-1,931**	**-599**	**-1,575**	**-2,165**	**-2,335**

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/ 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.

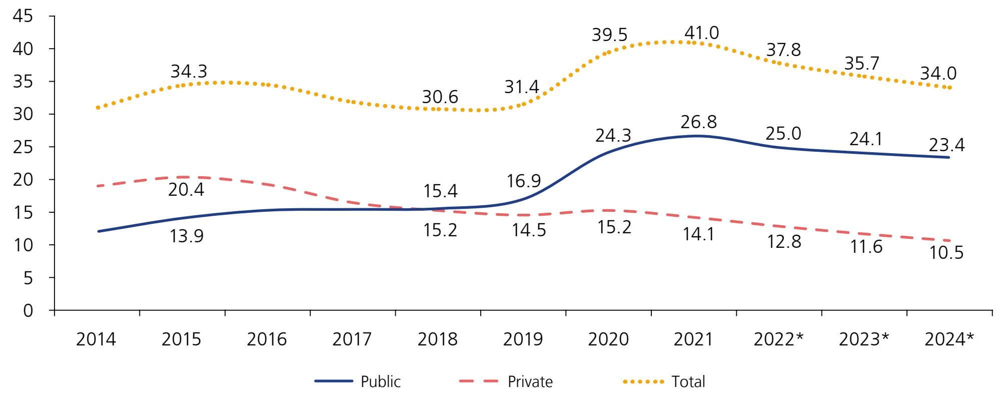
Considering a context of lower global uncertainty, the flow of financing to the public sector is projected to recover in 2023 and 2024 as a result of the resumption of sovereign bond purchases by non-residents.

Compared to the previous Report, the 2022 public financial account incorporates lower portfolio investment liabilities because of the sale of sovereign bonds by non-residents observed so far this year.

31. The private sector's medium- and long-term external debt balance is expected to fall from 14 percent of GDP in 2021 to 11 percent at the end of the projection horizon,

its lowest level in the last 10 years. For its part, the public external debt would fall by a similar proportion, from 27 to 23 percent, over the same period.

Graph 34
BALANCE OF MEDIUM- AND LONG-TERM EXTERNAL DEBT
(% GDP)



* Forecast.
Source: BCRP.

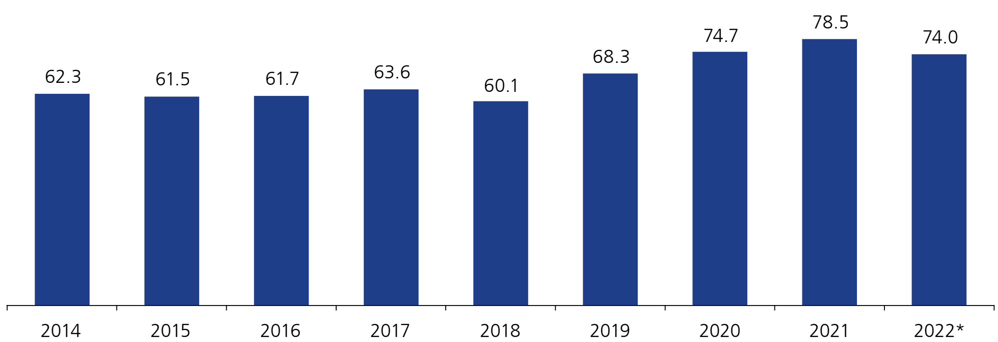
Net International Reserves

32. On December 12, international reserves had accumulated a reduction of US$ 4,499 million with respect to the end of last year, reaching a total of US$ 73,997 million. This result is mostly attributable to foreign exchange operations with the public sector (US$ 2,443 million) and net sales of foreign currency (US$ 1,236 million), aimed at mitigating exchange rate volatility.

Graph 35
NET INTERNATIONAL RESERVES AND INTERNATIONAL COVERAGE INDICATORS, 2014 - 2024
(Billion US$)

	2019	2020	2021*	2022*	2023*	2024*
International Reserves as a percentage of:						
a. GDP	29.4	36.3	34.8	30.2	28.0	26.7
b. Short-term external debt 1/	498	543	558	510	508	518
c. Short-term external debt plus current account deficit	444	657	406	288	343	371

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



* As of December 12, 2022.
Source: BCRP.

Although the ratio of international reserves as a percentage of GDP would fall slightly below its pre-pandemic level over the forecast horizon, the country's reserves can cover more than 5 times the balance of short-term external liabilities and 3 times the sum of these liabilities plus the current account deficit. In addition, since May 27, 2022, Peru has a successor arrangement to the IMF's Flexible Credit Line (FCL) for up to approximately US$ 5.3 billion to face eventual contingencies. The agreement seeks to strengthen the economy's resilience in the face of global uncertainty associated with fears of a recession, the conflict between Russia and Ukraine, and the tighter international financial conditions that have been affecting economic activity and inflation globally.

III. Economic activity

Sectoral GDP

33. Economic activity between January and September 2022 grew 2.9 percent, driven by the improvement in the health situation, as reflected in increased activity in non-primary sectors (3.9 percent) such as services, trade and manufacturing, in line with the expansion of private spending as well.

    Despite this, however, growth for the period was offset by the contraction in primary production (-0.6 percent), especially in the sectors of metal mining, primary manufacturing, and fishing. Production in the sector of metal mining declined due to social conflicts and production disruptions in some of the main mines, while output in the fishing sector was affected by lower catch of species for human and industrial consumption, which in turn reduced output in primary manufacturing, with lower production of fishmeal and fish oil and canned and frozen fish products being observed. In addition, there was less oil refining.

34. After recording a 1.7 percent rate in the third quarter of the year, economic activity in the country is expected to recover in the last quarter with a 2.7 percent year-on-year growth rate associated with the recovery of mining production due to the onset of operations of Quellaveco and the expected performance of the construction sector in view of the favorable evolution of public investment. With this result, the economy is expected to grow 2.9 percent in 2022, a lower rate than projected in the previous report. This revision is explained by a lower expected expansion of the primary sectors, mainly due to the lower mining production observed until September, although this effect would be offset in part by a higher expected activity in the non-primary sectors, especially in the construction and commerce sectors.

    In 2023, mining production is foreseen to recover due to projects that came into operation, such as Quellaveco, and the reactivation of mines that came to a standstill in 2022. However, the pace of growth in most of the non-primary sectors is expected to slow down due to the lower dynamism foreseen in private consumption and the effect of the new subnational authorities on public investment. Compared to the previous report, the growth forecast has been lowered to 2.9 percent because of a lower projection in the non-primary sectors, associated in turn with lower expected growth in private spending.

Table 13
GDP BY ECONOMIC SECTORS
(Real % change)

	2021	2022*			2023*		2024*
		Jan.-Sep.	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
Primary GDP	**6.4**	**-0.6**	**1.9**	**0.7**	**5.8**	**6.3**	**2.8**
Agriculture and livestock	4.6	4.1	2.4	3.5	2.4	2.4	2.7
Fishing	9.9	-16.6	-5.7	-13.4	5.3	11.6	3.5
Metallic mining	10.5	-2.8	1.6	0.0	8.4	8.6	2.8
Hydrocarbons	-4.6	6.9	8.0	4.2	4.7	4.7	4.9
Manufacture	3.2	-4.1	-0.2	-1.8	4.9	6.9	2.0
Non-Primary GDP	**15.7**	**3.9**	**3.3**	**3.4**	**2.3**	**2.0**	**3.1**
Manufacture	25.2	4.1	3.6	2.8	2.6	2.0	3.0
Electricity and water	8.5	3.5	3.0	3.8	5.0	5.0	3.9
Construction	34.5	2.0	0.5	3.5	2.0	1.3	3.2
Commerce	17.8	3.5	2.6	3.1	2.5	2.4	3.5
Services	11.8	4.2	3.7	3.6	2.2	2.0	2.9
GDP	**13.6**	**2.9**	**3.0**	**2.9**	**3.0**	**2.9**	**3.0**

IR: Inflation Report.
* Forecast.
Source: BCRP.

In 2024, the economy is expected to grow 3.0 percent, by which time tourism and restaurant-related activities are expected to reach their pre-pandemic levels.

a) Output in the **agriculture sector** grew 2.5 percent in the third quarter of the year, due to higher agricultural production oriented to the foreign market (blueberries, olives, mangos, avocados and cocoa) as well as due to good weather conditions, which improved the yields of these products.

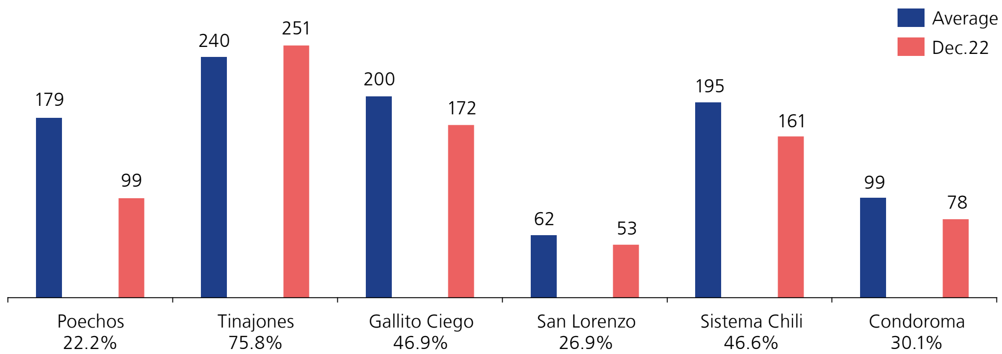
Growth in the agriculture sector in **2022** has been revised up from 2.4 to 3.5 percent because of an upward revision on the sector's performance in the first months of the year and better production prospects for agro-exports, as well as because of a lower projected drop of production for the domestic market in the fourth quarter.

The projection for the agriculture sector for **2023** is maintained at 2.4 percent, and a rate of 2.7 percent is expected for **2024**, with agriculture for the domestic market recovering as a better scenario for fertilizer prices is anticipated.

On the other hand, on December 6, the **water storage** in the main coastal reservoirs is below 50 percent of capacity and under the last 5-year average, with the exception of Tinajones (Lambayeque). This behavior has begun to reverse and, according to SENAMHI forecasts, rains will intensify in the following months above normal in most of the central and southern highlands and within normal levels in the rest of the country.

The water deficit delayed plantings in the highlands and the sierra region, which resulted in a 14.4 percent reduction in the área planted during August-October 2022, affecting mainly crops such as potatoes, amylaceous maize, quinoa and other Andean products.

Graph 36
STORED VOLUME OF MAIN RESERVOIRS
(MCF) 1/



1/ As of December 6, 2022, average in the last five years (2017-2021) of the same date and percentage with respect to the volume stored from December 2022 in relation to the total capacity from each reservoir.
Source: ANA.

b) Output in the **fishing sector** increased 5.9 percent year-on-year in the third quarter of 2022, mainly due to the higher catch of anchoveta (136.8 percent), both in the north-central and southern areas. This result was partially offset by a contraction in marine fisheries for human consumption (-16.5 percent) due to the lower availability of squid and scallops resulting from negative sea temperature anomalies.

Ministerial Resolution No. 391-2022 authorizing the start of the second anchovy fishing season in the north-central zone, with an assigned quota of 2.3 million MT, was published on November 22. On the other hand, the ENFEN committee (integrated by the Peruvian organizations in charge of studying El Niño events) reported on December 15 that the alert system status was changed to "Not Active"[2] as it is more likely that the sea surface temperature will show values within the neutral range from December 2022 to early autumn 2023. Based on this information and on available data so far, activity in the fishing sector is expected to decrease 13.4 percent in **2022** and to increase 11.6 percent in **2023**, while neutral conditions and a 3.5 percent annual growth rate in the sector are expected fpr **2024**.

c) In the third quarter of **2022**, production in the metal mining sector declined 3.4 percent due to lower extraction of: (i) zinc (-6.9 percent), mainly because of lower production from Compañía Minera Los Quenuales due to the depletion of the Iscaycruz unit, and lower productio from Nexa, due to lower mineral ore grades; (ii) silver (-11.8 percent), because of lower production at Los Quenuales, Ares and Buenaventura due to the suspension of operations at the Uchucchacua unit to implement actions aimed to improve operating efficiency, and (iii) molybdenum (-24.1 percent), due to lower production at Southern, Cerro Verde and Las Bambas. On the other hand, copper production increased 1.5 percent, driven by the start of production at Quellaveco and by higher extraction at Cerro Verde as a result of increased ore processing.

2 The "not active" status implies the presence of neutral conditions or that the ENFEN Committee expects El Niño or La Niña events to be close to ending.

In **2022, metal mining production** is expected to record zero growth, since the lower production of most metals would be offset this year by a higher production of copper, iron and tin. The revision of the year's forecasts from 1.6 to 0 percent is mostly explained by the reduction of Quellaveco's production plan, whereas growth in **2023**, when the sector is expected to grow 8.6 percent, would be driven by production in this mining unit. In addition, a growth rate of 2.8 percent is expected from Quellaveco's higher molybdenum extraction for **2024**.

d) Activity in the **hydrocarbons** sector in the third quarter of 2022 recorded a 9.8 percent drop compared to the same period of 2021, due to the lower extraction of natural gas liquids from lots 88 and 56 associated with failures and maintenance.

On the other hand, the higher oil production (3.7 percent) is due to the higher extraction of lot 95 resulting from the drilling of new wells. Likewise, natural gas production increased by 13.2 percent due to the higher extraction of lot 88 (domestic market) and lots 56 and 57 (foreign market), since in the third quarter of 2021 extraction was affected by various maintenance and failures recorded in the plants.

So far in the fourth quarter of 2022, oil production has been affected by the lower extraction of lot 95, due to the lower availability of barges and the standstill of the pipeline. Likewise, production at lots 192 and 8 continue to be paralyzed. On the other hand, natural gas extraction would increase compared to the same quarter of 2021 due to higher domestic demand.

In **2022,** the sector is expected to grow 4.2 percent, which implies a projection revision on the downside due to the lower extraction of oil from lot 95 and the lower extraction of natural gas liquids due to recorded failures. In **2023,** on the other hand, production in the sector is expected to grow 4.7 percent as a normalization of natural gas and natural gas liquids production is anticipated, while in **2024,** the sector is expected to grow 4.9 percent following the normalization of oil extraction.

e) Activity in the **primary manufacturing** subsector grew 3.1 percent in the third quarter of 2022, mainly as a result of higher fishmeal and fish oil production (due to higher anchoveta catch in July and August), as well as higher copper and zinc refining by Southern and Nexa, respectively. This was partially offset by lower refining of hydrocarbons, due to a failure at the Malvinas Plant, as well as by lower production at La Pampilla, due to delays in supply due to abnormal sea surges.

The growth forecast for the subsector in **2022** has been revised down from -0.2 to -1.8 percent due to lower fishing activity and lower oil refining, as well as due to lower sugar and meat product processing. In contrast, an increase of 6.9 percent is expected for **2023** and a rate of 2.0 percent is foreseen for **2024.**

f) **Ouput in non-primary manufacturing** declined 0.4 percent in Q3-2022, this decline resulting mainly from lower production of mass consumer goods. In particular, a contraction was observed in the production of furniture and in the production of fruit, vegetable and green preserves. This was partially offset by the improved performance of goods oriented to the foreign market, such as fabrics and knitted goods, and garments.

As a result, the growth forecasts for non-primary manufacturing in **2022** have been revised down from 3.6 to 2.8 percent. Despite this, activity in the subsector would still be above pre-pandemic levels. Moreover, year-over-year growth rates of 2.0 percent and 3.0 percent are expected for **2023** and **2024**, respectively.

g) Activity in the **construction** sector grew 3.0 percent in the third quarter of 2022, mainly due to higher execution of public works. The domestic consumption of cement, the main indicator of the sector's activity, decreased 1.6 percent during this period compared to the third quarter of 2021.

Activity in the construction sector is expected to grow 3.5 percent in **2022**, driven by the physical progress of public works, whereas in **2023** and **2024** it is expected to grow 1.3 and 3.2 percent, respectively, driven by higher private investment.

h) During the third quarter of 2022, the **trade** sector grew 2.4 percent, given the lower operating restrictions compared to 2021. Wholesale and retail trade grew 2.8 and 1.3 percent, respectively; and vehicle sales and repair grew 2.3 percent.

In **2022** and **2023**, the sector's activity is expected to grow 3.1 and 2.4 percent, respectively. In **2024, it is** expected to grow 3.5 percent.

i) The **services** sector grew 2.8 percent in the third quarter of the year. The sector's recovery was driven by the elimination of curfews, higher visitor capacities at establishments, and mass vaccinations.

The sector's growth in the quarter was due to the greater dynamism in the following areas: (i) lodging and restaurants (13.2 percent), due to the elimination of visitor capacity restrictions and increased delivery services; (ii) transportation and storage (8.7 percent) due to increased air and land passenger transportation as a result of the elimination of transfer restrictions; and (iii) other services (5.5 percent).

In **2022**, the sector is expected to grow by 3.6 percent. This forecast considers a longer impact of the pandemic on tourism-related industries, such as transportation and lodging. In **2023,** the sector would grow 2.0 percent and most sectors are expected to reach pre-pandemic levels. In **2024** the sector would grow 2.9 percent.

Expenditure-side GDP

35. On the expenditure side, output growth between January and September was mainly supported by private consumption, which was driven by the recovery of employment and by the withdrawals of social security savings and CTS deposits that were allowed. Another factor that also contributed to this was the progress in the vaccination process –73 percent of the population had already received the third dose on September

30–, which allowed for better sanitary conditions and thus accelerated the demand for services. On the other hand, the weak growth of private investment was the result of the deterioration of business confidence and the lower momentum of self-construction. On its side, public investment has recovered in recent months.

Compared to the September Report, the growth forecast has been lowered from 3.0 to 2.9 percent due to the lower expansion of traditional exports (reflecting lower primary production) and non-traditional exports (due to our trading partners' slower pace of growth) and the greater dynamism of imports, mainly consumer imports. The current forecasts for 2022 consider higher growth in domestic demand, with greater dynamism in private consumption and public investment. The economy is expected to grow 2.9 percent in 2023, less than forecast in September, due to lower growth in private spending. The longer stagnation of business confidence on the pessimistic side than initially expected underpins the lower projection for private investment, while the impact of inflation on real incomes would limit consumption growth. The forecasts assume an environment of relative social stability. By the end of the forecast horizon, the economy is expected to grow 3.0 percent.

Table 14
DOMESTIC DEMAND AND GDP
(Real % change)

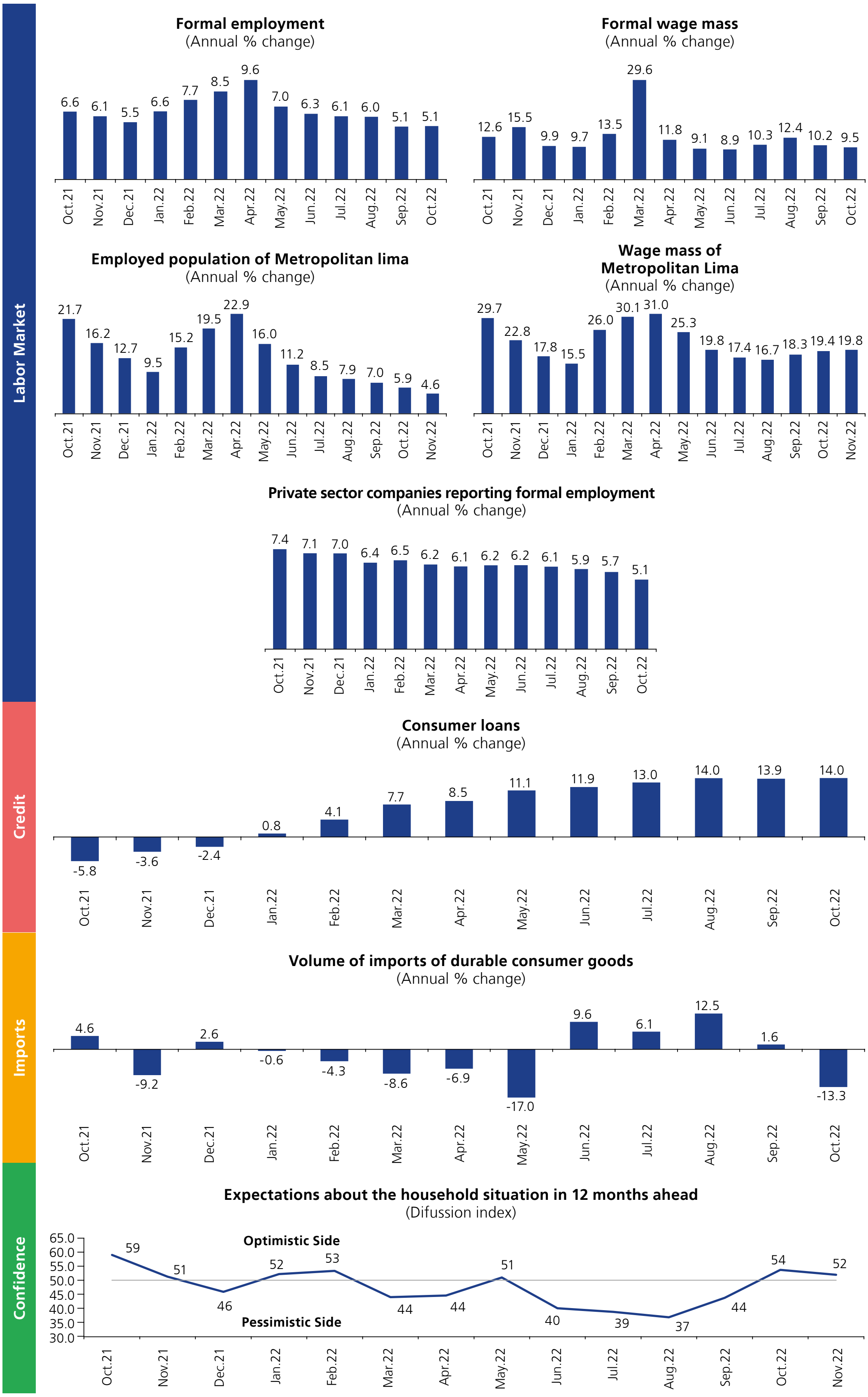
	2021	2022*			2023*		2024*
		Jan.-Sep.	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
Domestic demand	**14.7**	**2.5**	**2.5**	**2.7**	**2.7**	**2.5**	**3.1**
Private consumption	12.4	5.1	4.2	4.4	3.1	3.0	3.0
Public consumption	10.6	-0.2	1.5	-1.6	2.0	2.0	3.0
Private investment	37.4	0.2	0.0	0.0	1.8	1.0	2.5
Public investment	24.9	0.6	2.1	6.0	0.0	0.0	4.0
Change on inventories (contribution)	-2.5	-0.9	-0.5	-0.2	0.0	0.0	0.0
Exports	**13.7**	**6.1**	**5.5**	**5.0**	**7.7**	**6.4**	**2.5**
Imports	**18.6**	**4.1**	**3.8**	**4.3**	**6.5**	**4.6**	**2.9**
Gross Domestic Product	**13.6**	**2.9**	**3.0**	**2.9**	**3.0**	**2.9**	**3.0**

IR: Inflation Report.
* Forecast.
Source: BCRP.

36. Most indicators related to **private consumption** grew steadily in September and October. In the labor market, jobs continued to increase, especially those related to the commerce and services sectors, an effect reflected in the increase of the formal wage bill at a national level and the number of private sector companies reporting employment. The same behavior was observed in the indicators of employed population and wage bill in Metropolitan Lima, according to INEI's Permanent Employment Survey.

For its part, the real expansion of consumer credit was associated with the increase in car and the greater use of credit cards. Consumer confidence, measured by agents' expectations regarding their family's economic situation in 12 months, recovered in September and moved into the optimistic range in October and November, this result being explained by the complete reopening of the economy. In the opposite direction to the aforementioned indicators, the volume of consumer durables imports decreased in October due to lower imports of household appliances, televisions, furniture and bedroom accessories.

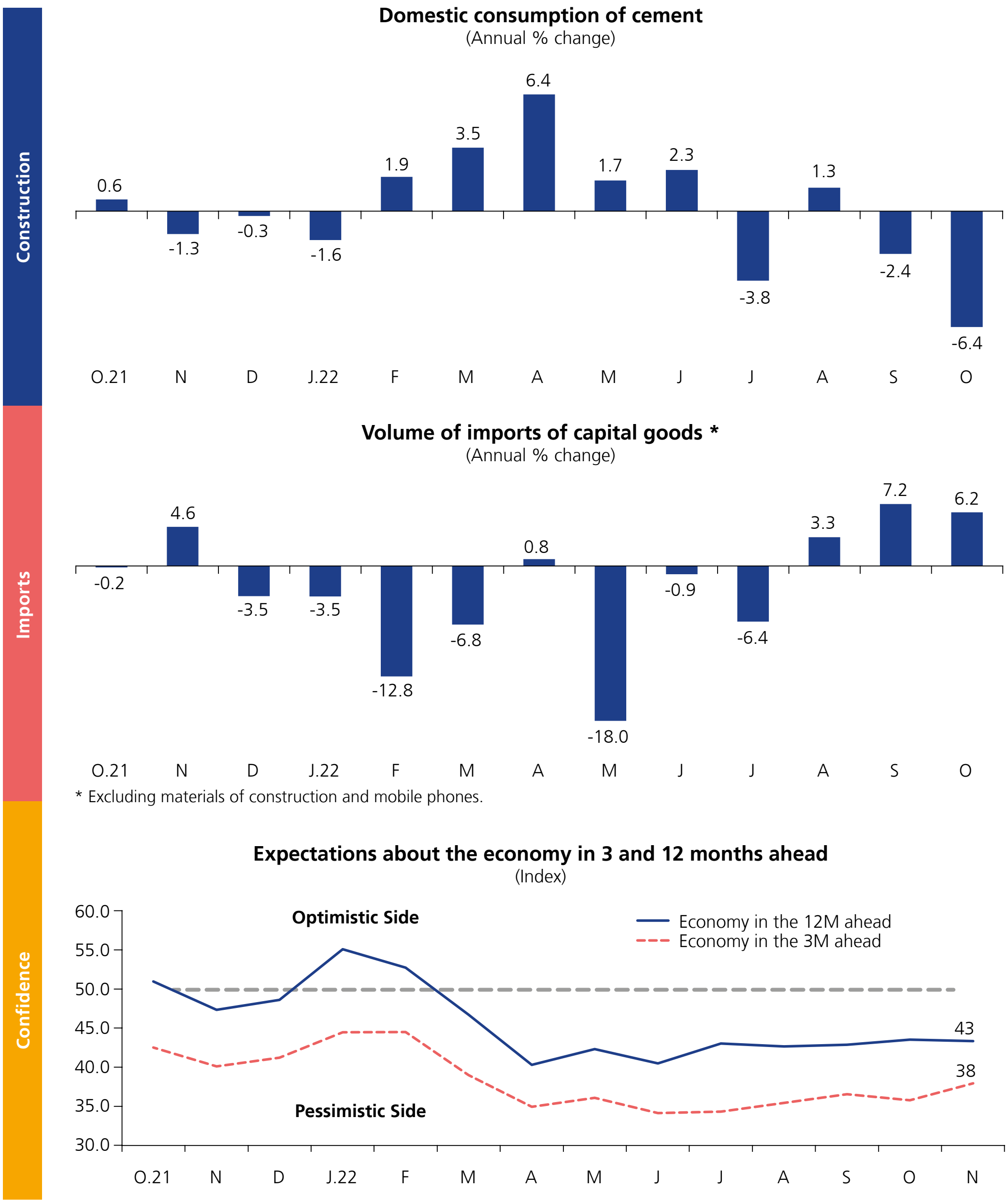
Graph 37
INDICATORS RELATED TO PRIVATE CONSUMPTION



Source: BCRP, INEI, SUNAT, and APOYO.

37. Most of the leading indicators related to **private investment** showed a mostly unfavorable performance in recent months due to the persistence of political uncertainty and its impact on investment decision making. Domestic cement consumption contracted in September and October, while 3-month and 12-month economic expectations remained pessimistic, with a slight improvement in 3-month expectations in November. In contrast, the volume of imports of capital goods, excluding construction materials and cell phones, grew in September and October due to higher purchases of transportation equipment, as well as increased purchases of machinery and equipment for the electricity sector.

Graph 38
INDICATORS RELATED TO PRIVATE INVESTMENT



Source: BCRP, SUNAT, and cement companies.

38. Private expectations for GDP growth have been updated in line with recent economic developments. The latest **Survey on Macroeconomic Expectations** indicates that agents project growth rates between 2.6 and 2.7 percent for this year, rates between 2.3 and 2.8 percent for 2023, and rates between 2.6 and 3.0 percent for 2024.

