
REPORT OF THE **BOARD OF DIRECTORS** TO **CONGRESS**

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REPORT OF THE
BOARD OF DIRECTORS
TO **CONGRESS**

Banco de la República
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Bogota, 03 August 2022

To
PRESIDENTS AND OTHER MEMBERS
Honorable Chairmen and Members
Standing Constitutional Committees
The Senate of the Republic
The House of Representatives

Dear Sirs:

In compliance with Article 5, Act of Congress 31/1992, the Board of Directors of *Banco de la República* hereby submits to the Congress of the Republic of Colombia their Report to Congress on the macro-economic results for the first half of 2022 and the outlook for what remains of the year for its consideration. The recent developments in inflation and the decisions made by the Bank's Board of Directors in this context are presented. Furthermore, the changes in the local financial and the credit markets, the country's foreign balance, the breakdown of the foreign reserves and their performance, the financial position of the Bank and its forecasts, and the trend of payments in the Colombian economy are described.

Cordially,



Leonardo Villar Gomez
Governor

Contents

Introduction **9**

1. Executive Summary 13

2. Macroeconomic Environment 19

2.1 Development of and Outlook for the International Macroeconomic Environment 19

2.2 Change in and Outlook for the Economy and Labor Market 26

2.3 Change in and Outlook for the Fiscal Situation 32

3. Inflation and Monetary Policy Decisions 35

3.1 Change in and Outlook for Inflation 35

3.2 Monetary Policy Decisions 37

4. Change in and Outlook for Financial and Loan Markets 40

4.1 Local Financial Markets 40

4.2 Financial Intermediation by Credit Institutions 42

4.3 The Financial System's Exposure to Market Risk and the Changes in the Portfolio of Non-Banking Financial Institutions 49

5. Foreign Balance and Foreign Reserves 52

5.1 Change in and Outlook for Colombia's Balance of Payments 52

5.2 Foreign Reserves 55

6. Financial Situation of *Banco de la República* 62

6.1 Financial Position of *Banco de la República* (general balance sheet) 62

6.2 Income Statement (P&L) 64

7. Payments in the Colombian Economy 69

7.1 Global Overview of Payment Systems

7.2 Developments and Challenges for Electronic Payments in Colombia

7.3 Initiatives of *Banco de la República* in Connection with Payment Systems 72

Shaded section 1: Inflation as a Global Phenomenon 74

Shaded section 2: Regional Economy 80

Shaded section 3: Monetary base and M3 84

Shaded section 4: Main Factors Affecting the Profits of the Foreign Reserves 88

Shaded section 5: Share of the Bank for International Settlements Held by *Banco de la República* 94

Box 1: *Banco de la República*'s New Liquidity Transaction Plan 96

Box 2: *Banco de la República*'s Strategic Plan, 2022-2025 100

Appendix: Management Policy for the Foreign Reserve Investment Portfolio 103

Graphs

Graph 2.1 Revisions to Global Economic Growth Projections **19**
Graph 2.2 Total Consumer Inflation **20**
Graph 2.3 Index of Pressure on Global Supply Chains **20**
Graph 2.4 International Prices of Some Raw Materials **21**
Graph 2.5 International Food Price Index and World Bank Projections **22**
Graph 2.6 Monetary Policy Interest Rate **23**
Graph 2.7 Indicators of Risk Perception in International Financial Markets **24**
Graph 2.8 Portfolio Flows into Emerging Economies by Nonresidents **25**
Graph 2.9 Gross Domestic Product **26**
Graph 2.10 Employed Population by Geographic Domain **30**
Graph 2.11 Dependent Contributors to Pension (PILA) **31**
Graph 2.12 Unemployment Rate by Geographical Domain **31**
Graph 2.13 Index of Job Openings from Classified Ads and Public Employment Service (PES) **31**

Graph 3.1 Consumer Price Index (CPI) **35**

Graph 4.1 Risk Premia (5-year CDS) for some Economies in the Region **40**
Graph 4.2 Interest Rate Index in Some Economies in the Region **40**
Graph 4.3 Zero-coupon TES Rate in Pesos by Maturity, Private Debt Index, and Monetary Policy Rate **40**
Graph 4.4 Colombia's Nominal Exchange Rate vs. Crude Oil Prices **42**
Graph 4.5 Monetary Policy Rate, Interbank Rate (IBR) and BBI (*overnight*, at/for 1, 3, and 6 months) **42**
Graph 4.6 Deposit Rates **43**
Graph 4.7 Lending Rate **44**
Graph 4.8 Annual Growth of the Gross Loan Portfolio by Type **45**
Graph 4.9 Banks' Perception of Demand for Credit **45**
Graph 4.10 Change in Supply of New Loans by Type **45**
Graph 4.11 Household Debt **46**
Graph 4.12 Household Financial Burden **46**
Graph 4.13 Private Corporate Sector Indebtedness as a Percentage of GDP **46**
Graph 4.14 Portfolio Quality Indicators **47**
Graph 4.15 Main Deposits (balance and annual variation) **47**
Graph 4.16 Credit Institution Profit **48**
Graph 4.17 Credit Institutions' Liquidity Indicators **48**
Graph 4.18 Total and Core Capital Adequacy Indicators **49**
Graph 4.19 Assets of Non-banking Financial Institutions **51**
Graph 4.20 Collective Investment Funds (net assets and deposits) **51**

Graph 5.1 Breakdown of the Foreign Reserves **57**
Graph 5.2 Breakdown of Investment Portfolio by Sector **57**
Graph 5.3 Distribution of Investments by Credit Rating **57**
Graph 5.4 Foreign Exchange Breakdown of the Investment Portfolio **58**
Graph 5.5 Short-term Government Bond Rates (2 years) **58**
Graph 5.6 Investment portfolio **59**
Graph 5.7 Recent FCL Agreements **60**

Graph 7.1 Number of Low-amount Deposits and Entities Offering the Product, 2018-2021 **71**

Tables

Table 2.1 Real Annual GDP Growth by Branch of Economic Activity **27**

Table 2.2 Real Annual Growth of the GDP by Type of Expenditure **28**

Table 4.1 Investment Balances Exposed to Financial Institution Market Risk **50**

Table 5.1 Colombia's Balance of Payments **53**

Table 6.1 Financial Position Statement of *Banco de la República* Classified by Economic Criteria **63**

Table 6.2 *Banco de la República* Income Statement (P&L), January to June **65**

Table 6.3 Return on the Foreign Reserve Investments **66**

Table 6.4 Forecast of *Banco de la República* 2022 Income Statement (P&L) **67**

Table 7.1 Main Instruments of Payment in the Colombian Economy, 2021 **71**

Maps

Map 7.1 Jurisdictions with Immediate Payment Clearing and Settlement Systems in Place or in the Process of Being Implemented **69**

Introduction

Global economy is currently undergoing a period of high uncertainty characterized by persistently high global inflation and growing fears of a global recession that have generated enormous volatility in the financial and foreign exchange markets. Supply constraints and disruptions in global supply chains were compounded in the first half of the year by the effects of Russia's invasion of Ukraine. These effects included rising pressure on the cost of agricultural supplies, raw materials, and energy prices. At the same time, global demand has continued to recover, and, in some countries, labor markets are tightening. In this context, inflation in advanced economies registered historically high levels which, in the case of the United States, reached 9.1% in June. For Latin America's largest economies, annual inflation stood at high levels at the end of June and had surpassed their targets by far as was the case in Chile (12.5%), Brazil (11.9%), Colombia (9.7%), Peru (8.8%), and Mexico (8.0%).

In response to the strong inflationary pressure, central banks have implemented monetary policy adjustments faster and more forcefully than expected. The US Federal Reserve (Fed) raised its policy interest rate by 50 and 75 basis points (bp) in May and June respectively, thus raising it to a range between 1.5% and 1.75%.¹ Forecasts suggest that there will be further increases to levels of between 3.0 and 3.5% by the end of 2022. After they had put an end to a part of their net asset purchases, the European Central Bank (ECB), in turn, raised their monetary policy interest rate by 50 bp in July thus taking it to 0.75%. Several emerging economies, including the main economies in this region, also continued to raise their interest rates in the first half of the year as they had started to do in 2021.

The outlook for global economic growth has deteriorated in an international environment of high inflation rates, declining fiscal stimuli, tightening monetary policies, and deteriorating geopolitical conditions. High inflation has reduced purchasing power and consumer and investor confidence with negative effects on demand. Given the above, the World Bank and the Organization for Economic Co-operation and Development (OECD) revised their projection for global growth in 2022 and 2023² downward, and the risk of recession in the United States and the euro zone is already being considered. With this in mind, the technical staff at *Banco de la República* lowered their growth forecast for the country's trading partners for 2022.³

In this environment of growing global uncertainty and the Federal Reserve's tighter monetary policy, the US dollar has strengthened against most developed country's currencies and some emerging market currencies in view of the increased

1 As this report went to press, it was learned that the members of the Federal Open Market Committee (FOMC) decided to raise the monetary policy interest rate 75 bp at their July 27 meeting, thus placing it in a range between 2.25% and 2.50%.

2 The World Bank lowered their forecast for global growth for 2022 from 4.1%, which it had expected in January, to 2.9% in June. The OECD likewise adjusted their forecast for world growth in 2022 from 4.5%, which it had projected last December, to 3.0% in June. With growth expected to remain at around 3.0%, neither institution foresees a recovery of the world economy in 2023.

3 The average real GDP growth projected for our country's trading partners for 2022 was downgraded from 3.3% in the January Monetary Policy Report to 2.6% in the June report.

demand for safe-haven assets and higher returns on dollar-denominated investments. The depreciation of some emerging market and regional currencies, including the Colombian peso, has been accentuated by recent declines in the prices of commodity exports such as crude oil and copper in the midst of concerns about the performance of the global economy and by idiosyncratic factors related to political and fiscal uncertainty.

Despite the deterioration in the international environment, economic activity in Colombia during the first half of the year stayed bullish and maintained the remarkable recovery in gross domestic product (GDP) seen in 2021. This strong performance was due to the growth in domestic demand which was mainly driven by household consumption. Exports other than mining and coffee as well as those of services also contributed to maintaining economic activity. Thus, growth for the first quarter, as reported by DANE, was 8.5% which exceeded the technical staff's expectations. Available indicators suggest that private consumption probably remained strong during the second quarter as a result of the recovery in employment and the ample availability of consumer credit. Thus, given the low base of comparison for 2021, growth estimates for the second quarter are in double digits overall. For the remainder of the year, the pace of growth is expected to moderate in a less favorable international environment that is characterized by tighter foreign financial conditions and the slower growth of our trading partners. On this basis, the technical staff is forecasting 6.9% GDP growth for 2022 which is similar to what was reported by the OECD for Colombia and would make this country the fastest growing economy among the members of that organization as well as the strongest among the medium and large economies of Latin America.

The sustained recovery of GDP has been reflected in the progressive strengthening of the labor market which had continued to recover in the first few months of 2022. Based on May figures, the employed population registered an annual growth of 11.0% in the national aggregate and 10.5% in the thirteen main cities and this was reflected in significant annual reductions in the unemployment rate. According to the seasonally adjusted series, unemployment at the national level stood at 10.6% in May, which is below its pre-pandemic level⁴ (11.1% in February 2020). In addition, there has been a significant increase in the demand by firms to fill new positions as has been reflected in the indices of job openings that were at record highs in April. This suggests that the unemployment rate will continue to fall in the second half of the year, and this points to an increasingly tight labor market.

As for the economy's foreign balance, the current account of the balance of payments showed a 6.4% deficit as a share of the quarterly GDP in the first quarter of 2022 which was higher than the 4.1% deficit registered during the same period of the previous year. The widening of this imbalance reflects the growth in domestic demand which led to a larger deficit in the balance of trade in goods and services in spite of the increase in the terms of trade. Likewise, there was an increase in the deficit balance of factor income, mainly due to the greater remittance of profits abroad by companies with foreign capital in the country. Higher income from workers' remittances partially offset the expansion of the foreign deficit. Foreign direct investment (FDI) was the main source of financing from abroad, especially that which is intended for the financial and business services, mining and crude oil sectors. These resources were significantly supplemented by long-term loans received by the private sector.

4 Last July 29, when this report was going to press, DANE published the results of the GEIH with figures up to June. These results show that the seasonally adjusted unemployment rate for that month was 11.7% for both the national aggregate and the thirteen main cities.

The recovery of the Colombian economy starting in 2021 took place in the context of accelerating global inflation and strong macroeconomic imbalances in an environment of unusually low international interest rates, ample liquidity, and the relaxed global credit conditions that prevailed after the 2008-2009 financial crisis. These imbalances were exacerbated by the expansionary policies implemented to face the economic shock caused by the pandemic. This led to a rapid recovery in world demand that could not be adequately met by increases in supply due to the damage caused by the pandemic. As a result, global logistical and supply problems arose that put upward pressure on the international prices of agricultural supplies and raw materials.

In the case of Colombia, this was reflected in an inflation rate that went from 1.6% in 2020 to 5.6% in 2021 and continued to rise in the first half of 2022 until it reached 9.7% in June. The greatest pressure has come from food prices that registered an annual inflation of 23.6% in June. This was compounded by road blockades in Colombia in mid-2021 that accentuated price increases. Russia's invasion of Ukraine deepened the world's raw material supply problems by driving international prices even higher. These increases have been reinforced by the accumulated depreciation of the peso. These began to be passed through to domestic prices with greater intensity during the second quarter of 2022. Prices of regulated products have been another item in the consumer basket that has pushed inflation upwards in spite of the limited increases in domestic fuel prices. Annual inflation of regulated items stood at 9.8% at the end of the first half of 2022 under pressure from the international prices of some raw materials, the exchange rate, and the activation of indexation mechanisms which affected the tariff formulas of public utilities and other regulated items.

Uncertainty about inflation forecasts for the second half of the year is very high due to upside risks that cannot be ruled out in view of the possible prolongation of problems in supply chains, the escalation of the war in Ukraine, and the new Covid-19 outbreaks in China that have generated new lockdowns in that country under the zero-tolerance disease policy. In this context, the technical staff's estimates suggest that inflation will probably remain at levels above 9.0% for the remainder of the year and gradually decline starting at the beginning of 2023.

The upward trend in inflation, the consolidation of the economic recovery at real GDP levels that surpass pre-pandemic ones and deplete excess productive capacity, and the widening of the current account deficit to levels that reflect significant excesses of demand over domestic production led the BDBR to speed up the monetary policy tightening process during the first half of the year. Thus, after raising the policy interest rate from 1.75% in September 2021 to 3.0% at the end of the previous year, the BDBR raised the monetary policy rate by 100 bp at each of the January, March and April decision-making sessions, thus taking it to 6.0% and decided to raise it by 150 bp to 7.5% at the June session.⁵ The importance given by the BDBR to a vigorous and timely monetary policy response reaffirms its commitment to bringing inflation back to the 3.0% target in the medium term, and to seeking to avoid the de-anchoring of inflation expectations that could trigger price indexation processes which would make it more costly for inflation to return to the 3.0% target. The BDBR has reiterated that the strength shown by economic activity in recent quarters does not require an expansionary monetary policy.

⁵ As this report was being finalized, the BDBR decided to raise the monetary policy interest rate by 150 bp thus taking it to 9.0% at its July 29 session.

Moving away from the long-term target of 3.0% per annum on a prolonged basis has significant costs for society. One of the most important is the deterioration in income distribution since inflation hits the low-income groups the hardest. It also distorts relative price signals, makes it more difficult for long-term credit markets to function including those for residential housing and business investment, and makes public sector financing more expensive, and increases the fiscal deficit along with many other negative effects. Hence the importance of monetary policy decisions designed to bring inflation back to its target of 3.0% per annum and re-establish certainty about the future behavior of prices. This will produce a stronger economy in the long run and a significant gain in well-being, gains that will certainly more than offset the costs that may be incurred in bringing inflation back to target.

1. Executive Summary

International Macroeconomic Environment

The global economy recovered significantly in 2021 thanks to the vigorous stimulus that central banks and governments had been providing to their economies since the onset of the pandemic through low interest rates, ample international liquidity, and a significant increase in public spending. The recovery of economic activity was also facilitated by the relaxation of lockdowns, progress in vaccination programs, and better adaptation to pandemic conditions. In response, demand strengthened driven by private consumption and, to some extent, investment. The increase in world demand came up against a productive apparatus that the pandemic had weakened in both its production stages and in its marketing and distribution processes. Value chains were affected by bottlenecks in production and supply systems, especially in the maritime transportation of goods that underwent major disruptions. Under these circumstances, excess demand arose that ended up generating an inflation on a global scale that the world had not seen for decades.

In the first half of 2022 inflationary pressure worsened as a result of Russia's invasion of Ukraine. This increased the costs of fertilizers and other agricultural supplies as well as oil, gas, and coal prices, thus adding to the pressure on food and energy prices. This was compounded by health restrictions in China to contain the resurgence of Covid-19. As a result, global inflation and its expectations continued to rise and became more persistent.

In response to strong inflationary pressure, central banks began to raise their policy interest rates at a faster pace and by higher-than-expected amounts up to the end of last year. Moreover, they have signaled that monetary policy tightening will continue in the coming months. For example, the Fed had raised its benchmark interest rate to a range between 1.5% and 1.75% by the end of June,⁶ and the forecast is that it will likely be between 3.0% and 3.5% by the end of 2022. The Bank of England has also been increasing its interest rate and it had reached 1.25% in mid-June, its highest level in thirteen years. The ECB also raised its interest rate 50 basis points (bp) in July thus placing it at 0.75% after several years of having kept it at historic lows. Central banks in Latin America and other emerging economies have also raised their monetary policy interest rates, thus continuing the adjustments that began in 2021.

Against this international backdrop, the prospects for global economic growth in 2022 and 2023 have deteriorated. Several factors are working against sustaining the positive pace of economic activity achieved in 2021. The loss of purchasing power and higher interest rates will reduce private consumption which, so far, has been the main driver of the recovery. The tightening of international financial conditions will make access to foreign financing more expensive and force many countries to adjust their public finances. Uncertainty about the future course of the conflict in Ukraine and the outbreaks of Covid-19 in China are causing nervousness in the markets. As a result, a stagflation scenario (low economic growth and high infla-

⁶ As this report went to press, it was learned that the members of the Federal Open Market Committee (FOMC) decided to raise the monetary policy interest rate by 75 bp at their July 27 meeting, thus placing it in a range between 2.25% and 2.50%.

tion) could materialize in several economies in addition to the risk of recession in countries such as the United States and the euro zone.

Economic Activity

During the first half of the year, the Colombian economy consolidated the recovery that had begun the previous year as it achieved growth rates that were surprisingly high. According to DANE, annual GDP growth in the first quarter of the year was 8.5% in the original series and 8.2% with the figures adjusted for seasonality and calendar days. This result exceeded the technical staff's expectations (7.2%). The positive performance seen in these first few months of the year was fueled by the strengthening of domestic demand which, driven by the significant increase in household consumption (12.0%), expanded 13.4% year-on-year, especially in services (communications, recreation, and culture) and semi-durable goods (clothing and footwear). Gross capital formation also expanded at a significant pace during the first quarter (18.3%) spurred by investment in machinery and equipment as a result of purchases of transportation equipment and capital goods for industry. However, gross capital formation has not yet reached its pre-pandemic level due to the lag in the recovery of investment in housing and public works. Exports of non-traditional goods (those other than crude oil and coffee) as well as exports of services have also been an important source of growth. However, the sluggishness in real terms of traditional exports and the strong growth of imports during this period brought about a worsening of the trade deficit and a negative contribution to the growth of net external demand. On the side of supply, trade and service activities showed significant expansion with entertainment and recreation as well as lodging and food services standing out at levels well above those registered prior to the pandemic.

For the second half of 2022, the technical staff at *Banco de la República* expects a slowdown in economic growth. This is explained by the deterioration in the international environment that has been characterized by tighter financial conditions abroad and slower growth of our trading partners. The growth of domestic demand will tend to decline as a result of a slowdown in the growth of private consumption in line with a tighter monetary policy. Investment is likely to continue its trend towards a gradual recovery as investment in housing construction increases in response to the subsidy programs for low-income housing (LIH) and the progress in public works. Exports, in turn, should remain at high levels in 2022 due to favorable terms of trade that will probably mitigate the estimated slowdown our main trading partners are experiencing while imports should remain at high levels albeit at a somewhat slower rate of expansion given the moderation in domestic demand. All in all, the technical staff expects 6.9% growth for 2022. Going into 2023, growth is expected to moderate significantly to rates more compatible with the country's productive capacity and resources.

Employment

The sustained recovery of the GDP has stimulated the generation of employment to such an extent that, by May 2022, the employed population registered an annual growth of 11.0% for the national total and 10.5% for the thirteen main cities. This was reflected in significant annual reductions in the unemployment rate which, at the national level, stood at 10.6% in May below the pre-pandemic unemployment rate according to the seasonally adjusted series⁷ (11.1% in February 2020). The recovery of

⁷ Last July 29, when this report was going to press, DANE published the results of the GEIH with figures up to June. These results show that the seasonally adjusted unemployment rate for that month was 11.7% for both the national aggregate and the thirteen main cities.

employment in the national aggregate has, to a great extent, been explained by salaried employment in the recreation, agriculture, transportation, and warehousing sectors. The labor market has also been characterized by an increase in supply during the last few months. This is reflected in an increase in the overall participation rate (OPR) in both the national aggregate and in the thirteen cities after having remained at relatively stable levels during 2021. In spite of the increase in labor participation, the greater job creation has allowed the unemployment rate to fall continuously throughout the first half of the year. Additionally, the job openings indices show a significant recovery in the demand by companies for new employees, and this reinforces the outlook of a tighter labor market for the remainder of the year.

Inflation and Monetary Policy

The inflationary pressure currently affecting most of the world at a time of severe financial stress has its origins in the global macroeconomic imbalances that have been building up since the international financial crisis of 2008-2009. These were exacerbated by the policy responses required to respond to the shock caused by the pandemic and the very rapid recovery in demand during the period subsequent to it. Although a detailed examination of this subject is beyond the scope of this *Report*, the intention in this issue is to delve deeper into the background and causes of the current inflation by dedicating a special chapter of the document to it. This is complemented by a shaded area on the global phenomenon of inflation.

As discussed in Chapter 3, the environment of unusually low international interest rates, ample liquidity, and the relaxed global credit conditions that prevailed after the financial crisis until the onset of the pandemic in 2020 facilitated the financing of high levels of consumption and investment and allowed governments to increase spending and finance their public debt at artificially low costs. This led to the emergence or widening of fiscal and foreign imbalances with considerable risks for emerging economies. The response of governments and central banks to the crisis generated by Covid-19 through expansionary fiscal and monetary policies aggravated existing imbalances by expanding excess demand and increasing public and foreign debt.

Thus, the 2021 recovery occurred in the midst of significant economic dislocations in addition to an overflow of global inflation resulting from the disruptions in the supply chains generated by the pandemic, supply restrictions, and the increase in international prices of raw materials, supplies, and logistics costs in a context of rapidly growing demand. Global inflation continued to rise during the first half of 2022, exacerbated by the effects of Russia's invasion of Ukraine on energy and agricultural supply prices, and by restrictions in China to contain Covid-19 flare-ups that led to factory closures, port congestion, and increased merchandise delivery times. As a result of this multiplicity of shocks, inflation has become more persistent and inflation expectations have risen, thus making the task of central banks more difficult.

In this context, inflation in Colombia compares with what is happening in many countries in the region and the world without being one of the most acute cases. As of June, annual consumer inflation in the country stood at 9.7% and was significantly higher than what was registered at the end of 2021 (5.6%). A significant upward trend has also been seen in the various core inflation indicators; particularly in inflation excluding food and regulated items which stood at 6.1% at the end of June (compared to 2.5% in December 2021). The food category (raw and processed foods), which represents 15.0% of the consumer basket, has been the component most affected by logistical and supply problems such that it reached an annual inflation rate of 23.6% at the end of June, a figure that is higher than the figure for the end of 2021 (17.2%). Regulated goods and services have been another component of the basket with sub-

stantial increases. They stood at 9.8% at the end of the first half of 2022 due to pressure caused by the depreciation of the exchange rate and the activation of indexation mechanisms that have affected the tariff rates for public utilities.

Forecasts made by the technical staff suggest that inflation will probably remain at levels above 9.0% during the second half of year and gradually decline starting at the beginning of 2023. These estimates take into account the moderation in the growth of aggregate demand that may have been induced by the interest rate increases made by the monetary authority and that could also help to reduce the risk of de-anchoring inflation expectations from the 3.0% target. However, the new inflationary pressure that could arise from the accumulated depreciation of the peso and increases in domestic fuel prices to bring them closer to international prices cannot be ruled out.

The monetary policy carried out by the BDBR throughout this difficult period has followed the countercyclical pattern that has characterized the policy response of many central banks but adapted to the conditions of the Colombian economy. Thus, in order to mitigate the economic effects of the pandemic, the BDBR reduced the policy rate by 250 bp, from an initial level of 4.25% in February 2020 to 1.75% in September 2020. This was supplemented by a wide range of instruments as explained in the two 2021 Reports to Congress. In spite of the rise in the inflation rate that began to be seen starting in May 2021, the BDBR kept the interest rate at its historical low of 1.75% until September of that year to allow the monetary stimulus to fully act on the economy. The results of this policy were overwhelming. The economy expanded 10.6% in 2021, and has remained robust during the first half of 2022 supported by an abundant and accessible flow of credit that strengthened domestic demand and, in particular, household consumption. When it became clear that economic activity had reached the desired momentum, and in order to contain the inflationary pressure that had been building up, the BDBR began a gradual tightening of monetary policy in the last quarter of the year to take the policy rate to 3.0% by the end of 2021.

The intensification of inflationary pressure during the first half of 2022, because of the reasons noted, made it necessary for the BDBR to quicken the pace of monetary policy tightening from the 50 bp hikes they had adopted at their last two sessions in 2021 to increases of 100 bp at their January, March, and April sessions, and of 150 bp at their June session to move the policy interest rate to 7.5% by the end of the first half of the year.⁸ A more vigorous adjustment of the monetary policy reaffirms the commitment of the BDBR to achieve the convergence of inflation to its 3.0% target in the medium term and has the immediate objective of preventing inflationary pressure caused by external factors or sectoral supply problems from becoming generalized through indirect effects on other products and sectors and thus triggering price indexation processes, which would make it more difficult and costly for inflation to return to the 3.0% target. The decision to expedite the adjustment of monetary policy does not jeopardize the recovery of the economy, which has been expanding at a high rate, but it does seek to ensure that the rate of economic growth is compatible with the response capacity of the productive apparatus in order to moderate the excess demand that drives inflation. The goal is to achieve more sustainable economic growth that will continue to favor job creation.

Having reached the long-term target of 3.0% annual inflation in 2009 after a decade of using the inflation targeting model that governs the BDBR's monetary policy was a valuable achievement for Colombian society due to the great benefits of low, stable inflation. The most outstanding of these includes certainty about the future behavior

⁸ As this report was being finalized, the BDBR decided to raise the monetary policy interest rate by 150 bp thus taking it to 9.0% at its July 29 session.

of prices which contributes to creating a climate of confidence and allows access to credit at low interest rates that encourage investment, consumption, and economic growth. In contrast, moving away from the long-term target of 3.0% per annum on a prolonged basis has significant costs for society. One of the most important is the deterioration in income distribution since inflation hits the low-income groups the hardest. It also distorts relative price signals, makes it more difficult for long-term credit markets to function including those for residential housing and business investment, and makes public sector financing more expensive, and increases the fiscal deficit along with many other negative effects. Hence the importance of monetary policy decisions designed to bring inflation back to its target of 3.0% per annum and re-establish certainty about the future behavior of prices. This will produce a stronger economy in the long run and a significant gain in well-being, gains that will certainly more than offset the costs that may be incurred in bringing inflation back to target.

Balance of Payments

During the first quarter of 2022, the current account of the balance of payments current account registered a deficit of USD 5,367 m which is USD 2,282 m higher than what was seen the year before. As a share of the quarterly GDP, the deficit went from 4.1% to 6.4% between these periods. The widening of the foreign trade imbalance is a reflection of the strength of domestic demand which increased the trade imbalance in goods due to the rapid growth of imports driven mainly by higher household spending and by the increase in investment in machinery and equipment. Exports of goods increased although at a slower pace, boosted by higher crude oil prices, the recovery of our main trading partners, and the growth of non-traditional exports. The deficit in the balance of services also increased spurred by the higher flow of travelers going abroad and higher freight payments. The recovery of tourism from abroad and of income from other business services helped to prevent this imbalance from being worse.

The negative balance in factor income, in turn, rose as a result of the greater remission of profits of companies with FDI in Colombia. This is explained by the positive performance of the economy and higher petroleum and coal prices that contributed to the expansion of the profits of this group of companies and their consequent remission abroad. The increase in company profits was widespread across all economic sectors with the strong earnings performance of those operating in the crude oil and mining, transportation and communications, and financial and business services sectors being particularly noteworthy.

The pressure on the current account deficit was partially offset by an increase in net current transfer revenue. This was mainly due to the higher transfers of funds received by public companies, the government, non-governmental organizations, and non-profit institutions. Workers' remittances from the United States, Latin America, and Spain also rose in an environment of declining unemployment and nominal wage increases in those countries.

FDI was the main source of foreign financing during this period with USD 4,718 m (5.6% of GDP) in net capital inflows that were higher than the USD 2,430 m (3.2% of GDP) in net inflows registered during the same period of the previous year. This positive FDI trend was seen in most of the economic activities, especially in the financial and business services, mining and energy, transportation and communications, and manufacturing sectors. The financing of the foreign imbalance was supplemented with resources from external loans, among which long-term loans received by the private sector and flows received from foreign portfolio investment stand out.

The technical staff forecasts a 5.1% reduction in the current account deficit of the GDP for 2022 from its level of 5.7% of the GDP registered in 2021. The expected reduction of the foreign imbalance is associated with the improvement in the country's terms of trade given the increase in the international prices for crude oil, coal, coffee, and agro-industrial products, etc. The financing of this deficit would take place in less comfortable conditions characterized by higher global interest rates and high volatility in international markets.

Foreign Reserves

At the end of June 2022, the net foreign reserves totaled USD 57,164.4 m which meant a USD 1,415.6 m decrease compared to their level at the end of 2021. The main factor explaining this decrease in the amount of reserves is the negative profitability obtained so far this year as a result of the devaluation of investments caused by increases in short and medium-term international interest rates. The return on the reserves during 2022 excluding the foreign exchange component was -1.37% (-USD 792.6 m). This performance is explained by the reduction in investment prices due to the sharp increase in the market interest rates in which foreign reserves are invested. This appreciation effect occurs because there is an inverse relationship between bond prices and interest rates that means that the price of bonds declines as interest rates rise. The impact of the reduction in the price of investments due to the increase in foreign interest rates is offset, over time, by the higher interest received by the investments. These higher interest rates are expected to offset part of the devaluations seen for the remainder of 2022. The impact of the foreign exchange effect on the valuation of the reserves associated with the sharp depreciation of the other currencies in which reserves are invested (the euro, the pound sterling, the yen, the Canadian dollar, the Australian dollar, etc.) against the dollar was the second factor that weighed on the decrease in the US dollar value of foreign reserves.

The current level of foreign reserves is satisfactory when evaluated from different metrics. The IMF has proposed a methodology for assessing reserve adequacy (ARA) that judges the volume of reserves that is sufficient to cover the main balance of payment risks as an appropriate level by looking at macroeconomic variables during periods when there is pressure on the foreign exchange market. An economy is believed to be maintaining proper levels of reserves if the ratio of the actual reserves to that appropriate level is between 1.0 and 1.5. With figures as of May 2022, this ratio stood at 1.34.