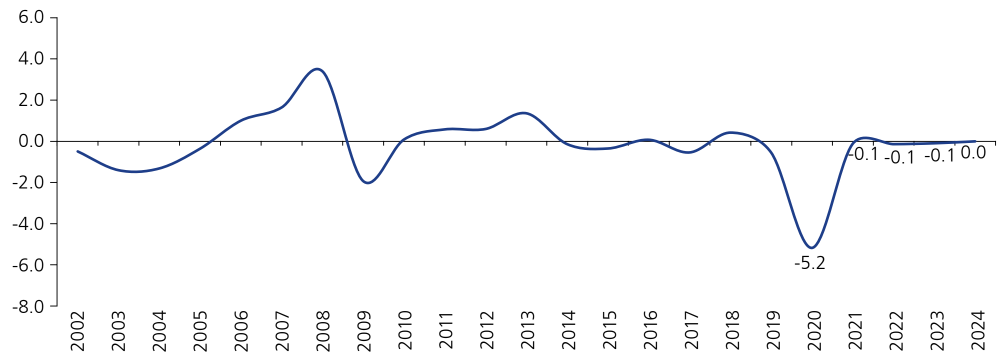
Table 15
MACROECONOMIC EXPECTATIONS SURVEY: GDP GROWTH
(% change)

	IR Mar.22	IR Jun.22	IR Sep.22	IR Dec.22*
Financial entities				
2022	2.5	2.5	2.5	2.7
2023	3.0	2.6	2.5	2.3
2024				2.6
Economic analysts				
2022	2.7	2.7	2.7	2.6
2023	2.8	2.7	2.4	2.3
2024				2.6
Non-financial firms				
2022	3.0	3.0	3.0	2.7
2023	3.0	3.0	3.0	2.8
2024				3.0

* Survey conducted on November 30.
Source: BCRP.

39. 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, since potential GDP characterizes the short and medium-term productive capacity of the economy over the business cycle. It is estimated that the economy would remain at a level close to its potential GDP after COVID-19 brought it in 2020 to its furthest level from potential GDP in this century.

Graph 39
OUTPUT GAP
(% of potential GDP)



Source: BCRP.

40. **Private consumption** between January and September 2022 grew 5.1 percent year-on-year, a result explained by the recovery of the labor market (mainly in the formal sector), monetary incentives provided by the Government, the availability of

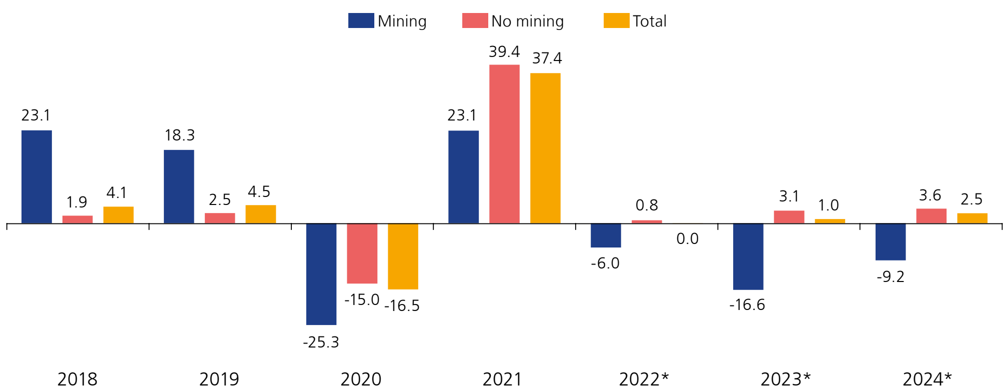
100 percent of CTS deposits, and the withdrawal of up to an amount equivalent to 4 tax units from pension funds, which allowed sales to continue growing. In the last quarter of the year, household spending is expected to continue to grow, driven by the increase in jobs and formal income, by the full availability of CTS deposits and the recovery of household expectations about the future of the economy observed in October.

In this context, given the higher-than-expected result in the third quarter, the projected growth rate of private consumption has been revised up, with respect to the September Report, from 4.2 to 4.4 percent in 2022. In 2023 and 2024, the consumption growth rate would remain around 3.0 percent once the sources of savings available during 2022 have dissipated. The 2023 private consumption forecast has been revised slightly down from the previous report due to the slower recovery in real incomes.

41. **Private investment** increased 0.2 percent year-on-year between January and September 2022, this low rate being influenced by the fact that business confidence levels 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 5.3 percent in the same period. Given these results, the projection of zero growth for private investment in 2022 remains unchanged. Along the same lines, mining investment is projected to decline due to the social conflicts prevailing in several regions of the country.

For 2023, the estimated expansion of private investment has been revised down from 1.8 to 1.0 percent. This is explained by a slower recovery in business confidence and the projected contraction in the terms of trade, which would have a negative impact on new investment project decisions. By the end of the forecast horizon, investment is expected to grow at a rate of 2.5 percent, under a scenario that incorporates the contribution of the mining projects of the San Gabriel and Shougang Hierro Perú mining companies.

Graph 40
PRIVATE INVESTMENT
(Real % change)



* Forecast.
Source: BCRP.

a. **Mining investments** between January and September 2022 totaled US$ 3,705 million, with investment from Anglo American Quellaveco (US$ 862 million), Antamina (US$ 298 million) and Yanacocha (US$ 246 million) accounting mainly for this total. The projection for 2022-2024 considers the completion of the construction of the Quellaveco project (US$ 5.5 billion total investment) and the Toromocho Expansion (US$ 1.3 billion) in 2023. Moreover, the construction phase of San Gabriel (US$ 0.4 billion) and the completion of Muelle San Nicolás (US$ 0.4 billion) by Shougang Hierro Perú are also expected to start in the forecast horizon.

b. In **non-mining sectors**, progress continues to be made in the construction of the main infrastructure projects. Line 2 of the Lima Metro was 44.4 percent complete in October, according to OSITRAN, 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 2023 after completing the relocation of drinking water and sewage networks. For its part, the expansion of Jorge Chávez International Airport, the construction of the second runway and the new control tower will be operational in 2023. The new passenger terminal is in its initial stage, with a delivery date of 2025. As for the modernization of the Callao North Pier, in October 2022, it recorded 48.5 percent progress. 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 points out that the Muelle Bicentenario project started construction works in September last year and that it recorded an accumulated progress of 59.2 percent in September 2022. The company estimates that the dock will start operating in early 2024.

Table 16

MAIN ANNOUNCEMENTS OF PRIVATE INVESTMENT PROJECTS: 2022-2024

SECTOR	INVESTOR	PROJECTS
MINING	Angloamerican Chinalco Buenaventura	Quellaveco Expansion of Toromocho Mine 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
INFRAESTRUCTURE	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 2022-2024 period, **Proinversion** reports a portfolio of US$ 9.0 billion in investment projects to be awarded according to its latest report of September 2022.

Table 17

MAIN PROJECTS TO BE IMPLEMENTED THROUGH CONCESSION ARRANGEMENTS IN 2022-2024

(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
Others	261

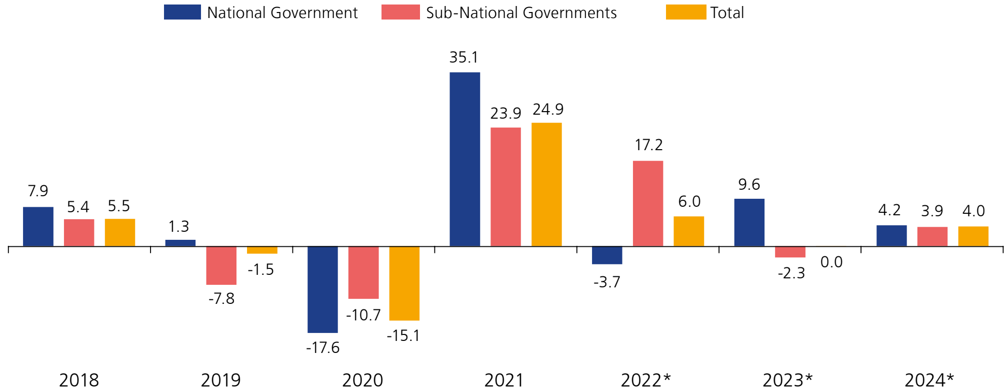
Source: Proinversión.

42. **Public investment** increased 0.6 percent year-on-year between January and September 2022, this increase being mainly explained by the performance of subnational governments in the third quarter, in line with the extraordinary spending seen in the last year in which municipal and regional authorities are in office. This increase was offset by lower investment at the National Government level, given the lower health emergency spending to face the COVID-19 pandemic.

Investment is expected to recover in the fourth quarter, driven by reconstruction works implemented mainly under the Government to Government Agreement with the United Kingdom, as well as by projects under the National Infrastructure Plan for Competitiveness (PNIC); by Special Public Investment Projects; by the unblocking of irrigation megaprojects, such as Majes Siguas and Chavimochic; and by a higher execution of public spending, as this is the last year of subnational authorities' term of office. Thus, public investment is projected to grow 6.0 percent in 2022, higher than expected in the previous Report (2.1 percent), mainly due to the acceleration of disbursements in the last quarter of the year.

In 2023, public investment is projected to register zero growth. This projection assumes that the growth in public investment by the National Government will be offset by the fall in investment by subnational governments that is usually observed in the year following municipal elections. In 2024, public investment is estimated to grow by 4.0 percent.

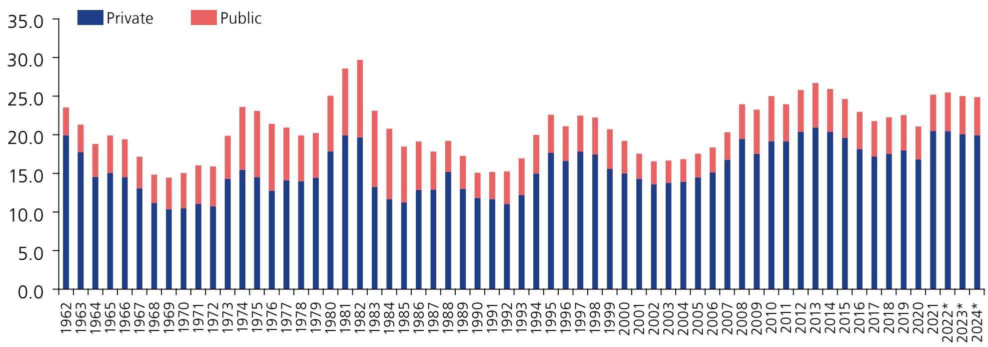
Graph 41
PUBLIC INVESTMENT
(Real % change)



Memo: Public investment is made up of investment by the National Government, Subnational Governments and investment by public companies.
* Forecast.
Source: BCRP.

43. **Gross fixed investment**, as a percentage of GDP, is expected to increase from 25.2 to 25.5 percent between 2021 and 2022, placing it at a slightly lower level than in 2014, due to the increase in public investment seen in the last year of the municipal and regional authorities' term of office. At the end of the forecast horizon, this indicator is expected to contract slightly and represent 24.9 percent of output, due to persistently low business confidence. For investment to recover, it is necessary to preserve economic and financial stability, consolidate an adequate business environment, and carry out reforms that underpin the economy's productivity.

Graph 42
GROSS FIXED INVESTMENT: PRIVATE AND PUBLIC, 1962-2024
(% GDP)



* Forecast.
Source: BCRP.

44. **Domestic savings** are projected to decrease from 19.4 percent of GDP in 2021 to 17.3 percent in 2022 due to the fall in private savings (3.3 percentage points of GDP) associated with the normalization of household consumption habits and the approval of the availability of CTS deposits and part of the funds in AFPs. Since it is estimated that the drop in private savings will outweigh the increase in public savings resulting from the recovery in tax collection and lower expenditures, the external financing requirement is expected to increase from 2.3 to 4.5 percent of GDP this year.

After recording a historical high of 25.5 percent of GDP in 2020, **private savings** would contract to 13.9 percent of GDP in 2022 (their lowest level since 2012), which is explained by the growth of consumption (supported by the availability of previously intangible sources of liquidity and by the rapid economic recovery), as well as by the effect of inflation on spending. This reduction in savings, particularly by households, has also been observed so far in 2022 in other countries in the region, such as Chile and Colombia.

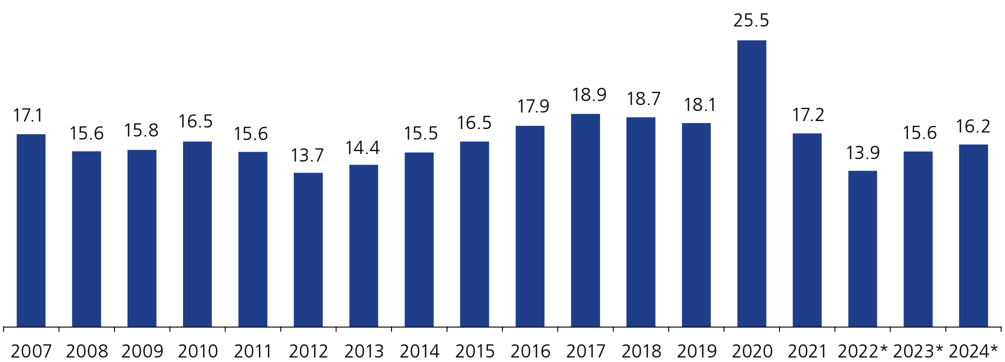
Over the forecast horizon, in 2024 private savings are expected to increase to 16.2 percent of GDP as a result of higher interest rates in the economy and the reduction of the effects of inflation on household spending. Thus, the external gap is projected to stand at -2.0 percent of GDP in 2024.

Table 18
SAVING-INVESTMENT GAP
(% of nominal GDP)

	2021	2022*			2023*		2024*
		Q3 1/	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
1 Domestic Gross Investment 2/	21.7	21.1	21.4	21.9	21.2	21.6	21.7
2 Domestic Saving	19.4	16.7	17.7	17.3	19.4	19.0	19.6
External Gap (=2-1)	-2.3	-4.4	-3.8	-4.5	-1.8	-2.7	-2.0
1.1 Private Domestic Gross Investment 2/	17.0	16.4	16.6	16.8	16.6	16.7	16.7
1.2 Private Saving	17.2	13.1	14.8	13.9	16.6	15.6	16.2
Private Gap (=1.2-1.1)	0.2	-3.3	-1.9	-2.9	0.0	-1.1	-0.5
2.1 Public investment	4.7	4.7	4.8	5.0	4.6	4.9	4.9
2.2 Public Saving	2.1	3.6	2.9	3.4	2.8	3.3	3.4
Public Gap (=2.2-2.1)	-2.5	-1.1	-1.9	-1.6	-1.8	-1.6	-1.5

IR: Inflation Report.
* Forecast.
1/ Accumulated in the last 4 quarters.
2/ Includes change on inventories.
Source: BCRP.

Graph 43
PRIVATE INVESTMENT: 2007-2024
(% GDP)



* Forecast.
Source: BCRP.

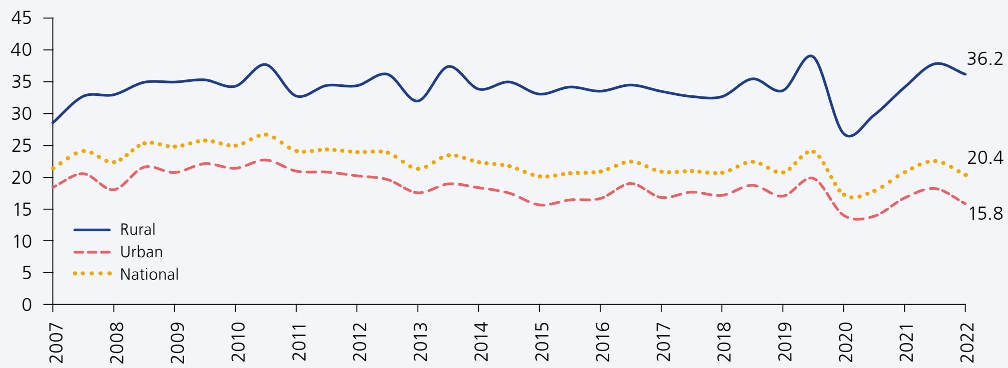
Box 2
MULTI-EMPLOYMENT AND EXTENDING WORKING TIME AS A RESPONSE TO ADVERSE SITUATIONS

When faced with difficulties in sustaining their consumption, households can respond in different ways. Two of household members' possible responses are linked to the labor market: searching for a second job and extending the working time. The evolution of multi-employment (workers who have a second job) and average working hours in Peru since 2007 is described below, focusing the analysis on the last few years to explore whether the COVID-19 pandemic and the subsequent rise in the cost of living have altered their dynamics.

Multiple employment and working hours

In the first half of 2022, the employed laborforce with two jobs represented 20.4 percent of the total. This value is slightly below the 2019 average value (22.4 percent) and the pre-pandemic average (22.9 percent). The incidence of multi-employment reached a low during the pandemic, with a rate of 17.2 percent in the first half of 2020. Moreover, when the incidence of multi-employment is compared by geographic area, we see that multi-employment is more prevalent in rural areas than in urban areas.

WORKERS WITH SECOND JOBS BY SEMESTER AND GEOGRAPHICAL AREA, 2007-2022
(As a % of the total number of workers in each group)



Memo: Data for the first semester of 2022 is obtained from the quarterly ENAHO Q1.2022 and Q2.2022. The rest of the data corresponds to the annual databases.
Source: INEI–ENAHO.

This is directly linked to the incidence of multi-employment across income quintiles and economic sectors. The following table shows that workers in lower-income households (Quintile 1) are, on average, more likely to have a second job and almost twice as likely as workers in households in the top quintile. Similarly, multi-employment is more widespread among primary sectors, mainly linked to rural areas, than among economic sectors more related to urban areas (such as construction, commerce and services). The table also shows that dependent workers are less likely to have a second job than self-employed workers.

It should be pointed out that multi-employment is an important source of income for Peruvian households. In 2021, income from secondary job accounted for 25 percent of the total labor income of workers with two jobs, the same share it showed in 2019. The relevance of secondary income is similar in urban and in rural households (25 and 26 percent in 2021, respectively), but becomes slightly higher for lower-income households. Thus, for the bottom income quintile (Quintile 1), income from a secondary occupation accounted for 28 percent of total labor income, whereas for the top quintile (Quintile 5) it represented 25 percent.

MULTIPLE EMPLOYMENT BY INCOME QUINTILES AND ECONOMIC SECTOR, 2007 - 2022
(In percentages of the total number of workers in each group)

	2007	2009	2011	2013	2015	2017	2019	2020	2021	2022 S1*	Differences 2021/ 2019	Differences 2022S1/ 2019
National	**22.6**	**25.1**	**24.1**	**22.4**	**20.4**	**20.9**	**22.4**	**17.5**	**21.7**	**20.4**	**-0.7**	**-2.1**
Quintile 1 (Lowest)	23.7	27.0	25.1	26.7	26.0	24.9	26.6	15.6	23.3	27.5	-3.3	1.0
Quintile 2	25.6	28.4	27.1	26.0	23.7	23.7	25.8	19.6	24.6	26.1	-1.2	0.3
Quintile 3	21.5	24.5	23.5	21.7	19.4	20.2	22.1	19.3	22.4	20.3	0.3	-1.8
Quintile 4	20.8	23.6	22.6	19.5	17.7	18.8	19.7	17.2	20.2	16.8	0.5	-2.9
Quintile 5 (Highest)	22.1	22.8	22.8	20.0	17.2	18.5	19.7	16.0	19.3	13.7	-0.4	-6.0
Sector												
Agro/Fishing/Mining	22.6	26.3	25.1	26.6	26.1	25.6	28.5	21.5	27.5	26.4	-0.9	-2.0
Manufacture	22.5	24.7	22.9	21.6	18.1	19.6	20.4	15.7	19.0	19.1	-1.5	-1.4
Construction	20.6	23.6	20.7	18.1	14.7	17.8	19.3	15.1	20.2	15.5	0.9	-3.8
Commerce	21.0	23.2	22.8	19.7	17.9	18.7	19.4	14.8	18.2	18.3	-1.3	-1.2
Services	23.8	25.4	24.8	22.0	19.1	19.7	20.9	16.0	19.8	18.5	-1.1	-2.4
Occupation type												
Employer	22.9	26.5	24.4	23.8	19.7	18.6	20.3	17.8	20.3	19.8	0.0	-0.5
Independent	29.4	32.0	31.0	30.0	28.4	28.1	29.0	23.6	28.4	28.0	-0.6	-1.0
Employee	22.6	24.3	23.4	19.2	16.1	17.7	19.1	12.8	15.6	14.1	-3.5	-5.0
Worker	25.4	28.2	26.0	23.1	20.5	21.6	24.1	20.4	24.5	21.8	0.4	-2.2
UFW**	5.2	7.8	6.4	6.7	5.8	3.8	4.8	3.4	5.7	5.6	0.9	0.8
Home worker	17.4	17.5	17.1	16.4	15.6	15.8	18.6	14.4	16.6	14.7	-2.0	-3.9
Other	5.4	4.6	6.2	9.3	3.5	7.5	11.0	3.9	5.7	5.9	-5.3	-5.1

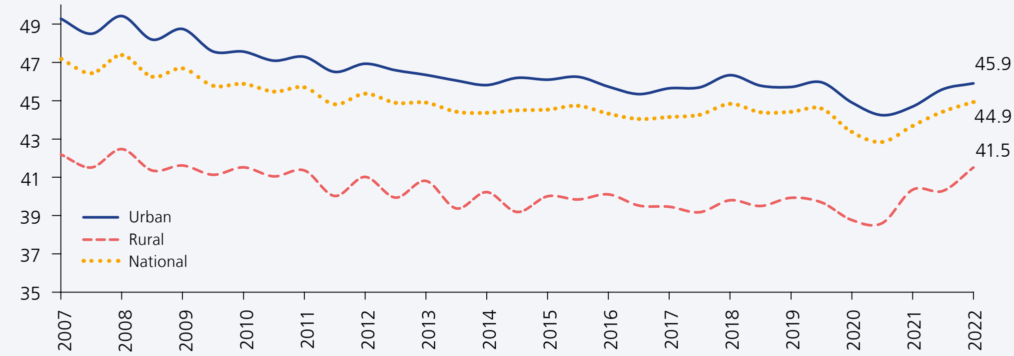
* The information for the first semester of 2022 is obtained from the quarterly ENAHO Q1.2022 and Q2.2022.
** Unpaid family worker.
Memo: Income quintiles are calculated based on total household income (includes labor income, rental income, income from transfers, and extraordinary income). Data from the ENAHO quarterly databases may not coincide with the annual ENAHO values for the same period.
Source: INEI-ENAHO.

As for the number of hours worked, the average working week of Peruvian workers in the first half of 2022 consisted of 44.9 hours.[3] This implies an increase with respect to pre-pandemic levels, when the number of working hours per week dropped to its historic low (42.8 hours) in the second half of 2020. In this case, it is the employed laborforce in urban areas that shows the longest working hours.

When divided by income quintiles, workers in the higher quintiles have a longer working day than those in the lower income quintiles. However, although all income quintiles show average working hours similar to those observed prior to the pandemic or values above them, the greatest change is observed in the lowest income quintile. Workers in the bottom per capita income quintile worked 1.7 hours more in the first half of 2022 than what they did in 2019, while workers in the top quintile, on the other hand, worked practically the same number of hours.

3 The hours worked consider the total number of hours of work in both the main job and the secondary one. Workers with one job worked 44 hours on average, while workers with two jobs worked an average of 49 hours. About 16 hours (33 percent) of these 49 hours were time spent in the secondary job.

AVERAGE HOURS WORKED PER WEEK BY SEMESTER AND GEOGRAPHICAL AREA, 2007-2022
(Average by workers of each group)



Memo: Data for the first semester of 2022 is obtained from the quarterly ENAHO Q1.2022 and Q2.2022. The rest of the data corresponds to the annual databases.
Source: INEI–ENAHO.

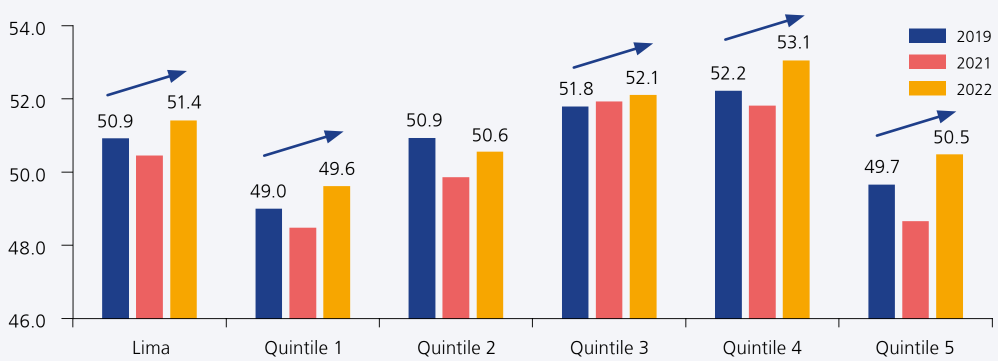
AVERAGE HOURS WORKED PER WEEK BY INCOME QUINTILES, 2007-2022
(Average by workers of each group)

	2007	2009	2011	2013	2015	2017	2019	2020	2021	2022 S1*	Differences 2021/ 2019	Differences 2022S1/ 2019
National	46.8	46.2	45.3	44.7	44.6	44.2	44.5	43.1	44.1	44.9	-0.4	0.4
Quintile 1	39.5	39.4	38.1	37.3	37.9	37.3	38.2	36.4	37.8	39.9	-0.4	1.7
Quintile 2	44.9	45.0	43.7	43.1	43.4	42.6	43.3	39.9	41.8	43.8	-1.4	0.5
Quintile 3	48.7	47.6	46.3	46.2	45.8	45.3	45.7	43.1	44.8	45.4	-0.9	-0.3
Quintile 4	49.8	48.7	47.8	47.2	46.8	47.3	46.8	45.2	46.2	48.0	-0.6	1.1
Quintile 5	49.5	48.8	48.3	47.4	47.3	46.5	46.7	47.0	47.2	46.4	0.4	-0.3

* The information for the first semester of 2022 is obtained from the quarterly ENAHO Q1.2022 and Q2.2022.
Memo: Income quintiles are calculated based on total household income (includes labor income, rental income, income from transfers, and extraordinary income). Data from the ENAHO quarterly databases may not coincide with the annual ENAHO values for the same period.
Source: INEI-ENAHO.

A similar situation is observed in Metropolitan Lima. The data of the Permanent Employment Survey (PES) shows that the average number of hours worked in the first half of 2022 by those working more than 30 hours was 51.4 hours per week, which is higher than the average number of hours per week worked in the same period in 2019 (50.9 hours). This is true for almost all labor income quintiles.

AVERAGE WORKING HOURS IN METROPOLITAN LIMA, 2019-2022



Memo: Values correspond to the first semester of each year. Only workers who worked more than 30 hours a week are included.
Source: INEI-ENAHO.

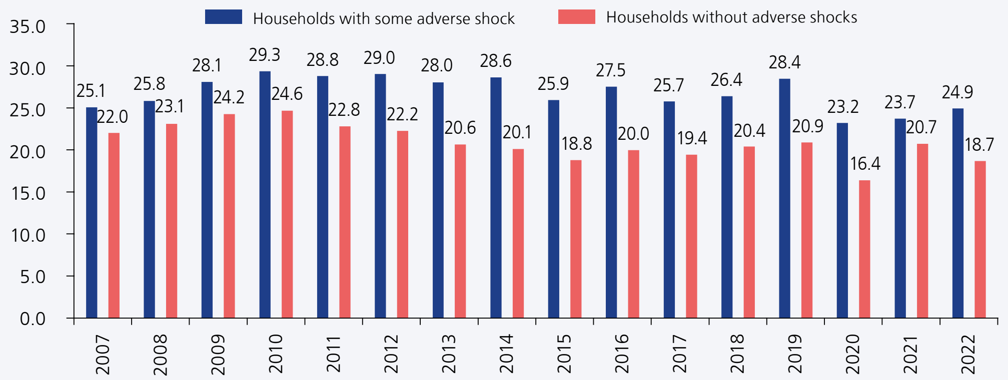
Strategy to face adverse situations

To analyze whether working in a secondary occupation or extending the working day are strategies used to cope with economic difficulties, one can compare the level of both variables between households affected by some adverse shock and those that are not. To do this, we use the ENAHO question on whether the household has experienced any adverse shocks.[4] Negative shocks are detrimental to households, given that, on average, 9 out of 10 households that experience at least one of these shocks report having had a decrease in income or loss of assets (goods or real estate).

The first finding suggests that households affected by adverse situations are also those where workers are more likely to have more than one job. This consistency applies to both pre-pandemic and pandemic periods. Thus, 25 percent of workers in households that had experienced at least one adverse shock were working in a secondary occupation in the first half of 2022.[5] The percentage drops to 19 percent for households that have not had adverse shocks.[6] It is worth noting that the degree of the gap remains the same for the different income quintiles.

WORKERS WITH SECOND JOBS ACCORDING TO INCIDENCE OF SHOCKS, S1.2007-S1.2022

(As a % of the total number of workers in each group)



Note: The graph considers the annual averages for the period 2007-2021, and the average for the first semester of 2022. Data for first semester of 2022 is obtained from the quarterly ENAHO. The rest of the data correspond to the annual databases. The third quarter of 2020 is excluded due to lack of information.
Source: INEI-ENAHO.

When analyzing the relationship between multiple employment and the incidence of negative shocks, a positive relationship between both variables is observed if the period of the pandemic is excluded. In other words, in normal times, the quarters where households suffered more shocks were also, on average, the quarters when workers were more likely to be have a second job. The values observed between 2020 and 2022 alter the relationship because there was a simultaneous high incidence of shocks along with exogenous constraints to finding employment.

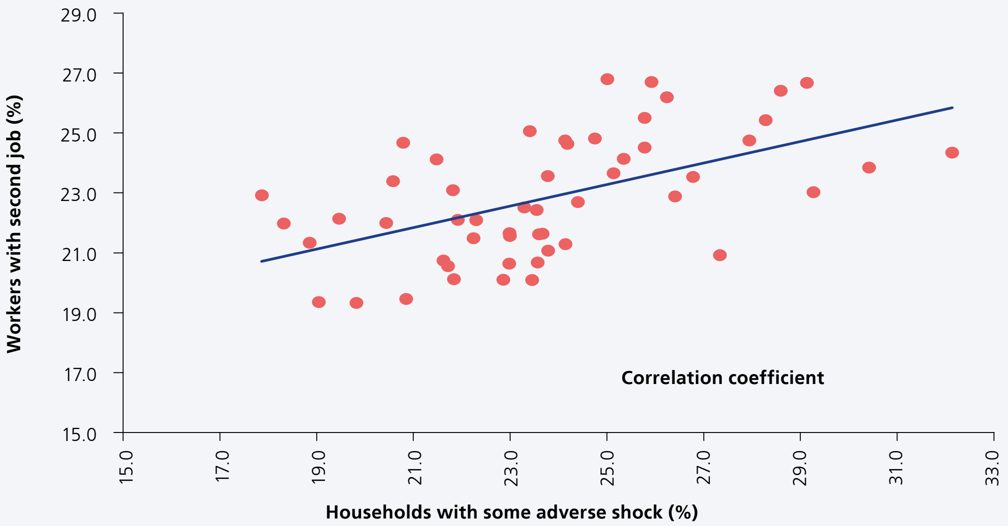
4 Households in the ENAHO survey are asked if the household has experienced (i) the loss of employment of a household member, (iii) bankruptcy of the family business, (iii) an illness or serious accident of a household member, (iv) abandonment of the head of household, (v) criminal act, (iv) natural events, or (vii) any other adverse situation in the last 12 months.

5 This is also mostly true if we analyze only households that experience economic shocks (job loss or bankruptcy of the family business).

6 In the first half of 2020, there was a significant drop in the incidence of second jobs in the case of households that were not affected by an adverse shock. This is explained by the fact that among households that did not suffer adverse shocks, there was an increase in the number of workers with only one job and a decrease in the number of workers with two jobs in that period.

WORKERS WITH SECOND JOBS AND HOUSEHOLDS WITH INCIDENCE OF SHOCKS BY QUARTERLY, Q1.2007–Q4.2019

(As a % of total workers and households)

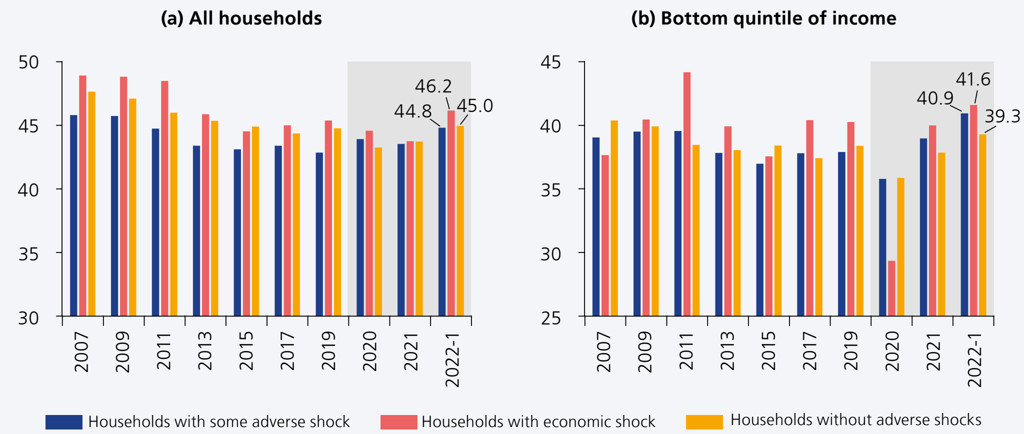


Memo: Quarterly data is obtained from the annual ENAHO.
Source: INEI-ENAHO.

The second finding relates to the average number of work hours. Prior to the pandemic, households experiencing adverse shocks worked fewer hours than their non-shock peers. This is explained by the fact that prior to 2020, the most common negative situations were health-related events and natural events, which prevented household members with shocks from extending their working hours. On the other hand, if only households affected by economic shocks (job loss or bankruptcy of the family business) are taken into account, it is evident that these households do end up working longer hours to offset their income losses. This also explains why since 2020 households affected by an adverse shock work more hours or a similar number of hours than their peers that have not had shocks: from that year on, the most frequent negative situations have been adverse economic events.

AVERAGE HOURS WORKED PER WEEK BY INCOME QUINTILES, 2007 – 2022

(Average by workers of each group)



Memo: Graph considers the annual averages for the period 2007-2021, and the average for the first semester of 2022. The data for first semester of 2022 is obtained from the quarterly ENAHO. The rest of the data correspond to the annual databases. The third quarter of 2020 is excluded due to lack of information.
Source: INEI-ENAHO.

In addition, the analysis by income level suggests that the response is stronger among households in the lowest income quintile (Panel b). Thus, for example, while, in aggregate, households that experienced an adverse economic shock worked an additional 1.2 hours more than their non-shock counterparts, the difference among households in the bottom income quintile in the first half of 2022 was 2.3 hours.

Final Comments

In conclusion, it is observed that households facing adverse situations and income losses also respond by altering their behavior in the labor market. Specifically, households affected by a higher proportion of negative shocks tend to be more likely to have workers with a second job and, in normal times, the incidence of multi-employment is positively related to the incidence of adverse shocks. In addition, households have also responded to adverse economic situations by increasing their average working hours as well.

Complementary evidence from Peru and other countries is also available. For example, the results of a survey of El Comercio-IPSOS[7] published on November 14 revealed that of the 84 percent of people who indicated that they had experienced a rise in the cost of living in the last 12 months, 20 percent said that they worked more number of hours to earn more income. Similarly, a Qualtrics International U.S. survey conducted in late October indicated that more than half of U.S. workers were considering the possibility of looking for a second job in the current context.[8]

7 The survey information was obtained from El Comercio (https://elcomercio.pe/politica/encuesta-el-comercio-ipsos-el-costo-de-vida-se-ha-elevado-para-ocho-de-cada-diez-peruanos-gobierno-pedro-castillo-noticia/).

8 Survey information obtained from Fox Business note (https://www.foxbusiness.com/personal-finance/unrelenting-inflation-forces-more-americans-consider-getting-second-job).

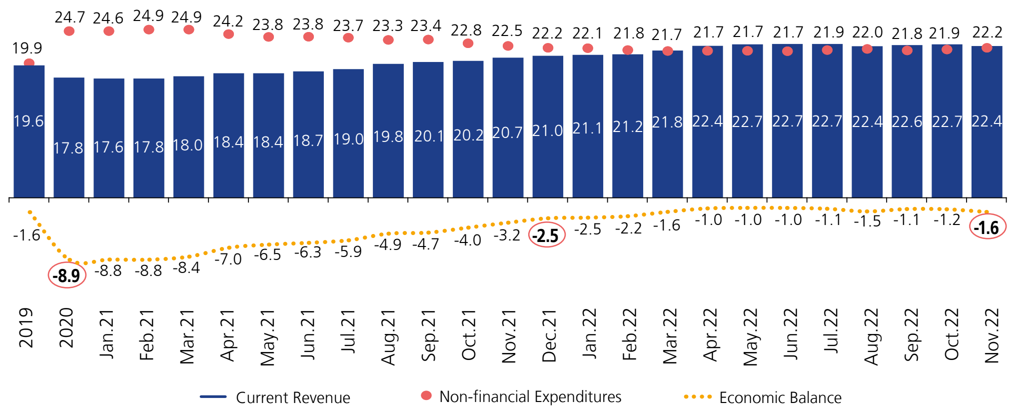
IV. Public finances

45. The cumulative fiscal deficit over the last twelve months decreased from 2.5 to 1.6 percent of GDP between December 2021 and November 2022. The decrease with respect to the end of 2021 is explained mostly by the increase in current income of the General Government. This decrease was partially offset by the deficit in the primary balance of state-owned enterprises and higher debt interest payments.

Graph 44

ECONOMIC BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2019-2022

(Accumulated last 12 months - % GDP)



Memo: The economic balance is calculated as current revenues - non-financial expenditure + others (capital income and primary result of state-owned companies) – payment of debt service.
Source: MEF, SUNAT and BCRP.

The increase in current income in GDP terms was 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 from domiciled legal entities and from the regularization of tax payments, together with higher revenues from the value added tax (VAT). In addition, among non-tax revenues, there was an increase in income from *canon* and oil and gas royalties and from interest received on Public Treasury deposits.

Although non-financial expenditures have remained unchanged as a percentage of GDP, they have increased in nominal terms. The nominal increase in non-financial expenditures results from higher expenditures in: (i) other capital expenditures, mainly due to the capital contribution to Petroperu (ED N° 023-2022) and the honoring of credit guarantees provided under the Reactiva Peru Program; (ii) gross capital formation, mainly at the levels of local and regional governments; (iii) salaries, due to higher payments to teachers' personnel, and (iv) 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 observed in the sectors of Health, Education and Agriculture.

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

46. The **fiscal deficit** would decline from 2.5 to 1.6 percent of GDP between 2021 and 2022, a level 2.1 percentage points lower than the deficit of 3.7 percent 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 this year, whereas spending is expected to decrease slightly as a percentage of GDP with respect to the previous year. This outcome would be offset in part by a deficit primary balance of state-owned companies and higher debt interest payments.

For 2023, the deficit in terms of output is expected to remain at 1.6 percent of GDP, a level 0.8 percentage points lower than the fiscal rule of 2.4 percent of GDP (Law No. 31541[9]). Although revenues are expected to be less dynamic (in line with the correction of commodity prices), non-financial expenditures –mainly other capital expenditures– would decrease in a similar proportion in terms of output. In 2024, the fiscal deficit would be equivalent to 1.5 percent of GDP.

Table 19
NON-FINANCIAL PUBLIC SECTOR
(% GDP)

	2021	2022*			2023*		2024*
		November 1/	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
1. General government current revenues	**21.0**	**22.4**	**21.8**	**22.2**	**20.9**	**21.2**	**21.0**
Real % change	*38.1%*	*7.9%*	*4.6%*	*5.3%*	*-1.5%*	*-2.6%*	*3.1%*
2. General government non-financial expenditure	**22.2**	**22.2**	**22.1**	**22.0**	**21.4**	**21.2**	**21.1**
Real % change	*5.1%*	*-1.8%*	*-0.3%*	*-1.3%*	*0.0%*	*-1.5%*	*3.7%*
Of which:							
Current expenditure	17.1	16.2	16.8	16.1	16.2	15.8	15.8
Real % change	*-0.6%*	*-7.6%*	*-2.0%*	*-6.9%*	*-0.2%*	*0.6%*	*3.7%*
Gross capital formation	4.2	4.6	4.4	4.7	4.4	4.7	4.7
Real % change	*30.9%*	*4.5%*	*5.2%*	*9.6%*	*2.5%*	*2.5%*	*4.4%*
3. Others 2/	**0.2**	**-0.2**	**-0.1**	**-0.2**	**0.2**	**0.1**	**0.2**
4. Primary balance (1-2+3)	**-1.0**	**0.0**	**-0.3**	**-0.1**	**-0.3**	**0.1**	**0.1**
5. Interests	**1.5**	**1.6**	**1.5**	**1.6**	**1.6**	**1.7**	**1.6**
6. Overall Balance	**-2.5**	**-1.6**	**-1.9**	**-1.6**	**-1.8**	**-1.6**	**-1.5**

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

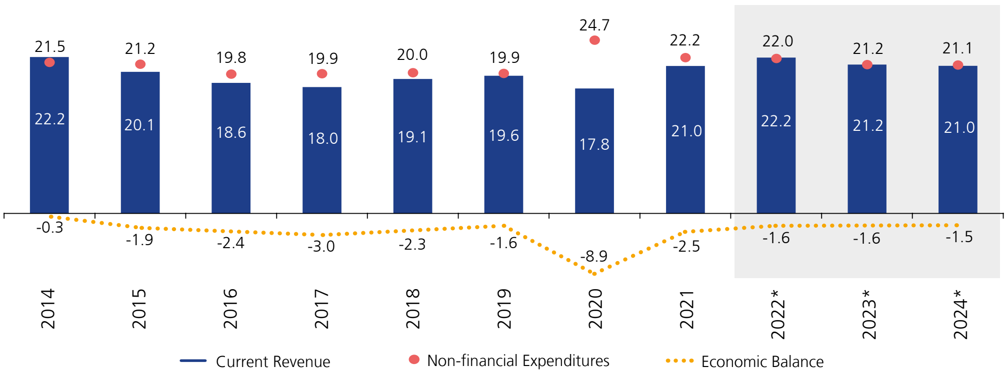
Compared to the September Report, the fiscal deficit projected for 2022 has been lowered from 1.9 to 1.6 percent of GDP. The forecasts for this year include an upside

9 Approved on August 4, 2022.

revision on current income due to the higher revenue collection observed in recent months, as well as a downside revision of non-financial expenditure, particularly its current component. This would be offset by the lower primary balance of state-owned companies.

Likewise, the forecasts for 2023 have been revised down, from 1.8 to 1.6 percent of GDP. This downward revision with respect to the previous report is mainly explained by lower current spending than expected in the September report.

Graph 45
ECONOMIC BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2014 - 2024
(% GDP)



Memo: The economic balance is calculated as current revenues - non-financial expenditure + others (capital income and primary result of state-owned companies) – payment of debt service.
* Forecast.
Source: BCRP.

Current income

47. Current income would show a real growth of 5.3 percent in 2022 and represent 22.2 percent as a percentage of GDP, a level 1.2 percentage points higher than that recorded at the end of 2021. The increase is mainly due to the evolution of activity during the first half of this year as a result of the ongoing economic recovery and higher export and hydrocarbon prices. By components, higher revenues are expected from income tax collections, mainly from domiciled legal entities and from the regularization of tax payments. In addition, but to a lesser extent. an increase in VAT revenues, both from import duties and domestic taxes, is also expected.

In 2023, current income would fall by 2.6 percent in real terms with respect to the previous year and would thus represent 21.2 percent of GDP, a level 1.0 percentage point lower than expected for 2022. This fall is explained by a lower income tax collection, mainly from the regularization of tax payments, given the revision on the upside of the coefficients for payments on account during 2022 compared to 2021, as well lower revenue associated with a contraction in the collection of corporate income from the mining sector, given the reversion of export prices in a less favorable international scenario. In 2024, current income would grow by a real 3.1 percent, a level equivalent to 21.0 percent of output.

Compared to the previous report, revenue forecasts for 2022 have been revised up from 21.8 to 22.2 percent of GDP. This revision considers a higher revenue execution than expected in September, particularly due to income tax collection, revenue from value added tax (VAT) and revenues from own resources and transfers.

Moreover, the forecasts for revenues in 2023 have been revised up from 20.9 to 21.2 percent of GDP, reflecting higher VAT and non-tax revenues. This growth would be in part offset by lower revenues from the income tax and from canon and oil royalties, given the lower projection of international prices and economic growth.

Table 20
CURRENT REVENUES OF THE GENERAL GOVERNMENT
(% GDP)

	2021	2022*			2023*		2024*
		November 1/	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
TAX REVENUES	**16.3**	**17.5**	**17.0**	**17.3**	**16.3**	**16.4**	**16.2**
Income tax	6.3	7.6	7.4	7.4	6.4	6.3	6.1
Value Added Tax (VAT)	8.9	9.5	9.3	9.5	9.3	9.5	9.5
Excise tax	1.0	1.0	1.0	1.0	1.0	1.0	1.1
Import duties	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other tax revenues	2.2	1.9	1.9	1.9	1.8	1.8	1.7
Tax returns	-2.3	-2.7	-2.7	-2.7	-2.5	-2.5	-2.4
NON-TAX REVENUES	**4.6**	**4.9**	**4.8**	**4.9**	**4.6**	**4.8**	**4.8**
Contributions to social security	2.1	2.0	2.0	2.0	2.0	2.1	2.2
Own resources and transfers	1.3	1.4	1.3	1.4	1.3	1.4	1.4
Royalties and likely	1.0	1.1	1.1	1.1	0.9	0.8	0.7
Rest	0.3	0.5	0.4	0.5	0.4	0.4	0.4
TOTAL	**21.0**	**22.4**	**21.8**	**22.2**	**20.9**	**21.2**	**21.0**

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

Non-financial expenditures

48. **Non-financial expenditure** would record a real reduction of 1.3 percent in 2022, and represent 22.0 percent as a percentage of GDP, 0.2 percentage points less than in 2021. The expected lower gowth of non-financial expenditure is associated with the reduction in public spending related to COVID-19, with lower transfers to households and workers standing out, in contrast to what was observed in 2021. This would be partially offset by higher expenditures in gross capital formation, especially in local governments, and by other capital expenditures, particularly due to the capital contribution to Petroperu (Emergency decree N° 023-2022) and the funds assigned to honor credit guarantees.

Non-financial expenditures in terms of GDP are expected to continue to decline, reaching 21.2 percent in 2023. The projected lower expenditures are the result of lower capital expenditures, most notably other capital expenditures. By 2024, spending is expected to continue to decline to 21.1 percent of GDP.

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. These measures include the implementation of a law to unblock paralyzed works, technical assistance and support for compliance with the execution schedule and budgetary authorizations for targeted interventions, among other actions. These disbursements are expected to outweigh the slowdown in investment spending that is usually observed in the year following regional and municipal elections.

Compared to what was forecast in the last Report, the expenditure projection for 2022 has been lowered from 22.1 to 22.0 percent of GDP. This revision is mainly explained by a lower execution of current spending on goods and services (lower purchases of medical supplies and payments to CAS staff to face COVID-19) and salaries (lower salary increases than expected). This lower expenditure would be partially offset by higher capital expenditure, both in terms of gross capital formation (acceleration of disbursements by subnational governments in the last quarter of the year) and other capital expenditure (Public Treasury support to Petroperu).

Moreover, the projection for 2023 has been revised down from 21.4 to 21.2 percent of GDP, reflecting lower expenditures on goods and services and salaries than those estimated in the previous report. Expenditures are projected to remain above pre-pandemic levels at the end of the projection horizon (average level 2003-2019: 19.2 percent).

Table 21
NON-FINANCIAL EXPENDITURE OF THE GENERAL GOVERNMENT
(% GDP)

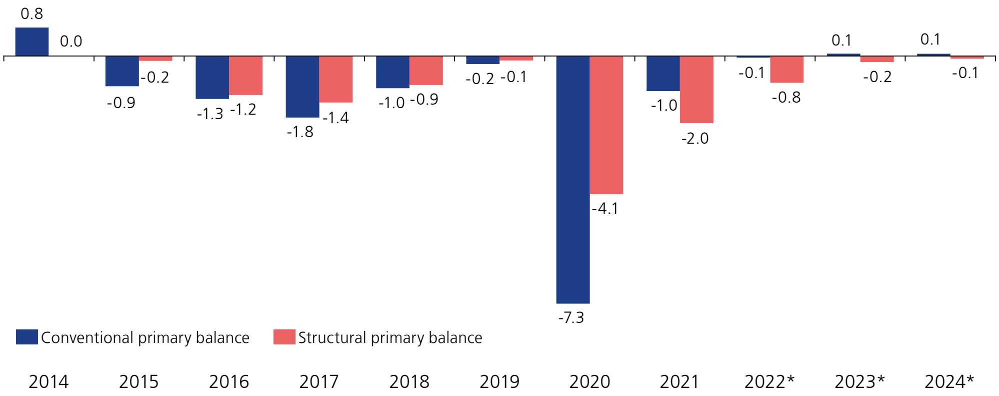
	2021	2022*			2023*		2024*
		November 1/	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
Current expenditure	**17.1**	**16.2**	**16.8**	**16.1**	**16.2**	**15.8**	**15.8**
National Government	11.6	10.7	11.4	10.7	11.2	10.7	10.6
Regional Governments	3.8	3.7	3.6	3.5	3.3	3.4	3.3
Local Governments	1.8	1.8	1.9	1.8	1.7	1.7	1.8
Capital expenditure	**5.0**	**6.0**	**5.3**	**6.0**	**5.1**	**5.4**	**5.4**
Gross capital formation	**4.2**	**4.6**	**4.4**	**4.7**	**4.4**	**4.7**	**4.7**
National Government	1.6	1.6	1.6	1.6	1.7	1.7	1.7
Regional Governments	0.8	0.9	0.9	1.0	0.9	1.0	0.9
Local Governments	1.8	2.1	2.0	2.1	1.9	2.0	2.0
Others	**0.8**	**1.4**	**0.8**	**1.3**	**0.7**	**0.7**	**0.7**
TOTAL	**22.2**	**22.2**	**22.1**	**22.0**	**21.4**	**21.2**	**21.1**
National Government	14.0	13.6	13.7	13.6	13.5	13.1	13.0
Regional Governments	4.6	4.7	4.5	4.5	4.2	4.3	4.2
Local Governments	3.6	3.9	3.9	3.9	3.6	3.8	3.9

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

Fiscal Stance

49. 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 0.8 percent of potential GDP in 2022 and at 0.2 percent in 2023, both ratios being higher than the 0.1 percent of potential GDP estimated for 2019. A structural primary balance equivalent to 0.1 percent of potential GDP is expected at the end of the forecast horizon. 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 46
CONVENTIONAL AND STRUCTURAL PRIMARY BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2014-2024
(% GDP and Trend GDP)



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

Financing and debt

50. Compared to the September Report, the forecasts for **financing requirements** for 2022 and 2023 have been reduced, mostly because of the expected evolution of nominal fiscal deficits in both years. As regards the **sources of financing**, a lower issuance of sovereign bonds and a lower use of public deposits are expected in 2022. The revision of bond issuance on the downside is consistent with tighter and more volatile international financial conditions. On the other hand, a lower use of public deposits is foreseen for 2023.

Table 22
FINANCIAL REQUIREMENT AND FINANCING OF THE NON-FINANCIAL PUBLIC SECTOR
(Million Soles)

	2021	2022*			2023*		2024*
		Jan-Nov	IR Sep.22	IR Dec.22	IR Sep.22	IR Dec.22	IR Dec.22
I. USES	**25,220**	**4,345**	**22,381**	**19,877**	**25,005**	**22,172**	**29,457**
1. Amortization	2,937	4,054	4,611	4,645	6,010	6,027	12,902
a. External	1,554	3,356	3,853	3,894	3,990	4,006	3,810
b. Domestic	1,383	698	758	751	2,020	2,020	9,092
Of which: recognition bond	*627*	*482*	*522*	*512*	*550*	*550*	*550*
2. Overall Balance 1/	22,283	291	17,770	15,232	18,995	16,145	16,555
II. SOURCES	**25,220**	**4,345**	**22,381**	**19,877**	**25,005**	**22,172**	**29,457**
1. Disbursements and Others	59,139	14,521	17,827	16,503	22,324	22,333	26,297
a. External credits	11,185	6,839	8,051	8,071	4,769	4,777	7,797
b. Global and Sovereign bonds	47,954	7,682	9,776	8,432	17,555	17,555	18,500
2. Variation in deposits and others 2/	-33,919	-10,176	4,554	3,374	2,681	-161	3,160
Note:							
Percentage of GDP							
Gross public debt balance	35.9	33.9	33.8	34.1	32.8	33.1	32.1
Net public debt balance	21.8	20.2	21.3	21.6	21.5	21.6	21.6
Balance of public deposits	14.2	13.7	12.5	12.4	11.3	11.5	10.5

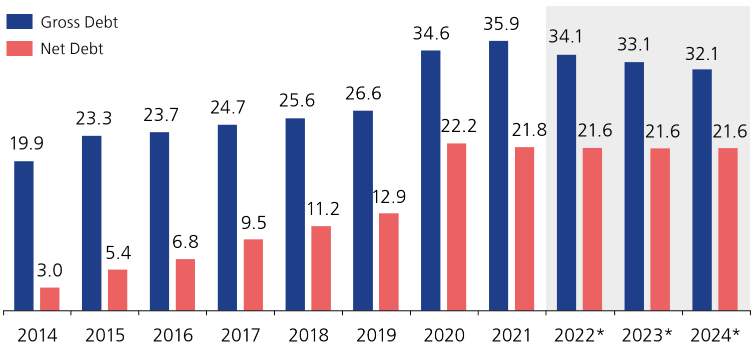
1/ Negative sign indicates surplus.
2/ Positive sign indicates reduction of deposits.
* Forecast.
IR: Inflation Report.

51. The **gross debt** of the Non-Financial Public Sector would fall from 35.9 percent of GDP in 2021 to 34.1 percent in 2022 and then to 32.1 percent at the end of the projection horizon. It is worth mentioning that gross debt levels forecast for 2022 and 2023 are lower than the maximum established by the macro-fiscal debt rule of 38.0 percent of GDP, established by Emergency Decree N°079-2021 and Law N° 31541. The current forecasts imply that Peru's gross debt stands out as one of the lowest in the region.

For its part, the **net debt of** non-financial Public Sector deposits would decline from 21.8 to 21.6 percent of GDP between 2021 and 2022 and would remain unchanged toward the end of the projection horizon.

Graph 47

NON-FINANCIAL PUBLIC SECTOR DEBT: 2014- 2024
(% GDP)



GROSS DEBT IN LATAM. 2021-2022
(% GDP)

Gross Debt (% GDP)	**2021**	**2022***
Peru	**35.9**	**34.1**
Chile	36.3	36.2
Paraguay	37.7	39.3
Mexico	57.6	56.8
Ecuador	62.2	58.9
Colombia	64.6	61.1
Uruguay	65.1	61.2
Brazil	93.0	88.2

* Forecast.
Source: BCRP and WEO (October 2022).

52. The yield curve of fixed-rate Public Treasury Bonds (BTP) in soles have accumulated an average reduction of 82 bps. so far, influenced mainly by: (i) the drop in yield rates of US Treasury bonds with terms longer than 3 years (24 bps.); (ii) the reduction of sovereign risk measured with the 5-year CDS (60 bps.), and (iii) lower inflation expectations in the United States and Peru. It should be pointed out that the yield rate of the Peruvian 10-year bond decreased from 8.80 percent in September to 7.77 percent in December; a quarterly reduction above the yield rates of Brazil, Colombia and Mexico.

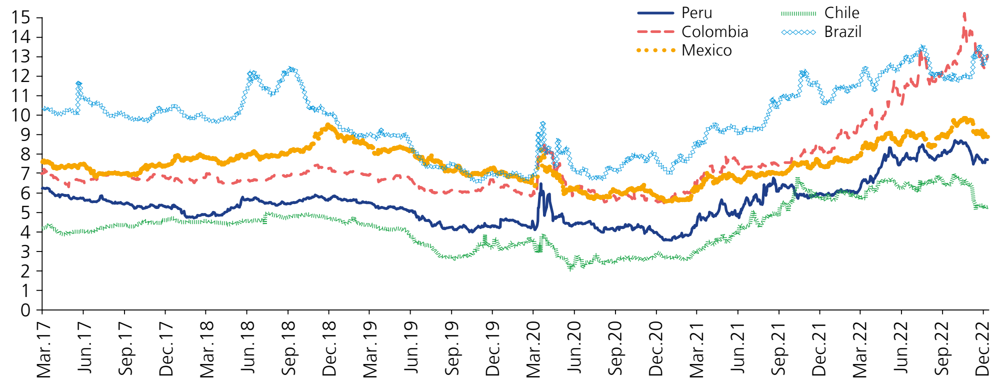
It is also worth pointing out that yields on Peruvian government bond were favored by an environment of lower risk aversion in the region's financial assets during the fourth quarter of 2022. On December 12, the risk rating agency Standard & Poor's revised the outlook for Peruvian debt from stable to negative due to political risk.