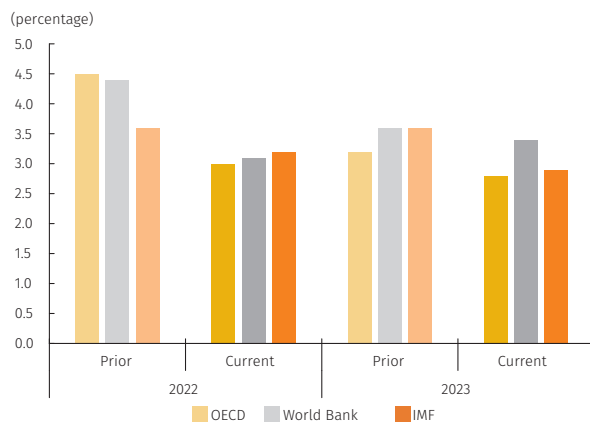
Other indicators used to evaluate the level of foreign reserves include the ratios of foreign reserves to monetary aggregates, short-term foreign debt, and the current account deficit. In the case of Colombia, these indicators suggest that the level of reserves was at appropriate levels as of May 2022.

Banco de la República profits

During the first half of 2022, *Banco de la República's* losses amounted to COP 2,077 b as a result of -COP 921 b in revenue and COP 1,156 b in expenses. The negative performance of income is mainly due to losses on the investments of foreign reserves as a result of their devaluation at market prices. This was partially offset by the yield on the securities in domestic currency held by the Bank (TES and private debt) and expansion repos. in spite of the above, a profit of COP 966 b is forecast for 2022 as a whole, a figure that is higher than the one registered in 2021. As was mentioned, the main reason for this arises from the fact that the immediate impact on the valuation of the foreign reserves portfolio that was generated by the increase in interest rates in the first half of the year will be gradually offset by higher interest accruals.

2. Macroeconomic Environment

Graph 2.1
Revisions to Global Economic Growth Projections
(annual change)



Sources: International Monetary Fund, World Bank, and the Organization for Economic Cooperation and Development.

2.1 Change in and Outlook for the International Macroeconomic Environment

The international organizations are forecasting lower world economic growth for 2022 and 2023. During the first half of 2022, the world economy faced new shocks that could be affecting its recovery. Russia's invasion of Ukraine, in particular, added inflationary pressure and has had negative impacts on the economy and risk perception globally.⁹ In addition to the above, the strong isolation measures implemented in China to control the Covid-19 outbreak have resulted in more persistent disruptions in global supply chains. In this environment, and as discussed below, the increase in global inflation and its expectations has led to a generalized tightening of monetary policy. In view of the above, the International Monetary Fund, the World Bank, and OECD revised their growth projections for 2022 and 2023 downward to a rate of around 3.0%¹⁰ (Graph 2.1). The technical staff at *Banco de la República*, in turn, revised the foreign demand outlook for Colombia downward.¹¹ As a result, a stagflation scenario (low economic growth and high inflation) is likely to materialize in several economies in addition to the risk of recession in countries such as the United States and the euro zone.

In the first half of 2022, global inflation and its expectations continued to rise and reflect more persistent inflationary pressure. For the G20 countries, total annual inflation as of May was 8.85% and for the OECD countries, it was 9.65%. According to the World Bank, these results occurred in an en-

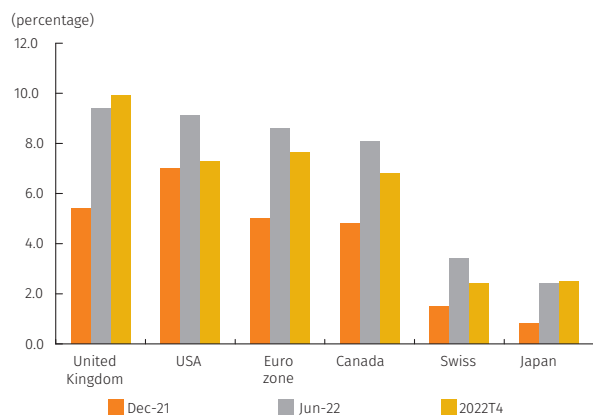
9 See "Box 1. Russia's Invasion of Ukraine: reflections on the international economic context" in the Board of Directors March 2022 *Report to the Congress of the Republic*.

10 In its June report, the World Bank predicts a global output expansion of 3.1% in 2022 and 3.4% in 2023. This represents a downward revision compared to what was presented in the previous report (4.4% in 2022 and 3.6% in 2023). In its June report, the OECD, in turn, forecast a 3.0% growth in 2022 and 2.8% in 2023. These, compared to their December 2021 estimate, represent a downward revision of 150 basis points (bp) and 40 bp respectively. The International Monetary Fund updated their growth projections from the April report in July with a downward revision for 2022 from 3.6% to 3.2% and for 2023 from 3.6% to 2.9%. Furthermore, according to the World Trade Organization the growth of the volume of global merchandise trade for the current year was revised downward from 4.7% to 3.0% in its April report.

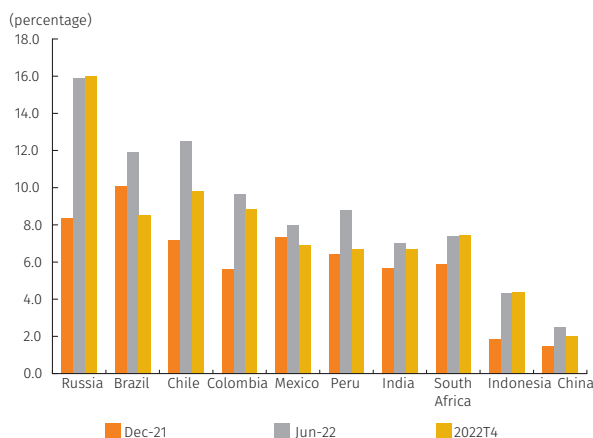
11 The technical staff's assumption for the average real GDP growth of our country's trading partners for 2022 went from 3.3% in January to 2.4% in the July report. An expansion of 2.0% is expected for 2023, compared to 2.6% in the report at the beginning of the year.

Graph 2.2
Total Consumer Inflation

A. Some Advanced Economies

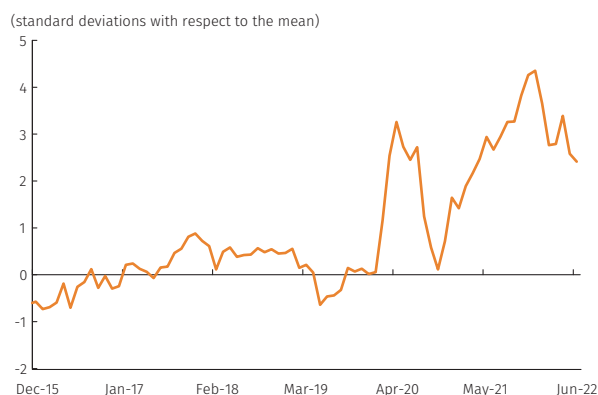


B. Some of the Main Emerging Economies and in the Region



Source: Data License, Bloomberg.

Graph 2.3
Index of Pressure on Global Supply Chains



Note: To construct them, the authors used indicators of international transportation costs (Baltic Dry index, Harpex index, etc.) and some of the components of the survey of business conditions (PMI) for the euro zone, China, Japan, South Korea, Taiwan, the United Kingdom, and the United States.
Source: Gianluca Benigno, Julian di Giovanni, Jan J. J. Groen, and Adam I. Noble, "A New Barometer of Global Supply Chain Pressures" Federal Reserve Bank of New York Liberty Street Economics.

environment of rising raw material prices, persistent supply disruptions, recovering demand, and tight labor markets in some countries. The most recent data show that total inflation in the advanced economies registered historically high rates in June (Graph 2.2, panel A) with the United Kingdom (9.4%), the United States (9.1%), the euro zone (8.6%), and Canada (8.1%) being the most noteworthy. The main emerging countries, in turn, saw a generalized increase in annual inflation in June compared to what was seen at the beginning of the year (Graph 2.2, panel B), and this was especially high in Turkey (78.6%) and Argentina (64.0%). Likewise, inflation rates remained considerably above the targets for the largest economies in the region such as Chile (11.5%), Brazil (11.9%), Colombia (9.7%), Peru (8.8%), and Mexico (8.0%). In the case of China (2.5%) and some Asian countries,¹² inflation rose for the same month compared to what was seen at the end of 2021 although it remains contained in some cases. Thus, in the majority of the economies that have adopted inflation targeting plans, total annual consumer inflation is above the target levels. Overall, global inflation expectations have risen and suggest that inflationary pressure is likely to be more persistent. Thus, international organizations expect global inflation to be higher in 2022 than it was in 2021, but to decrease in 2023.¹³

Supply constraints and disruptions in global supply chains have been more persistent. According to the New York Federal Reserve, the downward trend in the index of pressure on global supply chains was temporarily interrupted between March and April 2022. In the months that followed, this indicator improved although it remained at relatively high levels compared to its historical performance¹⁴ (Graph 2.32). New disruptions in global supply chains occurred largely as a result of Russia's invasion of Ukraine. Added to this were the health restrictions in China to contain the resurgence of Covid-19. These resulted in factory closures, port congestion, and increased delivery times for merchandise. In this context, the World Bank has pointed out that globalization could be affected by strong geopolitical tensions, which, if they intensify, could affect the integration of countries more persistently

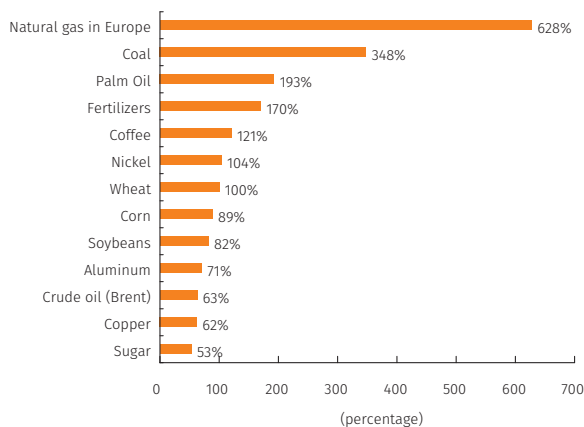
12 Between December 2021 and June 2022, annual inflation in the Philippines went from 3.1% to 6.1%, in South Korea from 3.7% to 6.0%, in Thailand from 2.2% to 7.7%, in Indonesia from 1.9% to 4.4%, in Taiwan from 2.6% to 3.6%, in Vietnam from 1.8% to 3.4%, and in Japan from 0.8% to 2.4%.

13 The OECD revised their inflation projections for the 2022 average upward for the group of countries that it is made up of from 4.2% in December 2021 to 8.5% in June 2022. For 2023, this change was from 3.0% to 6.0%. The IMF, in turn, revised their inflation projection upwards for the 2022 average from 5.7% to 6.6% in advanced economies and from 8.7% to 9.5% in emerging economies in their July report. The average inflation forecast for advanced economies is 3.3% for the 2023 average and 7.3% for emerging economies.

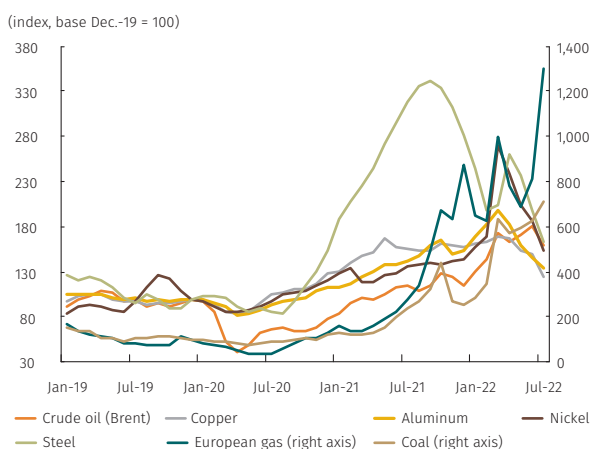
14 In June 2022, container transportation costs showed a significant reduction compared to what was registered at the end of 2021 but remain above what was seen before the pandemic.

Graph 2.4
International Prices of Some Raw Materials

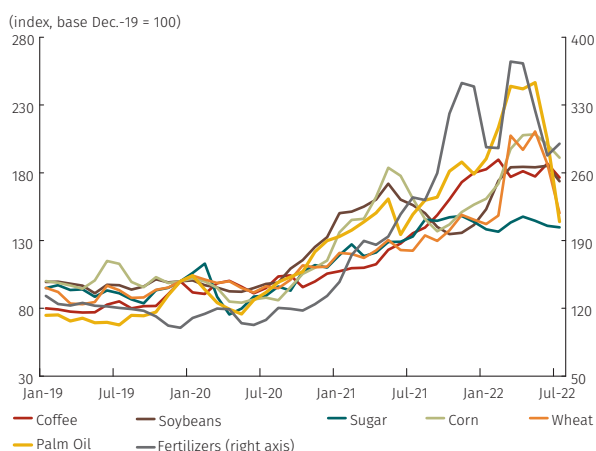
A. Variation vs. 2019 Average
(growth between the Jan-Jun 2022 average and the 2019 average)



B. Index of Energy and Metal Prices



C. Price Index of Agricultural Goods



Note: For fertilizers, the North American fertilizer price index from Green Markets is used.
Actual Data as of 18 July 2022
Sources: Data License, Bloomberg and Datastream.

thus generating the risk that global commercial and financial networks could become fragmented.¹⁵ According to the OECD,¹⁶ in turn, a reconfiguration of global value chains and world trade through the relocation of suppliers that might make it more costly to secure supplies could affect the efficiency derived from the globalization process, which has been reflected in improved productivity and lower production costs.

International petroleum and other raw material prices rose in the midst of uncertainty about the duration and effects of Russia’s invasion of Ukraine during the first half of 2022.

The international prices of several raw materials increased significantly in the first half of 2022 (Graph 2.4) due to the relatively high share that these two countries have in the international supply of several commodities.¹⁷ In the case of petroleum, the international price of Brent crude oil was highly volatile during the second quarter of the year and averaged close to USD 112 bl. This is mainly explained by the observed and expected decrease in Russian hydrocarbon production as a result of the sanctions imposed on the Russian crude oil sector.¹⁸ In addition to the above, production cuts by the Organization of the Petroleum Exporting Countries and their allies (OPEC+) and the lag in the recovery of output in other oil-producing countries are continuing.¹⁹ Regarding demand for crude oil, social isolation measures in China to contain Covid-19 flare-ups and the prospects of slower global growth have mitigated upward pressure on current prices and their projections. However, the market remains very tight with low levels of commercial inventories for OECD countries. In view of the above, the US Energy Information Administration (EIA) forecast a downward trend for the Brent crude oil price in its July report with an average of USD 104 bl in 2022 and USD 94 bl in 2023. However, uncertainty and volatility is high due to the multiple shocks affecting this market. As a sign of the above, international crude oil prices and some other commodities have registered, so far this year to mid-July, a significant reduction compared to June (Graph 2.4, panels B and C) in the midst of concerns about the performance of the world economy. In general, the high prices of crude oil and other raw materials, such as gas and coal, have contributed to increasing inflationary pressure around the world. In fact,

15 World Bank. Global Economy Outlook. June 2022.

16 OECD (2022). Economic Outlook of the OECD, June 2022.

17 See “Box 1: “Russia’s Invasion of Ukraine: reflections on the international economic context” in the *Board of Directors March 2022 Report to the Congress of the Republic*.

18 In addition to the oil import ban by the United States and the announcements by several companies that they will not extend their operations in Russia, there are also restrictions by the United Kingdom and the European Union on the purchase of crude oil from Russia.

19 In this context, the International Energy Agency (IEA) agreed to release approximately 183 million barrels (mb) of its strategic reserves.

in May, the energy component of the CPI (including fuel) for OECD countries registered an annual increase of 35.4%. The European group of countries showed the largest increases, which has led to an energy crisis.

International food prices reached historically high levels in the first half of 2022.

For the January-June average, the World Bank’s food price index registered an annual growth of 25.6%²⁰ and, in May, it reached the highest value of the year (Graph 2.5, panel A). There was a significant increase in the prices of several products during this period, and the main contributors to the increase in this food price index were wheat and palm oil. In June, this indicator showed a monthly decrease of close to 5.0% although it remained at high levels. The high international food prices in the first half of 2022 were largely due to the impact of Russia’s invasion of Ukraine on the global supply of some of these products. In addition, factors such as logistical disruptions, climatic phenomena, and high supply costs have also contributed to this increase. The above resulted in inflationary pressure on a global scale so that in May annual food price inflation for OECD countries was 12.6%, a figure that is higher than the 6.4% core inflation (excluding food and energy-fuel). According to World Bank projections, food prices could decline over the remainder of this year and the next (Graph 2.5, panel B) in a context of lower world economic growth and possible improvements in the supply of some products. Indeed, up to mid-July, international prices of some foodstuffs showed a reduction compared to June, but they are still quite high compared to those registered before the pandemic (Graph 2.4, panel C). The future trend of these prices is subject to high uncertainty since the persistence of the shocks that currently affect these markets is unknown.

In response to the strong inflationary pressure, central banks have implemented monetary policy adjustments.

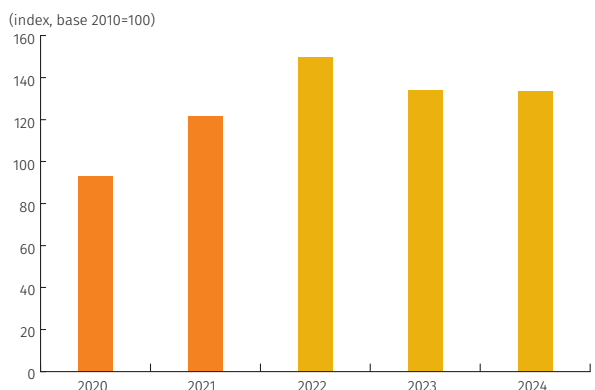
The rapid rise in inflation and inflation expectations in the first half of the year led to monetary policy normalization in several major advanced economies proceeding at a pace that was faster than had been expected at the end of last year, and to expectations of further monetary policy tightening (Graph 2.6, panel A). This will probably bring the long period of relatively low interest rates following the 2008 international financial crisis to an end. Indeed, in May and June of this year, the Fed raised its benchmark interest rate by 50 bp and 75 bp respectively. This is its largest increase since 1994. Thus, the policy interest rate stood within a range between 1.5% and 1.75%, and the projections suggest further increases to levels above the

Graph 2.5
International Food Price Index and World Bank Projections
(index, base 2010=100)

A. International Food Price Index



B. Forecasts of International Food Price Index

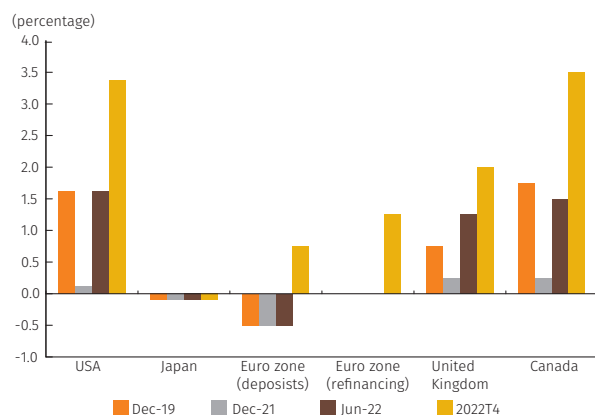


Source: World Bank, April 2022 Commodity Markets Outlook projections.

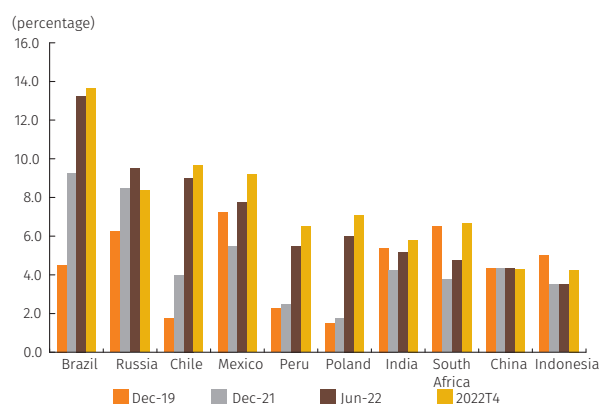
20 On average, the World Bank’s beverage price index (coffee, tea, and cocoa) increased 27% per annum between January and June 2022, mainly due to international coffee prices.

Graph 2.6
Monetary Policy Interest Rate

A. Some Advanced Economies



B. Some Emerging Economies and in the Region



Source: Data License, Bloomberg.

long-term interest rate.²¹ At the same time, the Fed began the gradual reduction of its balance sheet in June. Between April and July, the European Central Bank (ECB), in turn, completed the net asset purchases under its PEPP and APP programs²² and began its reinvestment phase. Likewise, they raised the benchmark interest rate for the first time (50 bps) in July after several years of keeping it at historic lows and announced additional adjustments at their next meetings in line with market expectations. Last of all, they approved the creation of the Transmission Protection Instrument (TPI) at this meeting.²³ Over the course of the year, the monetary policy interest rates and their outlook for other advanced economies have also risen.²⁴ As noted below, there has also been an increase in interest rates in international financial markets and in the perception of global risk. This generates tighter foreign financing conditions and concerns, in particular, about economies with high levels of indebtedness.

The central banks of the countries in the region and other emerging economies have been raising their monetary policy interest rates significantly (Graph 2.6, panel B). The upward adjustment of the monetary policy interest rate, a process that began in several emerging economies in 2021, continued during the first part of 2022. In particular, in a context of increases in inflation and its expectations, higher foreign interest rates and a mixed economic recovery, the central banks of the main economies of the region have raised their policy interest rates to levels higher than those seen in December 2019.²⁵ The increases registered between the minimum reached the previous year and up through June 2022 were as follows²⁶: Brazil went from 2.0% in February 2021 to 13.25% in

21 Projections made by members of the Fed's Open Market Committee (FOMC) indicate that the median policy interest rate is likely to be 3.4% and 3.8%, respectively, by the end of 2022 and 2023.

22 As of April, the ECB terminated their net asset purchases under the Pandemic Emergency Purchase Program (PEPP). In addition, they also brought their net asset purchases under the asset purchase program (APP) to an end as of July 1.

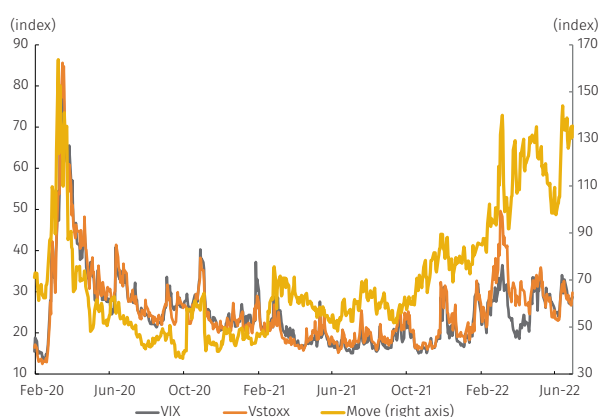
23 While the process of monetary policy normalization continues, this instrument is intended to ensure its transmission to all euro zone countries. In particular, "it can be activated to counteract unwanted or disorderly market trends that pose a serious threat to monetary policy transmission."

24 Between March and June 2022, the monetary policy rate in New Zealand went from 1.0% to 2.0%, in Canada from 0.5% to 1.5%, in the United Kingdom from 0.75% to 1.25%, in Sweden from 0.0% to 0.75%, in the Czech Republic from 4.5% to 7.0%, in Israel from 0.1% to 0.75%, and in South Korea from 1.25% to 1.75%. Overall, the Bloomberg survey median points to higher future interest rate trajectories than what had been expected at the beginning of the year.

25 For December 2019, the monetary policy interest rate was 4.5% in Brazil, 1.75% in Chile, 7.25% in Mexico, and 2.25% in Peru.

26 The month of 2021 that is referenced for each country corresponds to the month prior to the first interest rate increase following the low interest rates seen after the start of the pandemic.

Graph 2.7
Indicators of Risk Perception in International Financial Markets



Source: Data License, Bloomberg.

June 2022. Chile went from 0.5% in June 2021 to 9.0%²⁷ one year later. Mexico went from 4.0% in May 2021 to 7.75% in June 2022. and Peru went from 0.25% in July 2021 to 5.5% in June 2022. For the remainder of the year, market expectations point to additional monetary policy adjustments. Within the group of emerging economies, China, where new monetary stimulus measures have been implemented in a context of significant effects on economic growth, strict lockdown measures, and relatively low inflation has been an exception to this trend.

Over the course of 2022, the majority of the international financial markets have deteriorated in response to persistent inflationary pressure and fears of a possible global economic recession. This inflationary pressure has influenced expectations of a more contractionary monetary policy than expected at the beginning of the year and has been reflected in higher global interest rates and an increase in the probability of an economic recession in the main economies. This has also had a negative impact on stock market indices. This, together with the lockdown measures adopted by the Chinese government and the persistence of Russia's invasion of Ukraine, led to a lower demand for risky assets and a strengthening of the dollar around the world. Thus, international risk perception indicators, such as the Vix,²⁸ the Vstoxx,²⁹ and the Move,³⁰ rose in the midst of high volatility, and the average five-year credit default swap (CDS) of the countries in the region (Brazil, Mexico, Chile, and Peru) rose 66 bp compared to the end of 2021 while the average CDS of a sample of emerging countries³¹ rose 151 bp (Graph 2.7). In Colombia, the CDS has risen 89 bp over the course of 2022 due to the influence of several sources of local uncertainty (see section 3.1 of this Report).

Interest rates have continued to rise worldwide during 2022 in a context of lower liquidity in the debt markets. The US Treasury curve has temporarily inverted twice so far this year due to approximately 230 bp increases in short-term bond rates,

27 In Mexico and Chile, the pace of adjustment of the benchmark interest rate went to 150 bps.

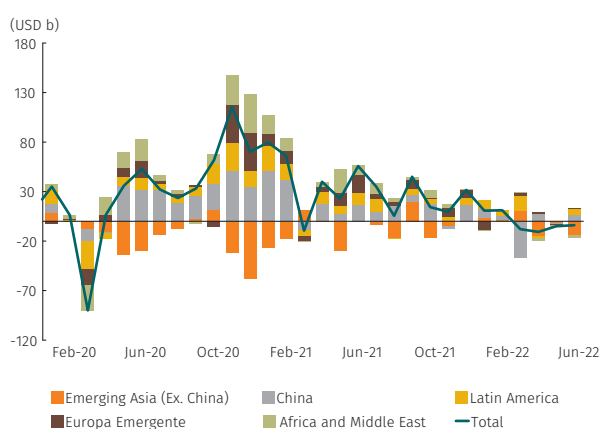
28 The VIX is the expected implied volatility of 30-day options on the S&P 500 stock index.

29 Vstoxx is the expected implied volatility of 30-day options on the EuroStoxx 50 stock index.

30 The Move is the expected implied volatility of 30-day options on US Treasury bonds.

31 According to Markit's CDX EM index, which is made up of eighteen sovereign issuers in Latin America, EMEA, and Asia.

Graph 2.8
Non-residents Portfolio Flows to Emerging Economies



Source: IIF.

above the hike of about 160 bp in longer-term bond rates.³² The deterioration in the performance of these securities was due to the inflationary pressure that has been evident since last year and, associated with this, by the materialization of a less expansionary monetary policy path by the Fed. In the case of long-term Treasuries, the deterioration in their prices has been contained, in part, by expectations that the economy will slow down significantly or may even go into recession. This would lead the Fed to reduce or reverse the current cycle of monetary normalization. Like what has been seen in the United States in a context in which central banks of the countries in the region are withdrawing monetary stimulus, the short-term securities of Brazil, Mexico, Chile, and Peru have depreciated more than long-term securities.³³

Over the course of the year, portfolio capital flows to emerging economies, exception to Latin America, have been weakening due to a higher risk perception of investors. Based on preliminary figures published by the Institute of International Finance (IIF), there have been USD 5.8 billion (b) in net outflows of foreign portfolio investment in emerging markets due to inflows of USD 29.4 b to the debt market and outflows of USD 35.2 b from the equity market over the course of 2022 (as of June).³⁴ Latin America was the only region that presented net inflows while China presented the second largest net portfolio outflows,³⁵ mainly in March (USD 37.4 b, the largest monthly outflows registered with available data), possibly driven by closures in the country because of the increase in Covid-19 cases and the higher risk perception of investing in countries with strained relations with the West (Graph 2.8).

In the case of Latin America, portfolio capital flows have been supported mainly by the positive performance of commodity prices and by some idiosyncratic factors. During the year to date, Latin America presented net inflows totaling USD 33.3 b of which USD 21.2 b and USD 12.1 b correspond to inflows into the fixed-income and variable-income markets, respectively.

32 A yield curve is considered inverted when short-term interest rates are higher than long-term interest rates. Based on Andrew Ang et al. (2006) -Ang, A., Piazzesi, M., & Wei, M. (2006). "What Does the Yield Curve Tell Us about GDP Growth?", *Journal of Econometrics*, pp. 359-403-, an inverted curve in the United States usually reflects an increase in the probability of recession at a horizon of twelve to twenty-four months ahead. In particular, seven of the last eight recessions have been preceded by an inversion of the yield curve.

33 While short-term debt securities have devalued by an average of 240 bp (in foreign currency) and 190 bp (in local currency), long-term securities have devalued by an average of 215 bp (in foreign currency) and 135 bp (in local currency).

34 Inasmuch as net inflows of foreign portfolio investment to emerging markets during the second half of 2021 amounted to USD 141.3 b as a result of inflows of USD 120.4 b and USD 20.9 b to the debt securities market and the stock market respectively.

35 Emerging Asia (excluding China) has presented the largest net outflows during 2022, for a total of USD 17.1 b.

According to several analysts, the war in Ukraine may have temporarily favored flows to this region given how geographically and commercially distant it is from the conflict zone, and this may have led investors to reassess their exposure to the assets of other emerging countries.

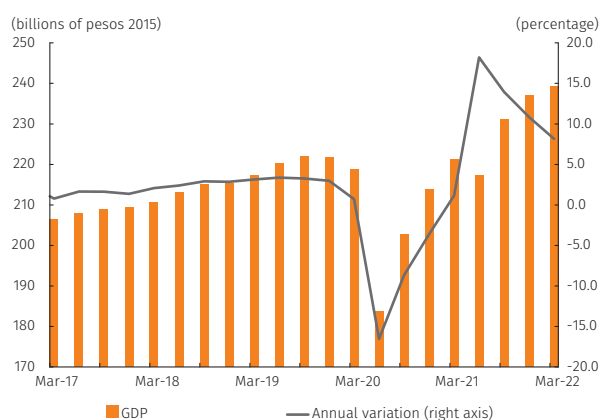
The US dollar has been strengthening vis-à-vis most of the currencies of developed countries and some of the emerging ones so far in 2022. This strengthening was associated with an increased demand for safe-haven assets and the expectations and materialization of a tighter monetary policy by the Fed in response to inflationary pressure. In this context, the DXY³⁶ rose 9.4% and reached its highest level in twenty years. Some of the currencies of emerging countries³⁷ and those in the region, including the Colombian peso, also depreciated under the influence of idiosyncratic factors, among which political and fiscal uncertainty are the most notable.

2.2 Change in and Outlook for the Economy and Labor Market

2.2.1 Economic Activity

In the first half of the year, the Colombian economy continued to grow at high annual rates, thus consolidating the recovery that began in the previous year. In the first quarter of 2022, GDP expanded at an annual rate of 8.5%. In seasonally and calendar adjusted series, this rate was 8.2% (Graph 2.9). This figure is high by historical standards but lower than what was seen in the second half of last year. Regarding supply, trade and service activities continued to expand significantly (Table 2.1) in the first half of the year with entertainment and recreation activities, and lodging and food services standing out. These were at levels well above those registered prior to the pandemic. For the second quarter of 2022, the Bank's technical staff expects that the GDP will have remained at a high growth rate on an annual basis. Although the official DANE data release is not yet available, it is estimated to have been higher than 11% as of the date of this Report.