In the case of the global dollar bond yield curve, yields also decreased between September 30 and December 12, 2022, accumulating an average reduction of 82 bps. The Peruvian 10-year bond decreased from 5.79 percent to 4.97 percent during the same period, in line with the lower interest rate of the US bond, but with a cumulative quarterly variation below the bonds of Brazil, Chile, Colombia and Mexico.

Graph 48

10 YEAR SOVEREIGN BOND YIELDS IN LOCAL CURRENCY

(%)



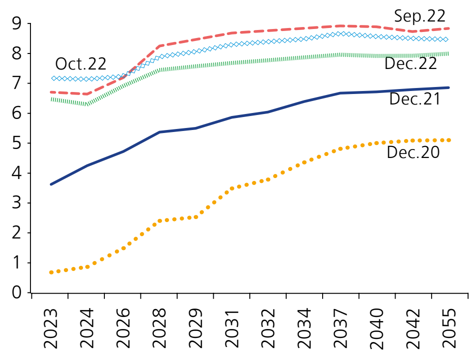
* As of December 12.
Source: MEF and Reuters.

Lower inflationary pressures have been reflected in the bond market through a reduction in the spread between nominal BTPs and bonds with Constant Acquisition Value (VAC) for all maturity terms. Specifically, the spread for 10-year term bonds has fallen from 4.06 to 3.12 percent between September and December 2022, while the spread for the 2-year bonds declined from 3.85 to 3.67 percent.

Graph 49

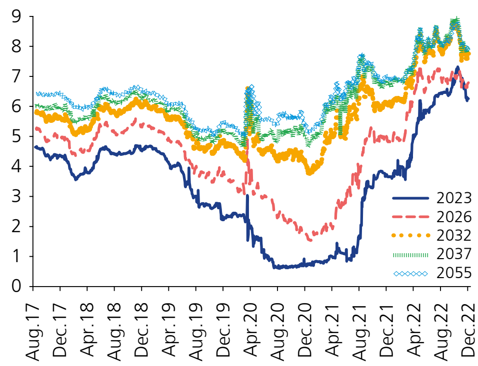
YIELD CURVE

(%)



YIELD BY MATURITY

(%)



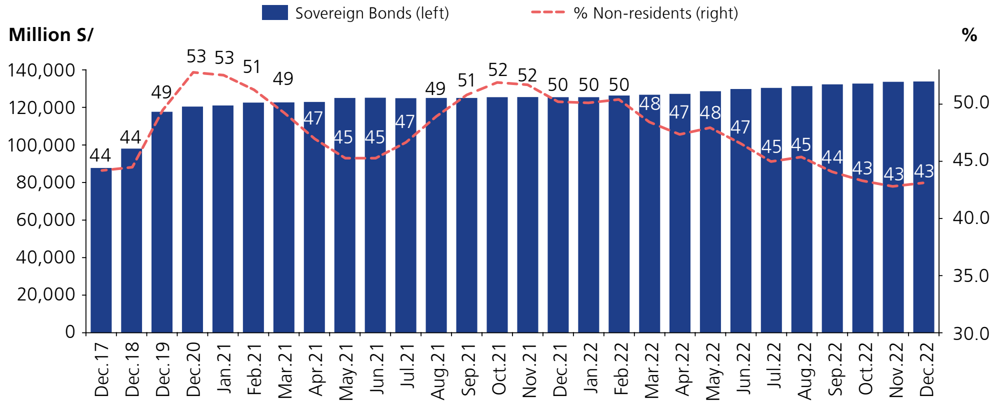
* As of December 12.
Source: MEF .

The balance of sovereign bonds amounted to S/ 133.5 billion as of December 14, 2022, a sum S/ 1.5 billion higher than the balance on September 30. So far in the fourth quarter, AFPs are the main bond demanders, while non-resident investors and banks stand out on the supply side. Non-resident investors reduced their holdings of sovereign bonds by S/. 0.7 billion between September and December 2022, reducing their share from 44 to 43 percent.

Graph 50

SOVEREIGN BOND BALANCE AND PARTICIPATION OF NON-RESIDENT INVESTORS

(Amounts in millions of soles and participation in %)



* As of December 14.

Note: As of February 2022, excludes inflation-linked bonds, Global Depositary Notes (GDN) and Euroclear transactions of non-residents. As of March 2021, nominal sovereign bonds and VAC are included and GDN are excluded.

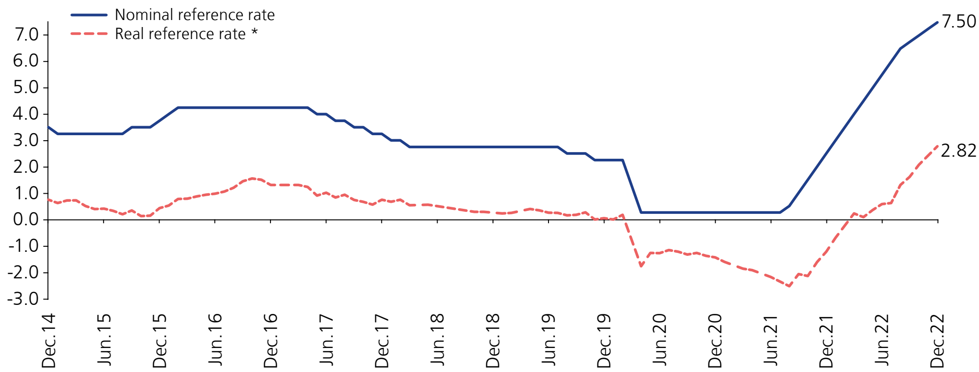
Source: BCRP, CAVALI, MEF, and SBS.

V. Monetary Policy and Financial Conditions

Monetary policy actions

53. Between October and December 2022, the Board of Directors of BCRP continued with the adjustment of the monetary policy stance position initiated in August 2021, increasing the benchmark rate by 25 basis points each time. Thus, the Board raised the benchmark rate from 6.75 percent in September to 7.50 percent in December 2022. It is worth mentioning that the real benchmark rate is 2.82 percent in December 2022 (above the estimated neutral real rate of 1.50 percent), after having reached a historic low of -2.53 percent in August 2021.

Graph 51
REFERENCE INTEREST RATE
(%)



* With expectation on inflation.
Source: BCRP.

54. Monetary policy decisions between October and December 2022 took into account the following factors:

- The twelve-month inflation rate was 8.45 percent in November 2022, still above the BCRP's inflation target range (between 1 and 3 percent).
- The 12-month inflation rate excluding food and energy prices (5.71 percent) was also above the upper limit of the target range in November 2022.

- The significant increase in international energy and food prices observed since the second half of last year, accentuated by international conflicts, has led to a strong increase in global inflation rates at the global level 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 fourth quarter 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 4.78 percent in October to 4.68 percent in November, a level still above the upper limit of the inflation target range.
- Most of the leading indicators and expectations about the economy remain in the pessimistic range.
- The growth outlook for world economic activity has been declining due to the effects of restrictive monetary policy in advanced economies, the impact of inflation on consumption, slower growth in China and international conflicts.

55. The 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 [10].

Since last year, the 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 more restrictive monetary policy in order to regain credibility regarding inflation control. In such a scenario, the increases in the reference rate necessary to control inflation would have been larger and, consequently, the potential impact on economic activity would have been greater.

56. In the policy meetings held between October and December, the BCRP 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:

i. Overnight deposits: 5.25 percent per year.
ii. Direct repo operations of securities and currency, and rediscount operations: i) 8.00 percent per year for the first 10 operations carried out by a financial entity in the last 3 months; and ii) the interest rate set by the Monetary and Exchange Operations Committee for additional 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.

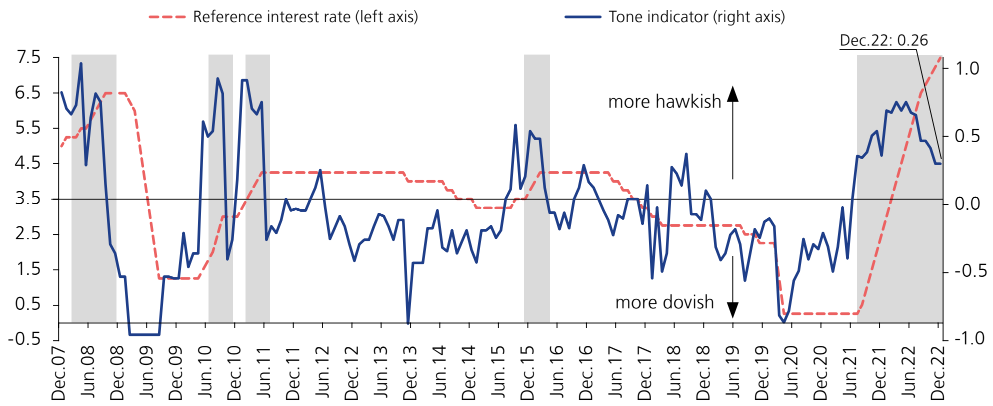
Since over-the-counter operations are operations of last resort, the (lower and upper) limits of this corridor are set with the objective of encouraging financial institutions to channel their liquidity surpluses through the interbank market.

10 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.

57. In terms of communication, the Board of Directors of BCRP maintained the statement on future monetary policy outlook between October and December, although as from October the expression "normalization of monetary policy" was changed to "adjustments in the monetary policy stance". This expression was maintained in November and December.

58. Regarding the tone of monetary policy, the tone indicator used by BCRP shows a stance of withdrawal of monetary stimulus since July 2021, one month before the interest rate increase adopted in August 2021. It is worth mentioning, however, that the value of the indicator has decreased in recent months.

Graph 52
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.

Monetary Operations

59. The **Central Bank's operations** were aimed at ensuring adequate liquidity levels in the interbank market. To this end, between September 1 and December 12, 2022, BCRP injected liquidity through the net maturity of BCRP CDVs (S/ 7,403 million), the net maturity of term deposits and overnight deposits (S/ 4,774 million) and the net maturity of BCRP CDRs (S/ 200 million). These operations were partially offset by the amortization of government-secured repos (S/ 6,446 million), the net placement of BCRP CDs (S/ 3,725 million), the net maturity of securities repos (S/ 1,256 million), the net maturity of currency repos (S/ 635 million), the sale of foreign currency for a total of US$ 110 million (S/ 437 million), the net maturity of Public Treasury Deposits (S/ 146 million) and the maturity of loan portfolio repos (S/ 24 million).

On December 12, 2022, the balance of repo operations was S/ 46,329 million and the balance of CDBCRP, CDV BCRP and BCRP CDRs CDRs was S/ 27,365 million. On the other hand, the balances of auctions of Public Treasury funds and BTP purchase settlements totaled S/ 6,496 million and S/ 3,464 million, respectively. Finally, on December 12 the balance of Interest Rate Swap (IRS) operations amounted to S/ 2,670 million, of which S/ 390 million corresponded to 3-month IRS, S/ 735 million to 6-month IRS and S/ 1,545 million to 9-month IRS.

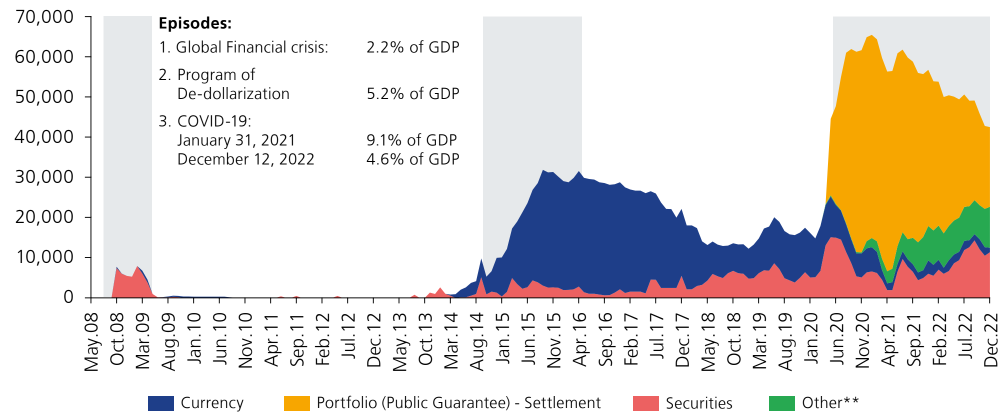
In GDP terms, the balance of liquidity injection operations is equivalent to 4.6 percent of GDP, of which S/ 19.8 billion correspond to government-secured repos of credit portfolio.

Table 23
BALANCE OF BCRP MONETARY OPERATIONS

	Balance (mill. S/)			Average interest rate (%)		
	Dec.20	Dec.21	12,Dec.22	Dec.20	Dec.21	12 Dec.22
Monetary sterilization						
1. CD BCRP	41,067	14,347	12,394	0.74	0.84	6.66
2. CDR BCRP	6,392	1,350	-	0.18	0.57	-
3. CDV BCRP	-	12,664	13,152	-	-	-
4. Term and overnight deposits	43,714	15,110	1,503	0.23	2.35	5.25
Monetary injection						
5. Currency repos	5,970	3,342	1,112	2.80	2.29	3.09
6. Security repos [1/]	6,309	5,963	11,303	1.09	1.81	5.69
7. Portfolio	464	6,441	6,352	0.50	1.26	1.27
8. Government-backed portfolio repos *	50,729	38,827	19,776	0.50	0.50	0.50
9. Public Treasury fund auctions	200	4,632	6,496	3.18	2.37	7.77
10. BTP Purchase liquidation [2/]	1,321	2,078	3,852	4.92	5.14	7.12
Memo						
Repos of loans with Government-backed	497	4,803	4,728	0.50	0.71	0.72
- Security repos	34	657	657	0.50	0.76	0.76
- Portfolio repos	463	4,146	4,070	0.50	0.71	0.71
Long-term credit expansion repos	-	5,540	5,388	-	2.11	2.12
- Security repos	-	3,045	2,995	-	2.00	2.01
- Portfolio repos	-	2,295	2,293	-	2.26	2.26
- Currency repos	-	200	100	-	2.00	2.00
Interest rate swaps	-	20,245	2,670	-	1.71	6.37
FX Swaps-sell (Fixed rate)	-	19,391	38,014	-	0.53	3.25
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 December 12, 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.
2/ Interest rates correspond to the day of the BTP auction. Purchase of BTP is at acquisition value.

Graph 53
BALANCE OF MONETARY INJECTION OPERATIONS OF BCRP
(In mill. S/)



* As of December 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.

60. On October 31, BCRP announced that it will be able to buy Public Treasury Bonds (BTP) with maturities up to 2040 that are recorded in CAVALI and that the corresponding terms and amounts will be communicated in each auction call. These operations are part of the group of instruments available to the BCRP to regulate liquidity in the financial system. BTP purchases in the secondary market are carried out in a preventive manner, and are specifically aimed at adjusting structural liquidity in the financial system in order to ensure the proper functioning of financial markets.

61. It should be pointed out that Article 61 of BCRP's Organic Law establishes that BCRP is empowered to purchase securities issued by the Public Treasury in the secondary market as long as the annual increase in the holdings of such securities, valued at their acquisition price, does not exceed 5 percent of the balance of the monetary base at the end of the preceding year. The limit for these acquisitions in 2022 is S/ 4,864 million. Thus, since November 2, purchases of sovereign bonds with maturities between 2028 and 2037 have been auctioned and bonds for a total of S/ 1,775 million have been acquired (amount settled as of December 12).

62. The balance of repo operations went from representing 14.8 percent of the BCRP's net assets in December 2021 to 12.1 percent on December 12, 2022. On the liabilities side of BCRP, the share of Public Sector deposits increased from 26.0 percent in December 2021 to 29.4 percent on December 12, 2022. On the other hand, 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 9.4 percent on December 12, 2022. In addition, currency in circulation increased its share from 22.6 percent in December 2021 to 23.7 percent on December 12, 2022.

Table 24

SIMPLIFIED BALANCE SHEET OF THE BCRP

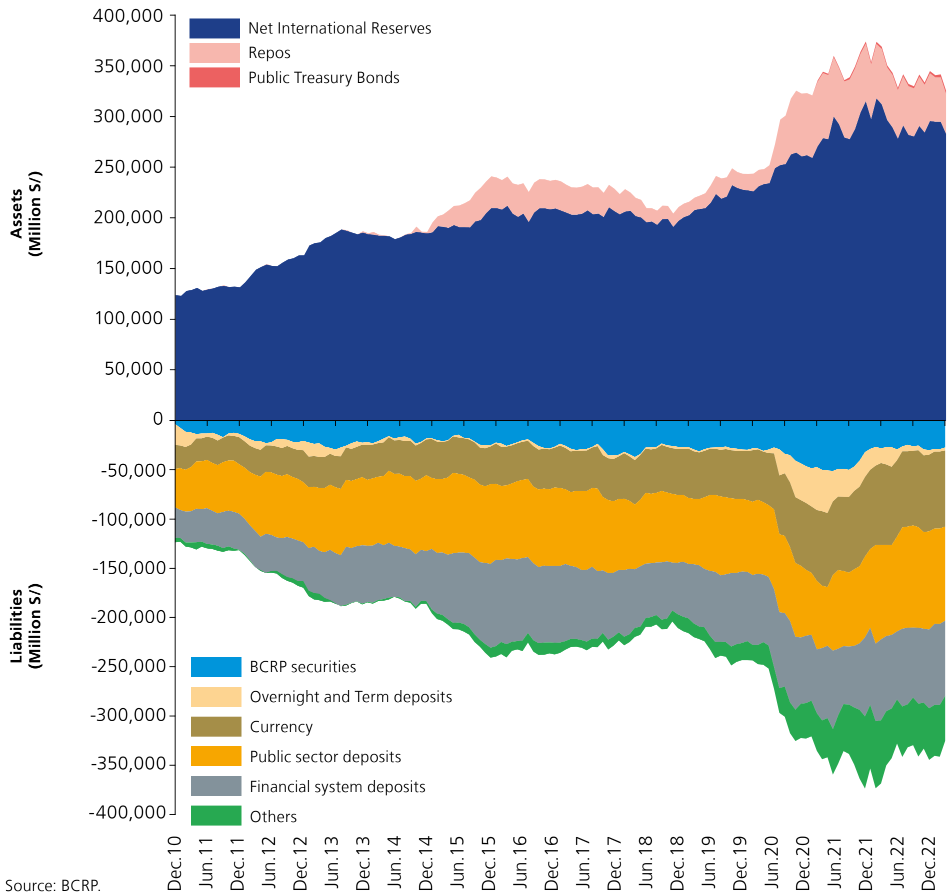
(As % of Net Assets)

	Dec.20	Dec.21	12,Dec.22
I. Net assets	**100%**	**100%**	**100%**
Net International Reserves	**80.7%**	**84.6%**	**86.7%**
	(US$ 74,706 mills.)	**(US$ 78,495 mills.)**	**(US$ 73,435 mills.)**
Repos	**18.9%**	**14.8%**	**12.1%**
Sovereign bonds	**0.4%**	**0.6%**	**1.2%**
II. Net liabilities	**100%**	**100%**	**100%**
1. Total public sector deposits	**20.7%**	**26.0%**	**29.4%**
In domestic currency	17.4%	23.9%	25.7%
In foreign currency	3.3%	2.1%	3.6%
2. Total financial system deposits	**19.3%**	**22.2%**	**23.4%**
In domestic currency	4.3%	3.9%	4.1%
In foreign currency	15.0%	18.4%	19.3%
3. BCRP instruments	**27.2%**	**11.8%**	**9.4%**
CD BCRP	12.3%	3.9%	3.8%
CDV BCRP	0.0%	3.4%	4.7%
CDR BCRP	1.9%	0.4%	0.0%
Term deposits	10.6%	3.2%	0.0%
Overnight deposits	2.4%	0.9%	1.0%
4. Currency	**21.4%**	**22.6%**	**23.7%**
5. Others*	**11.4%**	**17.4%**	**14.1%**

* 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, on December 12, 2022, BCRP assets amounted to S/ 325,088 million, a sum equivalent to 36.4 percent of GDP, lower than the level recorded in 2015 during the de-dollarization program (39.3 percent of GDP)[11].

Graph 54
EVOLUTION OF THE BCRP BALANCE SHEET: 2010 - 2022



Source: BCRP.

Financial markets

63. In the fourth quarter of 2022, interest rates in the money market, rates on deposits and credit in domestic currency of the financial system, have continued to incorporate the effect of the increase in the BCRP benchmark rate. In October, November and December 2022, the overnight interbank interest rate was close to the benchmark rate (7.00, 7.25 and 7.50 percent, respectively), with a significant increase being observed in the amount traded in the interbank market at the beginning of a new reserve requirement period, with the corresponding reduction after the benchmark rate decision was announced. This occurs because the market expects an interest rate hike, so participants prefer to obtain funding and accumulate reserve requirements at a lower interest rate. The overnight interbank rate was 2 basis points above the benchmark rate on average in the fourth quarter of 2022, whereas in the third quarter it was 2 basis points below it.

11 This amount includes Net International Reserves, Repos and Treasury Bonds.

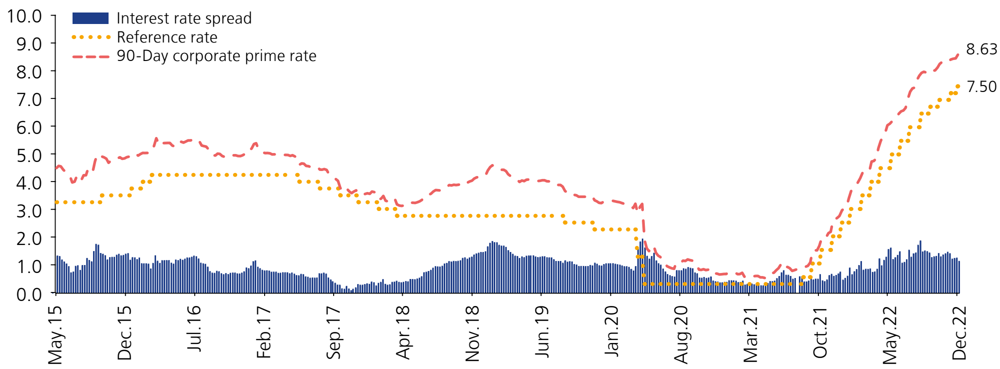
Table 25
INTEREST RATE IN DOMESTIC CURRENCY 1/
(%)

		Dec.19	Dec.20	Dec.21	Mar.22	Jun.22	Sep.22	Dec.22	Hist. Average 2/
Pasive	90-day corporate prime	2.8	0.2	2.6	4.3	6.1	7.4	7.8	3.4
	TIPMN	2.3	1.0	1.1	1.5	2.2	2.7	2.9	2.2
	FTIPMN	1.5	0.1	1.0	2.0	2.9	3.5	3.7	2.1
	Deposits up to 30-day	2.3	0.0	1.9	3.5	5.1	6.5	7.2	3.1
	Individuals	1.6	0.2	0.7	1.2	1.0	3.3	4.1	2.3
	Business	2.3	0.0	1.9	3.5	5.1	6.5	7.2	3.1
	On 31 to 90-day term deposits	2.7	0.2	2.2	3.8	5.5	6.8	7.0	3.3
	Individuals	1.8	0.5	0.8	1.7	2.2	3.5	3.5	1.8
	Business	2.8	0.2	2.2	3.9	5.7	7.0	7.4	3.4
	On 91 to 180-day term deposits	3.0	0.4	2.4	4.0	6.2	6.9	6.7	3.5
	Individuals	2.3	0.5	0.9	2.3	4.1	4.6	4.6	2.4
	Business	3.1	0.3	2.6	4.3	6.4	7.4	7.7	3.7
	On 181 to 360-day term deposits	3.3	0.7	2.9	4.4	6.1	7.3	7.7	3.8
	Individuals	3.3	1.3	2.9	3.6	5.4	6.6	6.8	3.7
	Business	3.3	0.4	2.9	4.7	6.4	7.6	7.9	3.9
	CTS	2.2	1.9	2.3	2.8	2.2	3.5	2.5	3.1
Active	90-day corporate prime	3.3	0.7	3.1	4.8	6.7	8.1	8.6	4.2
	TAMN	14.4	12.1	11.2	11.8	12.7	13.5	14.2	15.7
	FTAMN	18.2	17.6	20.9	23.3	24.7	27.5	28.0	20.4
	Corporates	3.8	2.5	3.2	5.0	6.8	8.2	8.8	5.0
	Large companies	6.0	4.6	5.7	6.8	8.3	9.4	10.4	6.6
	Medium-sized enterprises	9.3	6.1	8.8	10.8	11.9	13.4	14.1	9.9
	Small business	18.0	17.2	19.3	20.3	20.4	21.6	22.2	20.1
	Micro business	31.3	30.1	32.3	35.6	35.2	35.3	35.3	32.4
	Micro business 3/	44.5	22.6	38.8	37.3	39.2	39.3	39.0	39.9
	Consumer	40.9	39.5	41.8	42.4	44.6	47.4	49.0	41.7
	Consumer 3/	43.1	41.5	40.4	43.5	43.5	45.8	47.5	42.9
	Mortgage	7.0	6.4	6.9	7.1	8.1	9.5	9.9	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 December 12.
Source: BCRP and SBS.

Lending and deposit prime rates are the interest rates that have most rapidly incorporated the changes in the benchmark rate, because they are highly representative of the market. Between September and December 2022, these rates increased by an average of 52 and 48 basis points, respectively –a variation lower than the increase in the benchmark rate (75 basis points)–, for operations with maturity terms between overnight and twelve months. By maturity, the largest increases in the fourth quarter were those observed in the overnight term. The spreads between the 3-month, 6-month and 12-month lending rate and the benchmark rate are below pre-pandemic levels.

Graph 55
INTEREST RATE IN S/: 90-DAY CORPORATE PRIME AND REFERENCE RATE
(%)



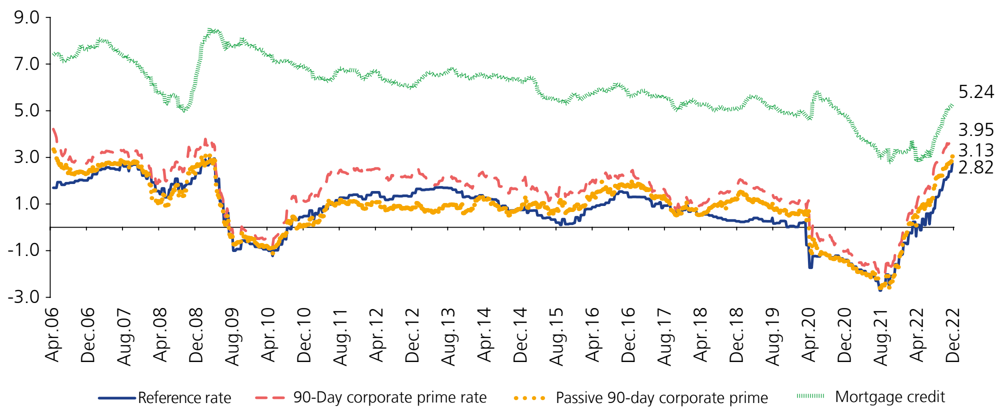
* As of December 7.
Source: BCRP and SBS.

The interest rates of the different segments of bank loans also increased between September and December 2022. The consumer segment, characterized by its high risk, showed the largest increase during the quarter, with the interest rate in this segment rising from 47.4 percent in September to 49.0 percent in December. In the mortgage segment, the interest rate increased from 9.5 percent in September to 9.9 percent in December, influenced by the upward trend observed in recent months in the yield rate of the 10-year sovereign bond.

Similarly, most banks' deposit interest rates maintain an upward trend, but at a slower pace than lending rates. On the one hand, interest rates paid on individuals' deposits have increased mainly for terms of less than 90 days. On the other hand, interest rates paid on corporate deposits increased for terms of less than 360 days. This was especially the case of the overnight interest rate, which rose from 6.5 percent in September to 7.2 percent in December. In contrast, the average rate of CTS deposits in banks decreased from 3.5 percent to 2.5 percent between September and December.

64. Real interest rates in domestic currency also showed higher levels in the fourth quarter of 2022, in line with the upward trend of nominal interest rates. Thus, between September and December 2022, the benchmark rate increased by 92 basis points in real terms, while the 90-day prime lending rate, the 90-day prime deposit rate and the mortgage loan rate rose by 99, 85 and 89 basis points, respectively.

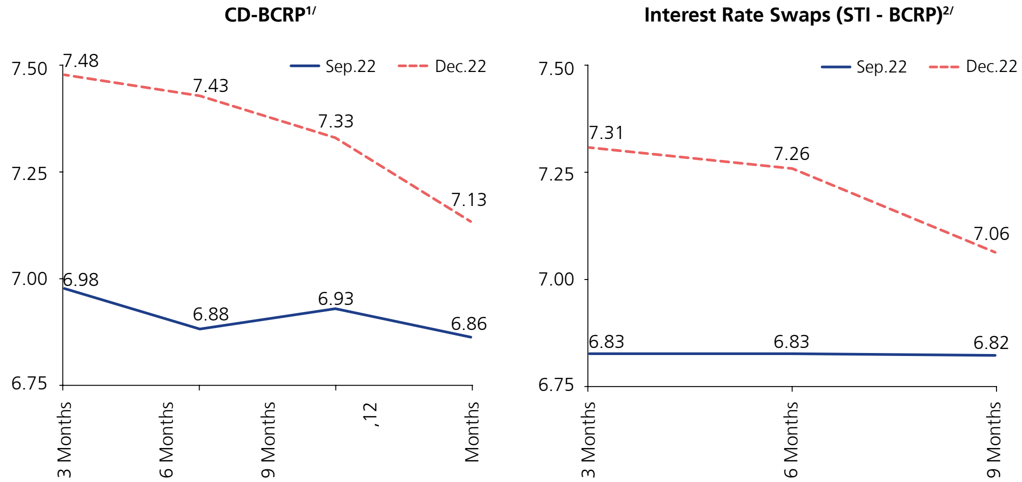
Graph 56
EX-ANTE REAL INTEREST RATES IN SOLES
(%)



As of December 12, 2022. Nominal interest rates are deflated using inflation expectations.
Source: BCRP and SBS

65. In December 2022, the yield curve of BCRP Certificates of Deposit (CD-BCRP) and Interest Rate Swaps (IRS-BCRP) show inverted shapes, in accordance with the market's expectation on the future evolution of the benchmark rate. Between September and December, the interest rates for the CD-BCRP rose by 50, 55, 40 and 27 basis points for 3, 6, 9 and 12 month maturity terms, respectively, while the interest rates on BCRP IRS increased by 48, 43 and 24 basis points at 3, 6 and 9 month terms, respectively, in the same period.

Graph 57
CENTRAL BANK FINANCIAL SECURITIES YIELD CURVE
(%)

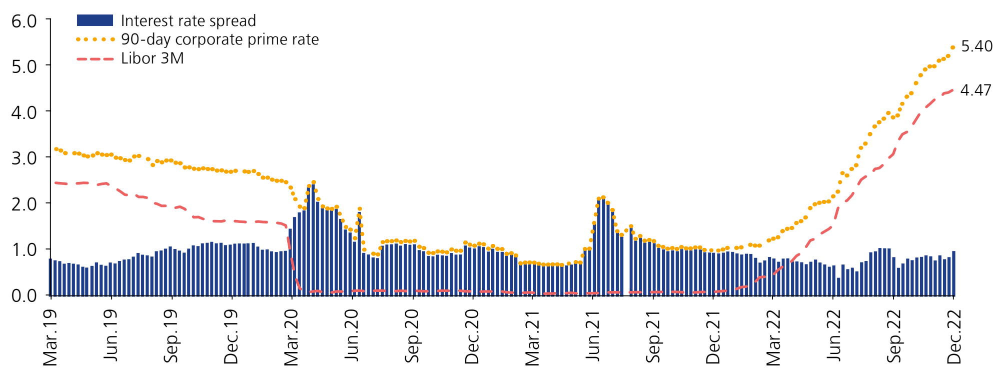


1/ Rate of return of the primary and secondary market of CD BCRP.
2/ Rate of return on BCRP interest rate swap placements.
Note: Data as of December 12.
Source: BCRP.

66. Moreover, the tightening of global financial conditions has continued to influence the trajectory of interest rates in the local money market in dollars. Between September and December 2022, the interbank interest rate rose from 3.25 percent to 4.00 percent, a trajectory similar to that of the Federal Reserve's policy rate during the period. In addition, the prime lending and deposit rates for terms between overnight and 6 months rose by an average of 104 and 86 basis points, respectively. The spread between the prime lending rate and the 3-month Term SOFR increased from 77 basis points in September to 93 basis points in December 2022.

In the bank credit market in dollars, all segments showed higher interest rates in the fourth quarter of 2022 and, based on information available, several of them have recorded new highs since September 2010.

Graph 58
INTEREST RATE IN US$: 90-DAY CORPORATE PRIME AND LIBOR 3-MONTH
(%)



As of December 7.
Source: Chicago Mercantile Exchange and BCRP

Banks' deposit interest rates in dollars are also increasing, especially in the case of those paid to companies (average of 67 basis points), which have increased more than interest rates paid to individuals (average of 47 basis points).

Table 26
INTEREST RATE IN FOREIGN CURRENCY [1/]
(%)

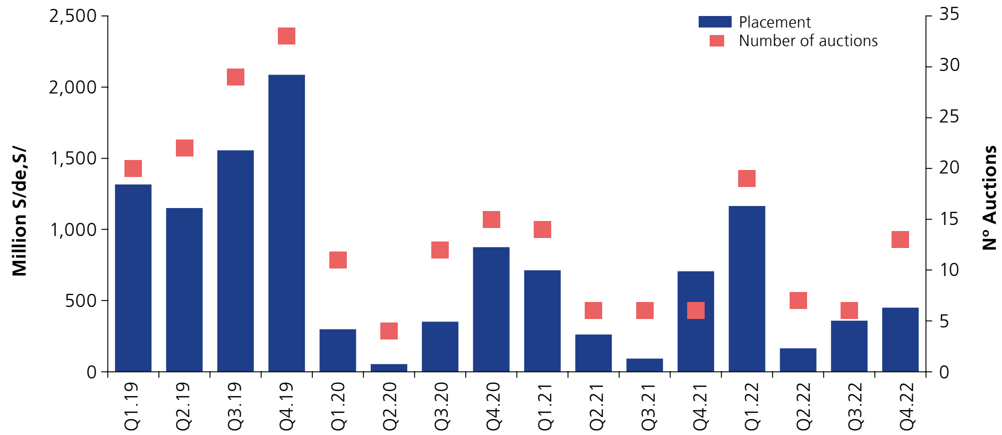
		Dec.19	Dec.20	Dec.21	Mar.22	Jun.22	Sep.22	Dec.22	Hist. average[2/]
	90-day corporate prime	1.6	0.2	0.3	0.6	1.7	3.5	4.3	1.0
	TIPMEX	0.8	0.3	0.2	0.2	0.4	0.8	1.0	0.5
	FTIPMEX	1.2	0.1	0.1	0.1	0.5	1.5	2.02	0.6
	Deposits up to 30-day	1.4	0.1	0.1	0.1	0.8	2.2	3.1	0.7
	Individuals	1.3	0.0	0.1	0.1	0.5	1.1	1.2	0.6
	Business	1.4	0.1	0.1	0.1	0.8	2.2	3.1	0.7
	On 31 to 90-day term deposits	1.5	0.3	0.2	0.3	0.8	2.4	3.0	1.0
Pasive	Individuals	1.0	0.2	0.2	0.2	0.4	0.9	1.5	0.6
	Business	1.6	0.3	0.2	0.3	0.8	2.6	3.1	1.0
	On 91 to 180-day term deposits	1.3	0.3	0.5	0.4	1.2	2.4	2.5	1.0
	Individuals	1.0	0.2	0.3	0.3	0.9	1.6	1.9	0.7
	Business	1.6	0.3	0.6	0.5	1.4	3.1	3.8	1.0
	On 181 to 360-day term deposits	1.4	0.3	0.6	0.6	1.7	2.7	3.1	1.1
	Individuals	1.2	0.3	0.4	0.6	1.4	2.1	2.9	1.0
	Business	1.8	0.3	0.7	0.8	1.8	3.5	3.9	1.1
	CTS	1.3	1.0	0.9	1.1	1.0	1.3	0.9	1.5
	90-day corporate prime	2.7	1.0	1.0	1.4	2.6	4.3	5.4	2.0
	TAMEX	7.6	6.1	6.7	6.7	6.9	8.3	9.1	7.6
	FTAMEX	7.1	6.3	7.6	8.1	8.1	10.8	11.5	7.6
	Corporates	3.2	2.0	2.1	2.5	2.8	4.8	5.7	3.0
Active	Large companies	5.5	4.5	5.7	6.8	8.3	9.4	9.6	6.6
	Medium-sized enterprises	6.6	5.9	5.9	6.5	6.5	8.1	8.9	7.7
	Small business	8.8	5.3	10.3	9.4	13.3	12.7	12.9	11.5
	Micro business [3/]	7.7	4.8	17.1	10.2	14.3	10.6	14.4	13.2
	Consumer [3/]	35.3	33.5	33.9	32.9	34.6	33.7	38.0	34.7
	Mortgage	5.6	5.4	5.0	5.1	6.9	7.3	8.3	6.9

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 December 12.
Source: BCRP and SBS.

Fixed-income market

67. Peruvian companies' level of financing in the capital market remains low in the fourth quarter of 2022 because of i) higher borrowing costs at the global level, ii) lower growth prospects in the world, and iii) higher yields on Peruvian sovereign bonds, among other factors. Bonds for a total of S/ 450 million, mainly in soles (93 percent), were placed in the local market through public offerings. This amount is higher than that placed in the third quarter (S/ 358 million). On the other hand, Peruvian corporations did not make any new bond placements in the international market, which contrasted with non-residents' issuance of bonds in soles for a total of S/ 230 million during the fourth quarter, as of December 12. It Is worth mentioning that this amount is lower than the total sold in the second and third quarters of 2022 (S/ 425 million and S/ 540 million, respectively).

Graph 59
PLACEMENTS THROUGH PUBLIC OFFERING OF PRIVATE SECTOR BONDS



Information available as of December 12.
Source: SMV.

68. The value of portfolios managed by institutional investors shows a slight recovery in the fourth quarter of 2022, amid a context of negative returns for financial assets worldwide.

In the case of AFPs, the investment portfolio increased from S/ 103.1 billion to S/ 107.4 billion between September 30 and December 2, 2022, mainly as a result of the recovery in the value of local investments in government bonds and stocks, as well as of a lower liquidation of securities than initially estimated to comply with Law No. 31478 for the withdrawal of funds. It is estimated that, in the sixth exceptional withdrawal of funds, affiliates would have withdrawn around S/ 22 billion (68 percent of the initial estimate), which were covered with the liquidation of external assets and BTPs. BCRP carried out repo operations with AFPs for terms of up to 3 months for aa total of S/ 4,890 million between July and November 2022. 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.

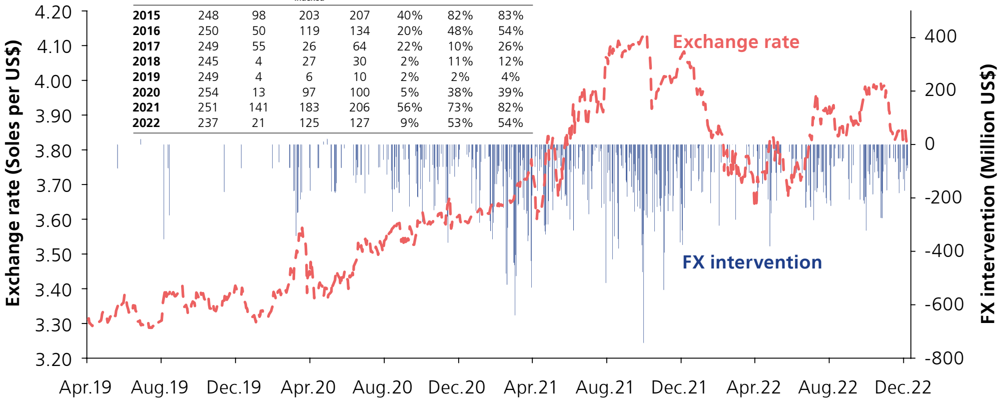
In the case of mutual funds, the amount of assets under management decreased slightly from S/ 29.3 billion in September to S/ 29.0 billion in November 2022. The number of unitholders also decreased from 341.9 to 341.6 thousand in the same period. In the case of insurance companies, on the other hand, the portfolio increased from S/ 54.7 billion to S/ 57.1 billion between June and September 2022.

Foreign Exchange Market

69. As for the exchange rate, between September and December 2022 the PEN appreciated by 3.6 percent against the dollar amid lower demand for dollars in the local exchange market, together with a weakening of the dollar at the global level (6.1 percent), increased local uncertainty due to the pressures demanding presidential vacancy, and higher copper prices (11.2 percent). In this context, BCRP intervention in the forex market decreased during the fourth quarter and exchange rate volatility declined compared to the level observed in the first three quarters of 2022. It should be pointed out that uncertainty in financial markets remains in the fourth quarter and that aversion towards risky assets has shown a high variability between September and December 2022.

Graph 60

EXCHANGE RATE AND FX INTERVENTION [1/]



Número,de,dias,de,,intervención

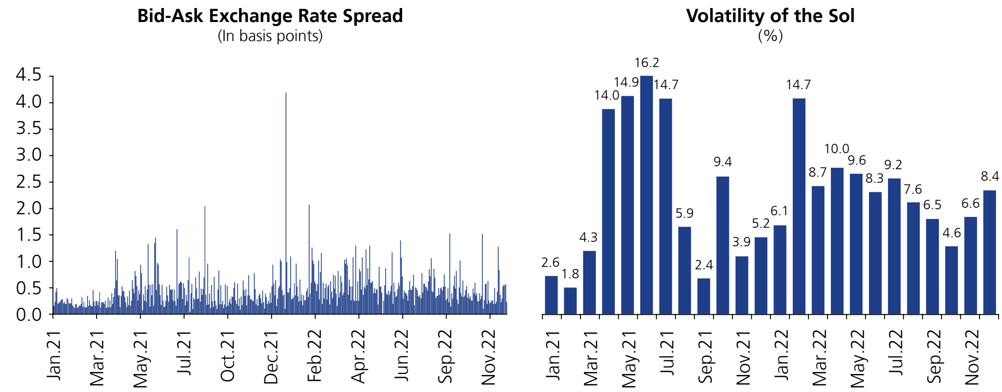
	Days of negotiation	Market *Spot*	Placement of derivatives and instruments indexed	Total (spot and/or placement)	Percentage of days with intervention		
					Spot	Instruments	Total
2015	248	98	203	207	40%	82%	83%
2016	250	50	119	134	20%	48%	54%
2017	249	55	26	64	22%	10%	26%
2018	245	4	27	30	2%	11%	12%
2019	249	4	6	10	2%	2%	4%
2020	254	13	97	100	5%	38%	39%
2021	251	141	183	206	56%	73%	82%
2022	237	21	125	127	9%	53%	54%

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

Moreover, the average volatility of the PEN has been lower in the fourth quarter of 2022 than in the previous three quarters. This lower volatility was also reflected in the bid-ask spreads of the exchange rate, which fluctuated between 0.1 and 1.5 basis points between September and December 2022, below the range of the third quarter (0.2 and 1.5 basis points). As for intraday volatility, the greatest one-day depreciation degree during 2022 (1.6 percent), recorded on December 7, was mainly associated with the presidential announcement to dissolve Congress, but the increase in intraday volatility was short-lived.

Graph 61

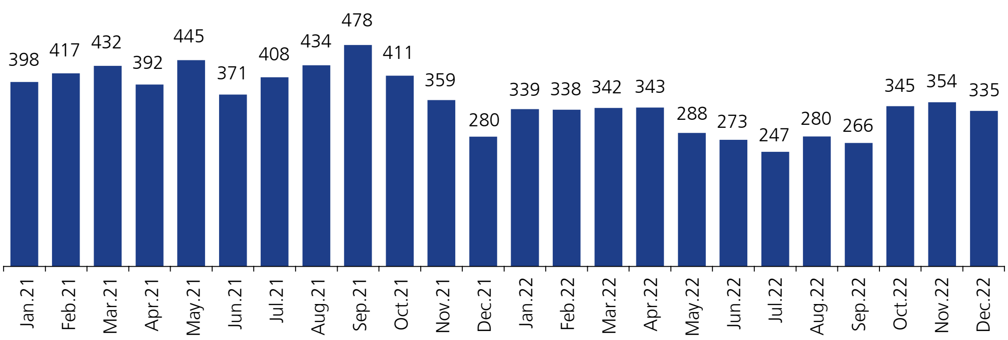
EXCHANGE RATE SPREAD AND VOLATILITY



Annualized monthly daily standard deviation.
As of December 12.
Source: Reuters and BCRP.

Average daily trading in the spot interbank foreign exchange market so far in the fourth quarter (US$ 335 million) has been higher than in the second and third quarters (US$ 301 million and US$ 264 million, respectively) due to the demand for dollars from non-financial sector clients in the spot market between October and December.

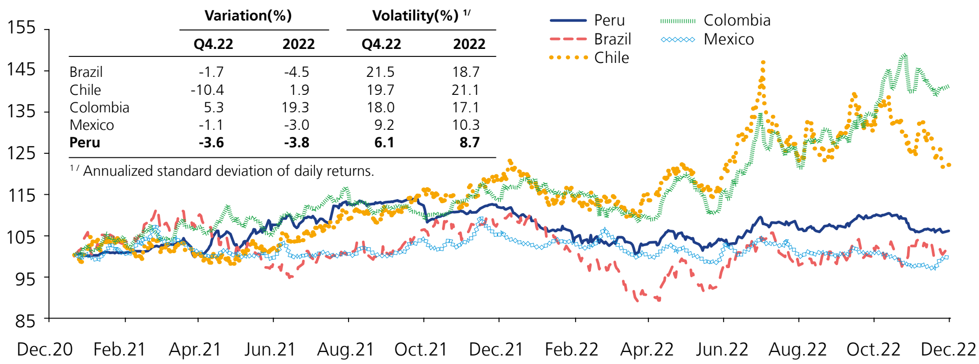
Graph 62
AVERAGE AMOUNT TRADED IN INTERBANK SPOT MARKET
(Million US$)



As of December 12.
Source: BCRP.

The sol stands out from other currencies in the region as one of the currencies with the best quarterly and annual performances, with the reasons explaining this situation including: i) lower external and fiscal vulnerabilities compared to other economies; ii) idiosyncratic factors; and iii) better macroeconomic prospects in 2023. The exchange rate variability of the PEN in the fourth quarter was lower than in the third quarter, but still remains high compared to previous years.

Graph 63
EXCHANGE RATE INDEX 1/
(Dec 31, 2020=100)

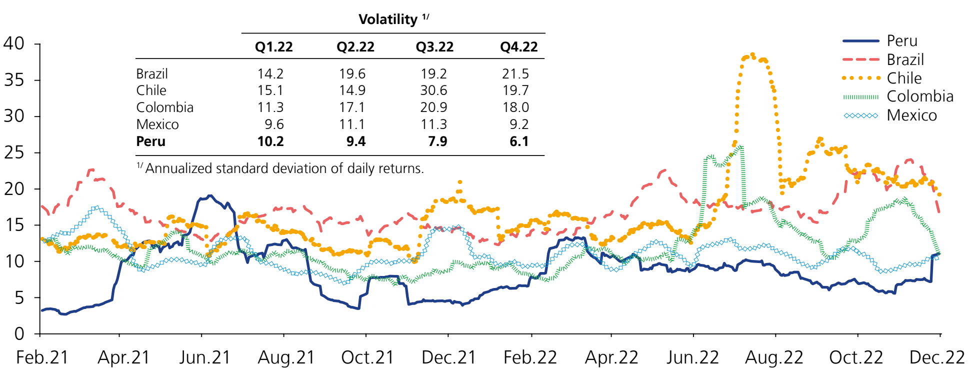


	Variation(%)		Volatility(%) 1/	
	Q4.22	2022	Q4.22	2022
Brazil	-1.7	-4.5	21.5	18.7
Chile	-10.4	1.9	19.7	21.1
Colombia	5.3	19.3	18.0	17.1
Mexico	-1.1	-3.0	9.2	10.3
Peru	**-3.6**	**-3.8**	**6.1**	**8.7**

1/ Annualized standard deviation of daily returns.

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

Graph 64
EXCHANGE VOLATILITY * 1/



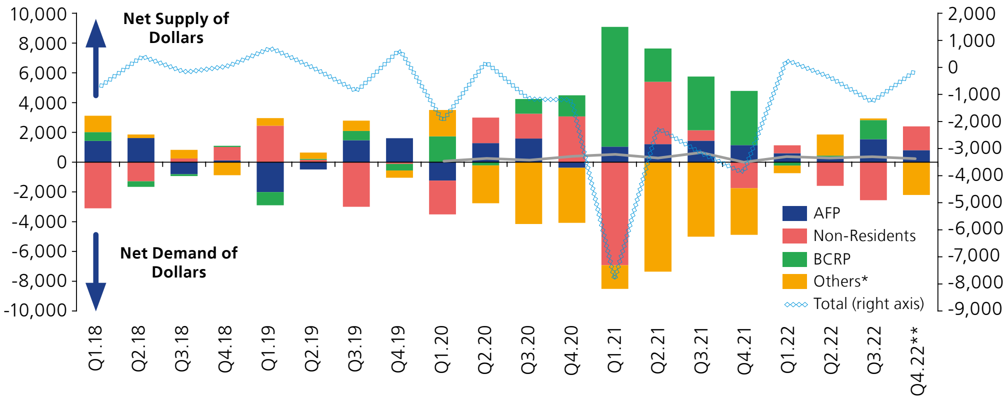
	Volatility 1/			
	Q1.22	Q2.22	Q3.22	Q4.22
Brazil	14.2	19.6	19.2	21.5
Chile	15.1	14.9	30.6	19.7
Colombia	11.3	17.1	20.9	18.0
Mexico	9.6	11.1	11.3	9.2
Peru	**10.2**	**9.4**	**7.9**	**6.1**

1/ Annualized standard deviation of daily returns.

* Standard deviation of the annualized daily return in the last 30 days.
Data as of December 12.
Source: Reuters.

70. As of September 12, foreign exchange flows from market participants in the fourth quarter of 2022 included a net demand for dollars (US$ 95 million), which was below that observed in the second and third quarters of 2022 (US$ 321 million and US$ 1,248 million, respectively). In the spot market there was a net demand for dollars (US$ 1,218 million), mainly from companies in the corporate sector, while in the derivatives market there was a net supply (US$ 1,112 million) from non-resident investors.

Graph 65
FLOWS TO THE FOREIGN EXCHANGE MARKET (SPOT AND DERIVATIVES)
(Million US$)



	2021	Q1.22	Q2.22	Q3.22	Q4.22	2022
Spot	-6,891	-1,482	1,389	2,901	-1,208	1,601
Derivatives	-10,287	1,788	-1,710	-4,149	1,112	-2,959
Total	**-17,178**	**306**	**-321**	**-1,248**	**-95**	**-1,358**
Variation in Global Exchange Position of Banks	-328	-77	107	-25	128	134
BCRP intervention	17,506	-229	213	1,273	-33	1,224

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

Non-resident investors stand out as the major suppliers in the derivatives market in the fourth quarter of 2022 (US$ 1,079 million), which is a change from their net demand for forwards in the third quarter (US$ 2,244 million). During the period, foreign investors decreased their holdings of government treasury bonds (BTP) by S/ 543 million.

The AFPs supplied around US$ 805 million in the fourth quarter, an amount below the net total supplied in the third quarter (US$ 1,540 million). Moreover, contrasting with the net sales recorded in the third quarter (US$ 2,644 million), net purchases of external securities by AFPs in the period amounted to US$ 307 million, which is associated with the fact that the deadline for AFP members to submit their request for withdrawal of funds in accordance with Law No. 31478 has expired.

In the case of the non-financial sector, between September and December 2022, entities showed a net demand of US$ 2,053 million: (i) corporate sector companies registered a net demand of US$ 2,169 million, mainly in the spot market (US$ 1,628 million). This lower amount than the total recorded in the third quarter (US$ 3,285 million) reflects a reduction in dollarization by economic agents due to precautionary reasons; (ii) mining sector companies recorded a net supply of US$ 1,640 million in the spot market, below the net supply of the third quarter (US$ 2 370 million), and (iii) the retail sector registered a net demand of US$ 198 million in the spot market, a change compared to the net supply it recorded in the third quarter US$ 1,028 million).

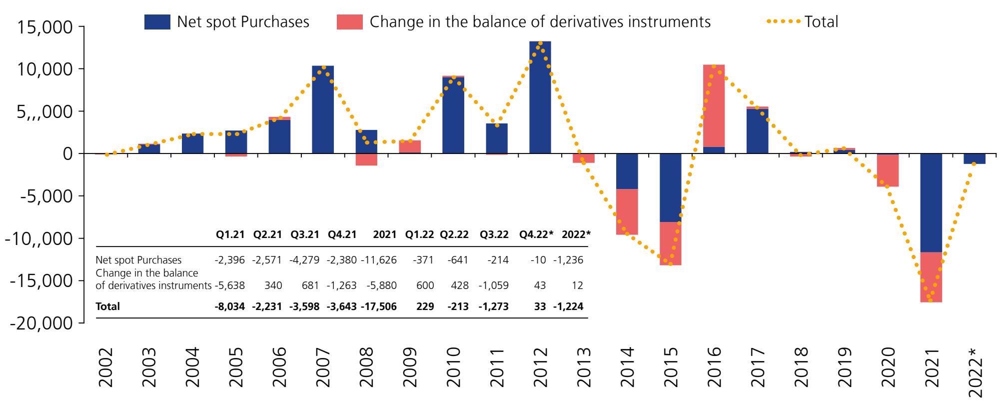
On the other hand, banks' overall position decreased from US$ 222 million in September to US$ 97 million in December 2022. Banks' balance of net sales of Non-Delivery Forwards (NDF) with non-resident investors decreased by US$ 852 million between the third and fourth quarters of 2022, reflecting the lower demand for dollars from non-resident investors observed in foreign exchange market flows.

Between September and December, in a context of high uncertainty in the global and local foreign exchange markets, BCRP intervened in the foreign exchange market through auctions of FX Swaps-sales at fixed rates and sales of dollars in the spot market to minimize volatility in the price of the PEN. Thus, FX Swaps-sales at fixed rates for a total of S/ 15,560 million were placed at terms of 3, 6 and 9 months and FX Swaps-sales at fixed rates for a total of S/ 15,105 million matured. The percentage of days in which BCRP intervened in the foreign exchange market in 2022 is lower than that recorded in 2021.

The accumulated balance of FX Swaps-sale on December 12 was S/ 38.4 billion (4.1 percent of GDP), which shows an average residual term of 244 days in December 2022, higher than in December 2019 (62 days) and December 2020 (107 days). This increase in average maturity terms is associated with the demand for hedging over a longer horizon.

Moreover, on December 12, BCRP had made a net sale of US$ 1.2 billion in the foreign exchange market through sales in the spot market (US$ 1.2 billion) and the net maturity of FX-swaps and BCRP CDRs (US$ 0.01 billion). Average monthly interventions in the foreign exchange market during the most volatile period –from January to November 2021– totaled US$ 1,568 million, a higher amount than during the Global Financial Crisis (US$ 1,296 million), between February 2013 and April 2016 (US$ 614 million) and between December 2021 and December 2022 (US$ 114 million).

Graph 66
FX INTERVENTION OF THE BCRP
(Million US$)



	Q1.21	Q2.21	Q3.21	Q4.21	2021	Q1.22	Q2.22	Q3.22	Q4.22*	2022*
Net spot Purchases	-2,396	-2,571	-4,279	-2,380	-11,626	-371	-641	-214	-10	-1,236
Change in the balance of derivatives instruments	-5,638	340	681	-1,263	-5,880	600	428	-1,059	43	12
Total	**-8,034**	**-2,231**	**-3,598**	**-3,643**	**-17,506**	**229**	**-213**	**-1,273**	**33**	**-1,224**

As of December 12.
Source: BCRP.

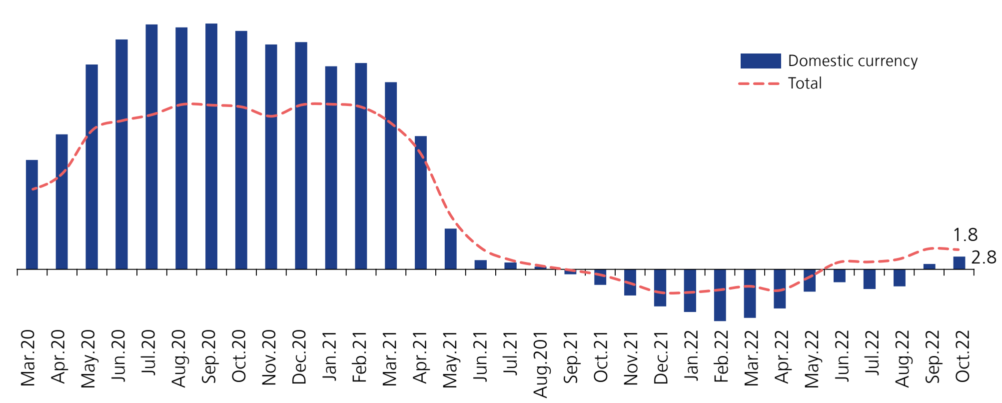
In this context in which a net demand for dollars prevailed in the local exchange market, BCRP offered net dollars to banks between September and December 2022 for net placements of FX Swaps-sale and net sales of dollars in the spot market. It is worth pointing out that in addition to the adequate level 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

71. The year-on-year growth rate of private sector deposits increased 2.8 percent in October 2022, after experiencing negative growth rates between September 2021 and August 2022. By currency, deposits in soles increased by 1.8 percent year-on-year, while deposits in dollars increased by 4.7 percent in the last 12 months to October.