Graph 2.9
Gross Domestic Product^{a/}
(quarterly and annual change)



a/ seasonally adjusted series and corrected for calendar effects)
Source: DANE, calculations by Banco de la República.

36 Index that compares the U.S. currency with six major currencies. The euro (EUR) weights 57.6%; Japanese yen (JPY), 13.6%; British pound (GBP), 11.9%; Canadian dollar (CAD), 9.1%; Swedish krona (SEK), 4.2% and the Swiss franc (CHF), 3.6%.

37 According to MSCI's emerging markets currency index, which tracks the performance of certain emerging market currencies against the U.S. dollar, emerging market currencies had depreciated 4.1% as of 30 June 2022 compared to the end of 2021. The index includes the following countries. The depreciation of their respective currencies during the period analyzed is shown in parentheses: Argentina (21.88%), Brazil (-5.66%), Chile (7.79%), China (5.40%), Colombia (4.36%), the Czech Republic (7.87%), Egypt (19.61%), Hungary (16.53%), India (6.24%), Indonesia (4.49%), Korea (9.16%), Malaysia (5.80%), Mexico (-2.00%), Peru (-4.34%), Philippines (7.81%), Poland (11.08%), Qatar (-0.06%), Russia (-27.94%), Saudi Arabia (-0.08%), South Africa (2.14%), Taiwan (7.47%), Thailand (6.30%), Turkey (25.51%), Pakistan (15.62%), United Arab Emirates (0.00%), and Kuwait (1.46%).

Table 2.1
Real Annual Growth of the GDP by Branches of Economic Activity
 (seasonally adjusted and corrected for calendar effects, base 2015)

	2021				2021 Whole year	2022 I Q.
	I Q.	II Q.	III Q.	IV Q.		
Agri-business, Forestry, Hunting, and Fishing	3.0	4.5	1.9	2.8	3.1	-2.4
Mining and Quarrying	-14.8	7.5	4.2	7.3	0.2	1.0
Manufacturing Industry	8.5	30.4	18.4	11.6	16.4	9.1
Electricity, Gas, and Water	-0.5	9.5	6.9	5.1	5.1	4.8
Construction	-6.6	24.5	2.6	6.8	5.7	4.4
Buildings	-1.1	24.0	11.2	14.6	11.6	9.6
Public works	-21.1	30.3	-9.8	-3.7	-4.6	-3.5
Specialized Construction Work	-4.5	24.3	3.9	6.9	6.6	5.4
Commerce, Repairs, Transportation, & Accommodations	-1.5	40.3	34.4	19.2	20.9	15.0
Information and Communications	2.1	10.4	12.8	20.6	11.4	19.5
Financial and Insurance Business	4.9	3.3	2.1	3.5	3.4	-3.2
Real estate	2.3	2.8	2.4	2.6	2.5	2.1
Professional, Scientific, and Technical Work	0.3	14.7	13.7	11.4	9.8	9.3
Public Administration and Defense, Education, Health	4.8	9.7	9.1	6.9	7.6	6.2
Artistic, Entertainment, and Recreational Activities	8.8	72.8	31.8	32.0	33.1	35.4
Subtotal value added	1.1	17.7	13.6	10.5	10.4	7.9
Taxes minus subsidies	1.5	23.7	17.3	13.9	13.6	11.3
GDP	1.2	18.2	13.9	10.8	10.7	8.2

Source: DANE, calculations by Banco de la República.

The strong performance of the economy continued to be driven by robust domestic demand, particularly private consumption. Total domestic spending grew 13.4% in the first quarter of 2022 compared to the same period in 2021, a figure that is higher than the annual expansion of GDP (8.2%) (Table 2.2). By components, private consumption grew at an annual rate of 12.0% with the use of services, durable goods, and semi-durable goods rising at double-digit rates which allowed them to reach levels well above those seen before the pandemic. Public consumption also contributed significantly to growth as it increased 8.6% year-on-year in the first three months of the year. This component will have probably been driven, above all, by the hiring of public employees and higher expenditures associated with cash transfer programs. For the second quarter, available indicators suggest that private consumption will likely have remained at high levels with significant annual growth. The positive performance of household consumption in the first half of the year continues to be supported by the recovery in employment, the ample availability of credit at interest rates that in real terms remain relatively low, and by government transfers to households, etc. The above-mentioned and the estimated recovery of investment was expected to sustain the domestic demand during the second quarter and thus, throughout the first half of the year, this aggregate would also have grown at a higher annual rate than that of the output.

Table 2.2
Real Annual Growth of the GDP by Type of Expenditure (seasonally adjusted and corrected for calendar effects, base 2015)

	2021				2021	2022
	I Q.	II Q.	III Q.	IV Q.	Whole year	I Q.
Final spending on consumption	2.7	23.2	19.3	12.2	13.9	11.7
Final spending on household consumption	2.1	25.7	20.5	13.3	14.8	12.0
Non-durable Goods	-0.4	6.6	8.1	4.1	4.5	4.1
Semi-durable Goods	8.4	109.3	51.7	28.3	40.9	32.7
Durable Goods	12.1	49.5	22.4	13.2	22.0	11.8
Services	0.7	29.0	23.8	16.4	16.7	15.2
Final spending on general government consumption	7.6	12.2	13.7	7.9	10.3	8.6
Gross Capital Formation	-2.8	30.2	8.1	18.5	12.2	18.3
Gross Fixed Capital Formation	-4.6	35.1	11.5	9.9	11.2	8.1
Housing	12.7	36.6	19.1	26.0	22.6	-2.0
Other buildings and structures	-20.6	24.0	-4.0	-0.1	-3.0	-2.7
Machinery and Equipment	6.7	49.9	19.6	9.2	19.1	25.6
Cultivated biological resources	9.1	5.0	1.0	-0.5	3.7	-10.4
Intellectual property products	-2.9	13.4	16.3	15.8	10.3	15.8
Domestic demand	1.6	24.3	17.8	12.8	13.6	13.4
Exports	-10.6	15.7	25.6	35.6	14.8	16.7
Imports	-2.5	46.9	41.9	36.9	28.7	38.6
GDP	1.2	18.2	13.9	10.8	10.7	8.2

Source: DANE, calculations by Banco de la República.

Investment continues to recover, but at a slow pace, especially due to a modest performance of the construction component. In spite of having registered an increase in the first quarter compared to the close of 2021 and an annual growth of 8.1%, similar to that of GDP, gross fixed capital formation continued to fall short of pre-pandemic levels. The main segments presented mixed performances: while investment in construction (housing and other buildings and structures) registered a weak recovery, investment in machinery and equipment reached record highs with a significant annual expansion rate (25.6%) spurred largely by spending on transportation equipment. Investment is expected to have continued to show modest growth for the second quarter due to a very slow recovery in the construction sector, which will probably only start to gain momentum in the second half of the year.

Non-mining and coffee exports have also been an important source of growth, facilitated by the recovery of most of our trading partners and high prices. In the first quarter, in spite of having declined slightly from the high levels of the fourth quarter of 2021, exports expanded at a significant annual rate (16.7% in constant pesos), partly because of a low base of comparison. The most significant growth in

the first months of the year was in nontraditional exports and services.³⁸ This is a trend that has been seen since 2021 and could have continued during the second quarter of the year according to preliminary figures from DANE and DIAN. In the case of non-traditional sales abroad, their performance was likely favored, along with other factors, by the recovery of our most important trading partners and also, to some extent, by the increased trade with Venezuela³⁹ (from almost zero levels in the last few years). Services exports have probably been driven by non-resident tourism. Sales abroad of raw materials, in turn, showed a mixed performance with nickel-iron showing significant annual growth rates in the first half of the year; crude oil, a moderate expansion (around 5 %); coal stagnating, and coffee and gold falling significantly. In most of these cases, levels remained lower than those seen before the pandemic.

The strong domestic demand has been accompanied by a rise in the trade deficit.

The positive performance of private consumption and on the part of investment has boosted the growth of imports which were strong in the first quarter as they grew 38.6% in annual terms and 10.6% in quarterly terms. The strongest component of imports was capital goods, and among these were purchases of transportation equipment, in part, related to public investment. This fact, coupled with largely stagnant traditional exports, has led to a widening of the trade deficit, which represented 13.0% of GDP (in constant pesos) in the first quarter. This is despite the favorable performance of non-traditional exports and services. The figures available for the second quarter suggest a pause in the growth of imports and a surge in exports. This would imply that the trade deficit might have narrowed somewhat from first-quarter levels although it would still be at historically high levels.

A moderation in the growth rate of economic activity is expected for the second half of 2022 and for 2023.

The technical staff at *Banco de la República* expects a slowdown in growth starting in the second half of the year in line with a less favorable international environment characterized by tighter external financial conditions and slower growth of our trading partners. In addition to the effects of the monetary policy adjustment process initiated by the BDBR at the end of 2021, this should bring domestic demand to sustainable levels in the long term and be compatible with meeting the inflation target. This adjustment started from very expansionary levels and lags the growth of spending. The main channel through which the increase in the monetary policy interest rate should act is through credit. Thus, this forecast assumes a moderation in the growth of private consumption and an adjustment on the fiscal front. It also considers the projections for public finances presented in the most recent Medium-Term Fiscal Framework (MFMP). For investment, a gradual recovery trend in housing construction is expected to continue given changes in the government's subsidy programs for low-income housing (LIH) and the high sales volumes registered in 2021. Something similar is expected for other buildings and public works due to the implementation of national government projects and, especially, those of local and regional administrations, many of which have secured financing. Exports, in turn, should remain at high levels in 2022, supported by favorable terms of trade that are likely to mitigate the estimat-

38 In constant pesos, services exports grew at an annual rate of 59.5% in the first quarter. Although there are no figures in constant pesos for non-traditional exports, the quantity index for this group grew 11.2% in annual terms in the first quarter.

39 Over the course of 2022, non-traditional exports in dollars to Venezuela have grown by 119.0% annually and represent 3.3% of the total non-traditional exports.

ed slowdown in our main trading partners. Imports will probably remain at high levels although at a lower rate of expansion in the second half of the year given the moderation of domestic demand. Thus, the foreign imbalance should begin to correct itself. All in all, the technical staff expects a growth that will be close to 7.0% for 2022. The effects of the monetary policy adjustment required to drive inflation to the target will still be felt in 2023. This, together with the aforementioned fiscal adjustment and a less favorable foreign context, will mean that economic growth will tend to be lower than what has been seen up to the first half of 2022. This being the case, the technical staff anticipates a significant moderation in growth to rates more compatible with the country's productive and resource capacity going into 2023. The magnitude of the adjustment of fiscal and foreign imbalances and the changes in the international economy are sources of significant uncertainty and generate risks that weigh on the outlook for the performance of economic activity.

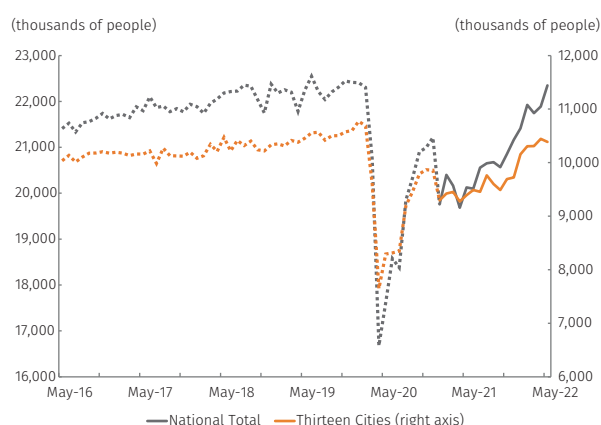
2.2.2. Labor Market⁴⁰

In the first few months of 2022, the labor market continued to recover with more sustained growth in urban employment.

According to seasonally adjusted monthly figures from the Large Integrated Household Survey (GEIH in Spanish) the creation of jobs in the national aggregate exhibited a good rate of growth during the last months of 2021 and the first half of 2022. Compared to December 2021, May saw a 5.6% increase in national employment (about 1.2 million jobs) (Graph 2.10). This performance was mainly explained by higher job creation in urban areas that saw a growth of 6.8% (around 664,000 jobs) in that period. With respect to May 2021, there was an 11.0% annual growth rate in employment spurred to a large extent by recreation, agriculture and livestock, and transportation and storage which, together, contributed 5.3 percentage points (pp) to the annual change.

The different sources of information show a greater growth in salaried employment. According to GEIH data, the recovery of employment in the national aggregate during the first half of 2022 was driven, to a major extent, by the salaried segment. This registered an annual growth of 11.3% in May given the sustained growth of private salaried employment,⁴¹ which contributed 5.8 pp to the annual growth of total employment

Graph 2.10
Employed Population by Geographical Domain
(seasonally adjusted monthly)



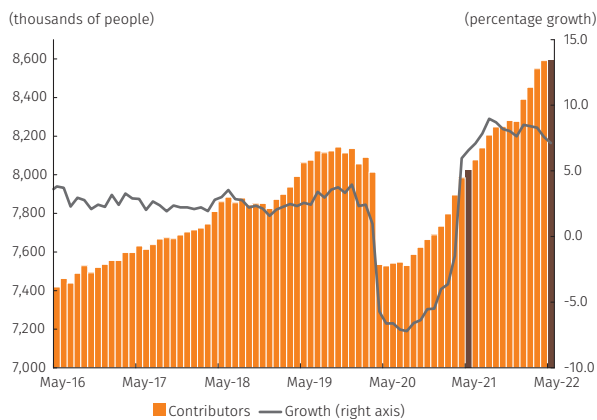
Note: The dotted lines represent DANE's spliced and seasonally adjusted series while the solid lines, in turn, correspond to information from the 2018 GEIH Framework.

Source: DANE (GEIH), calculations by Banco de la República.

40 The labor market analysis presented in this report was done based on the results of the 2018 GEIH framework which began collecting information simultaneously in January 2021. For further details on the methodological changes in the survey and their implications regarding the levels and behavior of the main labor market aggregates, we invite you to consult Banco de la República's Labor Market Report, No. 22, available at <https://www.banrep.gov.co/es/reporte-mercado-laboral>.

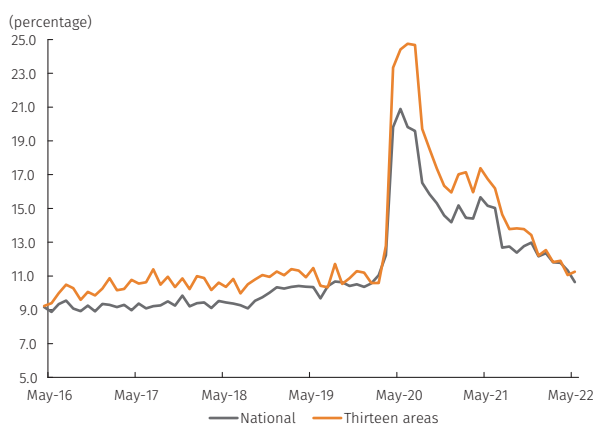
41 Salaried employment, according to DANE's definition, is composed of private workers and employees (private salaried employees) and government workers and employees.

Graph 2.11
Dependent contributors to pensions
 (seasonally adjusted monthly data)



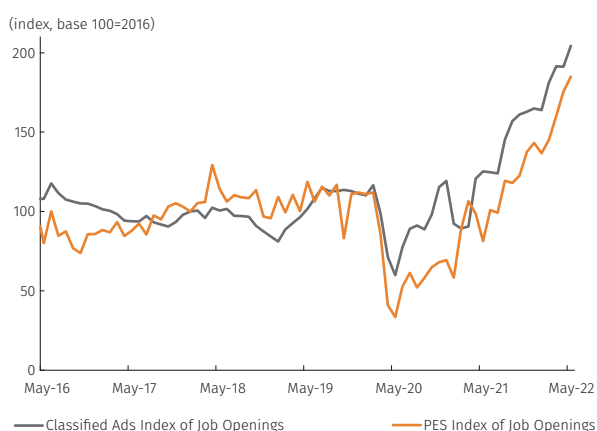
Source: Ministry of Health and Social Protection (PILA), calculations by Banco de la República.

Graph 2.12
Unemployment Rate by Geographical Domain
 (seasonally adjusted monthly)



Source: DANE (GEIH), calculations by Banco de la República.

Graph 2.13
Index of Job Openings from Classified Ads and Public Employment Service (PES)
 (seasonally adjusted monthly)



Source: Arango (2013), PES and Morales and Lobo (2021); calculations by Banco de la República.

in May. Although this period also saw gains in non-salaried employment (10.7% compared to May 2021), this segment has lost its leading role as a driver of total employment growth in recent months. Information from various administrative records confirms these trends. For example, in the case of the Integrated Record of Contributions to Social Security (PILA in Spanish), the number of dependent employees contributing to pensions exceeds the pre-pandemic levels as of June 2021 (Graph 2.11). Similar results are seen in the case of affiliates to occupational risk management companies (ARL) and family compensation funds (CCF).

The labor supply has also shown a significant recovery in recent months. However, this growth was lower than that of employment, which has led to sustained reductions in the unemployment rate (UR). After a period of relative stability during 2021, the labor force participation rate (LFPR) registered growth in both the national aggregate and the thirteen cities. With seasonally adjusted monthly figures, the national LFPR stood at 63.9% in the national aggregate and 65.1% in the thirteen main cities as of May. These levels were 1.7 pp and 2.6 pp higher than those seen in December 2021. In spite of the increase in labor participation, the greater job creation has made a continuous fall in the unemployment rate (UR) in both geographical domains possible. Under the seasonally adjusted series, the UR stood at 10.6% for the national total and 11.3% in the thirteen main cities in May (Graph 2.12). These levels are 1.5 pp and 0.9 pp lower respectively than those seen in December 2021 and are close to those registered before the pandemic.

Overall, the various indicators of demand suggest a labor market that is likely to be tighter than in 2021. It is estimated that the national UR will continue to decline gradually and that its average in 2022 will be close to that of 2019. Banco de la República's Monthly Survey of Economic Expectations (EMEE in Spanish) and the Manpower Survey of Employment Expectations indicate a significant increase in companies' hiring expectations. These have been at historically high levels since the fourth quarter of 2021. This trend is in line with what has been seen in the job opening indicators, calculated on the basis of classified ads and Public Employment Service (PES) openings which, since 2021, and especially in recent months, have reflected a historically high expansion in the demand for new job positions (Graph 2.13). The information that is derived from the EMEE, in turn, also shows a significant increase in bottlenecks to hiring at companies with a higher percentage of companies expressing difficulties in hiring personnel. The above, together with the reduction in unemployment rates, could suggest that the labor market might be tighter in the first half of 2022 than what was seen in 2021. Going forward, forecasts suggest that the national UR will continue to decline

gradually over the remainder of the year and that its average level will approach that of 2019 thus indicating an increasingly tight labor market.

2.3 Change in and Outlook for Fiscal Situation

The abrupt change in macroeconomic conditions generated by the Covid-19 pandemic implied an extraordinary fiscal effort that was reflected in a deterioration of public finances and a significant increase in indebtedness. The pandemic profoundly affected economic activity as it generated imbalances in external variables, fiscal accounts, inflation, and domestic production. These imbalances pose major challenges for economic policy in general and fiscal policy in particular. Widespread quarantines and closures during the most critical period of the pandemic inevitably led to the contraction of production and the loss of a portion of tax revenue. To moderate the social and economic impact of the health crisis as well as to address health system expenditures that sought to minimize the negative effects on the health of the population, the central national government (CNG) opted to expand public spending with the financial support of the Emergency Mitigation Fund (FOME), created for this purpose. The decline in tax collection and the expansion of government spending pushed the CNG's fiscal deficit and debt to high levels. Indeed, the CNG fiscal deficit stood at 7.8% of the GDP at the end of 2020 while gross debt reached 64.7% of the GDP and represented a change of 14.4 pp with respect to the value registered in 2019. These figures reflect the magnitude of the shock that brought about a significant deterioration in public finances.

The higher economic growth seen in 2021 reflected the recovery of domestic demand, drove tax revenues upwards, and corrected the fiscal deficit and debt downwards as a percentage of the GDP. A process of recovery in economic activity began in 2021 supported by a countercyclical monetary and fiscal policy. The economic recovery favored tax revenue and led to a decrease in the CNG's fiscal deficit, which fell to 7.1% of GDP at the end of 2021 while gross debt stood at 63.8% of GDP. These percentages are lower than observed in 2020 but still well-above historical averages. Despite the better fiscal results, the higher indebtedness and the increase in the risk perception of the country were reflected in the loss of the investment grade rating and in the gradual increase in interest rates on Colombian public debt securities. Indeed, long-term TES interest rates are at levels close to 11.5% which represents an increase of 5 pp with respect to the average seen in 2019 (6.5%). This increase is the result, in part, of the high level of public debt and the increase in risk premiums and has led to a significantly higher financial burden for the national budget.

The CNG's high deficit and debt levels suggest the need for additional fiscal adjustment in an environment of rising financing costs. The tax reform approved at the end of 2021, together with the strength of the economic activity seen in the last few quarters, makes it possible to anticipate an improvement in the fiscal accounts in 2022. Indeed, the projections presented in the Medium-Term Fiscal Framework show a decline in the CNG fiscal deficit and gross debt: by the end of the year, these will likely reach 5.6% and 59.1% of the GDP respectively.⁴² Nevertheless, these percentages are still high and there is significant spending pressure, particularly those derived from the pension system, the contributory and subsi-

⁴² The most recent figures from DANE's institutional economic accounts show a clear recovery of the general government deficit in the first quarter of 2022 with a twelve-month figure of 7.2% of GDP, a figure that is lower than the one estimated in December 2020 (8.6%).

dized health care systems, and the migrant population's access to the services offered by the State. In addition, the sharp increase in international petroleum prices has generated spending pressure on the Fuel Price Stabilization Fund. This pressure will persist as long as the gap between international and domestic prices of liquid fuel does not narrow.⁴³

It is necessary to continue reducing the fiscal deficit to ensure the sustainability of public finances, which requires an appropriate adjustment of revenues and expenditures. A sustainable fiscal adjustment requires an appropriate balance between tax management, which has a relatively low collection level, and expenditure management, which in Colombia is characterized by high inflexibility. In this context, continuing on a trajectory in which the fiscal deficit is reduced and public debt reaches and remains at sustainable levels requires efforts to ensure that revenue better reflects the level and nature of expenditures. In the face of persistent spending pressure such as what was mentioned above, the sustainability of public finances requires an increase in revenue that is permanent and consistent with the conditions and trends already described. These fiscal policy decisions and actions are fundamental for the credibility of macroeconomic policy and have significant effects on the performance of macroeconomic variables and agents' confidence. When faced with such a strong shock to the economy, these decisions have an impact on other economic policy fronts and, in particular, on the performance of monetary policy.

Given the interaction with monetary policy, the decisions and credibility of fiscal policy play an essential role in preventing the macroeconomic adjustment putting too much of the burden on interest rates. First, fiscal sustainability is fundamental to establishing continued access to financing and its conditions for not only the public sector but also the private sector. As has been noted in recent months, fiscal results have improved, but risk premiums for Colombia have risen and have been systematically distanced from those of other emerging countries with similar characteristics. It is essential to ensure fiscal sustainability in order to reverse this trend. Second, the trajectory of the fiscal deficit is the fundamental variable for determining a balanced adjustment among the agents in the economy. A fiscal adjustment process that gradually and rapidly reduces the CNG deficit and debt, will minimize the impact on private economic activity. Postponing this reduction or reducing the deficit and debt insufficiently in cases where this is necessary may result in over-adjustment by the private sector. In this scenario, the increase in interest rates and in risk premiums that the government must pay leads to increases in the real interest rate that the entire economy must pay and to devaluation pressure that limits the actions of monetary policy.

The Congress of the Republic and the CNG adopted a new fiscal rule in 2021 that reinforces the fiscal institutional framework, seeks to give greater credibility to fiscal policy, and fosters the required adjustment of public finances. Given the need for fiscal adjustment, the CNG has proposed a strategy in line with the trajectory outlined by the new rule in its most recent Medium-Term Fiscal Framework.

43 “The Fuel Price Stabilization Fund was created in 2007 in order to mitigate the impact of fluctuations in international prices of liquid fuel (LF) on the domestic market. Operationally, the Fund prevents the producer's income (reference price) from experiencing substantial fluctuations if there are sudden and drastic movements in international LF prices (parity price). The difference between the two prices multiplied by the amount of fuel sold during the period determines the net position of the fund. Thus, when the reference price is higher than the parity price, a participation differential (FEPC income) is generated while when this difference is negative, a compensation differential (expenditure) is generated” (Medium-Term Fiscal Framework, 2022, pg. 68).

This projects a fiscal adjustment that requires convergence to lower deficit and public debt levels within a reasonable period of time. Going forward, compliance with this rule is essential to ensure the country's fiscal sustainability and macroeconomic stability.

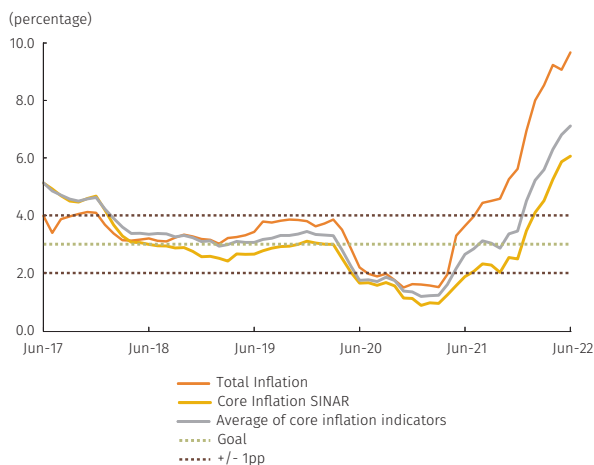
An orderly fiscal adjustment is a priority for macroeconomic stability. In terms of fiscal policy, this translates into timely decisions under strict compliance with the fiscal rule. A scenario where there are less favorable macroeconomic conditions or where greater spending pressure materializes could generate a situation that would require greater fiscal efforts to continue reducing the deficit and debt. Postponing the required fiscal adjustment reduces the likelihood that it will be gradual and orderly and may affect the monetary policy response by limiting its ability to smooth out macroeconomic fluctuations. The speed of this adjustment is critical given the country's increased exposure to interest rate risk and the end of the prolonged period of excess liquidity.

3. Inflation and Monetary Policy Decisions

3.1 Change in and Outlook for Inflation

Consumer prices in Colombia remained under upward pressure in the first half of the year, and this pushed inflation to high levels similar to those registered in the middle of the last decade. Annual consumer inflation stood at 9.67% as of June and was significantly higher than what was registered at the end of last year (5.62%). Its recent trajectory has surprised the technical staff at *Banco de la República* as well as the majority of market analysts. A significant upward trend, but lesser in magnitude, was seen in the various core inflation indicators; in particular, inflation excluding food and regulated items closed the first half of the year at 6.06% (compared to 2.49% in December 2021) (Graph 3.1). Similar levels of total and core inflation have not been seen since 2016.

Graph 3.1
Consumer Price Index (CPI)
(annual change)



Source: DANE, calculations by Banco de la República.

Russia's invasion of Ukraine continues to generate upward shocks on food prices and has added to the pressure from the evolving pandemic. The largest contribution to the increase in annual consumer inflation during the first half of 2022 came from food prices which showed a strong upward trend in the annual variation and closed June at 23.65%. Since the middle of last year, this indicator has been affected by the logistical and supply problems caused by the pandemic. This led to substantial increases in the international prices of agricultural supplies and raw materials. Up until June 2022, all these shocks were still being passed through to food prices in Colombia. Moreover, Russia's invasion of Ukraine at the end of February deepened the supply problems for raw materials and agricultural supplies around the world and drove international prices even higher, thus counteracting the expected declines. These surprising increases, reinforced by the accumulated depreciation of the peso, began to be passed through to domestic food prices more intensely during the second quarter of the year. However, for the remainder of 2022 and throughout 2023, this foreign pressure is still expected to begin to ease and set a downward trend in the annual adjustment of the CPI for food.

In addition to external factors, various domestic factors have also affected food prices. The difficulties generated by the road blockades in May 2021 led to the destruction of a large part of the poultry capital as well as to delays in planting, fertilization, and pest and weed control which caused shortages of some tubers, vegetables, and fruit throughout 2021 and part of 2022. In addition, the prices of perishable foods have risen sharply due to climatic factors that have adversely affected the production cycle and increased production and marketing costs in an environment of higher costs for agricultural supplies and transportation. In the remainder of 2022 and in 2023, in addition to the decrease in foreign pressure,

the recovery and stabilization of domestic supply due to more favorable weather conditions and the full normalization of the agricultural cycle after the effects of the blockades in 2021 are, as a whole, expected to contribute to a reduction in the annual adjustment of the CPI for food.

Rising inflation expectations and higher price and wage indexation rates have been reflected in higher prices for a wide range of goods and services. This, together with a very strong demand, has generated significant upward adjustments in several CPI items during the first half of 2022. Foreign pressure is probably being passed through more intensely to the basket of services, given the adjustments in the prices of meals away from home, which are also being affected by high food prices and the adjustment of the minimum wage. Furthermore, higher inflation expectations and an indexation to higher inflation levels are probably generating pressure, especially on rent prices and education, health, and administrative services in an environment with signs of excess demand. Pressure from abroad and its impact on production and marketing costs have likely supported the higher prices for the basket of goods registered since February of this year to a greater extent. Finally, it is important to note that the trajectory of inflation for both goods and services will probably continue to reflect the volatility associated with the VAT-free days and the termination of indirect tax relief associated with the health emergency that ended on June 30.

The prices of regulated products have shown high adjustments as a result of the mechanisms for indexing tariffs to the CPI and the PPI, in spite of the limited increases in domestic fuel prices. Since mid-2021, the annual change in the CPI for regulated items has risen substantially and stood at 9.80% at the end of the first half of 2022. This has reflected the upward pressure from the international prices of some raw materials, the exchange rate, and the activation of indexation mechanisms (to the CPI and PPI, etc.), which affect the tariff formulas for public utilities and other regulated services. In addition, tariff adjustments are probably being impacted by the pass-through of costs associated with investments and the replacement of losses incurred by some public utilities, particularly electric power companies. Some of these factors will continue to persist in the remainder of 2022 thus causing its annual change to remain at high levels.

Inflation expectations continued to rise in the first half of the year and remained above the 3.0% target at different horizons in June although they continue to show a downward trend in the medium term. In particular, the measurement obtained from the median of economic analysts' expectations, registered in the monthly survey of *Banco de la República* carried out between July 6 and 12, suggests an inflation rate of 9.2% by the end of 2022. However, according to the survey results, this measurement will probably be reduced to 5.2% by the end of 2023. Based on information as of July 18, in turn, the estimated expectations based on public debt bonds (breakeven inflation, BEI), adjusted for inflation risk premiums and liquidity, show inflation expectations that at two, three, and five years stand at 4.9%, 4.7%, and 4.3% respectively.

Total annual inflation will probably stop rising in the second half of the year and start to decline in 2023. In accordance with the technical staff's estimates, inflation will probably remain at levels above 9.0% for the remainder of 2022 and gradually decline starting at the beginning of 2023. These estimates include monetary policy action which is likely to help moderate the growth of aggregate demand and reduce the risk of de-anchoring expectations from the 3.0% target. Also, the reduction in inflation is expected to be supported by the dissipation of the effects of the aforementioned foreign and domestic shocks. Nevertheless, the reversal of

pandemic relief measures and VAT-free days will likely generate transitory price increases and inflation volatility.

The unfolding of Russia's invasion of Ukraine and the pandemic in various economies are generating high uncertainty about the trend of inflationary pressure from abroad and pose upside risks to prices in Colombia. Moreover, the possibility that the problems in the supply chains may be prolonged due to the developments related to the pandemic and the persistence of China's zero tolerance policy towards Covid-19 as well as a further escalation of Russia's invasion of Ukraine with its consequences for raw material prices, particularly the international price of crude oil, cannot be ruled out. With respect to the last one, there is a wide difference currently between the foreign and domestic prices of fuel that has widened the deficit of the Fuel Price Stabilization Fund (FEPC in Spanish). In this respect, in addition to uncertainty about the change in the international price of petroleum, the trend of future inflation is particularly sensitive to changes in domestic fuel prices that will be approved this year and next.

3.2 Monetary Policy Decisions

The current tightening of global monetary policy is taking place after a prolonged period of ample liquidity and unusually low interest rates. This period was triggered by the response to the 2008 financial crisis in which the US Federal Reserve (Fed) implemented a strongly expansionary monetary policy stance. Thus, they significantly increased liquidity through purchases of public and private debt bonds⁴⁴ and rapidly reduced the policy interest rate to levels between 0% and 0.25%.⁴⁵ The Fed began a phase of normalizing its monetary policy in 2014, which extended until 2019.⁴⁶ Thus, after more than a decade of loose global credit conditions, the robust consumption, investment, and employment indicated the end of the period of ample liquidity and low interest rates worldwide. However, with the advent of the Covid-19 pandemic, the process of monetary policy normalization in the United States reversed.

The global period of ample liquidity and low interest rates led to the accumulation of macroeconomic imbalances, which resulted in considerable risks for emerging economies: risk premiums were reduced and financial assets appreciated significantly. Ample liquidity allowed the governments of some countries to increase their spending and, consequently, their public debt, which could be issued at a particularly low cost. It may also have promoted investments in sectors and assets with higher levels of risk. Thus, a large number of emerging economies raised their aggregate capital stock and their net foreign financial position became exceptionally negative, and this increased their level of indebtedness. For example, according to IMF figures, gross public debt as a percentage of the GDP of emerging and developing countries went from 33.6% in 2008 to 53.9% in 2019.⁴⁷

The pandemic generated a collapse of the global economy and triggered fiscal and monetary policy responses that significantly expanded international liquidity

44 A period called quantitative easing.

45 Other central banks in developed countries such as the Bank of England and the European Central Bank implemented similar measures.

46 In 2014 the Fed stopped increasing its balance sheet and since the end of 2015, it had started a cycle of increases in its policy interest rate until it stood at levels close to the neutral interest rate in 2019.

47 In the case of Latin America and the Caribbean, they stood at 45.8% and 68.7% respectively.

and involved significant fiscal imbalances. The countercyclical response of governments and their central banks to face the crisis generated by Covid-19 and alleviate its humanitarian and economic effects was rapid and historically large in magnitude. The response adopted, however, further accentuated some of the distortions of the previous period and resulted in a significant increase in global liquidity, risky asset prices, fiscal imbalances, and public indebtedness in many countries. For emerging and developing countries, gross debt as a percentage of GDP increased again and reached 65.1% in 2021, according to IMF data. For Latin America and the Caribbean, this indicator stood at 72% for that year.

Since the end of 2021, overall inflation and its expectations rose and moved away from the targets and, in response, a large number of central banks started to tighten monetary policy. The rise in inflation, initially caused by cost pressure on prices and supply problems due to the Covid-19 pandemic, has recently been accentuated by the effects of Russia's invasion of Ukraine. Thus, as these shocks have become more persistent, the risk of de-anchoring inflation expectations from the targets set by central banks has increased. This has occurred in an environment of the uneven recovery of global economic activity, low interest rates, ample liquidity, and a significant fiscal stimulus. Against this macroeconomic backdrop, several emerging economies have been raising policy interest rates since mid-2021. They were followed by the main central banks of developed countries that began their adjustment over the course of 2022. The Fed's interest rate hike and the reduction of its balance sheet have put upward pressure on the risk premia of emerging countries, a trend that is more accentuated in those economies with significant imbalances in their current account or public finances, for example. For the remainder of the year, the Fed is expected to continue to decrease liquidity levels and raise its policy interest rate. The high levels of indebtedness in emerging economies, together with the increase in international interest rates⁴⁸ this year, have led to an increase in the cost of public financing for these countries, including Colombia. This is taking place against a backdrop of widespread uncertainty regarding the new long-term levels of output growth and interest rates in several economies. There are also discussions in their central banks on the nature and persistence of inflationary shocks and possible changes in the processes of expectation formation and price indexation, along with other challenges. All this is occurring in a context in which the fiscal imbalance of some emerging countries limits the actions of monetary policy to control inflation.

In the case of Colombia, Banco de la República has a constitutional mandate to ensure that the purchasing power of the peso is maintained in coordination with general economic policy. In order to comply with the above, the BDBR implemented an inflation targeting plan in 1999 with a floating exchange rate system in which monetary policy moves are focused on keeping inflation at the 3.0% target and reaching the highest sustainable level of output and employment. This policy framework has the virtue, along with others, of facilitating countercyclical monetary policy. In this plan, the monetary policy decisions are made on the basis of an analysis of the current situation and the economic outlook and on an evaluation of the inflation forecast with respect to the targets. For example, if this analysis indicates that inflation may persistently deviate from 3.0% due to excess or shortfalls in spending or in the productive capacity of the economy, the monetary policy rate (MPR) is modified to bring inflation back toward 3.0%. If the deviations are due to transitory factors (e.g., a climatic condition that affects food prices or

48 The rise in the risk indicators of emerging economies is reflected in an increase in the financing interest rate. The average EMBI between 2009 and 2019 was 343.1 pp while from the beginning of 2022 to June it was 437.1 pp.

temporary supply shocks) and inflation expectations remain anchored to the target, the MPR remains unchanged. In contrast, if the deviations become persistent to the point where they could generate undesirable price indexation processes, the MPR is modified to anchor expectations and help inflation return to the target.

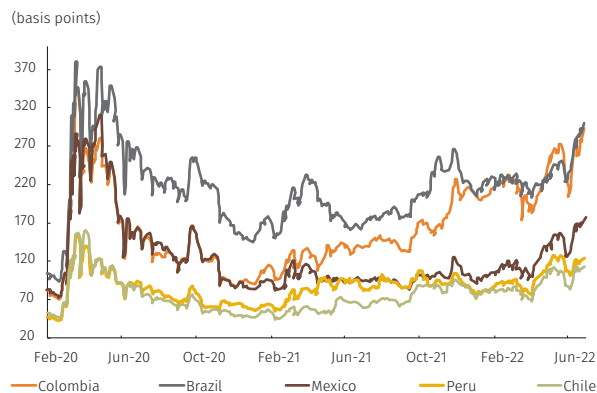
Over the course of 2022, the BDBR has expedited the monetary policy adjustment process that was started last September. In the future, the pace of adjustment will depend on the information available. Economic activity continued to have a surprisingly strong upward trend in the first half of 2022, and the forecasts suggested a higher level of output than had been estimated at the beginning of the year which would continue to outstrip the economy's productive capacity for the remainder of 2022. Inflation has risen faster than expected and remained well above the 3.0% target. The high records in core inflation measurements and in all major CPI groups confirm a significant diffusion of price increases. International cost and price shocks, intensified by Russia's invasion of Ukraine, proved more persistent than estimated and continue to contribute to keeping inflation at high levels. Added to this are the effects of indexing, the closing of excess production capacity, inflation expectations that continue to rise and exceed 3.0%, accumulated pressure on prices from the exchange rate, and a recovery of the labor market to levels that are no longer a source of downward pressure on the inflation rate. In view of this macroeconomic diagnosis, the BDBR decided to increase the pace of monetary policy tightening and at each of its meetings in January, March, and April, they raised the MPR 100 bp while at the June meeting, they raised it by 150 bp to 7.5%.⁴⁹ This faster pace of tightening, which is compatible with the strength that economic activity is showing, places monetary policy more quickly on a trajectory that will reduce inflation and contribute to its convergence to the target in the medium term. However, it should be noted that the effectiveness of monetary policy in controlling inflation depends, in part, on the general state of the economy and the effects of other public policies. In this respect, measures that support an orderly adjustment of the country's macroeconomic imbalances and improve market efficiency could help to strengthen monetary policy action and speed up the process of inflation convergence to the target. Going forward, the pace of monetary policy tightening will depend on the new information available.

At the beginning of April 2022, Banco de la República reverted to a normal liquidity transaction plan while incorporating some improvements. In 2020, the BDBR adopted a series of measures to ensure the liquidity of the economy and financial markets in response to the risks and adverse effects associated with the Covid-19 pandemic. This implied the implementation of new liquidity provision mechanisms and adjustments to the conditions of some of the instruments available to *Banco de la República* to regulate the liquidity of the economy and facilitate the normal functioning of the financial markets and the payment system in an environment of extraordinary tension. Considering the liquidity conditions of the country's financial markets and desiring to ensure the proper functioning of the payment system, the BDBR decided to return *Banco de la República's* liquidity transaction system to normal conditions as of 04 April 2022. These transactions went back to operating the way they had before March 2020 with three changes that reinforce them, as explained in Box 1. In this context, the auctions of temporary expansion operations implemented with private debt securities and promissory notes as well as those implemented with public debt at nine-month and one-year maturities were also suspended on that date. These mechanisms may be activated when the economic situation requires them.

⁴⁹ As this report was being finalized, the BDBR decided to raise the monetary policy interest rate by 150 bp thus taking it to 9.0% at its July 29 session.

4. Change in and Outlook for the Financial and Loan Markets

Graph 4.1
Risk Premia (5-year CDS) for some Economies in the Region



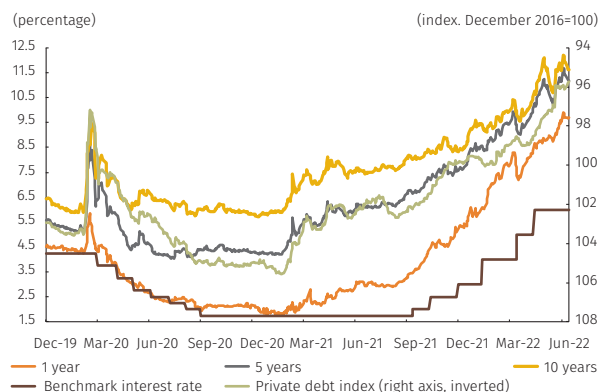
Source: Data License, Bloomberg.

Graph 4.2
Index of Interest Rates in Some Economies in the Region



Sources: Data License, Bloomberg, SEN, MasterTrader, calculations by Banco de la República.

Graph 4.3
Zero-coupon TES Rate in Pesos by Term, Private Debt Index, and Monetary Policy Rate



Sources: SEN, Master Trader, calculations by Banco de la República.

4.1 Local Financial Markets

4.1.1 Debt and Stock Markets

Colombia has experienced high volatility in financial markets and risk perception up to this point in 2022 because of the foreign context and the uncertainty regarding the election results and the adjustment policies to be undertaken by the elected government. In addition to the factors that impacted risk premia metrics in emerging markets, in Colombia the higher risk perception was mainly associated with the uncertainty surrounding the outcome of the legislative and presidential elections during the first half of the year. Associated with the above, the uncertainty surrounding the adjustment policies for fiscal and foreign imbalances may be contributing to the volatility of local financial markets.

Interest rates on public and private debt securities in Colombia have increased, mainly as a result of the higher country risk perception and global inflationary pressure. In line with what has been seen with respect to debt securities in the United States and other countries in the region, Colombian debt securities have shown significant devaluations over the course of the year, a phenomenon that is partly associated with the continued withdrawal of the monetary stimulus started by *Banco de la República* in September 2021 (Graph 4.2). These devaluations have been higher than those noted in other countries both in local currency securities (devaluations of 380 bp compared to 190 bp in the United States and 160 bp in the region) and in foreign currency (devaluations of 290 bp compared to 210 bp in the region). This is a consequence of the uncertainty surrounding the electoral process and the adjustment policies to be undertaken by the elected government (Graph 4.3).

The devaluations of public debt securities in local currency have been mitigated by the demand for these securities from foreign investors, primarily since March. Since that month, foreign capital inflows into the local public debt market have amounted to COP 11,648 b,⁵⁰ in contrast to outflows of COP

⁵⁰ Based on information as of June 30, purchases of local public debt securities in the spot market by foreign investors amounted to COP 6,540 b and COP 3,098 b of peso and UVR-denominated TES respectively. As for the futures market, its buying position has risen COP 2,010 b, corresponding to purchases of COP 869 b and COP 1,141 b of non-delivery forwards (NDF) of peso-denominated TES and UVR respectively.

1,700 b⁵¹ during the first two months of the year. This may be explained, in part, by the increase in the long-term spreads between TES and US Treasury interest rates. For the ten-year maturity this spread has gone from 700 bp at the beginning of the year to 900 bp as of June 30.

During the year, the local stock market has declined in line with the performance of most stock markets in the region while purchases by foreign investors have been recorded. The MSCI Colcap index has fallen 6.2% year-to-date (as of June 30), influenced by the aforementioned local and international factors. Between January and June, foreign investors, in turn, bought a net COP 885 b while during the same period last year they had sold a net COP 1,248 b.

The performance of local financial markets will depend on developments in the international context, the strength of the economic activity and employment, the monetary policy decisions of *Banco de la República* and the trajectory of fiscal and external adjustment to be undertaken by the elected government. Local financial markets gave a positive reception to the fiscal outlook published by the government in the recent Financial Plan and the Medium-Term Fiscal Framework (MFMP, in Spanish). The latter shows that the rapid economic recovery has resulted in higher tax revenue and more favorable forecasts of financing needs and the paths of public debt, and fiscal deficit as a share of GDP. Going forward, in addition to the international environment, the performance of local financial markets will continue to be influenced by the outlook for economic recovery and inflation as well as by the decisions made by *Banco de la República* based on this outlook and the reforms proposed by the next government, which, in turn, will have an impact on the trajectory of the country's fiscal, monetary and external adjustment.

4.1.2. Foreign Exchange Market

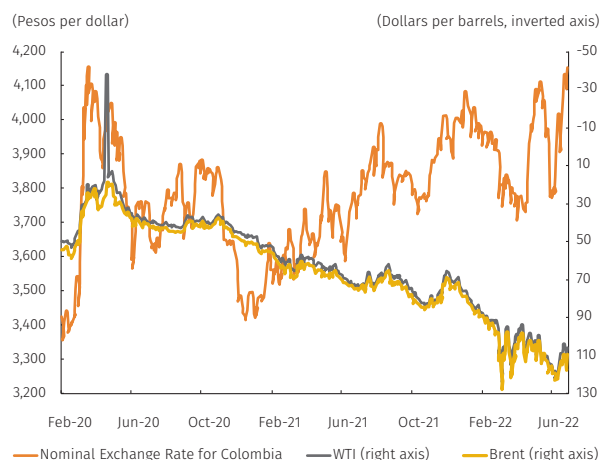
To reach the target of maintaining a low and stable inflation rate and achieving the maximum sustainable level of output and employment, *Banco de la República* follows an inflation targeting model⁵² with a floating exchange rate system. The exchange rate flexibility is considered a fundamental element for achieving these goals due to the fact that: 1) it is a variable of adjustment to external shocks that allows, for example, exports to adjust to imports as was seen in 2021 when the depreciation of the exchange rate boosted non-traditional exports and improved the country's trade position and economic activity; 2) it allows the interest rate to be used independently as an instrument to bring inflation and output to the values desired for them, 3) the volatility inherent to the float stimulates the development of the hedging market which is important for maintaining financial stability.

The Colombian peso has been volatile throughout 2022. In particular, starting in June, there has been a significant depreciation of the peso against most of the currencies in the region. The largest depreciation of the Colombian peso was seen at the end of the second quarter of 2022 in line with the strengthening of the US dollar in the global context and under the influence of a less favorable in-

51 During this period, net purchases of local public debt securities on the spot market by foreign investors corresponded to purchases of COP 1,785 b in peso-denominated TES and sales of COP 257 b in UVR-denominated TES. As for the futures market, its buying position has declined COP 3,228 b, corresponding to sales of COP 188 b and COP 3,040 b of NDF of peso-denominated and UVR-denominated TES respectively.

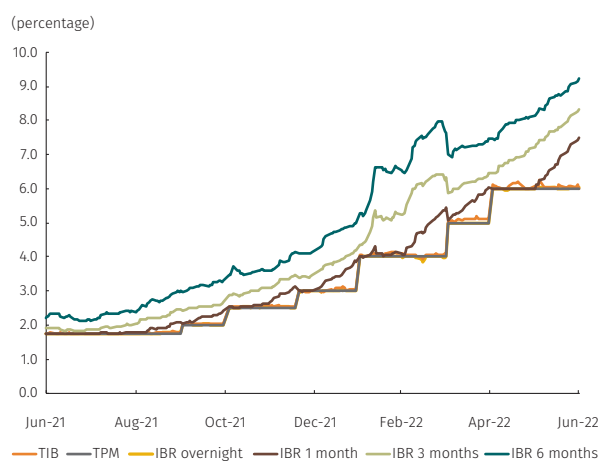
52 Under this approach, monetary policy actions are intended to ensure that future inflation is within the target set in the policy horizon.

Graph 4.4
Colombia's Nominal Exchange Rate vs. Crude Oil Prices



Source: Data License, Bloomberg. Data as of 30 June 2022

Graph 4.5
Monetary Policy Rate (MPR), Interbank Rate (IBR), and BBI (overnight, 1-, 3- and 6-months)



Sources: Banco de la República and Financial Superintendency of Colombia (form 441).

ternational environment for risky assets as well as a decline in oil prices. Local factors such as uncertainty regarding the economic policies that the incoming government is likely to apply and the persistence of inflationary pressures were also added (see subsection 3.1 in this Report). These local factors caused the Colombian peso to perform worse than most of its peers in the region. It should be noted that, until May, the currency depreciation was contained by the increase in oil prices⁵³ (Graph 4.4), the presence of foreign currency supply flows related to the different Public Takeover Bids, and tax payments by major taxpayers as well as by the net supply of dollars offered by foreign investors in the spot and forward markets.

4.2 Credit Institutions' Financial Intermediation

Interest rates in the overnight market rose in line with increases in the monetary policy rate (MPR). The BBI rates at higher maturities rose in greater proportion in anticipation of additional increases in the MPR. The overnight BBI rate and the overnight interbank rate are indicators of the cost of funding financial institutions at that maturity. Since the increases in the MPR began at the September 2021 Board meeting, these rates have remained close to the benchmark interest rate. For one-, three- and six-month maturities, BBI rates began to rise as of March 2021 and have been speeding up their rate of increase throughout 2022 in an environment of higher inflation expectations. Between January and June this year, these rates rose by more than 380 bp⁵⁴ on average and thus reflected higher inflation expectations and higher expectations of increases in the MPR in the coming months (Graph 4.5).

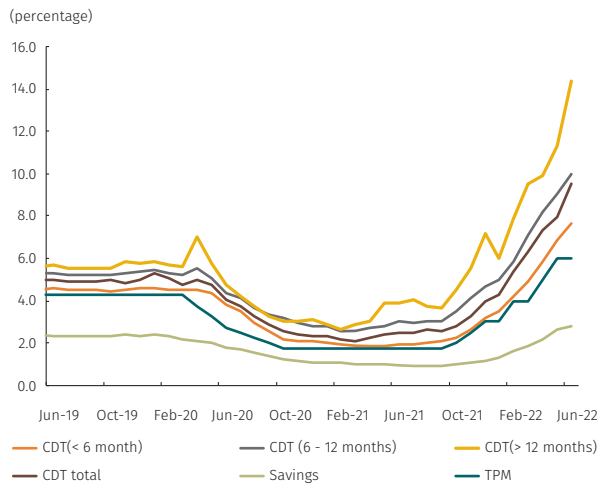
The transmission of increases in the MPR to deposit and lending rates will probably be occurring more rapidly than in previous cycles. The transmission of the increases in the MPR to term deposit and lending rates in this cycle has been more than proportional in the case of CD rates and commercial and consumer loans. Some studies carried out for Colombia⁵⁵ indicate that the estimated time for a complete transmission when there are changes in the monetary policy rate is usually between a year and a year and a half for deposit interest rates, and a little more for lending rates. However, these estimates have a high degree of uncertainty. Historically, transmission has been fastest in the case of commercial loans

53 The price of Brent crude oil rose 48% and WTI crude rose 41% as of 30 June 2022, compared to the close of 2021. The correlation between the Colombian peso and the Brent crude oil price was -0.91 in the first quarter of 2022 and -0.30 in the second quarter.

54 The BBI 1-month rate has risen 381 bp over the course of 2022, the three-month rate, 442 bp; and the six-month rate, 474 bp.

55 See Box 1 "The Transmission of the Changes in the Monetary Policy Interest Rate (MPR) to the Interest Rates of the Credit Institutions (CI)" in the April 2021 Monetary Policy Report for a summary of various studies. .

Graph 4.6
Lending Rate
(monthly average)



Source: Financial Superintendency of Colombia (form 441), calculations by Banco de la República. Information as of 30 June 2022.

while home purchase loans have taken the longest. Among the factors that may have increased the speed of transmission in this cycle are the expectation of additional increases in the MPR, the rise in inflation and its expectations, and the stronger economic activity and demand for loans. CD rates may also have been influenced by the full implementation of the structural liquidity regulation (net stable funding ratio, NSFR⁵⁶) as of March.

The increases in the MPR implemented between September 2021 and June 2022 have been transmitted to the interest rates for term deposits. The aggregate CD deposit rate has risen 698 bp since September 2021 with increases greater than the MPR for all maturities,⁵⁷ but especially for maturities greater than one year, due, in part, to the increase in the share of issues with longer maturities (more than five years).⁵⁸ In addition, the interest rate for savings accounts rose 187 bp compared to September 2021⁵⁹ (Graph 4.6).

Adjustments in the MPR have also been transmitted to credit rates. Starting in September 2021 and during the first half of 2022, commercial, consumer, and credit card rates rose more than the MPR while rates for home purchases and microcredit rose to a lesser extent.⁶⁰ For the two main types of loans, commercial and consumer, which represent more than 80% of portfolio disbursements, rate increases were the highest (565 bp for commercial and 548 bp for consumer since September

56 In order to supplement the CI liquidity risk measurement and management, the FSC issued instructions related to the construction of the net stable funding ratio (NSFR) through External Circular 019/2019. This indicator makes it possible to identify the structure and strategic management of the CIs' balance sheet in terms of their stability in order to limit the heavy dependence on unstable sources of funding that could exacerbate liquidity risk in the long term.

57 Between September 2021 and June 2022, the increase in the MPR was 425 bp (not including the 150 bp increase at the June 30 meeting). During that period, the CD rate for less than one year rose 555 bp, between six and twelve months 691 bp and for more than twelve months 1069 bp (taking the average data weighted by the amount per the month).

58 Based on information from CDs issued in the BVC, the share of maturities greater than five years was 9.0% as of June 2022 while in 2020 and 2021 the share was close to 0%.

59 Between September 2021 and June 2022, the increase in the interest rate on legal entities' savings deposits was 278 bp, that of official entities, 234 bp; and that of individuals, 9 bp.

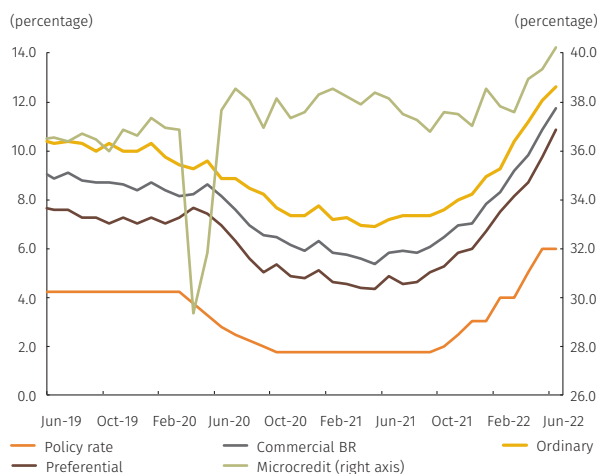
60 Aggregate credit rates for the month of June 2022 were calculated based on information available up to the week ending June 24 due to the fact that data for the last week of June was not yet available at the time of this report. This was due to the change in the instrument used to collect this information decreed by the Financial Superintendency. Considering the above, between September 2021 and June 2022, the rate for the purchase of low-income housing rose 262 bp, the rate for housing other than low-income housing rose 293 bp and the rate for microcredit rose 347 bp.

2021, and 469 bp and 466 bp, in that order, so far this year)⁶¹ (Graph 4.7, panel A). In real terms, all rates, including both deposit and lending rates, as of June 2022 were higher than their levels seen at the end of 2021 but were still at levels that can be described as low (Graph 4.7, panel B).

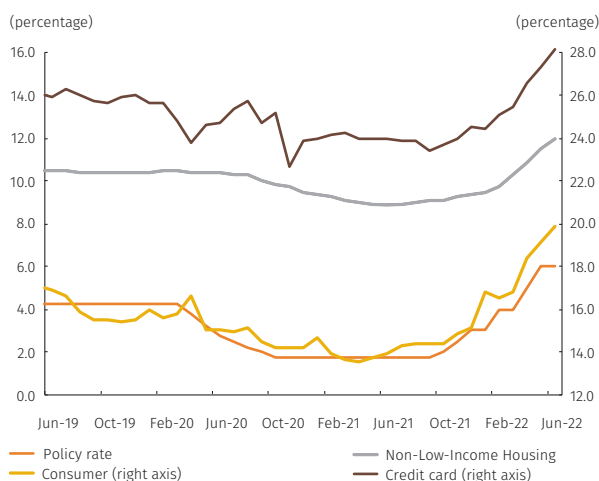
Graph 4.7
Lending Rate
(monthly average weighted by amount)

A. Nominal rate

I. Loans to Businesses

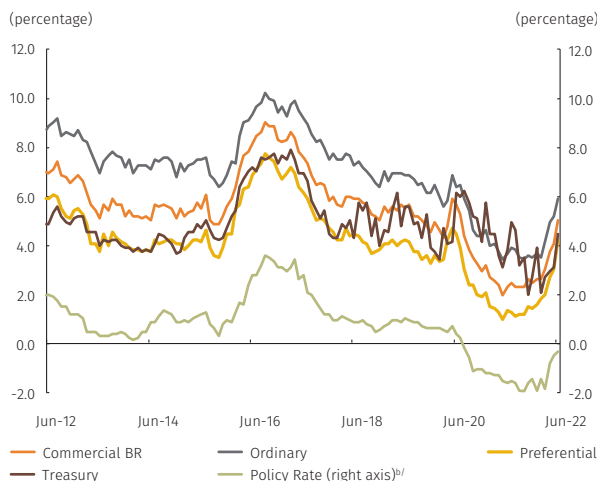


II. Loans to households

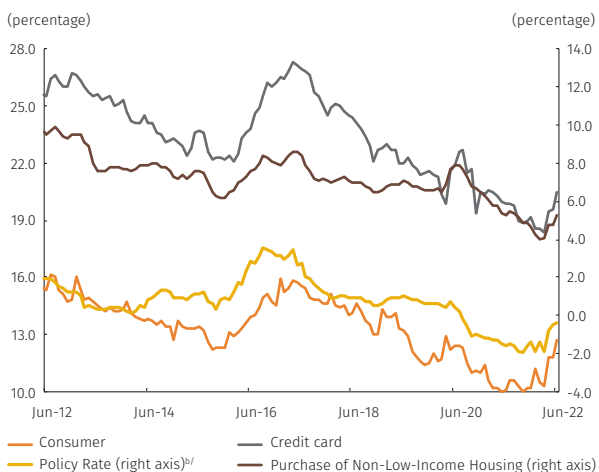


B. Real Rates ex ante^{a/}

I. Loans to Businesses



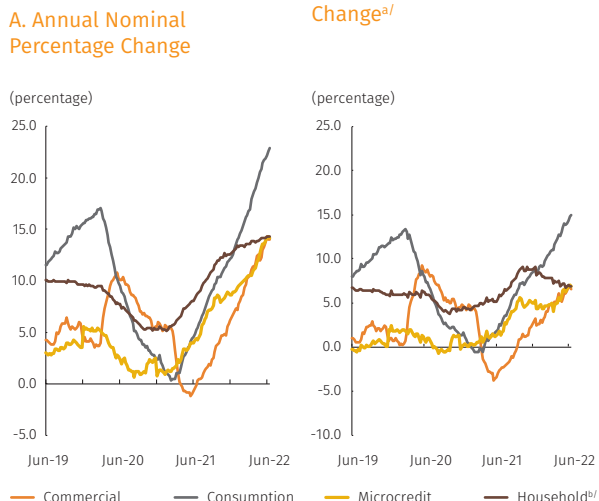
II. Loans to households



a/ The average of several measures of inflation expectations are used as a deflator (for 1 year from now obtained from the monthly survey of financial analysts, for 1 year from now obtained from the quarterly survey on economic expectations, the BEI for 2 and 3 years from now, and the forward BEI for 2 and 3 years from now).
b/ The policy rate is the one set by the BDBR at the monthly meeting; the remaining rates correspond to the average for the month (weighted by amount).
Note: June 2022 credit rates were calculated using information through the week ending June 24 since data for the last week of June were not yet available at the time this report was written. This was due to the change in the instrument used by the Financial Superintendency to collect this information.
Source: Financial Superintendency of Colombia (form 088), calculations by Banco de la República.

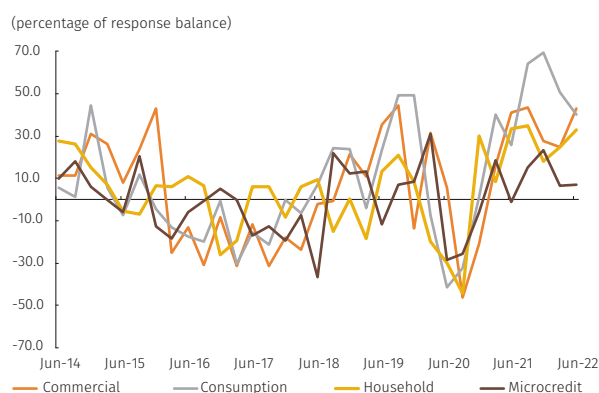
61 For the different sub-categories, between September 2021 and June 2022, the increase in interest rates was: prime, 584 bp; ordinary, 528 bp; treasury, 407 bp; consumer loans covered by automatic payroll deductions, 261 bp; and those other than loans covered by automatic payroll deductions, 613 bp. In addition, for credit cards the increase was 452 bp. See previous note.

Graph 4.8
Real Annual Growth of Credit Institutions' Gross Loan Portfolio by Type



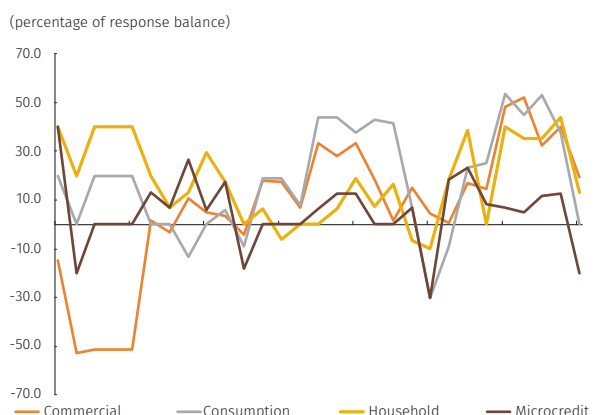
a/ Deflated with the Consumer Price Index less food.
b/ Includes adjustments due to securitization of the mortgage loan portfolio.
Source: Financial Superintendency of Colombia, calculations by Banco de la República.

Graph 4.9
Banks' Perception of Credit Demand



Source: Quarterly Survey on the Credit Situation in Colombia June 2022, calculations by Banco de la República.

Graph 4.10
Change in the Supply of New Loans by Type



Source: Quarterly Survey on the Credit Situation in Colombia, June 2022, calculations by Banco de la República.