As a result of a law allowing the withdrawal of 100 percent of the CTS that was

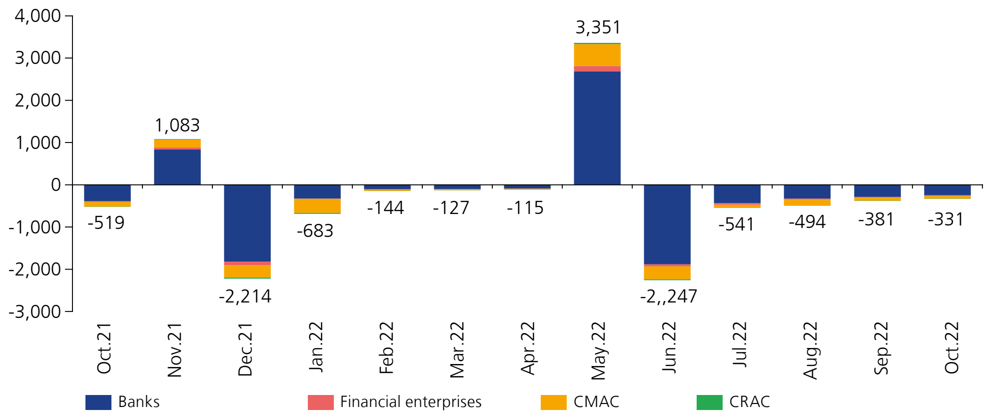
Graph 67
DEPOSITS OF THE PRIVATE SECTOR BY CURRENCY
(Annual % change)



Source: BCRP.

passed In May 2021 and was in effect until December 2021, an estimated total of S/ 12,392 million in CTS deposits was withdrawn. A similar law was then passed in May 2022 (in force since June) allowing withdrawals until December 2023. In the five months of the law's effectiveness, there have been withdrawals for a total of S/ 3,995 million, a significantly lower amount than the S/ 9,682 million withdrawn from CTS deposits during the first five months of the previous year's law. It is also worth mentioning that the largest drop in CTS deposits since the measure was implemented was observed in banks (S/ 3,160 million) and in municipal savings banks (S/ 642 million). Thus, in May, prior to the implementation of this measure, the balance of CTS deposits was S/ 14,239 million; while in October 2022 the balance was S/ 10,245 million.

Graph 68
MONTHLY FLOWS OF C.T.S. DEPOSITS
(Million S/)



The dollarization ratio of private sector deposits increased from 33.2 percent in December 2020 to 34.8 percent in October 2022, which is explained by both the increase in the dollarization ratio of corporate deposits (from 36.8 percent to 39.2 percent) and individual deposits (from 30.2 percent to 31.4 percent).

In 2022, deposits in domestic currency are expected to grow at a higher rate than credit to the private sector in domestic currency (5.3 and 3.5 percent, respectively). In 2023, the difference between the two variables is expected to persist, although with a smaller difference (6.9 percent for deposits and 6.7 percent for credit to the private sector in domestic currency), while in 2024 the difference would increase (10.5 and 7.3 percent, respectively).

Table 27
MONETARY AND CREDIT ACCOUNTS OF THE DEPOSITORY CORPORATIONS (END-OF-PERIOD)
(Annual % change)

	Dec.19	Dec.20	Dec.21	Mar.22	Jun.22	Sep.22	Oct.22	Dec.22*	Dec.23*	Dec.24*
Currency in circulation (End-of-period)	4.7	37.3	16.0	3.7	-1.0	-3.3	-3.4	0.0	1.2	0.0
Deposits in domestic currency	12.3	33.0	-5.6	-6.7	-1.4	1.3	2.5	5.3	6.9	10.5
Total deposits [1/]	10.1	23.9	-3.3	-2.0	1.5	3.4	3.3	4.9	4.6	7.2
Broad money in domestic currency	10.6	32.2	-0.7	-4.2	-1.3	0.1	0.9	3.9	5.4	7.9
Total broad money [1/]	9.6	25.3	0.0	-0.8	1.2	2.2	2.1	3.9	3.9	5.8
Credit to the private sector in domestic currency	10.1	19.4	5.6	7.7	6.7	4.1	3.7	3.5	6.7	7.3
Total credit to the private sector [1/]	7.1	11.0	4.4	7.3	6.1	5.9	5.6	5.5	5.2	6.0
Total credit to the private sector (without Reactiva Peru Program) [1/]	7.1	-5.4	9.3	14.0	13.3	13.0	12.6	12.3	8.6	7.5

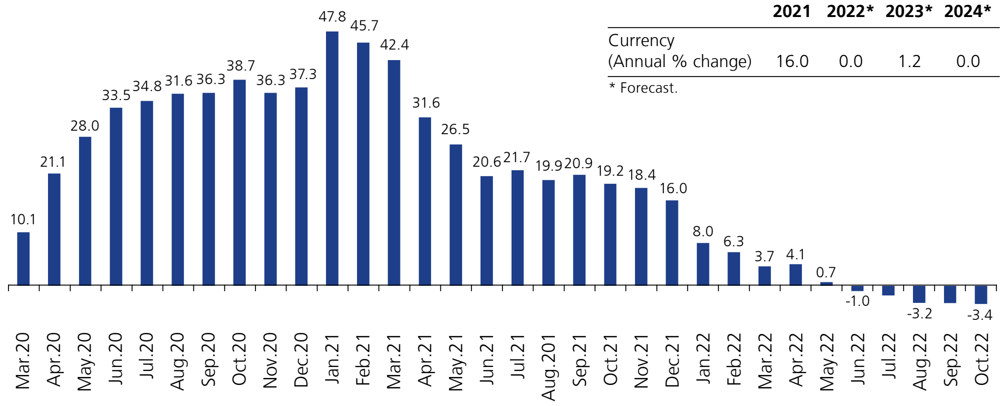
1/ Balances are valuated at constant exchange rate of December 2020.
* Forecast.
Source: BCRP.

72. After growing at historically high rates during the State of Emergency period[12], the growth of **currency in circulation** is expected to continue to moderate in the following months due to the weakening of the factors that favored the increase of currency in circulation in previous years. As a result, currency in circulation would grow at a slower rate than nominal GDP, returning to its pre-pandemic trend in the medium term. Currency in circulation fell 3.4 percent year-on-year in October 2022

12 Precautionary cash savings would have been driven mainly by transfers to families through the bonds granted by the State.

and it is expected to show growth rates of 0.0 percent in 2022, 1.2 percent in 2023, and 0.0 percent in 2024.

Graph 69
CURRENCY
(Annual % change)



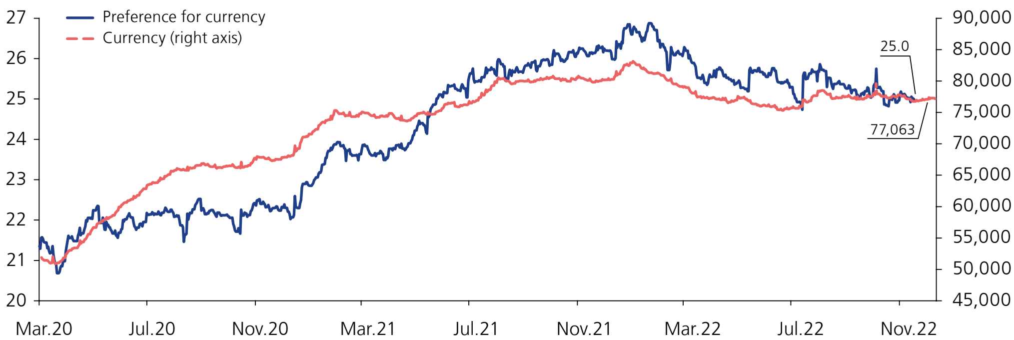
	2021	2022*	2023*	2024*
Currency (Annual % change)	16.0	0.0	1.2	0.0

* Forecast.

* Forecast.
Source: BCRP.

73. After growing continuously between April 2020 and December 2021, the preference for currency in circulation has declined so far in 2022. It declined between January 2022 and October 2022 and in November 2022 shows a level of 25.0 percent.

Graph 70
CURRENCY AND PREFERENCE FOR CURRENCY
(In millions soles and %)



Source: BCRP.

Credit to the private sector

74. **Credit to the private sector** slowed down in the third and fourth quarters of 2022 from a growth rate of 6.1 percent in June 2022 to year-on-year rates of 5.9 and 5.6 percent in September and October 2022, respectively. Excluding loans under the Reactiva Perú program, the year-on-year growth rate of lending rose to 12.6 percent in October 2022.

75. The growth of credit has been driven mainly by credit to individuals, which increased from a rate of 5.4 percent in 2021 to a rate of 17.1 percent in October 2022 as a result of the recovery of domestic demand. This acceleration in the pace of growth of credit to individuals results mainly from the increase in consumer loans (23.5 percent), which is associated with the greater dynamism of credit to new borrowers (see Box 3). On the other hand, mortgage credit maintains the dynamism observed since the second half of 2021, recording a year-on-year growth rate of 8.8 percent in October 2022.

76. Credit to businesses showed a contraction associated with the amortizations of the loans granted under the Reactiva Peru program. In October 2022, credit to companies decreased 0.4 percent, although when the Reactiva Peru loans are excluded, it increased by 9.7 percent. The largest drop in credit was observed in the segment of medium, small and micro companies (-3.5 percent), while the segment of corporate and large companies showed a growth rate of 2.7 percent.

Table 28

CREDIT TO THE PRIVATE SECTOR [1/]

(Annual growth rate)

	Dec.19	Dec.20	Dec.21	Mar.22	Jun.22	Sep.22	Oct.22
Business	**4.3**	**20.3**	**3.9**	**4.9**	**1.2**	**0.1**	**-0.4**
Corporate and large companies	4.4	6.8	8.1	10.7	4.1	3.4	2.7
Medium-sized enterprises, Small business and Micro business	4.3	36.2	0.0	-0.5	-1.8	-3.2	-3.5
Individuals	**11.5**	**-3.1**	**5.4**	**11.7**	**15.9**	**17.2**	**17.1**
Consumer	13.3	-7.1	3.9	15.1	21.7	23.6	23.5
Car loans	12.0	-2.3	7.6	13.8	12.6	17.9	18.0
Rest	13.4	-7.3	3.8	15.1	22.0	23.8	23.7
Mortgage	8.8	3.0	7.4	7.3	8.3	8.9	8.8
TOTAL	**7.1**	**11.0**	**4.4**	**7.3**	**6.1**	**5.9**	**5.6**
Memo:							
Businesses without Reactiva	**4.3**	**-7.0**	**12.1**	**15.6**	**11.6**	**10.3**	**9.7**
Total without Reactiva Peru	**7.1**	**-5.4**	**9.4**	**14.0**	**13.3**	**12.9**	**12.6**

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

The drop in credit to medium-size companies is mainly associated with the repayment of Reactiva Peru loans. Between October 2022 and December 2021, credit in domestic currency to medium-size companies registered a negative flow of S/ 7,946 million, of which S/ 8,272 million corresponded to net repayments of Reactiva Peru loans, offset by new loans for a total of S/ 4,158 million, among other factors. In contrast, in 2020, the flow of credit in domestic currency to medium-sized companies amounted to S/ 25,384 million, of which S/ 25,652 million was explained by loans from the Reactiva Peru program.

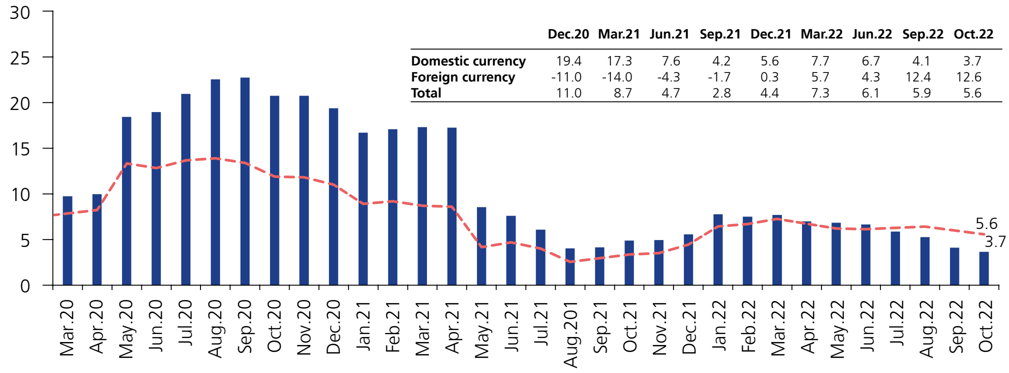
The balance of Reactiva Peru loans has continued to decrease, in line with the pace of loan repayments to the program. In October 2022, the balance of Reactiva Peru loans amounted to S/ 24,751 million, this sum representing 44 percent of the balance in December 2020.

77. Since the beginning of 2022, there has been a slow down in credit in soles and an increase in credit in dollars, especially in the corporate sector. By October 2022, lending in soles had grown 3.7 percent, while lending in dollars had grown 12.6 percent in the same period.

Graph 71

CREDIT TO THE PRIVATE SECTOR IN DOMESTIC CURRENCY

(Annual % change)



	Dec.20	Mar.21	Jun.21	Sep.21	Dec.21	Mar.22	Jun.22	Sep.22	Oct.22
Domestic currency	19.4	17.3	7.6	4.2	5.6	7.7	6.7	4.1	3.7
Foreign currency	-11.0	-14.0	-4.3	-1.7	0.3	5.7	4.3	12.4	12.6
Total	11.0	8.7	4.7	2.8	4.4	7.3	6.1	5.9	5.6

Source: BCRP.

Dollarization of credit and liquidity

78. The dollarization ratio of credit to the private sector, measured at a constant exchange rate, was 22.6 percent in October 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 28.4 to 32.0 percent between December 2021 and October 2022. On the other hand, the dollarization ratio of credit to individuals decreased from 7.5 to 7.1 percent during the same period. Moreover, the dollarization ratio of the segment of mortgage loans decreased from 9.8 percent in December 2021 to 8.7 percent in October 2022, while that of consumer loans increased from 5.7 percent to 6.0 percent in the same period.

Table 29

RATIO OF DOLLARIZATION OF CREDIT TO THE PRIVATE SECTOR [1/]

(%)

	Dec.19	Dec.20	Dec.21	Mar.22	Jun.22	Sep.22	Oct.22
Business	**39.1**	**29.0**	**28.4**	**29.2**	**31.0**	**31.9**	**32.0**
Corporate and large companies	52.4	44.5	43.3	44.3	47.7	49.2	49.5
Medium-sized enterprises	40.6	23.5	21.8	22.1	23.0	24.2	24.1
Small business and Micro business	6.1	4.3	3.6	3.5	3.3	3.2	3.2
Individuals	**9.6**	**8.6**	**7.5**	**7.5**	**7.2**	**7.1**	**7.1**
Consumer	6.5	5.8	5.7	6.1	6.0	6.0	6.0
Car loans	15.9	18.0	13.8	12.2	11.4	10.8	10.9
Credit cards	7.7	6.2	12.3	11.8	11.7	12.2	12.4
Rest	5.4	5.1	4.1	4.8	4.6	4.5	4.4
Mortgage	14.4	12.5	9.8	9.4	9.0	8.8	8.7
TOTAL	**27.4**	**22.0**	**21.1**	**21.4**	**22.2**	**22.6**	**22.6**

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

Non-performing loans

79. The ratio of non-performing loans (NPL) was 4.06 percent in October 2022, 0.3 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, mainly due to the increase in non-performing loans granted to the segments of medium-

sized companies and corporations and large companies. On the other hand, the ratio of non-performing loans to individuals decreased in the same period, particularly in the segments of car loans and mortgage loans.

Table 30
NON-PERFORMING LOANS INDEX
(%)

	Dec.19	Dec.20	Dec.21	Mar.22	Jun.22	Sep.22	Oct.22
Business	**3.71**	**3.73**	**4.60**	**4.80**	**4.81**	**5.04**	**5.22**
Corporate and large companies	0.62	1.04	1.08	1.28	1.45	1.46	1.54
Medium-sized enterprises	8.24	6.27	9.49	9.99	10.16	11.29	11.61
Micro and Small business	6.29	6.06	6.54	6.63	6.37	6.47	6.69
Individuals	**2.85**	**4.91**	**2.57**	**2.45**	**2.53**	**2.54**	**2.52**
Consumer	2.81	5.92	2.23	2.14	2.31	2.47	2.45
Credit cards	5.33	12.70	6.28	6.18	6.43	6.71	6.63
Car loans	3.75	5.85	3.72	3.74	3.54	3.46	3.37
Rest	1.46	3.07	1.35	1.28	1.39	1.52	1.50
Mortgage	2.91	3.51	3.01	2.87	2.84	2.64	2.61
Average 1/	**3.24**	**4.00**	**3.76**	**3.82**	**3.84**	**3.98**	**4.06**

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.

Projection of credit to the private sector

80. In 2022, 2023 and 2024, credit to the private sector is expected to grow at a slower pace than nominal GDP, after a significant increase in the credit-to-GDP ratio in 2020, which is expected to stabilize at pre-pandemic levels. Thus, the credit-to-GDP ratio is expected to register 44.3 percent of GDP in 2022 (after recording 51.6 percent in 2020 and 45.0 percent in 2021). This forecast also assumes the recovery of economic activity to a higher level in 2022 than pre-pandemic levels (21.2 percent nominal GDP growth compared to 2019), declining thereafter to 43.1 percent of GDP in 2023 and 42.9 percent of GDP in 2024.

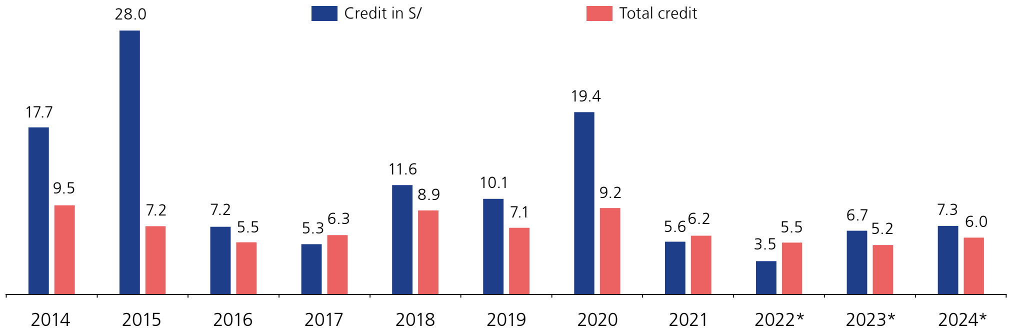
Credit to the private sector in domestic currency is estimated to grow 3.5 percent in 2022; 6.7 percent in 2023; and 7.3 percent in 2024, taking into account the disappearance of the statistical effect of the strong increase in 2020 and the beginning of the amortization of loans granted under the Reactiva Peru program. Thus, total credit would grow 5.5 percent in 2022 (12.3 percent without Reactiva), while in 2023 it is expected to grow by 5.2 percent (8.6 percent without Reactiva) and 6.0 percent in 2024 (7.5 percent without Reactiva). Thus, the credit dollarization ratio would continue to decrease, reaching a level of 20.6 percent at the end of 2024.

In line with forecasts for credit to the private sector, the growth of liquidity would pick up slightly (after remaining flat in 2021) and the growth of currency in circulation would moderate, although both are expected to grow at rates lower than nominal GDP in 2022, 2023 and 2024. The ratio of liquidity to GDP would fall from 60.7 percent in 2020 to 46.4 percent in 2023 and to 46.0 percent in 2024, while the ratio of currency in circulation of depository corporations would contract from 9.9 percent in 2020 to 8.3 percent in 2023 and to 7.8 percent in 2024.

Graph 72

CREDIT TO THE PRIVATE SECTOR

(% change)

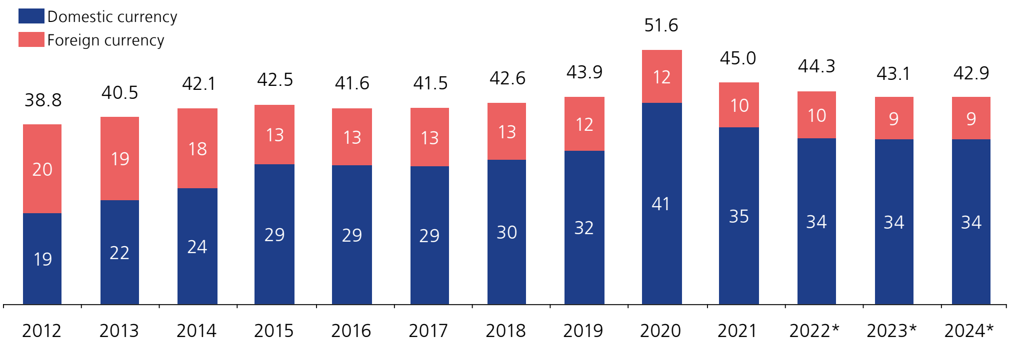


* Forecast.
Source: BCRP.

Graph 73

RATIO CREDIT/GDP

(%)

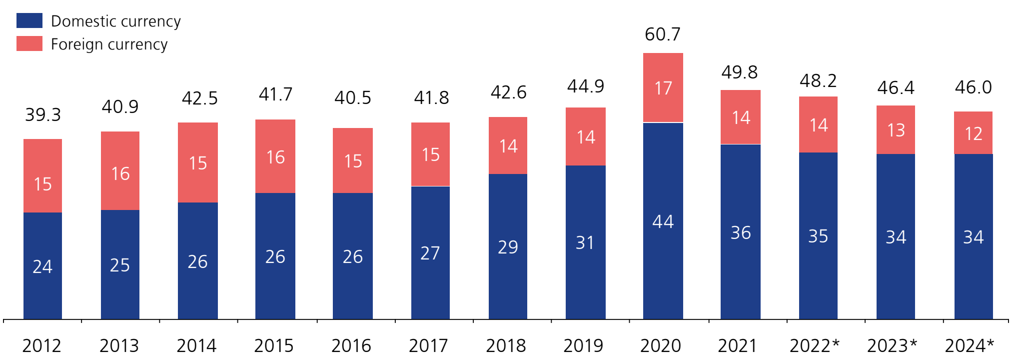


Note: calculated with constant exchange rate (December 2020)
* Forecast.
Source: BCRP.

Graph 74

RATIO LIQUIDITY/GDP

(%)



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

Box 3
EVOLUTION OF CONSUMER LOANS

After being significantly affected by the pandemic due to social confinement measures and the loss of employment, the segment of consumer loans has been recovering substantially. Because of this, the evolution of consumer loans by debt size, differentiating the loans by group of institutions[13], is analyzed in this box. The intensive and extensive margins of consumer loans are also analyzed herein.[14]

As of December 2020, the drop in consumer credit was explained by reductions in large and specialized institutions. By debt size, it is explained by the reduction in credit to lower-income individuals (or smaller loans). During 2021, without yet reaching its pre-crisis level, consumer credit showed a recovery of 4.0 percent due to credit recoveries in large, medium and microfinance institutions and to higher loans to people with higher incomes (loans over S/ 60,000). On the other hand, lending to lower-income individuals continued to fall, which could be associated with the incomplete recovery of employment and the establishment of interest rate caps.

So far in 2022, consumer loans have outweighed their prepandemic level since March 2022 and a significant recovery has been observed in all groups of institutions, with the exception of Specialized entities. By debt size, loans greater than S/ 20,000 are the ones that have outweighed their pre-crisis level.

BALANCE OF CONSUMER LOANS ACCORDING TO ENTITY GROUP AND DEBT SIZE

	Balance (million S/)				Growth rate (%)				
	Dec.19	Dec.20	Dec.21	Oct.22	Dec.19/ Dec.18	Dec.20/ Dec.19	Dec.21/ Dec.20	Oct.22/ Dec.21	Oct.22/ Dec.19
By Entity Group:									
Large companies	42,967	39,885	42,656	51,590	15.7	-7.2	6.9	20.9	20.1
Medium-sized enterprises	7,732	7,862	7,991	8,901	16.8	1.7	1.6	11.4	15.1
Specialized firms	12,160	9,887	8,657	10,532	10.8	-18.7	-12.4	21.7	-13.4
Micro business companies	7,183	7,345	8,343	9,685	16.9	2.3	13.6	16.1	34.8
State owned companies	5,635	5,033	5,168	6,472	-0.9	-10.7	2.7	25.2	14.9
By Debt Size:									
Less than 3,000	8,115	6,806	6,223	6,990	7.5	-16.1	-8.6	12.3	-13.9
Between 3,000 and 8,000	10,398	8,889	8,222	9,586	9.9	-14.5	-7.5	16.6	-7.8
Between 8,000 and 20,000	16,352	14,213	13,193	15,797	9.1	-13.1	-7.2	19.7	-3.4
Between 20,000 and 60,000	26,968	25,778	26,460	30,914	16.2	-4.4	2.6	16.8	14.6
Greater than 60,000	13,843	14,324	18,716	23,892	21.8	3.5	30.7	27.7	72.6
Total	**75,676**	**70,011**	**72,814**	**87,180**	**13.7**	**-7.5**	**4.0**	**19.7**	**15.2**

1/ Balances in dollars are evaluated at a constant exchange rate (S/ 3.62 per US$).
*Covers Other Depository Corporations, with the exception of cooperatives (banks, finance companies, municipal savings banks, rural savings banks and Banco de la Nación).
Source: RCC.

As for the number of consumer loans, a reduction of 11.2 percent (equivalent to 1.1 million fewer loans) was observed during 2020. This reduction occurred mainly in specialized institutions. By debt

13 These institutions were divided into 5 groups: Large entities (BCP, Interbank, Scotiabank and BBVA), Medium-sized entities (Comercio, BanBif, Pichincha, Mibanco, GNB and Santander), Specialized entities (Financiera CrediScotia, Ripley, CRAC Cencosud, Banco Alfin, Falabella and Financiera Oh!), Micro-financial entities (which include the rest of Financial entities, e.g. CMAC and CRAC) and State entities (which includes only Banco de la Nación).

14 Intensive margin: Increase or reduction of loans to people who already had credit at a given date. Extensive margin: Loans to people who did not have credit at a given date. Our reference date will be December 2019.

size, the largest drop was observed in the number of smaller loans, i.e. loans between S/ 3,000 and S/ 8,000 (-13.8 percent). On the other hand, the number of loans over S/ 60,000 increased by 5.0 percent.

During 2021, although the balance of consumer loans increased, the number of loans decreased by 4.4 percent (0.4 million less), especially in specialized and medium-sized entities. By debt size, there was a drop in the number of loans under S/ 20,000. Furthermore, the number of loans under S/ 3,000 decreased significantly, as this group is estimated to be the most affected by the interest rate caps.

On the other hand, so far in 2022, there has been an increase of nearly 11.2 percent in the number of loans (equivalent to an increase of 0.9 million loans), this recovery having occurred mainly in large entities (19.2 percent). In addition, the increase has been more pronounced among individuals with higher loans (or higher income). Despite this, however, the number of loans is 5.6 percent lower than that recorded in December 2019, mainly due to the reduction of credit observed in specialized institutions and in loans below S/ 3,000.