So far in 2022, credit growth has accelerated, especially in consumer loans, according to the recovery of economic activity. During 2022, portfolio disbursements have shown greater growth compared to what was registered in 2021 in all sub-categories of credit, except in loans covered by automatic payroll deductions, and acquisition of housing other than LIH. As a result, the balance of all credit modalities in nominal and real terms accelerated (except for housing portfolio, which experienced a slight slowdown in real terms). Preliminary information indicates that the gross portfolio of credit institutions (CIs) in legal currency may have amounted to approximately COP 592 trillion (t) as of June 2022, with an annual nominal growth of 16.9% and a real growth of 9.4%⁶² (Graph 4.8).

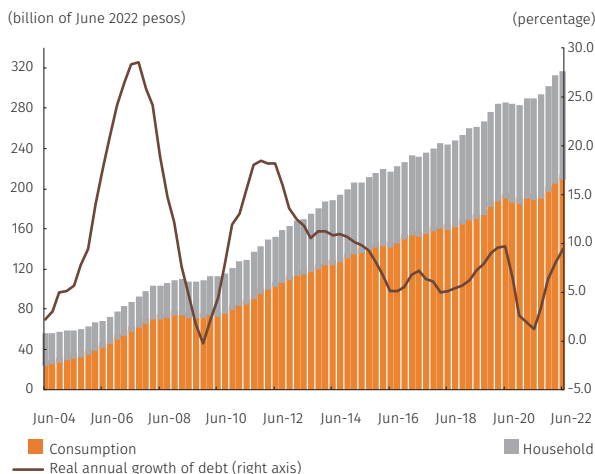
In the second quarter of the year, banks' perceptions on the credit demand remained at historically high levels, while the perception on the credit supply decreased for all portfolios. As of June 2022, the results of the Report on the Credit Situation performed by Banco de la República exhibited a reduction in the difference between the number of entities that perceived increases in credit demand and those that perceived decreases (perception indicator) for the consumer and microcredit modalities. However, both still exhibit a positive balance. On the contrary, the indicator for the commercial and housing portfolios increased (Graph 4.9). Regarding the credit supply, the perception indicator decreased in all modalities, while the requirements for granting new credits rose (Graph 4.10).

Firms and household indebtedness remains at historically high. Nevertheless, credit risk indicators continue to show improvements. In the most recent months, household indebtedness, which slowed down during the health emergency, resumed the accelerated growth path registered during 2019 (Graph 4.11, panel A). As a result, the debt-to-income ratio is at record highs (Graph 4.11, panel B). This higher indebtedness, along with financial burden indicators that are also at historically high levels, implies a greater risk in the event of a shock to household income (Graph 4.12). In turn, although the indebtedness indicators of the private corporate sector are also close to their historical maximum (Graph 4.13), its indebtedness as a percentage of GDP (more than half corresponds to loans in pesos) declined during 2021 and the first quarter of 2022. This trend may have been reversed in the second quarter due to the increase registered in the commercial loan portfolio (which, despite being the modality with the lowest growth, expands at a higher rate than GDP) and due to the effect of the depreciation of the Colombian peso on foreign currency liabilities of the corporate sector (Graphs 4.8 and 4.13). Furthermore, in a context of economic recovery, and after the completion in August 2021 of the Debtor Assistance Program

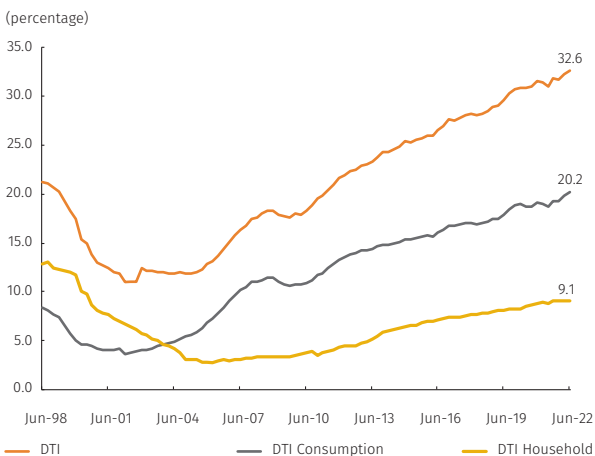
62 Using the Consumer Price Index excluding food as deflator.

Graph 4.11 Household Indebtedness

A. Breakdown and Real Annual Growth of Household Indebtedness

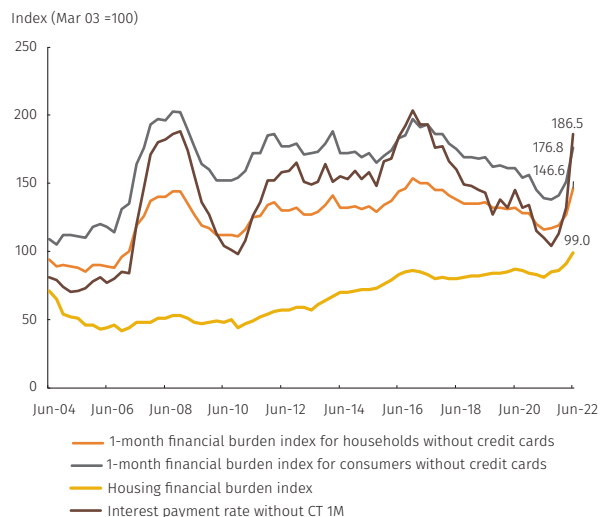


B. Debt-to-income (DTI)



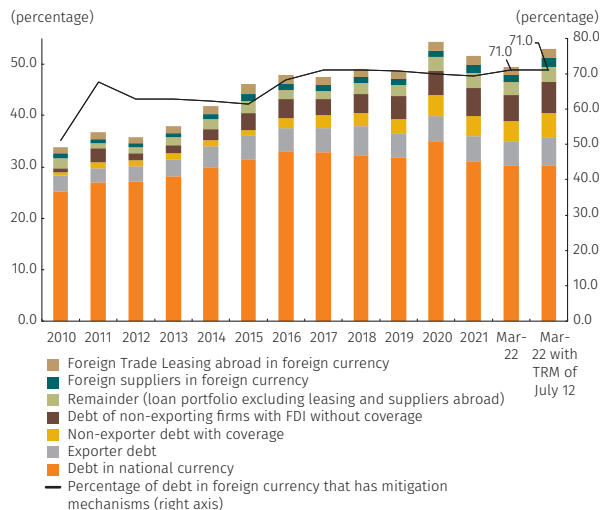
Note: information from the Solidarity Economy Superintendency and Titarizadora Colombiana as of March 2022. In panel A, the values reported in June 2022 from these sources correspond to those registered in March 2022. Sources: Financial Superintendency of Colombia, Solidarity Economy Superintendency, DANE, Banco de la República, and Titarizadora Colombiana, calculations by Banco de la República.

Graph 4.12 Household Financial Burden



Note: the debt-to-income indicator and the household financial burden index for June 2022 were calculated by the technical staff at Banco de la República using estimates of household income for the second quarter of 2022 based on information available as of March of the same year. Sources: Financial Superintendency of Colombia and DANE, calculations by Banco de la República.

Graph 4.13 Private Corporate Sector Financial Debt as a Share of GDP by Exchange Rate Coverage, FDI, and Debtor



Note: The most recent information from the Superintendency of Corporate Affairs is from December 2020. In the data from March 2022, the values reported from this source as of 2020 have been maintained. Sources: Financial Superintendency of Colombia, Superintendency of Corporate Affairs, and Banco de la República, calculations by Banco de la República.

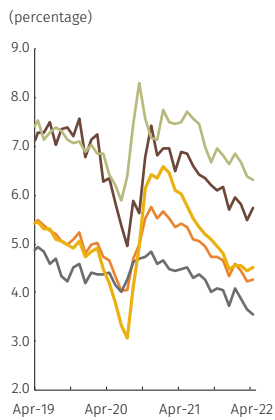
(PAD in Spanish) implemented by the FSC⁶³, the risky and non-performing portfolios of all credit modalities continued their downward trend. Therefore, so far in 2022, there have been improvements in the quality indicators by risk (QIR) and the non-performing loans indicator (NPL) (Graph 4.14).

The balance of term deposits grew significantly due to both supply and demand factors after having declined steadily during 2020 and 2021. Demand deposits as

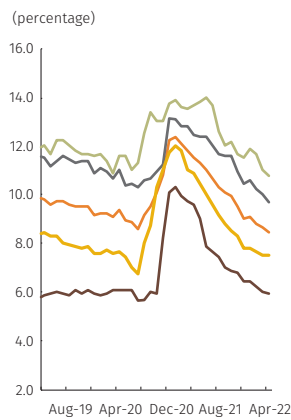
63 As of March 2022, the PAD accounted for an amount close to COP 25 t, which represented 4.2% of the total gross loan portfolio reported during the same month. Of this amount, 82.6% are up to date.

Graph 4.14
Portfolio Quality Indicators

A. Non-performing loans indicator (NPL)



B. Quality indicator by Risk (QIR)



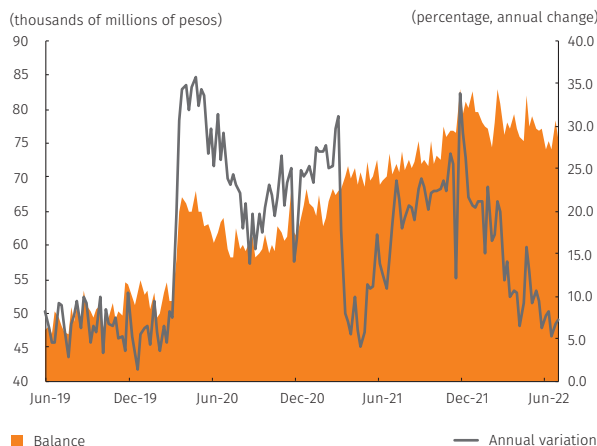
— Total portfolio — Commercial portfolio — Housing portfolio
— Consumer portfolio — Microcredit portfolio

Source: Financial Superintendency of Colombia; calculations by Banco de la República.

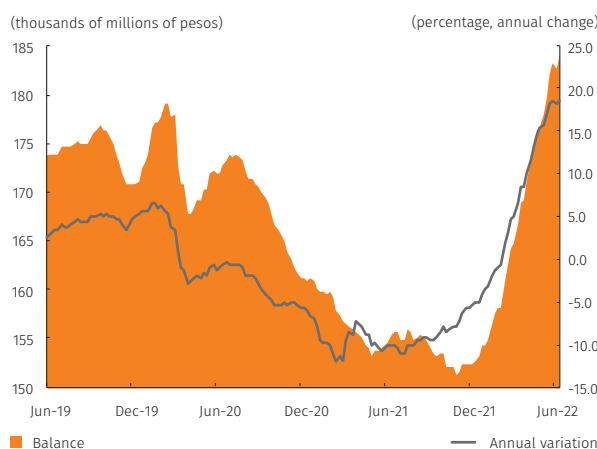
well as cash held by the public moderated their rate of expansion at the margin. Although demand deposits and cash continued to show higher nominal growth rates in 2022 than those registered prior to the pandemic, CDs became more attractive, and their balance returned to the (nominal) levels at the beginning of 2020 (after nearly two years of sustained declines) (Graph 4.15). This may be due to both supply and demand factors. From the savers' point of view, the sharp increase in inflation and in the interest rates of these types of deposits increases the opportunity cost of holding demand deposits, which have a lower (or zero, in the case of cash) remuneration. In addition, the level of uncertainty associated with the pandemic and with it the preference for liquid assets appears to be fading as economic activity and mobility have returned to normal. From the point of view of credit institutions, the greater growth of lending activity may have generated greater medium and long-term funding needs, even more so in an environment of expected increases in the monetary policy rate, and in view of the 100% NSFR requirement for an important group of banks that went into effect in March.

Graph 4.15
Main Deposits (balance and annual variation)

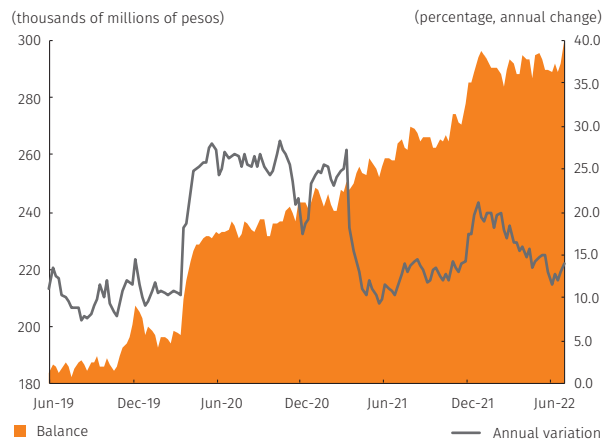
A. Current Account



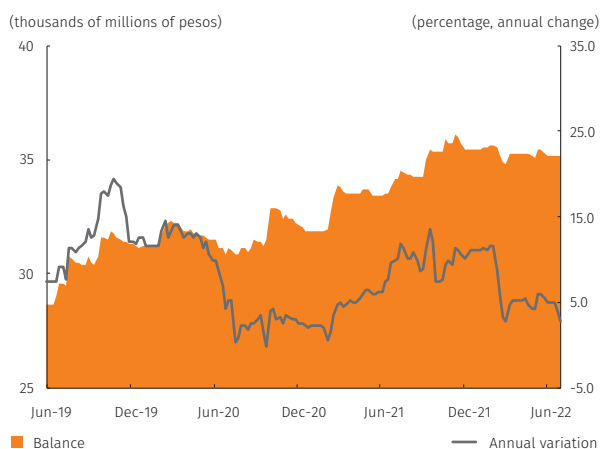
C. CD^{a/}



B. Savings



D. Bonds^{a/}



a/ Does not include the CDs nor bonds held by Banco de la República.
Source: Financial Superintendency of Colombia (form 281), calculations by Banco de la República.

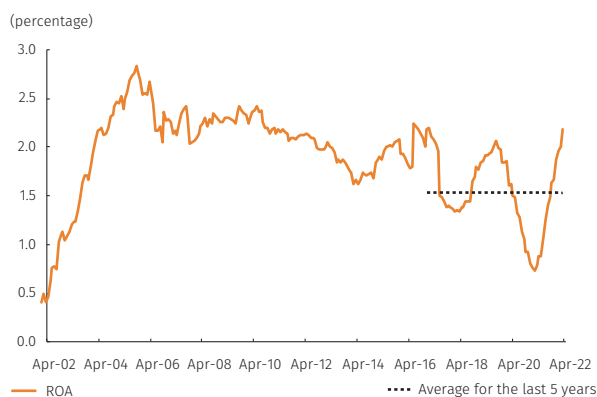
CIs' profitability continued the upward trend registered since February 2021, reaching a higher level than before the pandemic. The recent increase in the return on assets (ROA) indicator is due to a lower expense of loan-loss provisions given the improvements in portfolio quality indicators. During the pandemic, this item was the one that most explained the drop in profitability (Graph 4.16).

CIs have recovered their short-term liquidity so far in 2022 and structural liquidity has increased in line with the regulatory changes in this regard. The downward trend that the liquidity risk indicator (LRI) exhibited since the second half of 2021 changed during the 2022. In turn, the NSFR has shown a rising trend since its implementation in 2020 in line with the changes in regulatory limits foreseen in the implementation plan. In any case, a high heterogeneity is observed in the NSFR by entity. However, the four entities with the lowest NSFR as of April 2022 represent 27.7% of the assets of the CIs.

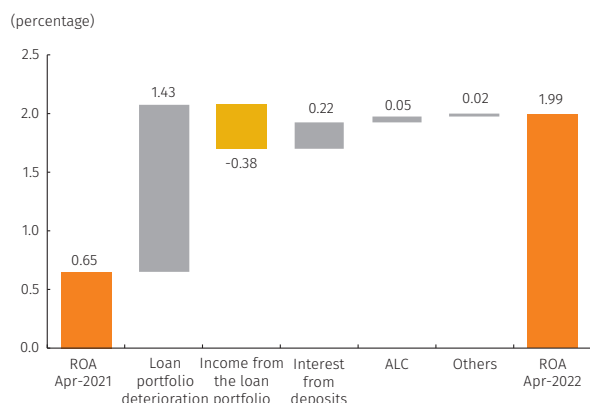
Regarding the equity soundness of the CIs, the aggregate levels of total capital adequacy ratio and the Common Equity Tier 1 are well-above their regulatory min-

Graph 4.16
Credit Institutions' Profitability

A. Return on assets (ROA)



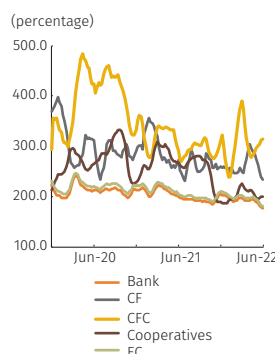
B. Breakdown of ROA



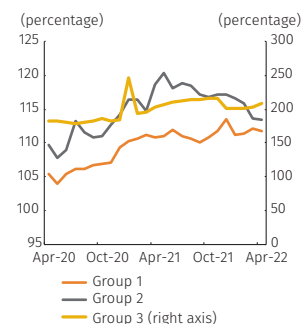
Source: Financial Superintendency of Colombia; calculations by Banco de la República.

Graph 4.17
Credit Institutions' Liquidity Indicators

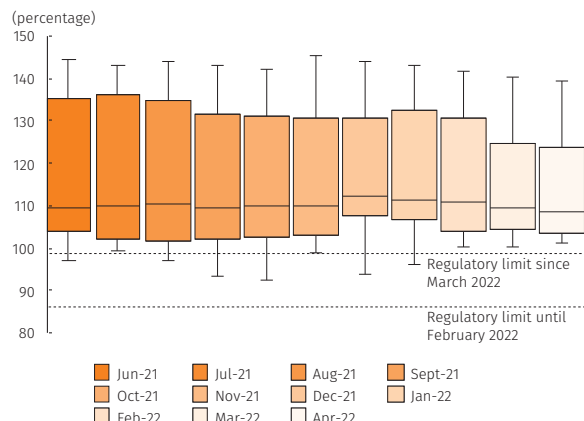
A. Credit Institutions' 30-day LRI (four-week moving average)



B. NSFR^{a/} (four-week moving average)



C. Distribution of NSFR of Group 1 Institutions^{b/}



a/ the distribution of the NSFR of the entities in group 2 is not presented because their regulatory limit is lower and the indicator seen is, on average, higher.

b/ Graph without outliers.

Source: Financial Superintendency of Colombia; calculations by Banco de la República.

imums (Graph 4.18, panel A).⁶⁴ The consolidated total capital adequacy ratio and the Common Equity Tier 1, in turn, show a similar performance to the individual ones, although at a lower level (16.2% and 12.5% respectively as of March 2022; Graph 4.18, panel B).

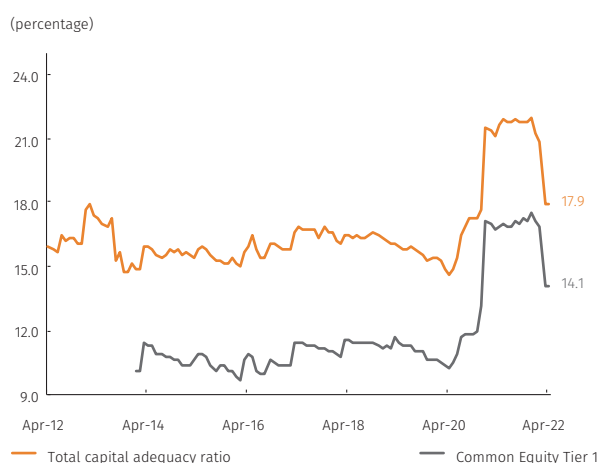
4.3 The Financial System's Exposure to Market Risk and Changes in the Portfolio of Non-Banking Financial Institutions

So far in 2022, the public debt portfolio exposed to market risk decreased for non-bank financial institutions (NBFIs) and credit institutions (CIs). For the Colombian financial system, exposure to fixed and variable income markets, which is measured as the investment in debt securities exposed to market risk⁶⁵, is mainly concentrated in treasury bonds TES (60% as of June 2022). At the end of June 2022, both CIs and NBFIs increased their holdings of private debt securities and stocks and reduced those of public debt securities (Table 4.1). The managed assets of NBFIs showed a similar performance in trust companies (TC), while stock brokerage firms (SBF) increased their holdings of debt securities. The reduction in public debt portfolios is due to devaluations in these securities.

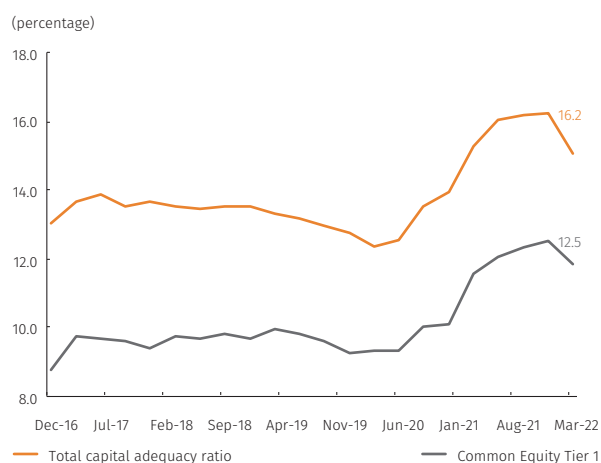
The performance of local financial markets is reflected in the NBFIs' portfolio given the importance of investments in their business model and the size of their exposure to market risk. In the last six months, NBFIs recorded slowdowns in their proprietary and managed portfolios due to greater volatility in local markets and devaluations in their investment portfolios. All the types of NBFIs presented real annual contractions in their proprietary account portfolio at the end of April 2022, except for the pension fund managers (PFM). In terms of the managed portfo-

Graph 4.18
Capital Adequacy Indicators

A. Capital adequacy at an individual basis



B. Capital adequacy at a consolidated basis



Source: Financial Superintendency of Colombia; calculations by Banco de la República.

64 There was a drop between February and March 2022 due to the spin-off from Banco de Bogotá of 75% of the investment in BAC Holding International, which generated a reduction of COP 14.5 t in both the basic and technical equity.

65 Investments in debt securities can be classified as held-to-maturity, trading, and available-for-sale. Changes in the price of investments in the market are reflected only for the latter two in the entities' income statements. Therefore, only these are considered as investments subject to market risk.

Table 4.1
Financial Institutions' Investment Portfolio Exposed to Market Risk
(COP billion)

Type of Entity	TES ^{b/}	Private debt	Equity	Total	TES	Private debt	Equity	Total
	(COP billion) July-2022				(percentage change in the last six months)			
Credit Institutions	50.93	5.77	17.40	74.09	-8.03	9.48	7.34	-3.58
Commercial banks	44.95	5.23	0.00	50.18	-9.02	9.99	0.00	-7.35
Investment banks	5.17	0.35	17.36	22.89	1.96	10.41	7.26	6.06
Finance companies	0.80	0.14	0.03	0.98	-9.64	-3.88	76.09	-7.34
Financial cooperatives	0.00	0.05	0.00	0.05	0.00	-4.89	0.00	-4.89
Non-bank Financial Institutions (NBFI)	12.30	10.28	7.56	30.14	-2.80	0.16	15.37	2.27
Pension Funds: proprietary assets	0.20	0.81	0.14	1.15	-30.95	-12.60	-11.97	-16.34
Stock Brokerage Firms: proprietary assets	0.64	0.37	0.12	1.13	-41.35	114.85	-27.60	-21.03
Trust Fund Companies: proprietary assets	0.26	0.27	1.01	1.54	-17.96	-4.11	-5.71	-7.75
Insurance and Capitalization Companies	11.20	8.83	6.29	26.31	2.21	-0.59	22.02	5.30
System in Proprietary Position	63.23	16.05	24.96	104.23	-7.05	3.32	9.65	-1.96
Managed assets								
Stock-brokerage firms: managed assets	2.06	9.38	7.86	19.30	6.14	-2.94	-12.28	-6.15
Trust Fund Companies: managed assets ^{a/}	96.96	36.30	13.50	146.76	-11.73	5.86	-3.24	-7.17
System	162.24	61.73	46.32	270.30	-9.77	3.77	1.41	-5.15

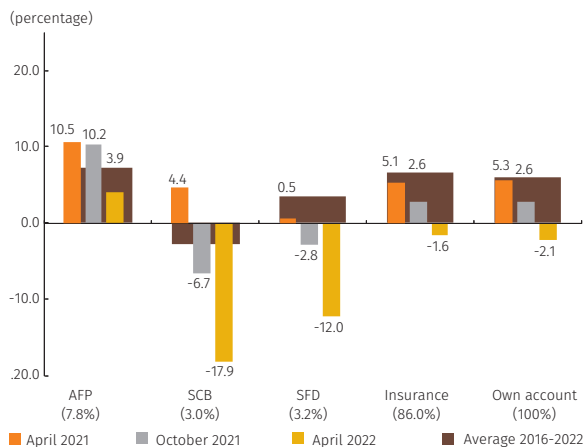
a/ Pension liabilities managed by trust companies are excluded.

b/ The value of the proprietary position is obtained from "Investment Portfolio" on format 351. The value of the managed position is obtained from CSD data.

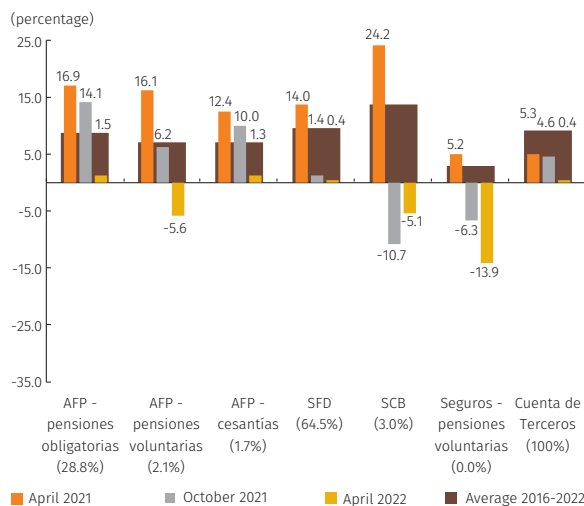
Sources: Central Securities Depository (CSD), Financial Superintendency, calculations by Banco de la República.

Graph 4.19
Assets of Non-banking Financial Institutions

A. Proprietary Assets

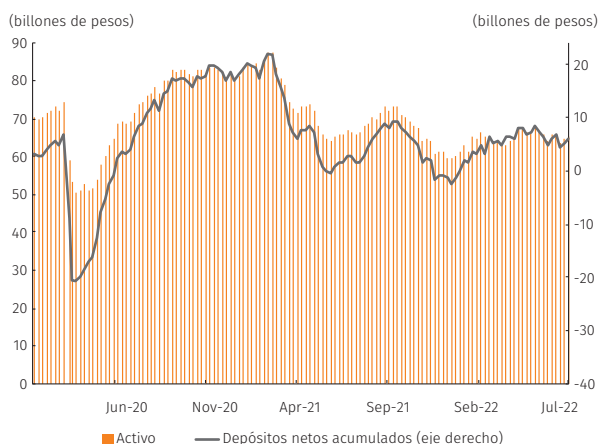


B. Managed Assets



Source: Financial Superintendency of Colombia; calculations by Banco de la República.

Graph 4.20
Open-ended Collective Investment Funds (net assets and deposits)



Source: Financial Superintendency of Colombia; calculations by Banco de la República.

lio, voluntary pensions, and third-party funds held by the SBF registered real annual contractions. These categories account for approximately 5.0% of the assets managed by the NBFIs (Graph 4.19).

The value of the assets of open-ended collective investment funds remained stable over the last six months. The assets of open-end collective investment funds (CIF) managed by TC, SBF, and IMC decreased COP 11.7 t during the fourth quarter of 2021, mainly due to the withdrawals by investors. As of 2022, withdrawals ceased, but assets remained stable at around COP 65 t given the devaluations mentioned above (Graph 4.20).

5. Foreign Balance and Foreign Reserves

5.1 Change in and Outlook for Colombia's Balance of Payments

The current account registered a deficit of USD 5,367 m between January and March 2022 which corresponded to 6.4% of the GDP and represented a USD 2,282 increase compared to the foreign imbalance registered a year ago (Table 5.1). This widening of the foreign imbalance occurred in an environment of strong domestic demand that was spurred by private consumption and remained at high levels as well as the positive performance of investment in machinery and equipment, which was reflected in a significant increase in the value of imports.

The higher foreign imbalance was mainly due to the increase in net factor income outflows (USD 1,730 m) (Table 5.1). This result was associated in particular with an increase in the profits of companies with FDI (USD 1,747 m). The recovery of the country's economic activity and the higher price of petroleum and coal resulted in a better performance of these companies and, therefore, a higher value of the profits remitted abroad. The increase in profits for companies with FDI was widespread across all economic sectors with the earnings increase for companies working in oil drilling and mining, transportation and communications, and financial and business services sectors being particularly noteworthy.

The higher current account deficit is also attributable to the higher trade deficit in the balance of goods (USD 971 m) and services (USD 328 m) (Table 5.1). The trade deficit in goods rose USD 971 m compared to a year ago and was generated by a higher growth in the value of imports (USD 5,453 m) compared to the value of exports (USD 4,482 m). For one thing, the annual increase in household spending (12.2%) and in gross fixed capital formation (11.0% in machinery and equipment in particular) contributed to the overall increase in purchases of goods abroad. The higher prices for crude oil as well as the recovery of our main trading partners, and the growth of non-traditional exports, in turn, explains the rise in exports of goods although this is at a slower pace than imports. In the case of the increase in the deficit of the balance in services (USD 328 m), the rising flow of travelers going abroad along with the higher freight payments contributed to the increase in the foreign imbalance. This was partly offset by the recovery of foreign tourists arriving in the country and income from other business services.

The pressure on the current deficit was partially offset by an increase in net income from current transfers. This increase (USD 747 m) is mainly due to higher income from other transfers (Table 5.1), especially funds received by public companies, the CNG, non-governmental organizations, and non-profit institutions. Workers' remittances (USD 97 m) from the United States, Latin America, and Spain also rose in an environment of declining unemployment and nominal wage increases in these countries.

FDI was the main source of financing from abroad in the first quarter of 2022. Between January and March 2022, the financial account registered USD 4,718 m (5.6% of the GDP) in net capital inflows which are higher than those seen a year ago (USD 2,430 m, 3.2% of the GDP) (Table 5.1). The resources received from FDI (USD 5,186

Table 5.1
Colombia's Balance of Payments

Current account (millions of dollars)	2021 (p) Jan-Mar	2022 (p) Jan-Mar	Change (dollars)
Cuenta corriente (A + B + C)	-3,085	-5,367	-2,282
Porcentaje del PIB	-4.1%	-6.4%	
A. Goods and Services	-3,759	-5,058	-1,299
1. Goods	-2,588	-3,558	-971
Exports FOB	9,279	13,761	4,482
Imports FOB	11,866	17,319	5,453
2. Services	-1,171	-1,499	-328
Exports	1,500	2,658	1,158
Imports	2,671	4,157	1,486
B. Factor Income	-1,776	-3,506	-1,730
Credit	1,366	1,495	128
Debit	3,142	5,001	1,859
C. Current Transfers	2,450	3,197	747
Credit	2,702	3,516	814
Debit	252	319	67
Financial Account Annual flows (millions of dollars)	2021 (p) Jan-Mar	2022 (p) Jan-Mar	Change (dollars)
Financial account with change in international reserves (A + B + C + D)	-2,430	-4,718	-2,288
Percentage of the GDP	-3.2%	-5.6%	
A. Direct Investment (ii - i)	-1,485	-3,844	-2,360
i. Foreign in Colombia (FDI)	2,353	5,186	2,833
Percentage of the GDP (FDI)	3.1%	6.2%	
ii. Colombian abroad	869	1,342	473
B. Portfolio Investment (1+2)	1,319	1,797	478
1. Public Sector (ii - i)	230	-839	-1,069
i. Foreign Portfolio Investment (a + b)	-417	1,191	
a. International markets (bonds)	281	-8	
b. Local Market (TES)	-697	1,199	
ii. Portfolio Investment Abroad	-186	353	
2. Private Sector (ii - i)	1,088	2,636	1,548
i. Foreign Portfolio Investment (a + b)	-480	-391	
a. International markets (bonds)	-212	0	
b. Local markets	-269	-391	
ii. Portfolio Investment Abroad	608	2,245	
C. Other Capital Flows public sector + private sector	-2,455	-2,798	-343
D. Reserve Assets	190	127	-63
Errors and Omissions (E and O)	654	649	-6
Memo items			
Financial account excluding change in international reserves	-2,620	-4,845	-2,224
Change in International Reserve	190	127	

p: provisional
pr: preliminary
Source: Banco de la República.

m) are noteworthy. USD 5,186 m (6.2% of the GDP) were received in FDI in the first quarter of 2022 and is USD 2,833 m more than a year earlier. This FDI trend was evident in the majority of economic activities, especially in the financial and business services sector, where a significant portion of the funds received went to the acquisition of shares of resident firms engaged in food and beverage processing and non-metallic mineral manufacturing.

The financing of the foreign deficit was also supported by net inflows from foreign loans and foreign portfolio investment. In loans from abroad and other capital flows (USD 2,304 m), net disbursements received by the private sector (USD 2,914 m) are notable compared to net payments made by the public sector (USD 908 m). In the first three months of 2022, in turn, foreign portfolio investments were estimated at USD 800 m. This was the result of net purchases of fixed-income securities in the local market by non-residents (USD 1,199 m) and was partially offset by net sales of variable-income instruments by non-residents (USD 391 m) and by net payments of long-term debt securities in the international markets (USD 8 m).

The technical staff projects a reduction for 2022 in the current account deficit as it goes to 5.1% of the GDP (5.7% of the GDP in 2021) in line with an improvement in the country's terms of trade and in a context of moderation in the annual expansion of domestic demand. This improvement probably resulted from the increase in export prices given the annual growth in the international prices of crude oil, coal, coffee, and agro-industrial products, etc. Thus, foreign sales in dollars will probably continue to expand in spite of the fact that the volume of exports of some of the main raw materials will remain below the levels seen before the pandemic. In addition, non-traditional exports are expected to perform well, net income associated with international tourism is expected to recover, and current transfers to the country are expected to increase. The factors that will probably limit a larger reduction in the current deficit, in turn, include growth in spending on imported goods and services, increased remittance of corporate profits abroad, nominal pressure from high foreign prices, high freight transportation costs, and higher interest payments on the external debt. In particular, imports and the generation of profits by companies with foreign capital in the local market could be favored by domestic demand although the annual growth rates are likely to moderate in the second half of 2022. At the same time, the remittance of profits abroad by crude oil and coal exporting companies is likely to continue being driven by the high prices of these products. From the point of view of the macroeconomic balance of savings and investment, the forecast of a lower current account deficit is associated with the prospects of an adjustment on the fiscal front and takes into account the trends in public finance forecasts presented in the MFMP. Last of all, note that the forecast of the foreign deficit remains highly uncertain given the risks associated with the changes in global and local financial and economic conditions.

The inflation targeting regime with a flexible exchange rate allows for an adjustment variable in the event of external shocks. Exchange rate flexibility is considered fundamental for achieving monetary policy objectives since it functions as an adjustment variable that allows monetary policy to not respond pro-cyclically to adverse shocks from abroad and thus accentuate the negative effects of these shocks. It also operates as a stabilizing mechanism for the trade balance by adjusting exports against imports in the event of a change in the exchange rate of the peso with respect to other currencies. In addition, this flexibility prevents excessive exchange rate risk-taking by agents since uncertainty about future changes in the peso's exchange rate acts as a self-regulating mechanism for the market. This

discourages speculative capital flows in the short term and, in general, currency mismatches in the economy.

The country is expected to continue to have access to different sources of external financing in 2022 even with rising interest rates, relatively high-risk premia, and high uncertainty in global markets. The technical staff expects FDI to increase in 2022 compared to the previous year and to consolidate its position as the country's main source of external financing.⁶⁶ For capital flows other than FDI associated with the private sector, a relatively moderate accumulation of net assets abroad⁶⁷ as a result of the country's international investments is assumed. These would be largely offset by inflows of resources associated with foreign indebtedness. The public sector, in turn, will probably continue to register capital inflows derived from the acquisition of new foreign liabilities although to a lesser extent than in the previous year. The reduction in these flows may be due to the expected reduction in the public sector deficit although the fiscal imbalance will probably remain relatively high, and the nominal balance of public debt is likely to increase annually. It is worth mentioning that access to foreign financing will probably be provided under less comfortable conditions, characterized by increases in international interest rates, in the perception of global risk, and in the local risk premium as well as by greater volatility in international financial markets.

5.2 Foreign Reserves

In compliance with Act 31/1992, Banco de la República manages the foreign reserves in accordance with the public interest, to the benefit of the national economy, and to facilitate the country's payments abroad. Consequently, the law requires that investment of the reserve assets shall be subject to the criteria of security, liquidity, and return. The security criterion under which the foreign reserves are managed in Colombia implies proper control of the risk to which the investments are exposed. In order to manage them within acceptable parameters and levels, the Foreign Reserves Committee of *Banco de la República*⁶⁸ defines strict limits on what the reserves are exposed to. In order to comply with the liquidity criterion, the Bank invests the foreign reserves in financial assets that are easy to liquidate or in assets with short-term maturities and defines investment tranches on the basis of liquidity and profitability goals. Once the criteria are defined to ensure that the foreign reserves portfolio are invested at a low risk, the management policy also seeks to achieve a suitable return since this criterion is part of the mandate given to *Banco de la República* by law. An explanation of the policies that guide the investment of the reserves and some relevant definitions are provided in the appendix.

The main purpose of the foreign reserves is to protect the country from external shocks that may affect both trade and financial flows and, depending on their magnitude, may jeopardize macroeconomic stability. Trade flows may be affected, for example, by a drastic reduction in exports or an increase in imports that tight-

66 Among the factors that are likely to favor FDI are: the prospects of higher profits in the oil drilling and coal industries, the strength of domestic demand, and part of the capital flows associated with the purchase of companies in Colombia.

67 Compared to 2020 and 2021, the net build-up of private sector foreign assets expected in 2022 will likely be lower.

68 The Foreign Reserves Committee is composed of the Minister of the Treasury and Public Credit or his delegate, the full-time members of the Board of Directors and the Governor.

ens foreign liquidity. Financial flows, in turn, may be affected by difficulties in accessing financing from abroad such as reduced access to international loans, or higher capital outflows from both foreign investors and residents. A country's foreign reserves are a determining factor in the perceived creditworthiness of domestic borrowers. This depends on the extent to which credit rating agencies and foreign lenders believe that a suitable level of reserves would allow the residents to meet their obligations in foreign currency such as, for example, paying for imports and servicing the foreign debt, at a time when the country faces difficulty in accessing foreign financing. Thus, an appropriate level of reserves contributes to improving the risk perception of the country and its residents, and this enables the government and private sector to get access to international capital markets.

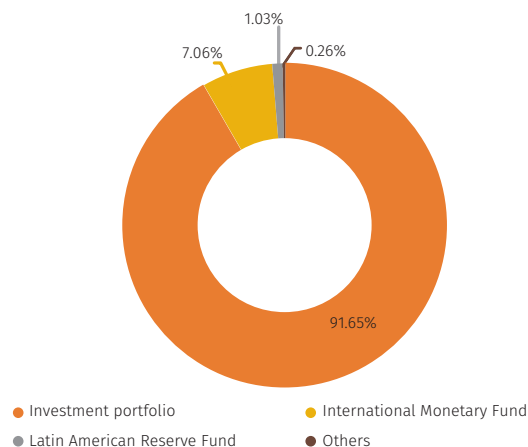
***Banco de la República* holds external liquidity buffers in amounts it considers sufficient to meet the aforementioned objective.** To this extent, the current strategy of accumulating foreign reserves is a recognition of the importance of having a proper level of liquidity in foreign currency to prevent and face external shocks. As a result of that, the amount to be purchased in foreign currency is determined in such a way that the level of *Banco de la República's* foreign liquidity will cover the foreign deficit, foreign debt payments, and other potential capital movements.

Net foreign reserves⁶⁹ totaled USD 57,164.4 million (m) as of 30 June 2022 which indicated a decrease of USD 1,415.6 m in 2022. The main factor explaining this decrease is the negative profitability obtained so far this year as a result of the devaluation of investments caused by increases in short and medium-term interest rates. The return on foreign reserves during 2022, excluding the foreign exchange component, was -1.37% (-USD 792.6 m). This performance is explained by the reduction in investment prices due to the sharp increase in the market interest rates in which foreign reserves are invested. This appreciation effect occurs because there is an inverse relationship between bond prices and interest rates, i.e., the price of bonds declines as interest rates rise. The impact of the decline in the price of investments due to the increase in interest rates is offset over time by the higher interest received by the investments. These higher interest rates are expected to offset part of the devaluations seen for the remainder of 2022. The impact of the exchange rate effect on the valuation of the reserves was the second factor that contributed to the decrease in the foreign reserve level.

The main component of the foreign reserves is the investment portfolio. This corresponds to investments in financial instruments on the international market and to the certified physical gold (91.17% and 0.48% respectively of the reserves). The breakdown of the foreign reserves, as of 30 June 2022, is presented in Graph 5.1.

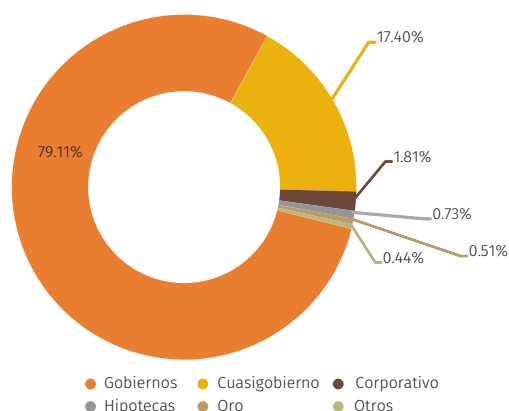
⁶⁹ The net foreign reserves are equal to the total foreign reserves, or gross reserves, minus *Banco de la República's* short-term foreign liabilities. The latter consists of demand obligations to non-resident agents in foreign currency. The gross foreign reserves came to USD 57,171.9 m and the short-term foreign liabilities added up to USD 6.5 m.

Graph 5.1
Breakdown of the International Reserves
(Information as of 30 June 2022)



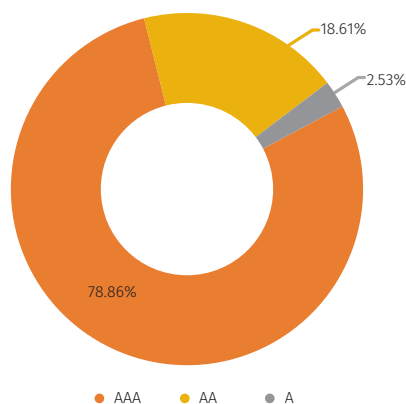
Note: gold is included in the investment portfolio. The item "Others" includes international agreements, cash on hand, and demand deposits.
Source: Banco de la República.

Graph 5.2
Components of Investment Portfolio by Sector
(Information as of 30 June 2022)



Source: Banco de la República.

Graph 5.3
Distribution of Investment Based on Credit Rating
(Information as of 30 June 2022)



Source: Banco de la República.

5.2.1 Reserve Indicators

Despite the reduction in the level of foreign reserves, the different indicators for evaluating them show suitable levels for the country. The methodology for assessing reserve adequacy (ARA) is a widely used international indicator. This metric is proposed by the IMF to measure the appropriate level of foreign reserves and provides that reserves must cover the main balance of payments risks during periods of pressure on the foreign exchange market. According to the IMF, this indicator seeks to cover risks associated with a loss of access to foreign financing, a loss of confidence in the local currency, a reversal of capital flows, and a possible collapse of demand from abroad.⁷⁰ An economy is believed to be maintaining proper levels of reserves if the ratio of the reserves to the appropriate level is between 1.0 and 1.5. Based on figures in May 2022, the IMF ratio of reserves at the appropriate level as calculated for Colombia stood at 1.34. Other indicators used for assessing the foreign reserves could give warning signals regarding the external vulnerability of economies. Included among these are the ratios of foreign reserves to monetary aggregates, short-term foreign debt, and the current account deficit. In the case of Colombia, these indicators suggest that the level of reserves was at appropriate levels as of May 2022 despite the fact that some of these have declined recently.

5.2.2 Breakdown of the Investment Portfolio⁷¹

The investment portfolio was mainly composed of securities issued by governments and entities related to governments at the close of June 2022. The breakdown of the investment portfolio as of May 2022 when about 96.51% was invested in paper issued by these entities can be seen in Graph 5.2.

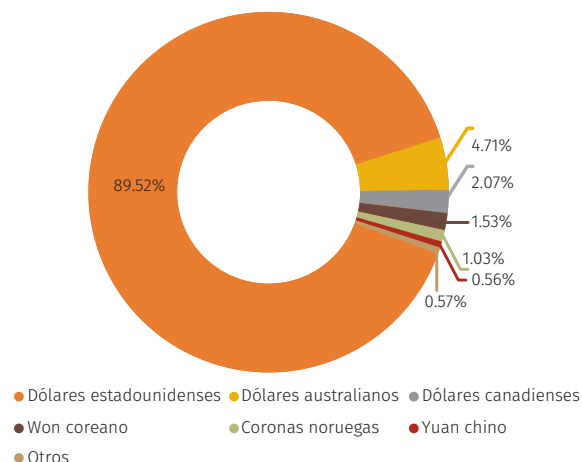
The breakdown of the portfolio by rating is evidence of the high credit quality of the assets the portfolio is invested in. Graph 5.3 shows that 78.86% of the portfolio is invested in instruments rated AAA and 18.61% in AA. The Bank uses the lowest credit rating granted by at least two of the three main rating agencies (S&P, Moody's, and Fitch Ratings) as a benchmark.

The investment portfolio is made up of currencies that are characterized by their high daily trading volumes and the fact that they belong to countries with elevated credit ratings with the United States dollar being the currency with the highest share. Graph 5.4 shows the foreign exchange components in the investment portfolio as of 30 June 2022. Consider-

70 FMI (2015). "Assessing Reserve Adequacy: Specific Proposals."

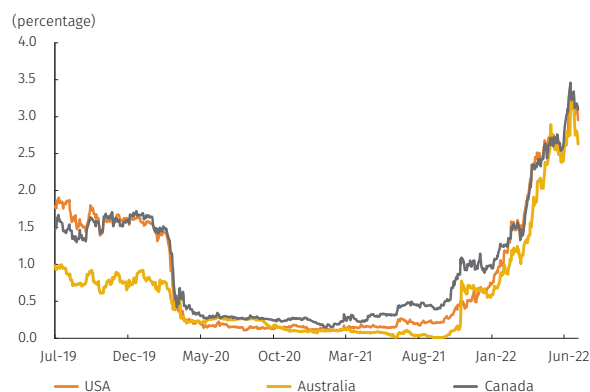
71 The graphs of the breakdown of the portfolio by currency and credit rating were calculated based on the amount in the investment portfolio excluding the gold.

Graph 5.4
Currency Components of the Investment Portfolio
(Information as of 30 June 2022)



Source: Banco de la República.

Graph 5.5
Short-term Government Bond Rates (2 years)
(Information as of 30 June 2022)



Source: Data License, Bloomberg.

ing that one of the objectives of foreign reserves is to be able to meet the country's foreign payments in times when foreign financing sources are reduced, the exchange rate breakdown of Colombia's foreign reserves seeks to replicate the behavior of the country's balance of payments outflow. Thus, the reserves attempt to cover the volatility of the country's payments abroad as a consequence of exchange rate movements. The largest share of Colombia's foreign reserves is in US dollars due to the fact that a majority of the country's commercial and financial transactions with the rest of the world are carried out in this currency. Investment in the following currencies are also allowed: Canadian, Australian, New Zealand dollars; Swedish krona; the pound sterling; Swiss franc; euros; yen; Norwegian krone; the renminbi; Hong Kong and Singapore dollars, and Korean won.

5.2.3 Profitability of the Reserves

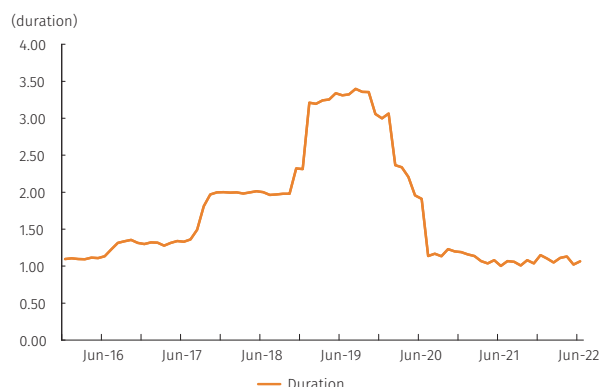
The profitability of the reserves depends primarily on two factors: interest and appreciation. The first corresponds to the interest received from the instruments invested in, and the appreciation factor, to the change in the prices of the securities due to movements in the interest rate. This second factor occurs because there is an inverse relationship between bond prices and interest rates, i.e., the price of bonds declines as interest rates rise, and vice versa.

In line with expectations for 2022, the reserves showed a return of -1.37% as of June 30,⁷² due, mainly, to the devaluations in investments due to the sharp increase in foreign interest rates (appreciation factor). Expectations of increases in benchmark rates by central banks due to concerns about an upward trend seen in inflation data that is going to levels above the defined targets in several countries and the measures taken by monetary authorities in response to such inflation levels have led to a sharper increase in interest rates in markets relevant to foreign reserves. Graph 5.5 shows the increases in interest rates in the primary markets for the investment of the reserves. In the United States, for example, two-year government bond rates have risen by about 220 bp during the year. This rapid increase in interest rates has negatively affected the profitability of the reserves during 2022 and has generated a devaluation in the investments.

In line with what was seen in the first few months of the year, the return on the foreign reserves is expected to remain negative during 2022. Higher levels in interest rates abroad will have a positive impact on the future profitability of foreign reserves through higher interest received on investments (in-

72 This profitability is obtained by dividing the actual return by the average value of the net reserves on 31 December 2021 and on 30 June 2022. Since 2015, the impact of the exchange rate effect on the profitability of the reserves has been excluded.

Graph 5.6
Duration of the Investment Portfolio



Source: Banco de la República.

terest factor) during the latter part of the year. Nevertheless, they are not expected to be enough to offset the devaluations seen in the first few months of the year. There is also the possibility of further devaluations as a result of higher interest rate increases.

To reduce the probability of incurring losses in the investment portfolio, the Bank reduced the duration⁷³ of the portfolio during 2019 and 2020. The change in the duration of the investment portfolio can be seen in Graph 5.6. As of 30 June 2022, the investment portfolio had a duration of 1.07, which means that the value of the portfolio could be lowered by 1.07% in the event of a 1.0% increase in the rates of all the bonds in the portfolio. The decrease in the duration of the investment portfolio that occurred during 2019 and 2020 was due to the fact that the Bank adjusted the makeup of the portfolio to invest in instruments with a lower sensitivity to increases in interest rates. The main factor explaining this adjustment is the sharp drop in short-term interest rates in the United States and other markets relevant to the portfolio. This generated a lower interest accrual in the portfolio and, therefore, a lower capacity to assume the risk of portfolio devaluation in case interest rates increase. Although this reduces the portfolio's sensitivity to changes in interest rates and limits the losses due to appreciation, to the extent that the yield rate of short-term bonds is lower than the rate of long-term bonds, it implies lower income from interest accruals.

5.2.4 Measures to Reinforce International Liquidity

As a supplement to foreign reserves, Banco de la República maintains access to other instruments that serve to strengthen the country's international liquidity. These instruments include the Flexible Credit Line (FCL) with the IMF and access to the repo facility with the Federal Reserve (FIMA).

Regarding the first instrument, the IMF approved a new two-year FCL arrangement for Colombia for USD 9,800 m in April of this year. This new agreement supplements the availability of external liquidity for the country, provides insurance against external risks and preserves the agents' confidence in the Colombian economy.

The FCL is a tool created by the IMF exclusively for countries with very strong economic fundamentals and institutional frameworks with a solid economic policy. In addition, the FCL acts as a positive signal to the international community, therefore, access to the FCL does not imply any ex-post conditionality regarding the country's macroeconomic policies.

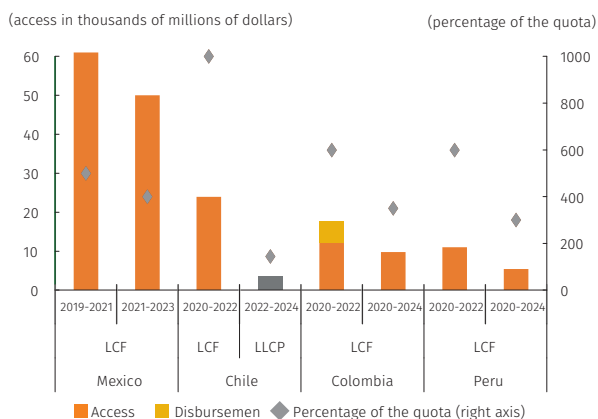
⁷³ Duration is a measurement of risk defined as a percentage decrease (increase) in the value of the portfolio with respect to a 1.0% increase (decrease) in all of the interest rates.

The primary objective of the FCL is to provide an instrument that facilitates immediate access to liquidity to beneficiary countries in the event of extreme external risks. The current external risks associated to a high level of uncertainty due to geopolitical factors and tighter international financial conditions highlight the importance of maintaining adequate levels of external liquidity.

The IMF considers that Colombia continues to meet the criteria to access this credit line and emphasized the soundness of the country’s institutional policy framework. In particular, a credible inflation targeting system, the existence of a fiscal policy framework anchored in sustainability of public debt as well as the presence of effective financial surveillance and regulation are conditions for maintaining the country’s eligibility to access this facility. The new FCL agreement constitutes a token of confidence from the IMF towards the country and its economic authorities.⁷⁴

This arrangement replaced the previous one approved in 2020 and is considered as a precautionary instrument by the Colombian authorities against external risks. Colombia has had access to this facility since 2009 through ten successive agreements with modifications in the amount depending on changes in external conditions and in accordance with the safeguard offered by the instrument.

Graph 5.7
Recent FCL Agreements



Source: IMF, Banco de la República.

The Colombian authorities have continued the process to gradually reduce access to this instrument which they consider to be temporary in nature. Colombia’s reduction of access under the new agreement to an amount equivalent to 350% of the quota compared to the 417% remaining in the 2020 agreement held with precautionary purposes is in line with an expected decrease in external vulnerabilities, reduced risks after the pandemic, and with the commitment by the Colombian authorities to gradually reduce access to the facility as external risks recede. Mexico, Peru, and Colombia currently have an FCL in place with the IMF, and all three countries have recently reduced the level of access. Chile, in turn, cancelled its FCL and replaced it with a short-term liquidity line (SLL) for an amount equivalent to 145% of its quota (Graph 5.7).

Moreover, Banco de la República also has access to the Federal Reserve’s repo facility (FIMA). This facility is an instrument that enables access to immediate liquidity if required under extreme circumstances. In these transactions, FIMA account holders (central banks and other international monetary authorities with accounts at the Federal Reserve Bank of New

74 The IMF’s release of the new FCL arrangement for Colombia is available at: <https://www.imf.org/es/News/Articles/2022/04/29/pr22135-imf-executive-board-approves-two-year-us-billion-flexible-credit-arrangement-for-colombia>

York) exchange their US Treasury bonds held in custody at the Fed for US dollars with the commitment to repurchase the securities the next day and pay the interest. The primary benefit that access to the FIMA repo facility has for *Banco de la República* is to have liquidity in US dollars without having to sell off the assets of the foreign reserve portfolios permanently. This access mitigates the liquidity and market risk. *Banco de la República* is likely to make use of this repo facility only in the event that, in the need of selling dollars on the spot market, the market for making transactions with Treasury bonds turns out to be very illiquid.

6. Financial Situation of *Banco de la República*

6.1 Financial Position of *Banco de la República* (balance sheet)⁷⁵

The Bank's assets amounted to COP 297,953 b, liabilities to COP 189,002 b and equity to COP 108,951 b as of 30 June 2022. Compared to the end of the previous year and as of June 2022, assets had risen COP 6,118 b (2.1%), liabilities COP 5,522 b (3.0%), and equity COP 596 b (0.6%). The Bank's balance sheet rose mainly due to the increase in the balance of transitory liquidity operations (REPO) and the effect of the higher exchange rate. Since the foreign reserves are *Banco de la República's* main asset, the depreciation of the peso with respect to the currencies they are invested in has had a significant effect on the assets and, as a consequence, on the equity (Table 6.1).

Assets rose COP 6,118 b, mainly due to the higher peso value of the gross foreign reserves and the increase in transitory liquidity operations. The Bank made no purchases or sales of foreign currency on the exchange market during the first half of the year, and the dollar balance of the gross foreign reserves declined USD 1,417 m⁷⁶. Nevertheless, the balance in pesos increased to COP 4,081 b (1.7%) as a result of the depreciation of the Colombian peso with respect to the reserve currencies. The balance of transitory liquidity operations (REPO), in turn, rose COP 5,441 b due to the use of this instrument for the supply of primary liquidity⁷⁷. The above was partially offset by a COP 3,557 b decrease in the investment portfolio, mainly as a result of the reduction of COP 2,853 b in TES held by the Bank, and to a lesser extent, COP 703 b in the private debt portfolio. The decrease in the value of the TES portfolio is due to the performance in local interest rates that led to a lower value at market prices, due to maturities, and due to the delivery of TES to the National Government as payment of the profits to be distributed for the year 2021. These were partially offset by the Bank's purchases of TES in the secondary market.

Liabilities rose due to the performance of the government peso deposits at the Bank. These were partially offset by the decrease in the monetary base. The national government's peso deposits in the Bank rose COP 9,467 b during the first half of 2022.

Last of all, the equity rose, mainly due to the positive change in foreign exchange adjustment of the foreign reserves. This last account had a change of COP 7,578 b, in contrast of the increase in the peso balance of the foreign reserves. The above

75 In this section, the line items are presented by economic rather than by accounting criteria. With respect to the financial statements presented to the Financial Superintendency of Colombia and the National General Accounting Office, the differences are: first, the value of the liabilities associated with purchase transactions for the foreign reserves portfolio for which payment has not yet been made is discounted from the assets (this is registered as a higher value of the asset in the Bank's financial statements and as a requirement of the foreign reserves under liabilities); second, the coins in circulation, which are not part of the accounting information on the Bank's balance sheet, are included in the assets and liabilities in this section; and third, other reclassifications of lower value accounts. In this respect, the asset and liability values presented in this Report (COP 297,953 b and COP 189,002 b respectively) differ from those registered in the financial statements as of 30 June 2022 (COP 306,237 b and COP 197,286 b respectively).

76 See chapter 3 of this Report.

77 This movement in assets largely offset the contractionary effect of government deposits in the Bank as regards liabilities. See the shaded section on monetary base and M3.

Table 6.1
Financial Position Statement of Banco de la República Classified by Economic Criteria^{a/}
(billions of pesos)

Account	December, 2021		June, 2022		Variation	
	Balances	Percent share	Balances	Percent share	Absolute	Percentage
Assets	291,835	100.0	297,953	100.0	6,118	2.1
Gross Foreign Reserves	233,247	79.9	237,328	79.7	4,081	1.7
Share in International Entities and Organizations	10,493	3.6	10,607	3.6	114	1.1
Investments	32,187	11.0	28,631	9.6	-3,557	-11.0
TES	30,989	10.6	28,136	9.4	-2,853	-9.2
Private Debt Securities	1,198	0.4	495	0.2	-703	-58.7
PRepo Operations (transitory liquidity operations)	10,122	3.5	15,563	5.2	5,441	53.7
Other Net Assets	5,784	2.0	5,823	2.0	39	0.7
Liabilities and Equity	291,835	100.0	297,953	100.0	6,118	2.1
Liabilities	183,480	62.9	189,002	63.4	5,522	3.0
Foreign-currency Liabilities that affect Foreign Reserves	33	0.0	13	0.0	-20	-60.7
Monetary Base	145,383	49.8	142,275	47.8	-3,108	-2.1
Cash	108,599	37.2	105,064	35.3	-3,536	-3.3
Reserve	36,783	12.6	37,211	12.5	428	1.2
Interest-bearing Deposits not constituting Reserve Requirements	3,349	1.1	2,876	1.0	-473	-14.1
Other Deposits	146	0.1	120	0.0	-26	-17.8
National Government (National Treasury Office L/C)	10,966	3.8	20,433	6.9	9,467	86.3
Obligations to International Organizations	23,603	8.1	23,284	7.8	-319	-1.3
Total Equity	108,355	37.1	108,951	36.6	596	0.6
Capital	13	0.0	13	0.0	0	0.0
Reserve	764	0.3	744	0.2	-20	-2.6
Surplus	109,253	37.4	116,853	39.2	7,600	7.0
CEC Settlement	521	0.2	521	0.2	0	0.0
Exchange Rate Adjustment of the Foreign Reserves ^{b/}	108,398	37.1	115,976	38.9	7,578	7.0
Investment in assets for Cultural Activities	334	0.1	356	0.1	22	6.6
Other Comprehensive Income (OCI)	-2,088	-0.7	-6,437	-2.2	-4,349	208.3
Fiscal Year Result	632	0.2	-2,077	-0.7	-2,709	n.a.
Cumulative Results - effect of change in Accounting Policies	-188	-0.1	-145	-0.0	42	-22.6
Accumulated Results Process of Convergence with IFRS	-31	-0.0	0	-	31	-100.0

a/ In this table, the line items are presented by economic rather than by accounting criteria. With respect to the financial statements presented to the Financial Superintendency of Colombia and the National General Accounting Office, the differences are: first, the value of the liabilities associated with purchase transactions for the foreign reserves portfolio for which payment has not yet been made is discounted from the assets (this is registered as a higher value of the asset in the Bank's financial statements and as a requirement of the international reserves under liabilities); second, the coins in circulation, which are not part of the accounting information on the Bank's balance sheet, are included in the assets and liabilities in this section; and third, other reclassifications of lower value accounts. In this respect, the asset and liability values presented in this Report (COP297,953 b and COP189,002 b respectively) differ from those registered in the financial statements as of 30 June 2022 (COP 306,237 b and COP 197,286 b respectively).

b/ Includes the exchange rate adjustment of the net foreign reserves, liabilities with the IMF for SDR allocations and liabilities with FLAR for Andean pesos.

Source: Banco de la República.

was partially offset by the lower value of COP 4,349 b in the account called other comprehensive income (OCI), mainly due to the devaluation of the TES portfolio held by the Bank as a result of the increase in local interest rates, the transfer of COP 556 b in profits to the national government charged to the 2021 fiscal year, and the loss of COP 2,077 b for the fiscal year 2022 to June.

6.2 Income Statement (P&L)

6.2.1 Close: June 2022

During the first half of 2022, Banco de la República's loss came to COP 2,077 b as a result of -COP 921 b in income⁷⁸ and COP 1,156 b in expenditures. Income decreased COP 2,267 b and expenditures rose COP 335 b compared to the January-June 2021 period (Table 6.2).