NUMBER OF CONSUMER LOANS ACCORDING TO ENTITY GROUP AND DEBT SIZE

	Number of credits (en thousands) 1/				Growth rate (%)				
	Dec.19	Dec.20	Dec.21	Oct.22	Dec.19/ Dec.18	Dec.20/ Dec.19	Dec.21/ Dec.20	Oct.22/ Dec.21	Oct.22/ Dec.19
By Entity Group:									
Large companies	3,436	3,194	3,247	3,872	15.5	-7.1	1.7	19.2	12.7
Medium-sized enterprises	824	738	673	702	9.8	-10.5	-8.7	4.2	-14.8
Specialized firms	3,309	2,772	2,478	2,582	6.7	-16.3	-10.6	4.2	-22.0
Micro business companies	1,324	1,190	1,192	1,329	6.8	-10.1	0.1	11.6	0.4
State owned companies	694	617	546	564	-3.5	-11.0	-11.5	3.3	-18.7
By Debt Size:									
Less than 3,000	5,713	5,059	4,792	5,163	8.0	-11.4	-5.3	7.7	-9.6
Between 3,000 and 8,000	1,845	1,591	1,500	1,718	9.9	-13.8	-5.7	14.5	-6.9
Between 8,000 and 20,000	1,171	1,027	956	1,129	8.7	-12.3	-6.9	18.1	-3.6
Between 20,000 and 60,000	733	701	709	819	14.5	-4.4	1.2	15.5	11.8
Greater than 60,000	127	133	179	221	20.7	5.0	33.9	23.5	73.7
Total	**9,588**	**8,511**	**8,136**	**9,049**	**9.1**	**-11.2**	**-4.4**	**11.2**	**-5.6**

1/ The counting of the number of loans is defined based on individuals who have at least one loan in one of the established groups.
* Covers Other Depository Corporations, with the exception of cooperatives (banks, finance companies, municipal savings banks, rural savings banks and Banco de la Nación).
Source: RCC.

The intensive and extensive margins were calculated using the month of December 2019 as reference (the last month of the year prior to the pandemic). Thus, it is worth pointing out that, in December 2020, there are consumer loans for S/ 3,450 million to debtors who had no balance in December 2019 (extensive margin), whereas consumer loans to existing debtors in the reference month (intensive margin) showed a reduction of S/ 9,116 million. This reduction would be associated with the loss of employment and, therefore, with lower demand from existing debtors who had medium and low loan amounts.

It should also be pointed out that, in October 2022, those debtors that were not present in the credit system in December 2019 recorded consumer loans amounting to S/ 13,532 million. On the other hand, in the same month, credit to debtors existing before the pandemic registered an accumulated drop of S/ 2 028 million with respect to the reference month, which indicates a partial recovery of these debtors with respect to the sharp drop they experienced in the hardest year of the pandemic.

DYNAMICS OF CONSUMER LOANS
(Intensive and extensive margins)

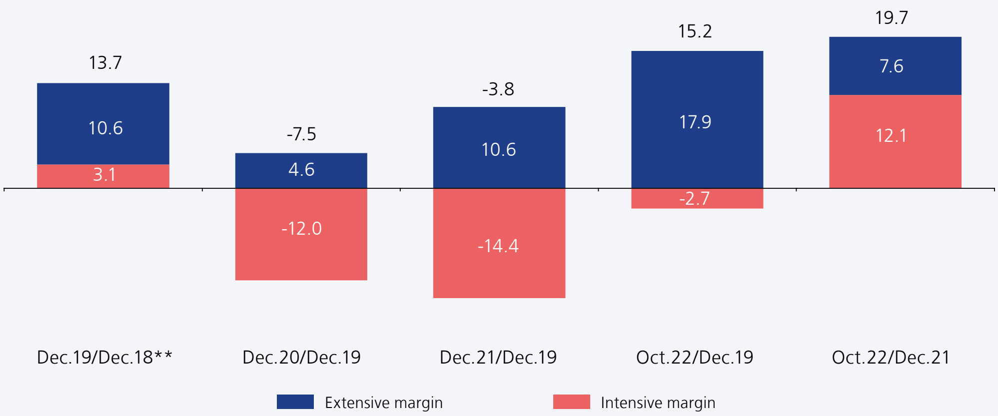
	Balance (million S/)				Flows (million S/)				Growth rate (%)			
	Dec.19	Dec.20	Dec.21	Oct.22	Dec.20/ Dec.19	Dec.21/ Dec.20	Oct.22/ Dec.21	Oct.22/ Dec.19	Dec.20/ Dec.19	Dec.21/ Dec.20	Oct.22/ Dec.21	Oct.22/ Dec.19
Intensive Margin	75,676	66,561	64,812	73,648	-9,116	-1,749	8,836	-2,028	-12.0	-2.6	13.6	-2.7
Extensive Margin	0	3,450	8,003	13,532	3,450	4,552	5,529	13,532	-	131.9	69.1	-
Total	**75,676**	**70,011**	**72,814**	**87,180**	**-5,665**	**2,803**	**14,366**	**11,504**	**-7.5**	**4.0**	**19.7**	**15.2**

* It is verified that the credits have been or not in the RCC in the month of December 2019.
** Covers Other Depository Corporations, with the exception of cooperatives (banks, finance companies, municipal savings banks, rural savings banks and Banco de la Nación).
Source: RCC.

As for the percentage contribution, during 2020 the extensive margin contributed with an increase of 4.6 percentage points to the variation compared to December 2019, so the contribution to credit was dominated by the intensive margin (-12.0 p.p.). This resulted in a contraction rate of 7.5 percent in December 2020 compared to December 2019.

Although the negative contribution in credit from the intensive margin dominated again in December 2021, the situation was reversed by October 2022 as the 15.2 percent growth of credit compared to December 2019 is explained by the 17.9 percentage point contribution of the extensive margin, despite the 2.7 percentage point drop in the intensive margin.

INTENSIVE AND EXTENSIVE MARGINS*
(in %)



*/ The intensive margin includes debt increases, amortizations, cancellations, as well as credit write-offs.
**/ Intensive and extensive margins for December 2019 are calculated based on the same month of the previous year (Dec-18).
**/ Covers Other Depository Corporations, with the exception of cooperatives (banks, finance companies, municipal savings banks, rural savings banks and Banco de la Nación).

In conclusion, a recovery of consumer credit from the fall associated with the pandemic is observed in October 2022, bringing about a greater participation of larger loans. In terms of the number of loans, it is worth pointing out that the total number of credits does not reach its pre-pandemic level, despite the fact that the group of loans larger than S/ 60,000 outweighed the December 2019 level (73.7 percent higher), with a 72.6 percent increase in the consumer credit balance for that group accounting for this during the same period.

Furthermore, it is estimated that the recovery of consumer credit to a higher level than before the pandemic is explained, as of October 2022, by the dynamics of credit to new borrowers and, therefore, by the dominance of the extensive margin over the intensive margin.

VI. Inflation and balance of inflation risks

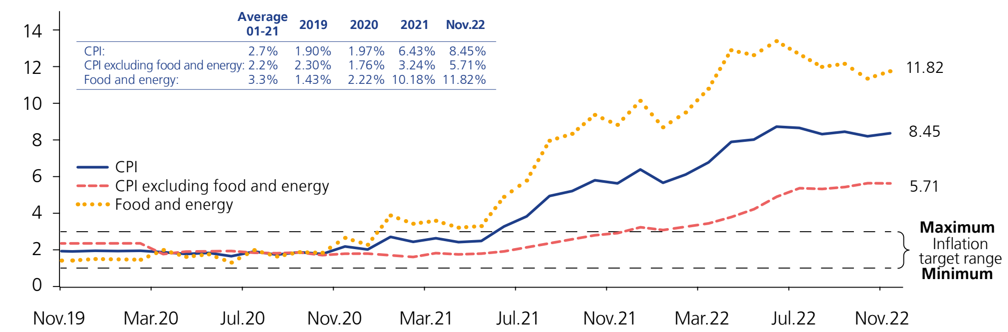
Recent inflation trends

81. Year-on-year **inflation** rose from 8.40 percent in August to 8.45 percent in November, after peaking at 8.81 percent in June. The items contributing most to the change in inflation in the last twelve months to November were local transportation, meals consumed away from home, potatoes, and eggs. Inflation excluding food and energy prices in November recorded 5.71 percent, a rate above the target range. The different indicators of trend inflation also show values above the target range.

Graph 75

INFLATION

(Last 12-month % change)

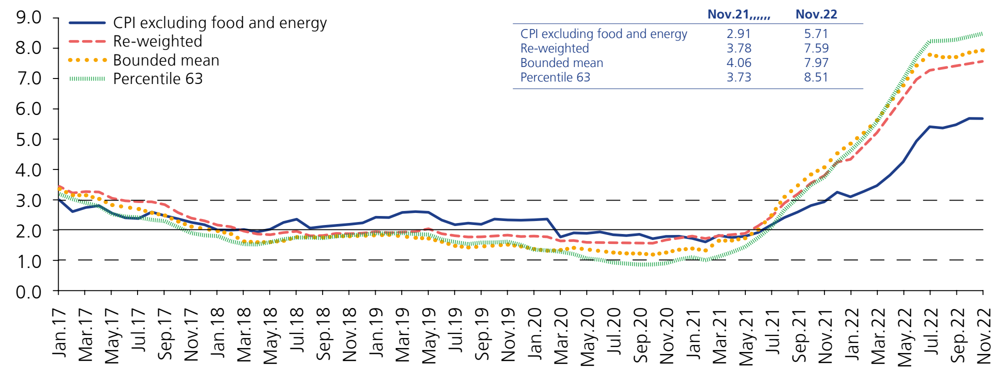


Source: BCRP.

Graph 76

MEASUREMENTS OF THE INFLATIONARY TREND

(Last 12 months % change)

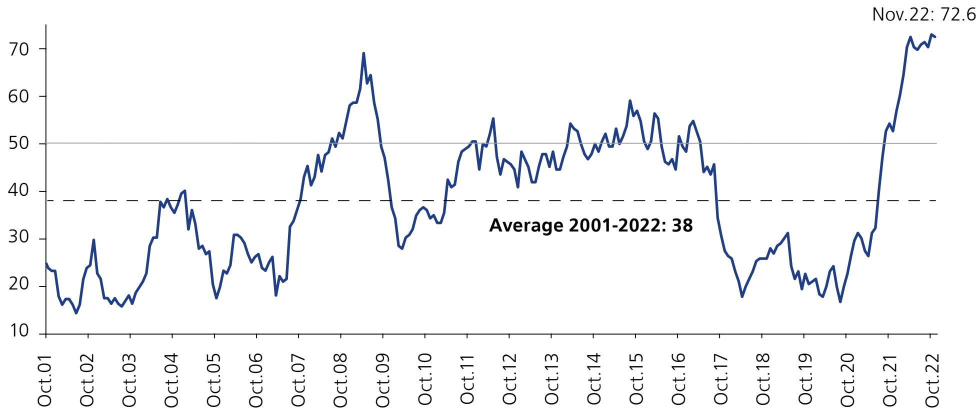


Memo:
1. CPI excluding food and energy: CPI excluding food, fuel and electricity.
2. Re-weighted: Reduces the weight of items with greater volatility, considers the original weights of each item over the standard deviation of their monthly percentage changes.
3. Bounded mean: Weighted average of the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

82. It is worth mentioning that 73 percent of a total of 186 items included in the Consumer Price Index recorded a year-on-year variation higher than 3 percent. This indicator has remained between 70 and 73 percent since March.

Graph 77

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



	Nov.21	Dec.21	Jan.22	Feb.22	Mar.22	Apr.22	May.22	Jun.22	Jul.22	Aug.22	Sep.22	Oct.22	Nov.22
Index	53	57	60	65	70	73	70	70	71	72	70	73	73
Number of items:													
Items with variation greater than 3%:	98	106	112	120	131	135	131	130	132	133	131	136	135
Items with variation less than 3%:	88	80	74	66	55	51	55	56	54	53	55	50	51

Source: BCRP.

83. The increase in the Minimum Living Wage (MLW) from S/ 930 to S/ 1,025, approved by Supreme Decree No. 003-2022-TR, went into effect on May 1st of 2022. This increase is foreseen to impact the costs of industries both directly, through the increase in labor costs of labor intensive industries with salaries close to the MLW, and indirectly, through the increase in the cost of intermediate inputs required by other industries whose costs are also affected by the MLW increases. According to a recent study[15], the sectors most directly and indirectly affected by the transfer of the MLW increase to final costs are: furniture, household items and housing maintenance; food and beverages; clothing and footwear; and other goods and services.

Moreover, according to this study, which uses disaggregated information to analyze the impact of changes in the MLW on prices, a 10 percent increase in the MLV would raise inflation by 0.73 percent twelve months later.

84. The items most closely linked to the foreign exchange rate, international prices and contracts linked to the Wholesale Price Index (WPI) contributed 2.1 percentage points to cumulative inflation between January and November (7.6 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)[16]

15 Castellares, R., Ghurra, O., & Toma, H. (2022). Effects of the Minimum Wage on Prices and Household Purchasing Power (No. 2022-004). Banco Central de Reserva del Perù.

16 The difference between the cumulative contribution to inflation between January and November 2022 and the corresponding contribution to 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 31
ITEMS LINKED TO THE EXCHANGE RATE, INTERNATIONAL PRICES AND TO THE WHOLESALE PRICE INDEX (WPI)

	Weight 2009=100	% chg. 12 m. Dec.20	Weighted contribution	% chg. 12 m. Dec.21	Weighted contribution	Peso Base Dec.21	% chg. 12 m. Jan.22-Nov.22	Weighted contribution
CPI	**100.00**	**1.97**	**1.97**	**6.43**	**6.43**	**100.00**	**7.60**	**7.60**
Items linked to the exchange rate	**14.06**	**1.66**	**0.21**	**4.25**	**0.54**	**14.58**	**4.71**	**0.69**
Items linked to international prices and exchange rate	**9.83**	**2.15**	**0.19**	**28.52**	**2.51**	**7.99**	**12.47**	**1.00**
Linked to food commodities	7.03	4.83	0.30	21.32	1.35	5.84	15.41	0.90
Fuels	2.79	-4.20	-0.11	47.20	1.15	2.15	4.48	0.10
Items related to WPI	**1.64**	**3.03**	**0.06**	**11.57**	**0.22**	**1.37**	**7.90**	**0.11**
Items related to the exchange rate, WPI and prices	**2.95**	**6.73**	**0.24**	**9.50**	**0.35**	**2.62**	**10.46**	**0.27**
Total items related to the exchange rate, WPI and prices	**28.47**	**2.58**	**0.70**	**13.31**	**3.63**	**26.56**	**$\boxed{7.77}$**	**2.06**
Rest	**71.54**	**1.75**	**1.27**	**3.86**	**2.81**	**73.44**	**$\boxed{7.54}$**	**5.54**

Source: BCRP.

85. Regarding the evolution of inflation during 2022, In the period between the months of January and November, the general price level increased 7.6 percent. This result is mainly explained by the increase in the prices of the food and energy group (10.8 percent), which contributed 4.8 percentage points to inflation in the period. The increase in food and beverage prices (11.2 percent), which contributed 4.5 percentage points to inflation, stands out within this group.

Table 32
INFLATION
(% change)

	Weight	Dec.19	Dec.20	Dec.21	2022 Jan.-Nov.	2022 November
CPI	**100.0**	**1.90**	**1.97**	**6.43**	**7.60**	**8.45**
1. CPI excluding food and energy	**55.3**	**2.30**	**1.76**	**3.24**	**5.02**	**5.71**
a. Goods	17.4	1.4	1.5	2.6	4.9	5.2
b. Services	37.9	2.9	1.9	3.6	5.1	6.0
Education	8.6	5.2	2.0	1.6	3.9	3.9
Health	1.5	1.5	1.2	2.8	7.1	7.3
Local transportation	8.1	2.2	2.5	3.0	12.2	14.0
Others	19.7	1.6	1.6	5.6	2.5	3.6
2. Food and energy	**44.7**	**1.43**	**2.22**	**10.18**	**10.80**	**11.82**
a. Food and beverages	**40.0**	**1.0**	**2.2**	**8.0**	**11.2**	**12.0**
Meals inside the home	24.5	0.6	2.9	9.8	12.6	13.4
Meals outside the home	15.5	1.7	1.0	4.5	8.9	9.7
b. Fuel and electricity	**4.8**	**4.3**	**2.1**	**24.4**	**7.8**	**9.9**
Fuel	2.1	-0.4	-4.2	47.2	4.5	8.8
Electricity	2.6	8.0	6.7	9.5	10.5	10.7

Source: BCRP.

86. At a disaggregated level, the items with the highest positive contribution to inflation in the January-November period were meals away from home, local transportation, potatoes, eggs, personal care products, residential electricity rates and bread.

Table 33
ITEM WITH THE HIGHEST WEIGHTED CONTRIBUTION TO INFLATION: JANUARY - NOVEMBER 2022

Positive	Weight	% chg.	Contr.	Negative	Weight	% chg.	Contr.
Meals outside the home	15.5	8.9	1.37	Domestic gas	0.8	-7.9	-0.07
Local transportation	8.1	12.2	0.99	National air transport	0.2	-26.8	-0.06
Potatoes	0.7	67.7	0.48	National ground transportation	0.3	-12.7	-0.03
Eggs	0.7	46.3	0.33	Telephone equipment	0.5	-6.0	-0.03
Personal care products	4.0	7.8	0.31	Natural gas	0.2	-9.7	-0.02
Electricity	2.6	10.5	0.27	Pumpkin	0.1	-4.7	0.00
Bread	1.4	18.4	0.25	Other cereals	0.1	-1.6	0.00
Citrus	0.6	30.4	0.19	Seafood	0.0	-4.0	0.00
Vehicle fuels	1.1	17.3	0.18	Other transport services	0.0	-6.9	0.00
Higher education	4.3	4.1	0.17	Chicken meat	2.7	0.0	0.00
Total			**4.54**	**Total**			**-0.22**

Food

The prices of meals outside the home recorded an average increase of 8.9 percent, mainly due to the increase in the price of food inputs. It should be pointed out, however, that the increase in meals consumed outside the home was lower than that of food consumed inside the home (12.6 percent), so the higher cost of inputs has not been fully passed through to the prices of meals away from home.

The price of potatoes showed the highest increase among perishable agricultural products (67.7 percent), this high increase being associated with the decrease in plantings in the regions of Junín and Huánuco in the August 2021-July 2022 season due to higher fertilizer prices. Plantings were also lower in Ica, a region that seasonally increases its share of supply from August to October. The price rise was then reversed in November, with a 4 percent reduction being observed due to the higher supply of the "white potato" variety from the Lima valleys. In this region, plantings increased from June onwards, encouraged by higher prices. This was coupled with the drop in temperature in the context of a weak "La Niña" event, which favored the tuberization process and therefore yields.

The price of eggs rose 46.3 percent, the highest increase being observed in the first half of the year, reflecting higher production costs associated with the higher international price of hard yellow maize during that period (34 percent). This result was also influenced by the higher demand for eggs due to their lower relative price compared to other foodstuffs with high protein content, e.g. chicken and fish. In addition, there was also a reduction in supply due to the lower placement of laying hens as many small producers were forced to leave the market due to their impossibility of facing the increase in the cost of poultry feed inputs.

The price of bread increased 18.4 percent due to higher production costs, mostly as a result of higher wheat prices –the main input for bread production– which pushed up the price of flour and higher energy costs.

Citrus prices rose by an average of 30.4 percent, reflecting the increase in the price of lemons (77.6 percent), a result influenced by the lower supply of better quality produce. In addition to the lower application of fertilizers, mainly in small-scale agriculture in Piura, lower temperatures on the northern coast of the country affected the flowering process of the product.

Services

The prices of local transportation recorded an accumulated variation of 12.2 percent in the January-November period due to the increase in urban fares for cabs, buses, minibuses, vans and motorcycle cabs. This result was influenced by the higher price of fuel as well as by the increase in tolls and the higher price of spare parts. In addition, there was also an adjustment of bus fares on three lines of the complementary corridors -red, blue and purple- in May, as well as an increase in Metropolitan Transportation System fares in July. Moreover, a fare increase was authorized for the other complementary corridor (yellow line) in September.

In contrast, domestic air fares and interprovincial bus fares decreased 26.8 and 12.7 percent respectively in the January-November period, reflecting mainly the reductions recorded after the seasonal increases in the months of December 2021 and July 2022, as well as the reversal of the increase in interprovincial fares recorded during the long holiday at the end of August.

Energy

Vehicle fuel prices rose an average of 17.3 percent in the January-November period. The price of 95 and 97 octane gasohol fuels, which are not included in the Oil Fuel Price Stabilization Fund (FPSF) increased by 22 and 24 percent, respectively, while the price of 90 octane gasohol, a product that is included in the FEPC, showed a smaller variation of 19 percent.

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) showed a 20.3 percent increase in the January-November period. The rise in oil prices was reversed in August and September, which contributed to reduce fuel prices in the domestic market in those months (-7.5 and -6.5 percent, respectively). Subsequently, new price increases were observed in October and November (1.2 and 1.0 percent, respectively), due to the higher price of gasohol, which was in line with the increase in the international marker (U.S. Gulf Coast price), due to the recovery of oil prices in the international market.

In contrast, the price of LPG for vehicles decreased 19.8 percent in January-November, the result in this product, which is included in the FPSF, reflecting the reduction of the upper and lower limits of the price band. However, it recorded an increase of 2.5 percent in September, affected by the shortage due to abnormal surges that hindered its disembarkation, a situation that was normalized in October.

The price of diesel, which is also included in the FPSF, rose 6.2 percent in September and 6.9 percent in October, due to the update of the price band after two months in which no price variation was allowed. In the January-November period it reached an increase of 21.5 percent.

For its part, the price of the domestic gas cylinder decreased 7.9 percent in the January-November period, reflecting the update of the price band. A larger reduction was expected, but the price was affected by the chain of intermediaries and expectations of shortages in July due to abnormal sea surges.

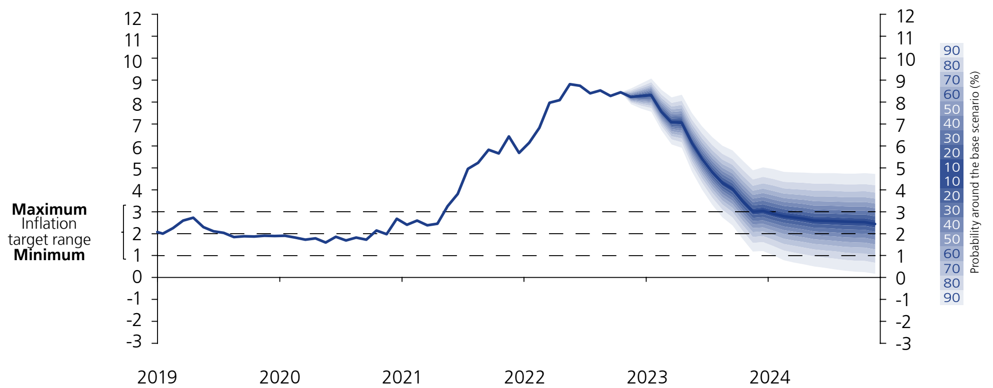
Electricity rates rose 10.5 percent, recording the highest increases in August and November (3.0 and 3.7 percent, respectively). The rises in those months were primarily due to the quarterly settlement made by Osinergmin to compensate for differences in the price at the generation level among regulated users. Additionally, a series of transmission component charges were updated to ensure the continuity of the service. Fixed charges and the Distribution Added Value (DAV) were also updated in August, in accordance with the variation of macroeconomic indicators: wholesale price index, exchange rate, copper and aluminum prices. Additionally, in November, the Distribution Added Value was established for the period of November 2022-October 2026. The application of the electricity consumption subsidy was also extended in November (from a consumption of no more than 100 kWh to a consumption of 140 kWh), based on the Electricity Social Compensation Fund (ESCF).

Forecasts

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

    Based on available information, year-on-year inflation is projected to return to the target range by the end of 2023. This forecast assumes the reversal of the effect of transitory factors on the inflation rate (exchange rate, international fuel and grain prices) in a context in which the economy's growth is around its potential and inflation expectations return to the target range in the following months.

Graph 78
INFLATION FORECAST: 2022 - 2024
(Last 12-month % change)



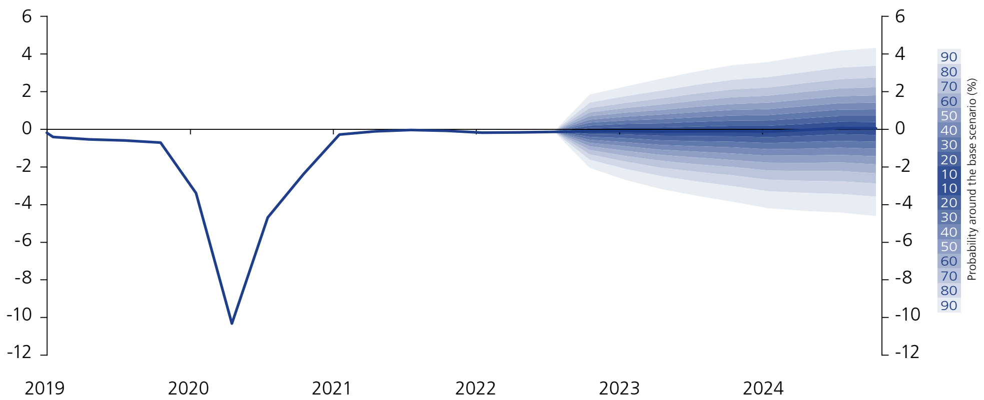
Note: This Fanchart presents the distribution of possible values of the inflation over the forecast horizon. Its central line is the distribution mode and shows the projection of the base scenario presented in this Inflation Report. Each pair of bands of the fan (each tone or shade) accumulates a 10%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

88. Over the projection horizon, an output gap of almost zero is expected.

Graph 79

OUTPUT GAP FORECAST: 2022-2024

(As a percentage of potential output, quarterly average)

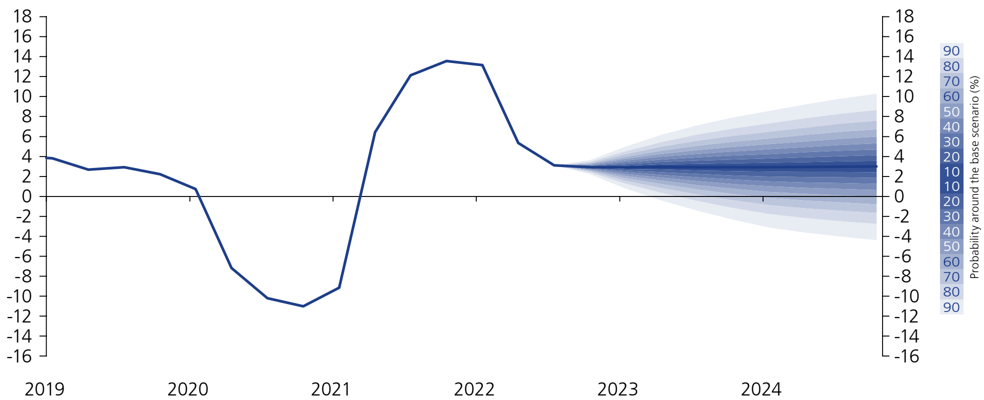


Note: This Fanchart presents the distribution of possible values of the output gap forecast over the forecast horizon. Its central line is the distribution mode and shows the projection of the base scenario presented in this Inflation Report. Each pair of bands of the fan (each tone or shade) accumulates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

Graph 80

OUTPUT GROWTH FORECAST: 2022-2024

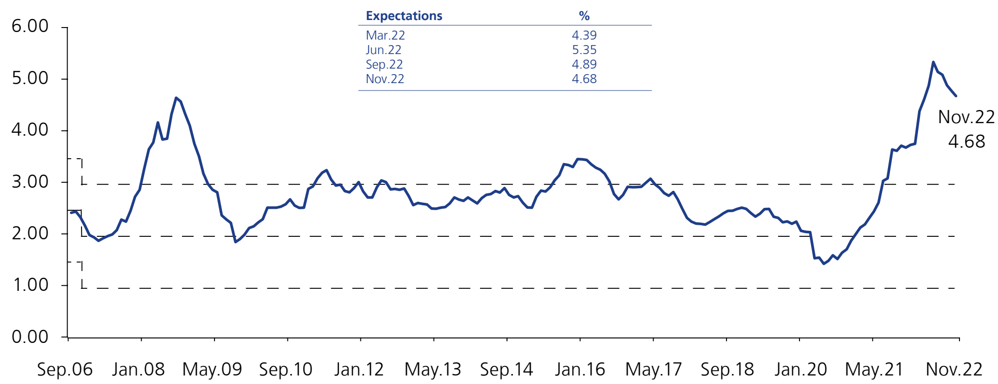
(Moving average percentage change 4 quarters)



Note: This Fanchart presents the distribution of possible values of the output growth forecast over the forecast 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 output growth in the forecast horizon associated with this level of confidence.
Source: BCRP.

89. 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 between 7.5 and 7.9 percent for 2022, a rate between 4.2 and 4.6 percent for 2023, and a rate between 3.0 and 4.0 percent for 2024. Expectations of inflation in twelve months' time rose to 4.68 percent in November 2022, this rate climbing temporarily above the upper limit of the inflation target range.

Graph 81
EXPECTATIONS OF INFLATION FOR THE NEXT YEAR
(% points)



Source: BCRP.