The income recorded from the beginning of 2022 to June is mainly the result of the negative performance of foreign reserves that was partially offset by the yield of the TES held by the Bank and of the expansion repos. In the first case, the yield on foreign reserves⁷⁹ showed a negative result of COP 3,011 b, mainly due to the increase in foreign interest rates, which devalued the balance in US dollars (Table 6.3). The yield on local currency securities held by the Bank was COP 501 b higher than what was seen in the first half of 2021, mainly as a result of the higher average balance of TES as a result of net purchases. Revenue from expansion repos, in turn, was COP 288 b higher, as a result of higher average volume and a higher rate of remuneration.⁸⁰ The latter is the result of the increases in the policy interest rate defined by the BDBR during the current year. With regard to corporate income,⁸¹ its value was COP 134 b during the first half of 2022 which was COP 19 b higher than what was seen during the same period in 2021. Finally, income generated by exchange rate differences amounted to COP 76 b, especially as a result of the depreciation of the peso vis-à-vis the US dollar during the year to date.⁸²

Expenditures, in turn, are mainly the result of the remuneration of the National Government's deposits in the Bank and by corporate expenses. Monetary expenses⁸³ for the January-June 2022 period amounted to COP 608 b, COP 221 b higher

78 In the case of the yield on foreign reserves, monetary income is presented net (income - expense). For presentation purposes, a negative return on foreign reserves is presented as an expense in the Bank's income statement.

79 Does not include the effect of the exchange rate differential due to changes in the US dollar exchange rate vs. other currencies in which these reserves are invested. This effect is registered in the Bank's OCI equity account and has no effect on the P&L.

80 The average daily volume of repo operations in the first half of 2022 was COP 14,774 b with an average remuneration rate of 4.99% compared to a volume of COP 7,505 b, with a rate of 1.85% in the January-June 2021 period.

81 They mainly include income from commissions for banking services and trust business, interest on loans to employees and pensioners, leases, social welfare activities, and income from cultural activities.

82 When the peso depreciates with respect to the US dollar, the income from the exchange rate differences that result from the higher value, in pesos, of foreign currency assets other than foreign reserves is registered on the Bank's P&L. The higher the depreciation of the peso is, the greater the value of this revenue. The peso has depreciated 4.27% against the US dollar during the first half of 2022, compared to 9.21% in the same period of the previous year.

83 These mainly include expenses related to remuneration for national government deposits at the Bank and the monetary contraction deposits, the management and administration of funds abroad, the commitment fees for the flexible credit line with the IMF, and exchange rate differences.

Table 6.2
Banco de la República's Income Statement (P&L), January to June
(billions of pesos)

	Actual as of June		Annual changes	
	2021	2022	Absolute	Percentage
I. Total Income (A+B+C)	1,345	-921	-2,267	n. a.
A. Monetary Income	1,125	-1,211	-2,337	n. a.
1. Interest and Returns	950	-1,292	-2,242	n. a.
Foreign Reserves	-9	-3,011	-3,002	35,103.8
Private Debt Securities Held by BR	103	27	-76	-73.9
TES Held by BR	758	1,336	577	76.1
Interest on Repo Operations (transitory liquidity operations)	68	356	288	423.3
Foreign Exchange Regulation Transactions	29	0	-29	-100.0
Other Operations	0	0	-0	-100.0
2. Foreign Exchange Differences	175	76	-98	-56.4
3. Other Monetary Income	0	5	4	951.6
B. Revenue from Coins Issued	105	156	51	48.8
C. Corporate Income	115	134	19	16.3
II. Total Expenditures (A+B+C+D)	821	1,156	335	40.8
A. Monetary Expenditures	386	608	221	57.3
1. Interest and Returns	276	533	257	93.4
National Government Interest-bearing Deposits	191	516	324	169.3
Interest on Monetary Contraction Deposits	35	17	-18	-50.9
Foreign Exchange Regulation Transactions	49	0	-49	-100.0
2. Costs of Management and Handling of Funds Abroad	24	17	-8	-31.1
3. Commitment fee for IMF flexible credit ^{a/}	69	55	-14	-20.2
4. Foreign Exchange Differences	17	2	-15	-86.2
5. Other Monetary Expenditures	0	1	0	106.4
B. Banknotes and Coins	89	151	61	68.8
C. Corporate Expenditures	341	397	56	16.4
1. Personnel Costs	223	268	45	20.4
2. Overhead	56	66	10	18.1
3. Other Corporative	62	63	1	1.0
4. Flexible Budget Availability	0	0	0	n. a.
D. Pensioners' Expenses	4	0	-4	-99.0
III. Operating Results (I - II)	524	-2,077	-2,601	n. a.

Note: Assets that are considered as a low value are registered under general expenses in 2022 and, in the approved budget, they were presented as part of other corporate expenses. Therefore, in this table, their value in the 2022 as a June column was reclassified from other corporate expenses, in the depreciation group, to general expenses, in the group of low value assets, in order to maintain consistency within the figures.

a/ Flexible Credit Line (FCL).

Source: Banco de la República.

CTable 6.3
Return on Foreign Reserve Investments
(billions of pesos)

	Actual as of June	
	2021	2022
Returns	-9	-3,011
Investment Portfolio	-79	-3,008
Accrual of Interest	1,391	1,104
Valuation at Market Prices	-1,470	-4,112
Gold	-58	-6
International Entities and Organizations	128	3

Source: Banco de la República.

than those registered in the first half of 2021. The above was the result of the higher remuneration on government deposits in the Bank which rose COP 324 b. This was mainly due to the higher rate of remuneration⁸⁴, which is closely related to the policy interest rate and this, as mentioned above, has risen over the course of the year. Corporate expenses amounted to COP 397 b with an annual increase of 16.4%. Specifically, personnel expenses rose 20.4% per annum, and included those related to a retirement plan for the transformation of six branches into cultural agencies.⁸⁵ Although the latter implied an immediate expense of COP 28 b in the Bank's P&L in 2022, it represents a significant savings in the long term with a present value of an estimated COP 156 b over a 15-year horizon. General expenses, in turn, presented an annual change of 18.1% and included higher expenditures for the Bank's operations related to the partial return to working onsite and higher technology expenses as a result of the change in the business model which has increased the subscription of cloud services⁸⁶ and higher cybersecurity costs. Finally, other corporate expenses showed an annual increase of 1.0%.

6.2.2 Outlook for 2022

In spite of the loss noted in the first half of 2022, a profit of COP 966 b, which is higher than the result registered in 2021, is projected for the year as a whole.⁸⁷ The result projected for 2022 is the result of COP 3,777 b in income and COP 2,811 b in spending (Table 6.4).

With respect to monetary results, a net income of COP 1,685 b is estimated. An annual increase of COP 1,444 b (78.3%) in monetary revenue is considered in the projection for 2022 compared to what was seen in 2021, mainly as a result of: 1) the higher income from COP 1,053 b in TES held by the Bank as a result of the higher interest rate and the higher average balance in these securities, and 2) COP 667 b in higher income from repo operations as a result of the higher remuneration rate and higher average balance.⁸⁸ The yield on foreign re-

84 The average daily volume of deposits was COP 22,037 b with an average remuneration rate of 4.83% in the first half of 2022 compared to average deposits of COP 22,410 b and a rate of 1.74% during the same period in 2021.

85 The transformed branches were Ibagué, Montería, Pasto, Riohacha, Quibdó, and Leticia. When this retirement plan is subtracted from corporate and personnel expenses, the annual increases will probably be 8.1% and 7.6% respectively.

86 Expenditures that must be registered as expenses in the P&L, whereas previously they were considered assets of the Bank and, therefore, were accounted for as part of its investment.

87 Profits for 2021 came to COP 632 b. The profit value in the approved 2022 budget was COP 1,262 b.

88 The average daily balance of these transactions was COP 11,988 b in 2021 with an average remuneration rate of 2.10%. An average balance of COP 14,222 b is projected for 2022 with a rate of 6.65%.

Table 6.4
Forecast for Banco de la República 2022 Income Statement (P&L)
(billions of pesos)

	Actual	Projection	Annual changes	
	2021	2022	Absolute	Percentage
I. Total Income (A+B+C)	2,391	3,777	1,386	58.0
A. Monetary Income	1,843	3,287	1,444	78.3
1. Interest and Returns	1,534	3,181	1,647	107.4
Foreign Reserves	-413	-331	82	-19.9
TES Held by BR	1,511	2,564	1,053	69.7
Private Debt Securities Held by BR	159	32	-126	-79.6
Interest on Repo Operations (transitory liquidity operations)	249	916	667	268.1
Foreign Exchange Regulation Transactions	29	0	-29	-100.0
2. Foreign Exchange Differences	299	101	-197	-66.1
3. Other Monetary Income	11	5	-6	-56.1
B. Revenue from Coins Issued	309	241	-69	-22.2
C. Corporate Income	239	249	11	4.5
II. Total Expenditures (A+B+C+D)	1,759	2,811	1,051	59.8
A. Monetary Expenditures	787	1,602	815	103.6
1. Interest and Returns	581	1,363	782	134.7
National Government's Interest-bearing Deposits	493	1,309	816	165.5
Interest on Monetary Contraction Deposits	39	54	15	39.6
Foreign Exchange Regulation Transactions	49	0	-49	-100.0
2. Costs of Management and Handling of Funds Abroad	46	79	33	71.0
3. Commitment fee for IMF flexible credit	128	104	-24	-18.9
4. Foreign Exchange Differences	31	48	17	54.8
5. Other Monetary Expenditures	1	8	7	782.3
B. Banknotes and Coins	273	327	54	19.7
C. Corporate Expenditures	699	872	173	24.8
1. Personnel Costs	447	542	96	21.4
2. Overhead	128	182	55	42.8
3. Other Corporative	125	143	18	14.7
4. Flexible Budget Availability	0	4	4	n.a.
D. Pensioners' Expenses	0	9	9	n.a.
III. Operating Results (I - II)	632	966	334	52.9

Note: Assets that are considered as a low value are registered under general expenses in 2022 and, in the approved budget, they were presented as part of other corporate expenses. Therefore, in this table, their value in the 2022 Actual column was reclassified from other corporate expenses, in the depreciation group, to general expenses, in the group of low value assets, in order to maintain consistency within the figures.

Source: Banco de la República.

erves is estimated at -COP 331 b and resulted from the devaluation of the balance of these reserves due to increases in foreign interest rates, which would offset their income from interest accruals. An annual increase of COP 815 b (103.6%) in monetary expenses, in turn, is estimated, especially due to the higher remuneration of government deposits in the Bank as a result of a higher remuneration interest rate.⁸⁹

A net outflow of COP 86 b is expected with regards to putting banknotes and coins into circulation. Revenue from the face value of coins issued and put into circulation is estimated at COP 241 b with an annual decrease of 22.2%, mainly as a result of lower demand. The costs of issuing and putting the monetary specie, including banknotes, into circulation, in turn, are projected to be COP 327 b, which is 19.7% higher than what was seen in 2021. This is the result of higher demand for banknotes and higher production costs. The latter is a consequence of higher international prices for raw materials and import costs related mainly to transportation as well as the higher value of the exchange rate.

With respect to the corporate budget and expenditures on pensioners, COP 632 b in net outlays is expected. COP 249 b in income and COP 881 b in expenses are estimated (annual changes of 4.5% and 26.1% respectively). The growth in corporate expenses is mainly due to personnel expenses that, as mentioned, include those related to the retirement plan for the transformation of six branches into cultural agencies. This, however, represents a significant benefit for the Bank in the long term. When this item is deducted from corporate expenses, its annual growth would be 20.7%. Moreover, the annual growth in general expenses is the result of higher expenditures derived from the Bank's operations and related to the partial return to onsite operations, and higher technology expenses resulting from the change in the business model that has increased the subscription to cloud services and higher cybersecurity costs. As was mentioned, these factors are already reflected in the Bank's P&L results for the year up to June 2022.

⁸⁹ The average daily balance of these deposits was COP 25,556 b with an average remuneration rate of 1.95% in 2021. An average balance of COP 20,690 b with a rate of 6.53% is projected for 2022.

7. Payments in the Colombian Economy

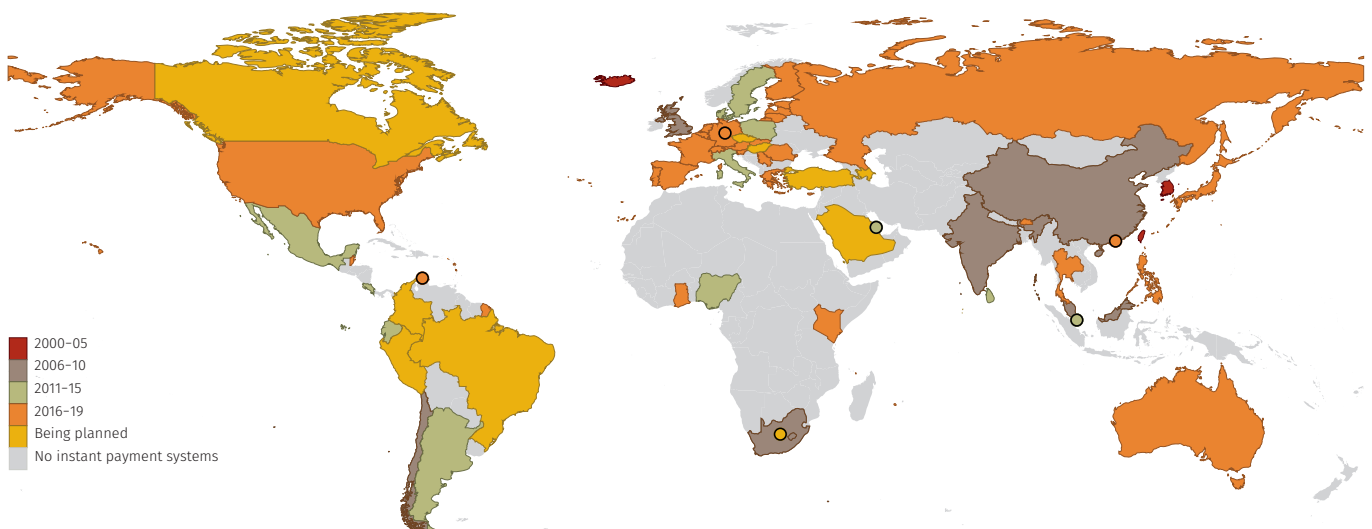
7.1 Global Overview of Payment Systems

Electronic payments are essential for a modern economy to function properly. The payment systems are the set of rules, entities, instruments, and technological components that make the transfer of funds between agents possible. They are typically divided between the high-value payment system, where financial institutions settle transactions made in financial markets, and the low-value payment system, which brings together transactions between individuals, merchants, and the government. A secure, efficient, and relevant payment system contributes to market competitiveness, trade growth, and financial inclusion.

Immediate low-value payment systems, understood as those that allow for money to be transferred and purchases to be made in real time, are now standard in both developed and emerging economies. This service contrasts with previous technologies (called batch or bulk) under which the money is delivered to the receiver with a delay, in some cases for more than a day (as in the case of checks), and at least several hours, or even a day, (wire transfer clearinghouses in the case of ACH⁹⁰ batch). Nearly sixty countries now have an immediate payment system most of which are managed by their central banks (Map 7.1). This is the case of the *New Payments Platform (NPP)* in Australia, *Target Instant Payment Settlement (TIPS)* in the European Union, *Fast and Secure Transfer (FAST)* in Singapore, *Faster Payments*

Map 7.1

Jurisdictions with Immediate Payment Clearing and Settlement Systems in Place or in the Process of Being Implemented



Source: Taken from BIS Quarterly Review, March 2022.

90 Automated Clearing House (ACH), or Automatic Clearinghouse.

Service (FPS) in the United Kingdom, *FedNow* in the United States, CODI⁹¹ in Mexico, and PIX⁹² in Brazil. The latter is a relevant benchmark given the high usability rates it has achieved in only two years of operation: Currently, more than 70% of adults in that country use this system.

The electronic payments industry has undergone a profound transformation in recent years in terms of both the network coverage that supports it and the technology. In Colombia, for example, the use of digital channels has intensified to the point that today more than 70% of the financial system transactions are carried out via digital channels while in 2018 this indicator was 26%.⁹³ E-commerce, in turn, has surged in several sectors of the economy driven by both a greater number of users and the increased frequency of purchases through digital channels. The share of sales through these channels doubled in 2021 compared to pre-pandemic levels.⁹⁴

The development of electronic payments provides opportunities to significantly improve the overall efficiency of the economy but also poses significant challenges in terms of the risks involved, many of which are entirely new. Because of these two facts, the issue holds a prominent place on the work agendas of several countries, including Colombia, as well as on the agendas of various international organizations. Multilateral organizations such as the G20,⁹⁵ the Bank for International Settlements (BIS) and the Financial Stability Board have established that the electronic payments universe is and will continue to be a priority area for analysis and discussion in the financial and regulatory areas. Specific topics include cross-border payment mechanisms, digital currencies issued by central banks and so-called cryptoassets. In the latter, the analysis has focused on explaining the high risks to which those who trade in these assets are exposed. As a complement to the investigations, various initiatives for experimenting with these issues have also been carried out in the so-called sandboxes that have been created in recent years by the authorities to test new developments and financial innovations under controlled conditions. One example of this is the seven BIS global innovation hubs where alternatives for issuing digital currencies are being tested.⁹⁶ In Colombia, the Financial Superintendency (FSC) operates a sandbox in which it runs a pilot for cash-in and cash-out cryptoasset operations.

7.2 Developments and Challenges in Electronic Payments in Colombia

The country has made progress in providing access to and using financial services in recent years, and this has led to an increase in electronic payments. As of December 2021, 91% of the adult population had at least one financial product.

91 A system that allows immediate payments in Mexico through the Internet or mobile banking, mainly by means of QR codes.

92 A system that allows immediate payments to be made in Brazil through the Internet or mobile banking, mainly by means of QR codes.

93 Figures taken from FSC. Digital channels include audio response, internet, mobile phones, ACH, automatic debit.

94 Figures taken from the Chamber of Electronic Commerce.

95 Group composed of twenty industrialized and emerging countries from all continents, namely: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Korea, South Africa, Spain (permanent guest), Turkey, United Kingdom, United States, plus the European Union.

96 The Dunbar Project, which includes Australia, Malaysia, Singapore and South Africa, seeks to integrate a digital currency platform to facilitate cross-border payments.

Table 7.1
Main Instruments of Payment in the Colombian Economy, 2021

Instrument	Number (millions of transactions)	Annual change
Debit Card	3.17	19%
Credit Card	0.82	21%
Transfer	4.6	46%

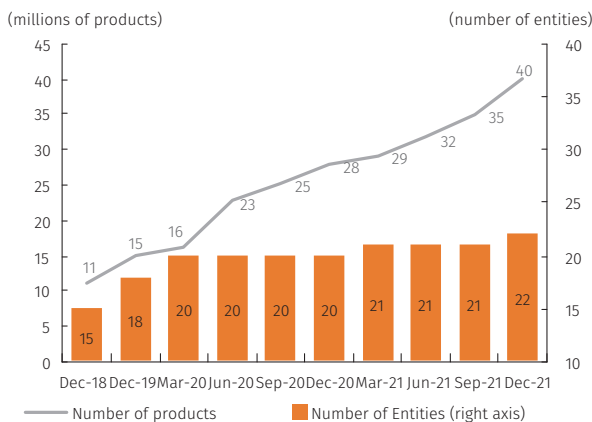
Source: Banco de la República.

This represents an increase of 13.2 pp in the last five years (Financial Inclusion Report 2021, *Banca de las Oportunidades*, and FSC). According to transaction information, the main electronic payment instruments showed an increase in number in 2021 compared to 2020 (credit and debit cards and transfers) (Table 7.1).

However, cash continues to be the most widely used payment instrument by the population. Although the perception of the use of cash has decreased in the last few years, 75% of individuals still make their regular payments with this instrument. Moreover, public transportation providers and certain commercial establishments such as neighborhood stores, drugstores, and beauty salons report that more than 85% of the value of their sales is made in cash (*Banco de la República*, Financial Infrastructure Report, 2022). The situation is similar with recurring and massive payments such as public transportation fares, tolls, and utility bills. Although cash is a payment instrument that is universally accepted and easy to manage, it has high distribution and security costs, and is not traceable. This impedes the construction of transaction histories that can contribute to access to credit.

Colombia has a robust transactional infrastructure. However, there are still costs and inefficiencies that prevent greater use by the people. In the vast majority of payments made by card or wire transfer, the funds remain unavailable to the recipient for some time, are costly and, the transactions are sometimes complex for most agents to carry out. There are also access restrictions. Two years ago, *Transfiya*, a clearinghouse for immediate payments owned by the financial system, was launched. Today, there are fourteen participating entities, and the total value of transactions is equivalent to 0.04% of total wire transfers. Nevertheless, its usability is limited to payments between individuals who are customers of a few entities, and this has prevented, among other things, greater speed in instant payments.

Graph 7.1
Number of Low-amount Deposits and Entities Offering the Product, 2018-2021



Source: Financial Superintendency of Colombia.

In spite of the introduction of new players and solutions into the market, the lack of interoperability between payment instruments and systems erodes the potential of the new alternatives which could reduce time and costs for the end user. Electronic transfer payment models using mobile wallets have a high potential to boost electronic payments since they are a easy way to pay and are quickly opened from a mobile device and at very low cost or free of charge. These factors have boosted its growth so much that today there are 40 million low-amount deposits while, in 2019, the supply was 15 million (Graph 7.1). However, they have been developed using closed models, each owned by its respective financial institution with different technical standards and no interconnection between them. This generates inefficiencies in the ecosystem. Mobile wallet transactions increased 224% in 2021. However, the to-

tal amount transacted is still very low and only represents 0.72% in value and, in number, 35% of interbank transfers. This payment instrument is also mainly used by individuals (99%),⁹⁷ and this creates an opportunity to broaden its acceptance in commerce.

In order to facilitate the participation of new players in the market and improve the conditions under which payment services are provided to the public, Decree 1692/2020 updated the regulation applicable to the low-value payment system.

Among the main adjustments incorporated by the decree is that companies not supervised by the FSC may now carry out acquisitions⁹⁸ and clearing and settlement houses are prohibited from carrying out such activities directly. In addition, it strengthened the corporate governance standards and conflict of interest management of these clearinghouses and the disclosure of costs and requirements for participating in them.

The International Monetary Fund and World Bank noted progress in the area of financial inclusion in their evaluation of the Colombian financial sector in 2021 and made recommendations for the consolidation of immediate payments and the interoperability of the system. With respect to financial inclusion, the mission emphasized the commitment of the public sector together with the legal and regulatory reforms that made it possible to achieve the objectives for access. However, they pointed out the need to supplement these efforts with further development of the payments system, for which they recommended establishing a National Payments Committee and defining a roadmap for promoting the electronic payments ecosystem, etc.

Regarding the emergence of cryptoassets, it is pertinent to reiterate that in Colombia they lack the essential attributes needed to be considered currency and are not recognized by the foreign exchange regime as currency. *Banco de la República* has informed the public of the high risks involved in the use of these assets and has reiterated that these markets do not have institutional backing.

7.3 *Banco de la República's Initiatives in Connection with Payment Systems*

***Banco de la República* has a mandate⁹⁹ to ensure the proper functioning of the domestic and foreign economy payments.** Consequently, it exercises the state function of issuing legal tender on an exclusive and non-delegable basis. It also manages the high-value payment system, which facilitates the transfer of money for the settlement of financial market transactions. *Banco de la República* as a provider of high-value payment services, operates the Deposit Account System (CUD in Spanish) the backbone of the country's financial infrastructure. It also operates and promotes the development of low-value payment systems and contributes to their efficiency and security.

97 *Banco de la República's* Financial Infrastructure Report (2022), available at: <https://www.banrep.gov.co/es/reportes-sistemas-de-pago>

98 Activity consisting of: 1) linking retail businesses to the low-value payment system; 2) providing access technologies in order to use payment instruments; 3) processing and handling payment or fund transfer orders; 4) crediting the merchant or aggregator the proceeds from sales made using the access technologies. (see Decree 1692/2020 for a more extensive description of the regulation of the activity).

99 Act 31/1992, Article 16.

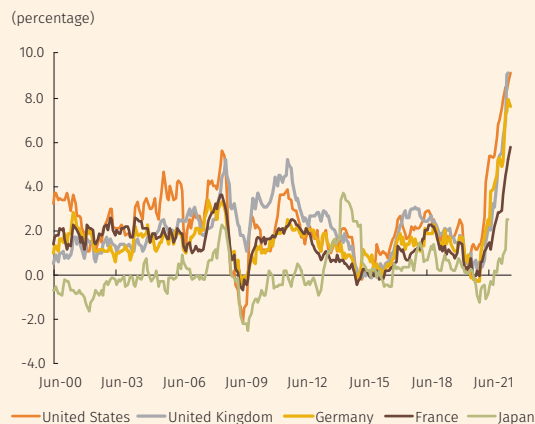
In the development of the 2022-2025 Strategic Plan, the Bank reaffirms its commitment to strengthen electronic payments. In response to the transaction needs of a modern economy, the BDBR approved the Strategic Plan for the 2022-2025 period¹⁰⁰ in November 2021 (see Box 2). The purpose was to prioritize relevant actions for encouraging the development of electronic payments and thus contribute to the wellbeing of Colombians. The agreement establishes the commitment to make progress in the analysis of alternatives in order to reinforce online payments, seeking to generate synergies with the different players in the ecosystem. Efficient and secure options for expanding the supply of cross-border payments will also be evaluated, and the convenience and risks of issuing a central bank digital currency (CBDC) will be analyzed.

Banco de la República will build a participatory agenda for encouraging electronic payments in line with international best practices. It will also provide formal venues for interaction with the different current and potential players in the payment industry so as to identify the improvements required to modernize the transaction infrastructure and achieve the provision of safe, efficient, accessible, and relevant payment instruments.

100 2022-2025, Strategic Plan, *Banco de la República* (www.banrep.gov.co).

Shaded section 1 Inflation as a Global Phenomenon

Graph S1.1
Annual Consumer Inflation



Source: Data License, Bloomberg.

In recent months there has been a general increase in inflation associated with both supply and demand factors, which has taken it to levels not seen in the last decades (Graph S1.1). Many countries have registered increases in their price levels at an accelerated rate and well above their inflation targets. This, together with rising inflation expectations, has created significant challenges for central banks.

Multiple reasons explain this increase in the price level. The disruptions in global supply chains¹ have led to many of supply constraints. The impact on the production chains of many goods has generated shortages or delays in different cases, giving rise to price pressures on the supply side. In addition, the changes in the labor markets constitutes another important factor in terms of inflationary pressures in some countries, since the demand for workers has not been accompanied by a proportional expansion of their supply and has come with sharp increases in wages, which generates pressures on costs and increases in inflation. Russia's invasion of Ukraine and the uncertainty associated with it have amplified price pressures, due to recent increases resulting from the price of raw materials, gas, electricity, and fertilizers.² Food prices,³ for example, have been greatly affected by these supply restrictions.

After the significant contraction resulting from the mobility restrictions during the pandemic, the economic recovery, in turn, has generated demand pressures that naturally boosted prices. The effects of the so-called "pent-up demand" implied a significant increase in private consumption thanks to the savings that households were forced to set aside during the pandemic. Likewise, countercyclical measures adopted by countries to address the recessionary impacts of the pan-

1 An example of this is the restrictions and congestion in some ports in addition to the shortage of containers, which caused an increase in freight costs. According to the Shanghai Shipping Exchange's container freight index, freight costs rose 77% during 2021. This index is made up of the cost of shipping containers on fifteen routes departing from the port of Shanghai.

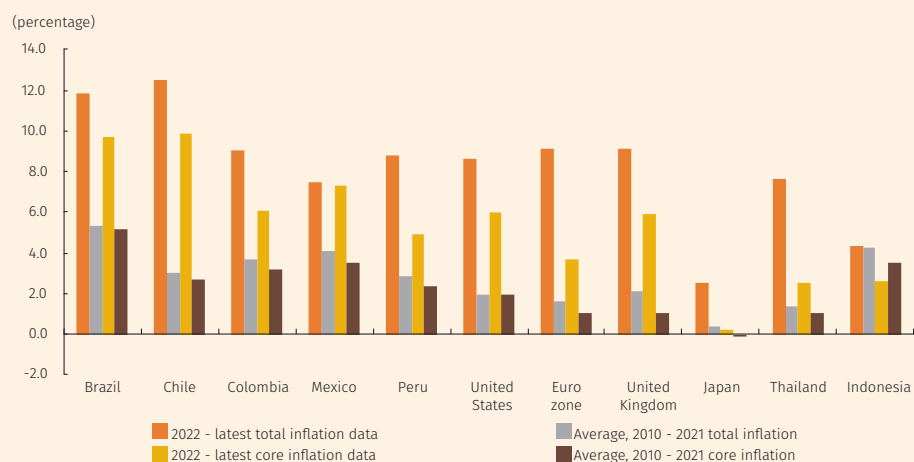
2 The international price of WTI crude oil rose 47% and that of gas rose 37% between July 2021 and June 2022. Moreover, based on the IMF's global fertilizer index, the price of these goods had risen 75% between June 2021 and May of this year.

3 Based on the FAO food price index, the international price of meat rose 13.6%, dairy prices rose 16.9%, and the aggregate food index rose 22.8% between May 2021 and May 2022.

demographic from both monetary and fiscal policies, also put pressure on the aggregate demand.

These shocks have pushed inflation up and above the target of monetary authorities in several economies, in an environment of high volatility. Although energy and food prices account for a significant portion of the increase in total global inflation, core inflation, which excludes the prices of these goods, has also shown a significant increase (Graph S1.2).

Graph S1.2
Total Inflation and Core Inflation



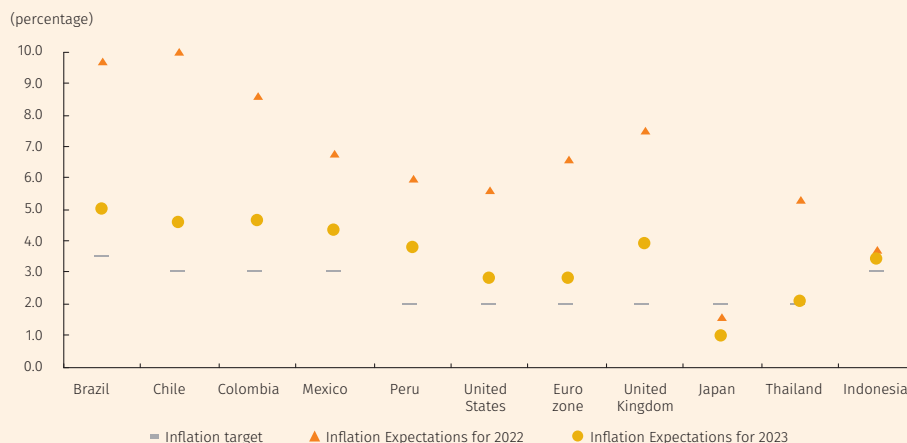
Sources: Central banks and statistics offices. Core inflation excludes food and energy prices.

In this context, inflation has reached its highest levels in decades in several economies. In the United States, annual inflation in June (9.1%) was the highest in 40 years, as was the case in the United Kingdom, where inflation (9.1%) has hit four-decade highs. Likewise, in Emerging Economies, CPI growth has reached historically high levels. In Colombia, as in Mexico, the highest level of inflation in 21 years has been reached. In Brazil, it has reached levels not seen in the last 26 years, and Chile has registered the highest inflation in 28 years.

In addition, inflation expectations have also risen beyond central banks' target (Graph S1.3). In this context, central banks have adjusted their policy in order to moderate aggregate demand and return inflation expectations to the levels that are consistent with their targets, and thus avoiding a de-anchoring of expectations, which would hinder the convergence of inflation to target.

Although the increase in inflation was expected to be transitory and determined mainly by supply factors, its persistence has been higher than expected and additional supply shocks have materialized. This outlook raises difficult prospects and poses challenges for monetary policy makers. Although current inflation is a global phenomenon, there are some differences in its breakdown between regions.

Graph S1.3
Inflation Expectations



Source: Focus Economics. In the case of economies with ranges as inflation targets, the midpoint of that range is plotted.

1. Differences in the drivers of inflation across regions and countries

Although there is a broad-based increase in inflation in most economies that is partly explained by common global phenomena, there are other shocks behind this behavior which differ by region and have a heterogeneous impact on the countries.