Table 34
SURVEY ON INFLATION EXPECTATIONS
(%)

	IR Mar.22	IR Jun.22	IR Sep.22	IR Dec.22*
Financial entities				
2022	3.80	5.50	7.30	7.70
2023	3.00	3.55	4.00	4.60
2024				3.50
Economic analysts				
2022	4.00	6.00	7.30	7.90
2023	3.00	3.80	4.00	4.20
2024				3.00
Non-financial firms				
2022	4.00	5.80	7.00	7.50
2023	3.20	4.00	4.30	4.50
2024				4.00

* Survey conducted as of November 30.
Source: BCRP.

90. 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, soybeans and maize) with the effect of the variation of the exchange rate (REN against the U.S. dollar).

Average import prices are projected to increase by 13.7 percent in 2022, mainly due to the increase in the price of oil and some foodstuffs, such as maize, wheat and soybeans. On the other hand, a partial correction in the prices of these products is expected for 2023 and 2024, as these prices are expected to decrease 2.4 percent in 2023 and 0.2 percent in 2024. As for the expected US dollar/PEN exchange rate, the surveys results in November show expected levels of S/ 3.90 per dollar for 2022 and levels between S/ 3.90 and S/ 4.00 per dollar for 2023 and 2024.

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

Table 35
SURVEY ON MACROECONOMIC EXPECTATIONS: EXCHANGE RATE
(S/ per US$)

	IR Mar.22	IR Jun.22	IR Sep.22	IR Dec.22*
Financial entities				
2022	3.90	3.80	3.90	3.90
2023	3.85	3.80	3.85	3.90
2024				3.90
Economic analysts				
2022	3.90	3.85	3.90	3.90
2023	3.93	3.90	3.90	4.00
2024				4.00
Non-financial firms				
2022	3.90	3.80	3.90	3.90
2023	3.90	3.86	3.90	3.95
2024				3.96

* Survey conducted as of November 30.
Source: BCRP.

Balance of risks to the inflation forecast

91. Risks to the inflation projection continue to be skewed to the upside, although showing different weights for the contingent scenarios compared to the previous Report. Thus, risks of higher food prices and of lower world economic growth are considered to be lower with respect to the baseline scenario. These scenarios are detailed below:

- **Domestic demand shocks**

  If consumer and business confidence do not recover, the risks of lower growth in private sector consumption and investment persist. This contingency becomes more likely if social unrest continues. On the other hand, delays in the execution of public spending, especially investment spending due to the change of subnational authorities, would contribute to a lower growth of economic activity. The impact of these contingencies would be a contraction in domestic demand, which would have a negative effect on inflation.

- **External demand shocks**

  There is still a risk of lower global growth with respect to the baseline scenario, even though the baseline scenario revises down global growth in 2023 from 2.7 percent in the September Report to 2.3 percent in this report, thus reducing the probability of this contingency scenario. The implication of this contingent scenario is a lower demand for our main export products (external demand) due to: (i) a more accelerated withdrawal of monetary stimulus in advanced economies because of the persistence of global inflation and its possible impact on inflation expectations; (ii) greater geopolitical tensions, and (iii) persistence of the recessionary effect of COVID-19 sanitary controls and problems in the real estate sector in China's economy. The impact of these contingencies in the short term would generate higher inflation due to the effect of exchange rate depreciation and in the medium term, lower inflation due to lower growth.

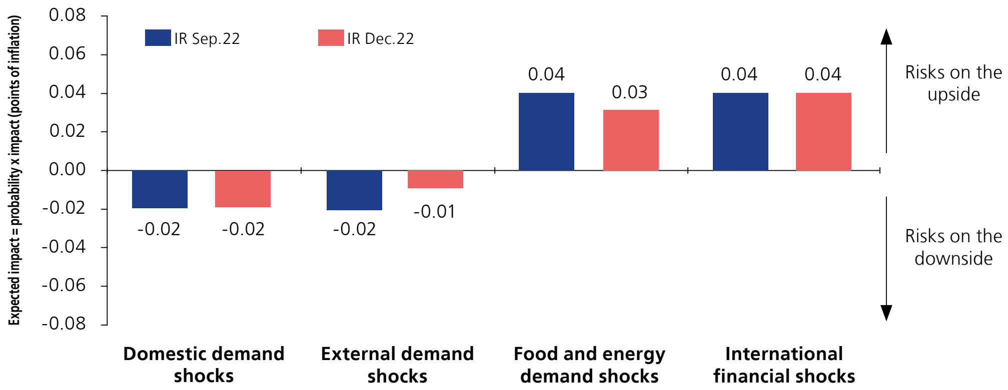
- **Food and energy price shocks**

  An intensification of geopolitical tensions in Eastern Europe and China could exacerbate and prolong the current energy and food crisis, which could result in higher fuel, food, and fertilizer prices and higher transportation costs. The expected impact of this risk has been revised down from the September Inflation Report.

- **Financial shocks**

  The faster pace of the early withdrawal of monetary stimulus in the advanced economies, political uncertainty and its effect on economic growth, and growing public and private indebtedness (mainly in the emerging economies) could generate episodes of capital outflows. These factors, added to volatility in financial markets, could generate upward pressure on the exchange rate, thus contributing to higher inflation.

Graph 82
BALANCE OF RISKS AGAINST THE BASE SCENARIO



Source: BCRP.

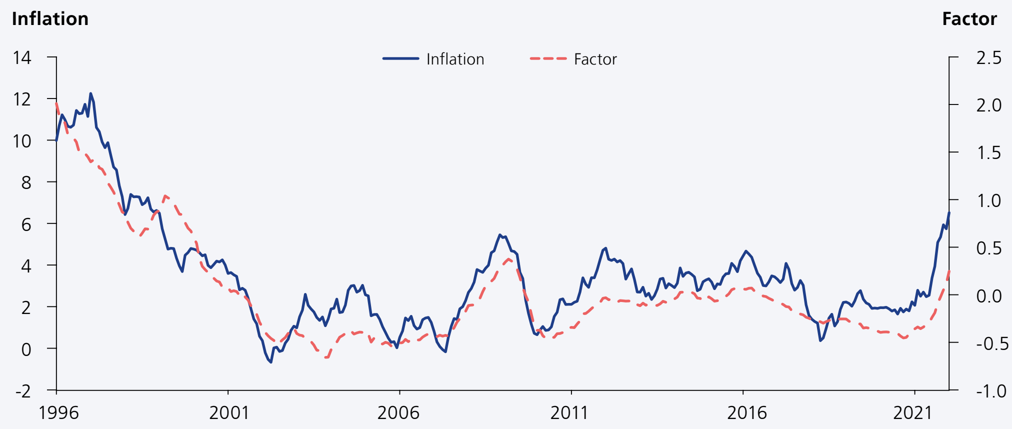
Box 4
A DISAGGREGATED ANALYSIS OF INFLATION: SYNCHRONIZATION, SPILLOVERS, CHANGES IN RELATIVE PRICES AND PERSISTENCE

A rise in global inflation has been observed at the global level since the second half of last year. In the case of Peru, however, not only is inflation one of the lowest in the region, but it has also begun to decline gradually in recent months. In fact, double-digit inflation has not been recorded in the country since January 1997, which is quite favorable for Peru's macroeconomic stability.

Despite inflation's recent increase, its dynamics is very different from that observed in the 1990s, when greater volatility and persistence, together with a greater amplification and feedback between sectors, were recorded. To obtain these results, the dynamics of inflation is studied in a disaggregated manner, using the different components of the Consumer Price Index. The Consumer Price Index (CPI) of Metropolitan Lima has more than 150 items with a specific weight, and this is the base information that we will take into account for our analysis, considering the year-on-year inflation rates registered during the episodes from 1992 to 2001 and from 2002 to 2021 (the latter is the period when Inflation Targeting was used). Moreover, the dynamics of total inflation brings with it the interaction and feedback between its different items or economic sectors, given that complementary effects may occur, which may trigger a greater amplification, persistence and volatility in aggregate inflation.

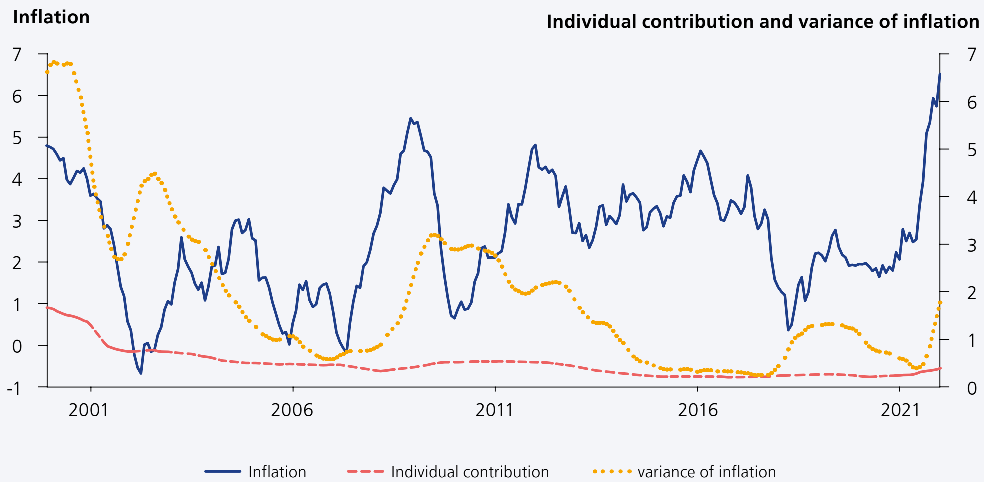
An analysis of its principal components allows us to find the level factor associated with these 150 items. Although it is a good representation of the aggregate dynamics, which can act as a trend factor –and has a correlation of 93 percent–, it only accounts for 30 percent of the total variance of inflation. In other words, beyond the level represented by each CPI item individually, on average there is a relevant second and higher order component and this deserves a much deeper and more detailed analysis.

YEAR-ON-YEAR INFLATION AND ESTIMATED LEVEL FACTOR
(%)



We then proceed to analyze the variance of inflation. This is explained both by the individual variances of each item, taking into account their weight, plus the covariances existing between each of them. Thus, the higher the rate of inflation, the greater the correlation or synchronization, and even amplification, between components. That is, the higher the inflation rate, the lower the contribution of the individual components to volatility. This is consistent with the lower relative contribution of the individual component in recent years, which declined in the last months of 2021 after the increase in inflation at the global level began. However, it is worth pointing out that this increase in the contribution of covariances is not yet comparable to that recorded in the late 1990s.

YEAR-ON-YEAR INFLATION, INFLATION VARIANCE AND INDIVIDUAL CONTRIBUTION
(%)

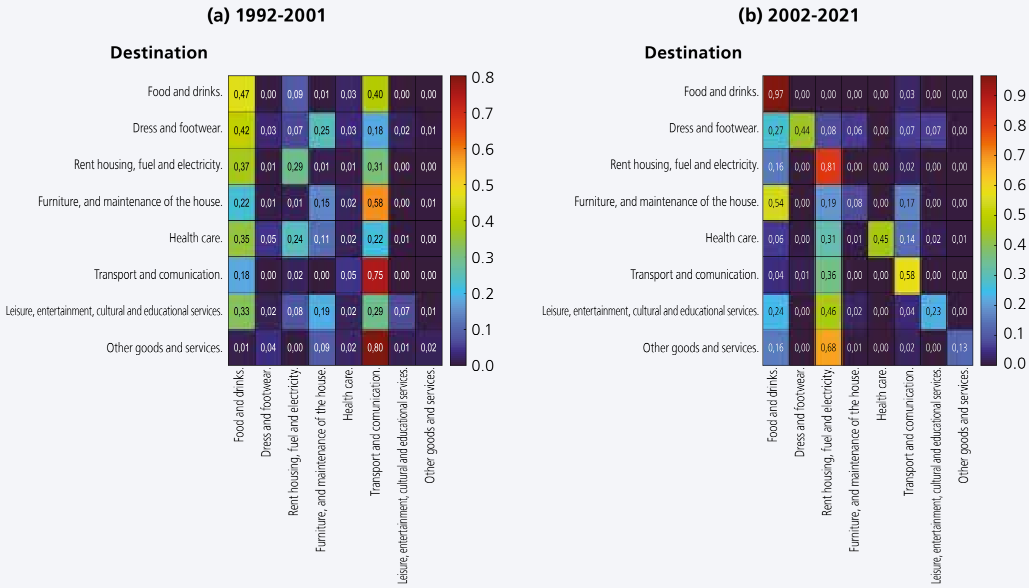


Secondly, we proceed to analyze the effects generated by some sectors on others, i.e. the so-called spillover effects. We show the variance decomposition considering a one-year horizon among the 30 major inflation items for the two analysis samples: 1992-2001 and 2002-2021. In this case, we find that these effects are higher as inflation is also higher, which corresponds to the 1992-2001 period. Among the major items that stand out for having significant effects on other sectors are transportation and communications in the first sample (1992-2001), while the food and beverage items (which includes meals outside the home), and housing rental, fuel and electricity stand out in the second (2002-2021), with the transportation and communications item continuing to play a leading role, although to a lesser extent.

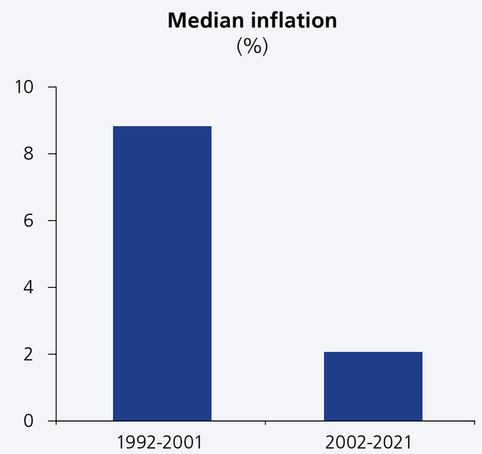
It should be pointed out that, although the relative importance changes among the samples analyzed, the reduction in median inflation among large items as well as the reduction in the average spillover effect for the same episodes should be highlighted. In other words, this is additional evidence that indicates that in episodes of lower inflation there is also a lower spillover or amplifier effect between sectors.

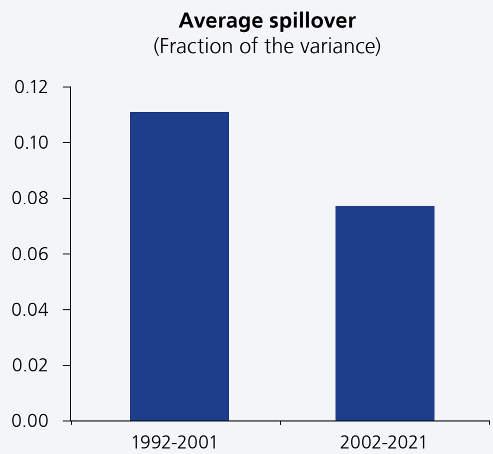
HEAT MAP: SPILLOVER EFFECTS BETWEEN MAIN CPI HEADINGS*

(As a fraction of the variance of inflation)



* Decomposition of the variance of the year-on-year inflation rates for a 12-month horizon.
This is obtained from a Vector Autoregressive (VAR) model for the interannual rates of the items considered.



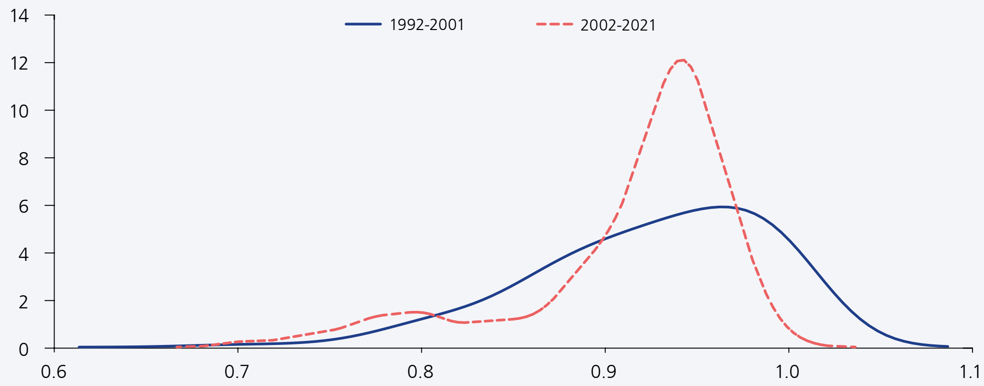


Median value of the year-on-year inflation rates for the indicated samples and average spillover effect based on what is shown in the heat map.

Third, we explore the persistence of inflation rates in the different items that make up the CPI. To do so, we follow Días and Marques (2010)[17] and construct the persistence indicator for the above episodes. A lower persistence is found for the episode of inflation targeting in the 150 items, where it is worth noting that the probability of being in the unstable region, i.e., with persistence equal to or greater than 1, decreases significantly. This result is a clear reflection of the effect of the adoption of the inflation targeting scheme, where a reduction in inflation persistence is recorded on average at the individual level, with the anchoring of expectations playing a particularly key role.

17 Días, Daniel A. and Marques, Carlos Robalo (2010): «Using Mean Reversion as a Measure of Persistence» Economic Modelling, Volume 27, Issue 1, January 2010, Pages 262-273

PERSISTENCE OF INFLATION ITEMS ACCORDING TO DÍAS AND MARQUES (2010)
(Histogram of the persistence indicator)



In light of the analysis, it is important to note that the dynamics of inflation is significantly different in the period with inflation targeting (2002-2021) in comparison to the 1990s, with a higher probability of being in the stable region (less than 1). The changes in volatility, persistence and complementary effects make us explicitly note the benefits of having low and stable inflation. Thus, although inflation rates have been recording an increase in different items in recent months, they are still lower than those recorded in past decades. Because of the above, the complementary effects between items show an amplified effect in the last part of the sample, although it is not comparable to what was observed 30 years ago. The disaggregated analysis of inflation allows us to shed more light on the change in the process generating inflation data and gives us a better understanding of the dynamics of inflation. It highlights the structural change associated with the adoption of the inflation targeting scheme, and also that while inflation has been higher this year, the effects are not comparable to those seen in years of double-digit inflation rates.

Box 5
TRENDS IN RESIDENTIAL ELECTRICITY RATES: REGIONAL COMPARISON

This box presents the evolution of electricity rates for residential users in Peru and other countries in the region (Colombia, Mexico, Bolivia, Chile, Uruguay and Brazil), using the electricity item of the Consumer Price Index (CPI) of each country for the analysis. In a context of rising energy prices at the global level, all countries, with the exception of Brazil, show an increase in electricity rates. The share of electricity in the CPI index in these countries varies between 1 and 4 percent.

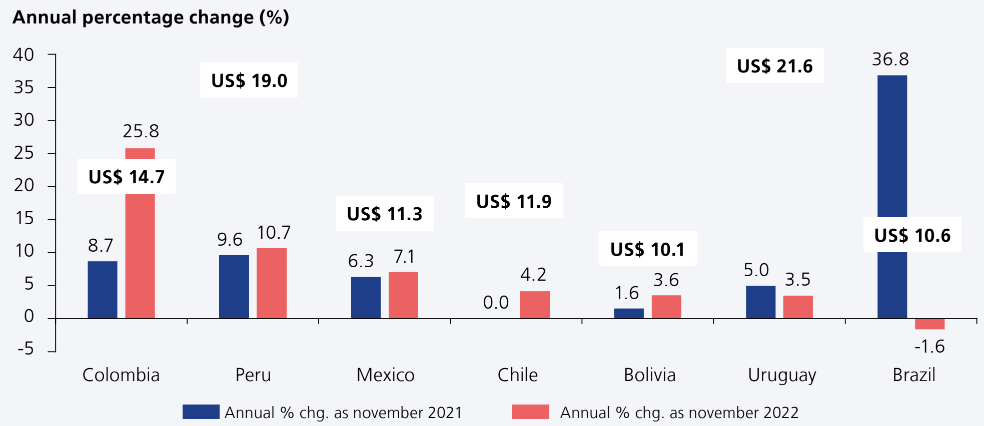
WEIGHT OF THE INDEX ITEM OF RESIDENTIAL ELECTRICITY RATES IN THE CONSUMER PRICE INDEX
(November 2022)

Countries	Weight (%)
Mexico	1.5
Chile	2.3
Bolivia	2.4
Peru	2.6
Colombia	3.5
Uruguay	3.5
Brazil	3.7

Source: Statistical Institutes of each country.

In November 2022, Colombia was the country in the regional sample that showed the highest year-on-year increase in electricity rates (25.8 percent), while Brazil recorded a drop (-1.6 percent) following a 36.8 percent increase associated with the drought the country experienced in the previous year. On the other hand, in developed countries such as the U.S., the U.K. and Germany, electricity rates[18] as of November 2022 had increased by 13.7 percent, 65.3 percent and 53.2 percent year-on-year, respectively. The higher increase recorded in this group of countries may be explained by the war between Russia and Ukraine and their dependence on gas, as well as by the fact that they have fewer nuclear power plants and also a high aversion to investment in power plants and infrastructure based on non-renewable sources.

YEAR-ON-YEAR PERCENTAGE CHANGE AND LEVELS OF RESIDENTIAL ELECTRICITY RATES
(As of november 2022)



Note: Residential electricity rate levels are from November 2022 (except for Bolivia, which is from October 2022) and are in US cents per kW.h. for a monthly consumption level of 300 kW.h.
Source: Statistical Institutes of each country and Distributors of the capitals of each country.

18 Sources: UK Office for National Statistics; US Federal Reserve of St. Louis; German Federal Statistical Office. In Germany, this is the index for electricity, gas and other fuels.

In Colombia, electricity rates are indexed to macroeconomic indicators such as the Consumer Price Index (CPI, which increased 12.5 percent year-on-year to November), the Producer Price Index (PPI, which increased 24.8 percent), the spot price (related to water availability in the country, which increased 65.5 percent), and the price of fuels. It is worth mentioning that during the 2020-2021 period, the rate paid for the service was lowered to reduce the expense of Colombian households through the deferral of the cost of basic consumption (without subsidies) in electricity bills for a period of 36 months for the low-income strata and for a period of 24 months for the middle-income strata. The uncollected value deferred is being recovered during this year. On the other hand, in the case of Peru, the year-on-year increase as of November 2022 is mainly linked to a higher exchange rate, followed by the Wholesale Price Index.

In Chile, Law No. 21885 establishing a transitorily mechanism for the stabilization of electricity prices for customers subject to rate regulation was approved in November 2019. As a result of this law, electricity rates in Chile were frozen until December 2020 through a credit system (Stabilization Fund) that is financed by the electricity generation companies until an established maximum debt is reached, after which the repayment of the debt via rate increases begins. The law allows for electricity rate adjustments from January 2021 to June 2023. Since adjustments were made in February 2022 (0.4 percent) and July 2022 (3.7 percent), further increases are not ruled out in the near future.

In the case of Brazil, there is currently a system of "tariff bands" created by the National Electric Energy Agency (Aneel), which functions as an indicator that shows transparency to consumers regarding the price of energy under certain conditions. There are 3 types of flags: i) a green flag, meaning that hydroelectric plants operate normally; ii) a yellow flag, meaning that thermal plants are used moderately, and ii) a red flag, meaning that conditions for the operation of hydroelectric plants are unfavorable. From September 1, 2021 until the beginning of April 2022, the red flag of water scarcity (low water level) was applied to finance the exceptional values for the activation of thermal power plants and the import of electricity. After that, the flag has been green. This explains the significant increase in 2021 and the subsequent reduction of electricity rates in that country in 2022. In October 2022, the year-on-year variation of electricity rates in Brazil was a drop of 10.6 percent, which would partially reverse the 2021 increase. However, since Aneel approved in November a rate adjustment in favor of the distributor Neoenergia de Brasilia, which meant a monthly increase of 19.36 percent, the annual variation as of November 2022 was a reduction of only 1.6 percent. It should be pointed out that the red flag rate impact excluded beneficiaries of the Social Electricity Rate (TSEE). In other words, consumers classified as low-income users by Law No. 10438 of April 2002, who enjoy discounts (similar to the discounts provided by FOSE in Peru), were not subject to such increases in their electricity bills.

As regards residential electricity rates, the highest level as of November 2022 is observed in Uruguay with 21.59 US cents per kW.h. while the lowest level is observed in Bolivia, with 10.13 US cents per kW.h. Peru registered the second highest level, with a rate of 18.97 US cents per kW.h. In Bolivia, there are high cross-subsidies from industrial and commercial users to residential users, so that the rates for the former are almost double those charged to households[19] .

19 In the absence of high cross-subsidies, electricity rates for residential users should be higher than those for commercial and industrial users, since more grids are needed for the former and also because the voltage has to be changed from medium to low so that electricity can reach homes. On the other hand, relatively fewer grids are needed for the second type of users and, in addition, they can even demand electricity only at medium voltage.

In some countries of the region analyzed, there is a correlation between the electricity index and the foreign exchange rate, because electricity rates incorporate the cost of inputs, both domestic and imported, for the generation, transportation and distribution of electricity. For this reason, electricity rates are usually indexed to other prices such as the exchange rate, the wholesale price index (WPI), fuel prices, etc. Thus, this indexation reflects increases in input prices and infrastructure cost indicators, so that the real value of rates over time reflects costs.

CORRELATION BETWEEN THE RESIDENTIAL ELECTRICITY RATES INDEX AND THE EXCHANGE RATE OF THE RESPECTIVE COUNTRIES
(November 2013 – November 2022)

Countries	Correlation (Annual Percentage change)
Peru	0.50
Brazil	0.47
Chile	0.42
Colombia	0.13
Bolivia	0.00
Uruguay	0.02
Mexico	-0.55

Source: Statistics Institutes and Central Banks of each country.
Own elaboration.

On the other hand, in Peru, electricity rates also incorporate the effect of the Electricity Social Compensation Fund (Fondo de Compensación Social Eléctrica - FOSE). The FOSE, established through Law No. 27510, finances a cross-subsidy mechanism[20] which, until October 2022, benefited the residential users of the public electricity service whose monthly consumption is less than or equal to 100 kW.h per month. Until October 2022, the FOSE was financed through a surcharge in the billing of the rate charges for power, energy and the monthly fixed charge of regulated users (industrial, commercial and household companies with consumption levels over 100 kW.h.) of the public electricity service of the interconnected systems that are not beneficiaries of the FOSE.[21] On February 22, 2022, Law No. 31429 extended the coverage of the FOSE and included users with consumption of up to 140 kW.h. per month and also incorporated free users as new contributors to the FOSE. The new scheme is effective as from November 2022. With these modifications, it is estimated that there could be electricity rate reductions of up to 10 percentage points in some cases[22] for beneficiary households.[23]

It is worth highlighting that the extension of the FOSE is likely to generate undesired effects on other agents and sectors of the economy. Law No. 31429 establishes that the extension of the cross-subsidy will be financed with contributions from free users who previously did not contribute to the FOSE. With this, the financing will affect the price of energy paid by various productive sectors that use it as an input, both directly and indirectly. Moreover, because taxing intermediate goods introduces distortions in the productive processes with the consequent loss of efficiency,

20 Law No. 27510 established the Electricity Social Compensation Fund.

21 It should be noted that users located in blocks classified as high and medium-high strata areas, according to the classification of the National Institute of Statistics and Informatics (INEI), are excluded as beneficiaries.

22 Statement of Motives of Bill 00990/2021-PE.

23 On the other hand, carrying out distributive measures based on consumption levels implies greater risks of errors in targeting the beneficiary population. For example, there may be individuals that have businesses whose electricity consumption exceeds the limit, but whose net income classifies them as part of a vulnerable population group.

the relative prices of final goods will also be affected. In addition, the sectors most affected by the FOSE (regulated and free users) would be those that have a greater participation of energy in their productive processes, such as mining and some manufacturing activities. The products of these sectors in turn constitute inputs for other productive sectors, so this would increase their costs and result in a possible impact on the price level[24]. The following table shows the differences in the intensity of electricity use:

SHARE OF ELECTRICITY IN INTERMEDIATE CONSUMPTION
(%)

	Share
Agricultural	0.5
Fishing	0.3
Mining and Hydrocarbons	7.8
Manufacturing	2.4
Primary	1.4
Non-Primary	2.7
Del cual	
Manufacture of Fertilizers and Nitrogen Compounds	*25.6*
Manufacture of Basic Chemicals and Plastics	*8.6*
Yarn Manufacturing	*9.5*
Fabric Manufacturing	*7.0*
Construction	0.1
Commerce	3.6
Services	3.5
Total	**3.0**

Source: Input output table 2020.

24 If the higher costs cannot be carried forward, the FOSE could result in lower surpluses. According to the Explanation of Motives of Bill 00990/2021-PE that supports Law No. 31429, free users would have an impact on billing of 2.5 percent. In the case of manufacturing, this impact would be equivalent to an increase in income tax of 0.2 percent, while in fertilizer manufacturing the higher rate would be 1.5 percent.