After the outbreak of the conflict between Russia and Ukraine, Europe has been the region most directly affected. This has translated in a shock on the energy costs, being the factor that has recently contributed the most to the increase in prices. Likewise, the international sanctions imposed on Russia have also aggravated disruptions to supply chains of intermediate inputs that came from the pandemic, which have affected sectors such as agriculture and manufacturing. Furthermore, the growth in housing prices, as a result of the pandemic, has been another factor that has pushed up prices through its impact on rents.⁴ At the end of 2021, inflation in the Euro Zone was 2.6% while that of the Emerging European Economies stood at 9.7%, after having registered historic lows in 2020. For 2022, according to IMF forecasts, inflation in the Euro Zone is expected to reach 6.6% and that several emerging economies in that region register double-digit figures by the end of the year.⁵

In Asia, inflation has remained contained (1.7% in 2021 and 3.3% in June 2022) due to low food prices, especially for rice, and a moderate economic recovery. The reaction of Asian countries to the recent outbreaks of the pandemic has strongly affected private consumption and has generated an excess of supply, keeping inflation at low levels. However, the widespread increase in global commodity prices poses an upside risk for inflation. This is especially relevant for Emerging Asian Economies since they

4 In some countries, there has been high growth in housing prices, mainly due to broader financial conditions.

5 See, for example: <https://blogs.imf.org/2022/04/19/war-dims-global-economic-outlook-as-inflation-accelerates/>

are mostly net importers of these goods, so an increase in their prices would negatively affect their terms of trade. Nevertheless, one factor that could be mitigating this pressure is the increase in Russian oil imports in some countries such as China and India at a discounted price given the sanctions imposed on Russia. The resurgence of Covid-19 infections in China, in turn, has led to new supply disruptions. The measures imposed to mitigate the transmission of the virus through its zero-Covid strategy could result in significant supply chain disruptions for both the region and the world. In this context, inflation in emerging Asian economies is expected to reach 3.4% in 2022, based on figures reported by Focus Economics. For the advanced Asian economies, inflation is expected to reach 2.7% this year, according to the most recent data published by the IMF.

In the case of advanced economies in the Americas, the United States registered in June an inflation rate of 9.1% and Canada of 7.7%, being these their highest rates in decades. The inflationary dynamics in these countries can be explained mainly by energy and housing prices. Over the coming months, inflation is expected to decrease in both countries, and by the end of 2022, it should be close to 5.6% in Canada and above 7.0% in the United States.

In the emerging economies of the region, inflation has been on an upward trend since last year, mainly because of supply factors along with economic recovery and tightening foreign financial conditions. Most countries in the region have faced strong upward pressure on inflation due to increases in international food prices and, in some oil-importing economies, sharp increases in energy components. Some of the countries in the region experienced weather adverse conditions and indexation mechanisms which put pressure on prices. Thus, total inflation stood above central bank targets in most economies at the end of 2021. The increase in food prices in Mexico, Colombia, and Peru and in electricity and oil prices in Brazil and Chile have been the main drivers of inflation. This has occurred in a context of a strong recovery of domestic demand in countries such as Chile and Colombia and of exchange rate and external financing cost pressures due to the beginning of the adjustment in global monetary policy. For 2022, inflation in the region is expected to remain above central bank targets, reaching 11.2% at the end of the year based on the IMF's most recent projections. Colombia, Brazil, Chile, Peru, and Mexico are likely to end the year with an inflation rate between 5.5% and 8.2%.

Given the tight international financial conditions due to monetary policy adjustments in advanced countries and a high global risk aversion, the appreciation of the dollar may trigger additional inflationary pressure in these economies. These exchange rate pressures may be even stronger for countries with significant fiscal and external imbalances.

Furthermore, the fiscal situation may also explain increases in inflation. The initial restrictions to avoid contagion at the beginning of the pandemic caused an unprecedented economic activity contraction which eroded tax revenues. Governments responded with countercyclical measures to support businesses and households during 2020. This caused a rise in the fiscal deficit and in the global debt balance which reached an all-time high of 256% of GDP.⁶ Advanced economies implemented large fiscal support packages, reaching an average deficit of 10% of GDP between 2019 and

6 Source: <https://blogs.imf.org/2021/12/15/global-debt-reaches-a-record-226-trillion/>

2020. The emerging economies, in turn, also experienced an increase in fiscal deficits and debt balances in both Asia and Latin America. The persistence of high levels of public indebtedness raises the perception of risk of these countries which results in higher external financing costs and an upward impact on exchange rates, prices, and inflation expectations. The deterioration of the external balance in emerging economies through higher current account deficits, in turn, is also a result of demand pressures and imbalances between savings and investment, which could lead to a greater inflationary pressure.

2. Central banks' response to inflationary pressure

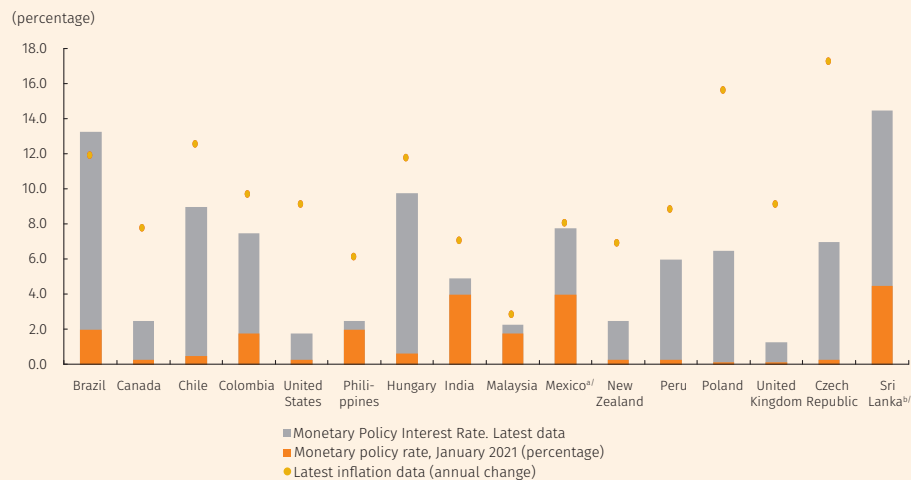
In the case of advanced economies, central banks have already begun the monetary normalization phase by both gradually reducing their balance sheets and increasing interest rates. The US Federal Reserve, the European Central Bank, the Bank of England, and the Bank of Canada are some of the banks already reducing the supply of liquidity by adjusting their balance sheets. In terms of interest rates, central banks in advanced economies have continuously increased their benchmark rates. The size of the increase has ranged from 25 bp to 175 bp since the start of the monetary policy tightening process in 2021 (Graph S1.4). The United States and New Zealand are among the countries in this group that have raised to a greater extent their interest rates (Graph S1.4).

In emerging economies, the normalization process began earlier than in the advanced economies. Given the pressure on international prices and their greater sensitivity to changes in global financial conditions, the size of the increase in interest rates has been higher in emerging economies. The pace of normalization has also accelerated in recent months given the recent trends in inflation and inflation expectations in these countries. Since the beginning of the adjustment, most of these economies have registered significant increases in their policy interest rates, however, this process has been more uneven than that in the advanced economies.

Brazil and Chile are among the group of countries in Latin America that have raised interest rates the most, with an increase of 1,125 bp and 850 bp since March and July 2021, respectively. The central banks of Colombia and Peru, in turn, have each raised their benchmark rates by 575 bp since the second half of 2021. In emerging economies of Europe, the size of the increase has exceeded 300 bp in most countries, with Hungary being one of the countries that has made the largest adjustment (915 bp) since the beginning of its normalization process last year. The case of emerging economies in Asia has been different, as they have not experienced strong inflationary pressures. Therefore, the monetary authorities in most of these countries have not started their monetary tightening process or have increased interest rates more gradually (90 bps or less), with the exception of Sri Lanka, where the tightening has been 1,000 bp since August 2021 when it started its monetary normalization process (Graph S1.4).

This outlook poses challenges for monetary authorities in a context of economic recovery and high uncertainty. The main challenge for policymakers is associated with calibrating the monetary adjustment in terms of timing and magnitude. An adjustment that is too slow or insufficient carries the risk of transitioning to a regime of high inflation, future reversal of which could be very costly. An adjustment that is too rapid or too strong carries the risk of causing an excessive slowdown in the economy or even a recession. Actions and clear communication by central banks should reinforce

Graph S1.4
Monetary Policy Rate (January 2021 - latest data) and
Inflation Rate



a/ The reference period for Mexico begins in February 2021.

b/ The inflation rate for Sri Lanka was 54.6% in June.

Source: Central Banks

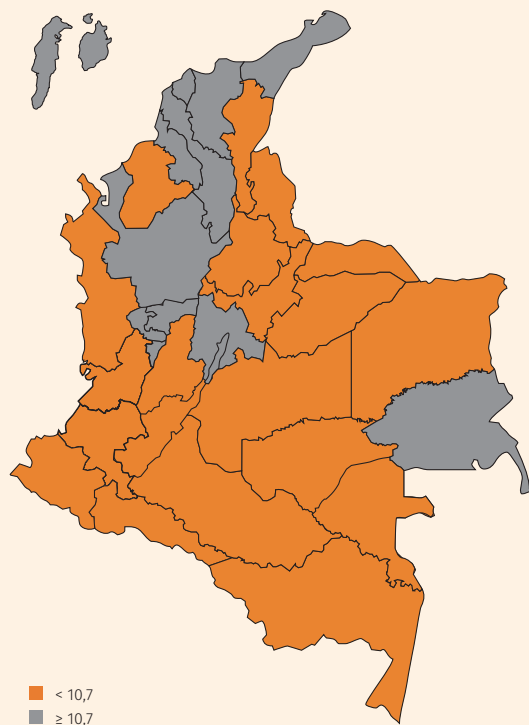
their credibility to keep inflation expectations anchored to the target and reduce the upward trend of inflation at the lowest possible cost in terms of current and future economic activity. Likewise, coordination with the fiscal authority is essential to ensure an orderly adjustment and the convergence of inflation to its target.

Shaded section 2 Regional Economy

1. Overview of Departmental Economies in 2021

In 2021, based on annual figures available for the gross domestic product (GDP) of the 33 territories in the country, departmental economies rebounded after the deep contraction noted in 2020 due to the arrival of the pandemic in the country and its adverse effects on all productive activities. According to figures from the National Bureau of Statistics (DANE), Bogotá, Antioquia, Valle del Cauca, Cundinamarca, Santander, Atlántico, and Bolívar contributed 8.1 percentage points (pp) to the growth of the Colombian economy. The improved performance of the departmental economies was due to the relaxation of mobility restrictions, the progress of the vaccination plan, and the recovery of private consumption. Likewise, the resumption of daily activities, the greater willingness of households to buy, and the increase in sales expectations in the retail sector boosted the economies. This recovery was limited in some regions where there were plant closures and road blockades during the national strike in the second quarter of 2021 that affected the southwestern part of the country to a greater extent.

Map S2.1
Real Departmental GDP, 2021
(annual change)

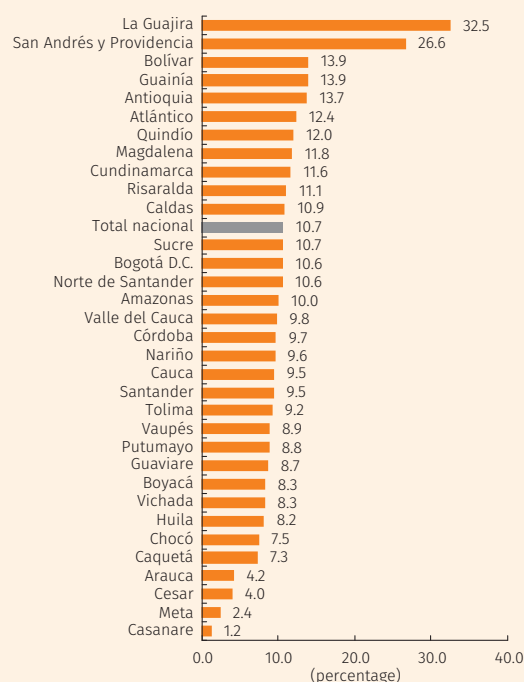


Source: DANE, calculations by Banco de la República.

Among the departments with growth higher than or equal to the national total are several in the Caribbean region (La Guajira, San Andrés and Providencia, Bolívar, Atlántico, Magdalena, and Sucre) and the Coffee Region (Eje Cafetero (Quindío, Risaralda and Caldas), together with Antioquia, Cundinamarca, and Guainía (Map S2.1). The growth in these economies was driven by the recovery of private consumption and by the resumption of markets which reflected the reactivation of trade and industry. Health care and social services also contributed to the positive result. The departments, in turn, with the smallest increase in economic activity, below 5.0%, were Arauca, Meta, and Casanare that are mainly engaged by crude oil production. In addition, they are the only ones that did not exceed pre-pandemic output levels considering the high base of comparison due to the recovery of the petroleum sector in 2019 in these territories.

La Guajira (32.5%) registered the largest economic expansion in 2021 in comparison to the rest of the territories (Graph S2.1) to which coal mining also contributed in addition to the aforementioned factors. This was due to the low base of comparison after registering price reductions and lower exports in 2020 as well as the resumption of operations after overcoming the sustained three-month workers' strike in the sector. In the case of Bolívar, economic activity was favored by the normalization of operations at the Cartagena Refinery with a greater demand for fuel for land and air transportation. Guainía was favored, in particular, by gold mining. San Andrés and Providencia, in turn, were greatly aided by the reestablishment of

Graph S2.1
Annual Change in the Real Departmental GDP, 2021



Note: preliminary figures.
Source: DANE, calculations by Banco de la República.

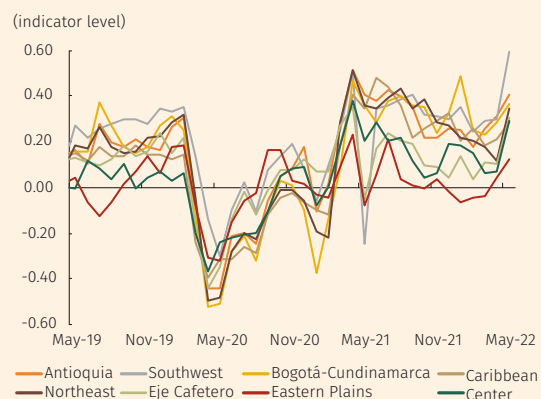
trade and tourism after the devastating passage of Hurricane Iota in 2020.

Going by sector, in commerce, vehicle repair, transportation, and warehousing, Bogotá accounted for a quarter of the sector's growth (20.9%), followed by Antioquia with 3.4 pp. Valle del Cauca, Bolívar, Cundinamarca, Santander, and Atlántico registered contributions of between 1.7 pp and 1.0 pp. The gradual return to normality in the operation of commercial establishments, the three days of the VAT-free shopping, and the opening of dealerships largely explained this behavior. However, the restricted attendance in hotels, bars, and restaurants together with the effects on transportation and storage of goods due to the difficult public order situation during the national strike did not allow for a better result.

Industry revived with the lifting of restrictions and income recovery along with household confidence. The reaction in production plans was due to the increase in domestic and foreign orders given the greater openness of the markets. Antioquia and Bogotá contributed nearly half (7.3 pp) of the increase in the industry (16.4%) and were also the territories that most exceeded the pre-pandemic growth rates for the sector. Other areas of the country that stood out were Cundinamarca, Valle del Cauca, Santander, and Atlántico, which together contributed 5.7 pp. In spite of this good performance, certain departments were highly affected by the national strike as a result of the paralysis in the manufacturing of products such as food and beverages, sugar and sugarcane, paper, and cardboard as was the case for Valle del Cauca, Cauca, and Risaralda. In addition, the global container crisis exacerbated some of the logistical problems, shortages of supplies, and high freight costs.

In construction, more than half of the departments registered a positive performance. However, none of the 33 territories surpassed the pre-pandemic scenario and thus the sector's performance continued to lag behind. As for growth in 2021 (5.7%), Antioquia stood out since its contribution was the largest (3.1 pp), followed by Valle del Cauca (1.4 pp), Norte de Santander (0.5 pp), and Huila (0.4 pp). With respect to the areas that registered contractions in this sector, Bogotá, Santander, Cundinamarca, Boyacá, and Risaralda were the ones where greatest negative impact on construction activity was seen. This performance was associated with the slow reactivation of construction work halted during the pandemic and the delay in new projects. In the second half of the year, there was a shortage of steel, iron, and wire given the surging demand due to the reactivation of the sector at the international level that may have affected the programming and launching of projects.

Graph S2.2
Regional Economic Pulse



Note: The Regional Economic Pulse is built on monthly surveys to businessmen and chief executives regarding their perceptions of the outcomes in their economic operations in the annual comparison basis with explanations for the performance described by the same survey sources. The levels of the economic indicator fluctuate between -1 and 1, where values above zero represent annual growth and values below zero represent declines but do not correspond to percentage variations. The indicator does not include monitoring of activities such as mining and quarrying, etc. Regions: Southwest (Valle del Cauca, Cauca, Nariño), Antioquia (Antioquia), Bogotá (Bogotá and Cundinamarca), Caribbean (Bolívar, Atlántico, Córdoba, Cesar, Magdalena, La Guajira, Sucre, and San Andres and Providencia), Northeast (Santander, Norte de Santander and Boyacá), Central (Tolima, Huila and Caquetá), Coffee Region or Eje Cafetero (Caldas, Quindío and Risaralda), and Eastern Plains (Meta and Casanare). To consult the methodology, see Box 2 in the July 2019 Report of the Board of Directors to Congress.
Source: Banco de la República.

2. Change in Regional Economic Activity in 2022

According to the *Regional Economic Pulse* calculated by Banco de la República for eight regions around the country,¹ most of these regions have continued to show positive growth trends so far in 2022 with levels above the pre-pandemic results. Large economies like Bogotá-Cundinamarca, Southwest, and Antioquia registered a notable performance followed by the Caribbean and Northeastern regions and a lower intensity performance in the Coffee region, Center, and Eastern Plains (Graph S2.2). The above is in an environment favored by the momentum of domestic demand and the recovery of the supply of manufactured goods thus overcoming the complex scenario of the Covid-19 pandemic. There was a significant upturn in most regions in May with the Southwestern economy seeing the greatest impact. The rise was mainly due to the effect of the comparison base given the national strike of a year ago that largely affected the transportation, agricultural, and industrial sectors because of the restrictions on mobility, shortages of raw materials, and paralysis of production.

Through May 2022, the retail sector will play an important role in the growth of economic activity in the different territories around the country with most of the emphasis on Antioquia, Bogotá-Cundinamarca, the Northeast, and the Caribbean. The recovery of domestic trade was supported by the complete lifting of pandemic-related restrictions in cities and the reestablishment of household spending on durable goods, particularly as a result of the VAT-free days. It is also a reflection of the low base of comparison in 2021 that resulted from the effects of the national strike and Covid-19 contagion spikes. The categories with the best sales results in most of the territories were those associated with the normalization of school and work activities, and the Easter and Mother’s Day celebrations. In addition, higher sales of new housing boosted demand for construction and remodeling supplies and materials. The sector’s performance was limited by difficulties in the logistic chains, inventory shortages, the surge in prices and expectations of rising interest rates. In the same context, vehicle sales showed a pronounced decline with a limited recovery in May.

1 The *Regional Economic Pulse* is built on the basis of monthly surveys of businessmen and executives regarding their perceptions of the results of their economic operations in the annual comparison with explanations for the performance described by the same survey sources. The levels of the economic indicator fluctuate between -1 and 1, where values above zero represent annual growth and below, declines, but do not correspond to percentage variations. The indicator does not include monitoring of activities such as mining and quarrying, etc. Regions: Antioquia (Antioquia), Southwest (Valle del Cauca, Cauca, Nariño), Bogotá (Bogotá, and Cundinamarca), the Caribbean (Bolívar, Atlántico, Córdoba, Cesar, Magdalena, La Guajira, Sucre, y San Andres and Providencia), Northeast (Santander, Norte de Santander, Boyacá), Eje Cafetero (Coffee region) (Caldas, Quindío, and Risaralda), Center (Tolima, Huila, and Caquetá), and Eastern Plains (Meta, Casanare). To consult the methodology, see Box 2 of the July 2019 Board of Directors’ Report to Congress.

In terms of tourism, Antioquia, the Caribbean, the Coffee Region, and the Northeast registered the largest recovery in hotel occupancy in the annual comparison. This occurred in a context of normalization and reactivation of land and air passenger transportation including an increase in the number of commercial routes. In line with the strong growth of commercial sales, there was a notable increase in consumer credit disbursements in the different regions, especially loans covered by automatic payroll deductions, unspecified use loans, credit cards, and for vehicles. The best performances in this regard were in the Caribbean, Antioquia, and the Coffee Region (*Eje Cafetero*). The increase in interest rates began to be felt in all the regions as of March with a slowdown in disbursements, particularly those destined for household consumption.

In the most industrialized territories such as Bogotá-Cundinamarca, Southwest, and Antioquia the reestablishment of inventories and the growing demand for manufactured goods may be contributing to the expansion so far in 2022. Food and beverage processing and the production of paper, cardboard, and plastic packaging intensified as people went back to working on-site, studying at schools, and going to entertainment venues. The surge in demand in the automotive market, in turn, stimulated the assembly of domestic motorcycles and vehicles together with the production of auto parts in spite of the lack of components that had just begun to normalize. Other regions, in addition, were favored in the textile, chemical, and rice milling industries. Moreover, in some coffee growing areas, coffee threshing was affected by the intense rains, the scarcity of raw materials, rising costs and fertilizers, and logistical difficulties all of which are factors that together have limited the expansion of the sector.

Finally, in the agricultural sector, more than half of the country's regions showed a negative result during the period under analysis as a result of the heavy rainfall, the shortage of supplies and the sharp rise in fertilizer costs. The Coffee Region (*Eje Cafetero*), Antioquia, Northeast, and Eastern Plains (*Llanos Orientales*) have had smaller harvests of the products that characterize them individually such as coffee, bananas, plantains, avocados, citrus fruits, potatoes, and rice. The latter began to show improvement at the end of the period under analysis. In contrast, flower cultivation in Antioquia grew due to the high demand from abroad for the traditional Valentine's Day and Mother's Day celebrations, and there was an increase in oil palm in the Eastern Plains and Northeast. In the livestock sector, high cattle prices discouraged slaughter for domestic consumption. At the same time, chicken and pork producing areas have seen an expansion of their products since these have been replacing beef consumption.

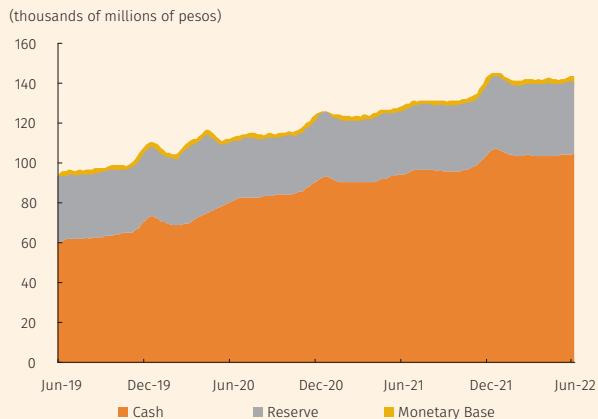
Shaded section 3 Monetary base and M3

During the first half of 2022, the monetary aggregates showed an annual growth that was relatively similar in nominal terms to what was registered in the second half of 2021 although this was lower in real terms. For the same period, term deposits increased and as of the end of June grew at similar rates as demand deposits in annual terms.

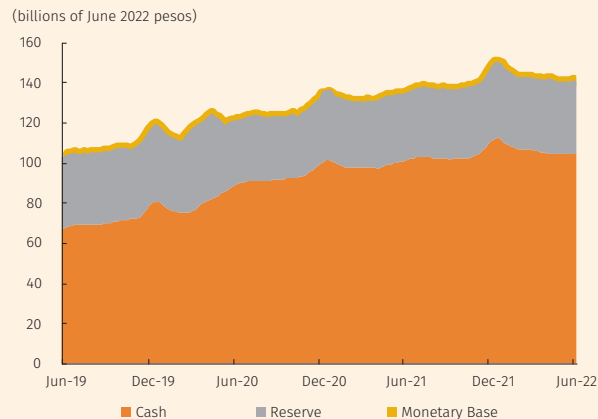
On average, the monetary base registered an annual nominal growth of 13.7% during the first half of the year (vs. 14.3% in the second half of 2021). In real terms, the base slowed down and at the end of June the annual variation was close to zero.¹ Its two components, cash held by the public and the bank reserve, showed similar trends (with greater volatility for the bank reserve) (Graph S3.1)

Graph S3.1
Monetary Base, Cash, and Bank Reserves
(balance and annual percentage change, four-week moving average: data as of Friday)

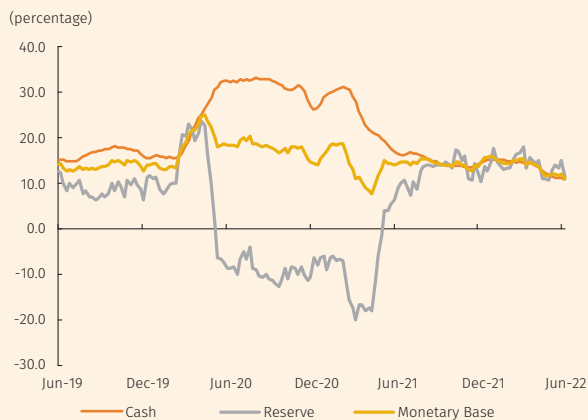
A. Balance in Nominal Terms



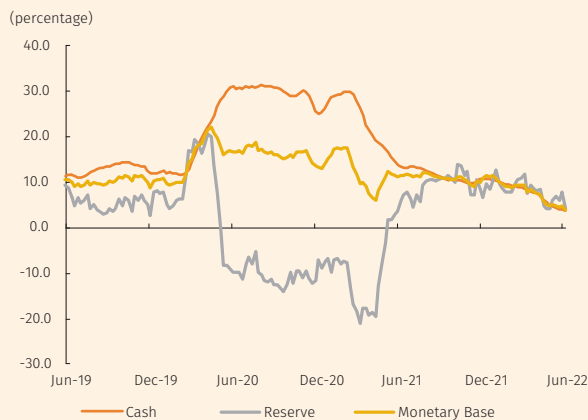
B. Balance in Real Terms^{a/}



C. Annual Nominal Changes



D. Real Annual Changes^{a/}



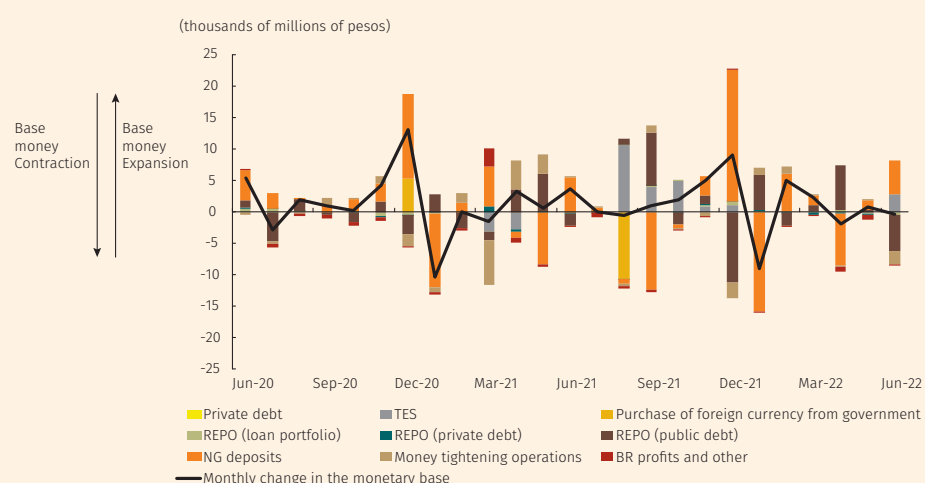
a/ The CPI excluding food is used as a deflator.
Source: Banco de la República.

¹ In real terms, it was 0.3% (the average for the last four weeks was 3.8%).

At nominal levels, the monetary base fell COP 3,108 b in the first half of 2022. This is explained by the performance of cash (down COP 3,256 b). This decline in the first half of the year is usual for cash demand, which typically peaks in the last weeks of the year and then declines. Against the background of the pandemic, in 2020 and 2021, this pattern was affected by the strong preference for liquid assets (including cash) which appears to be easing.

From a source perspective, expansion repo auctions and contraction² deposits (window) ensured an appropriate supply of primary liquidity for most of the period. These operations, which *Banco de la República* carries out on a daily basis with financial intermediaries, made it possible to offset the movements of government deposits at *Banco de la República* (which in the first half of the year entailed a contraction of primary liquidity)³ to the extent that they exceeded the changes in the demand for monetary base. The exception was in June, when *Banco de la República* purchased COP 2,839 b of TES in the market to provide liquidity to the economy⁴ (Graph S3.2). These purchases were made to ensure that the differences between the supply and demand of monetary base did not generate pressure on the money market, and to help the overnight banking benchmark indicator (BBI) to remain at the level of the monetary policy interest rate defined by the Board of Directors (BDBR). Note that, the BDBR decided to adjust the liquidity operations system at its March meeting, so that, it would, in general, revert to using the instruments that were in place before March 2020.⁵

Graph S3.2
Monetary Base by Source



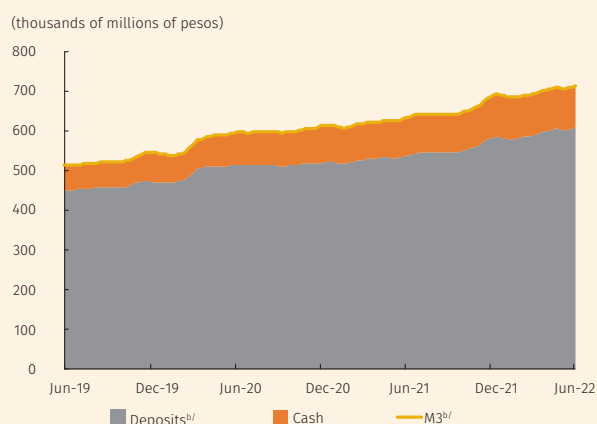
Source: *Banco de la República*.

- 2 Interest-bearing deposits not constituting reserve requirements.
- 3 The national government's peso deposits in *Banco de la República* rose COP 9,567 b between the end of December 2021 and the end of June 2022, which implies a contraction.
- 4 In addition, *Banco de la República* had reduced its TES portfolio COP 556 b by the end of March since, as requested by the Ministry of the Treasury and Public Credit, the profits corresponding to the 2021 fiscal year were paid through the delivery of TES valued at market prices from *Banco de la República*'s monetary intervention portfolio (see <https://www.banrep.gov.co/es/banco-republica-obtuvo-utilidad-632-mil-millones-mm-2021>).
- 5 See Box 2: "*Banco de la República*'s New Liquidity Transactions Plan."

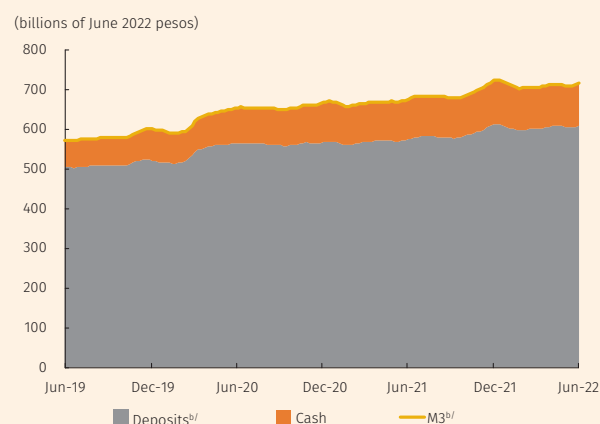
M3 and deposits, in turn, showed a relatively stable nominal annual variation throughout the first half of the year (around 12.5%) with a decreasing trend in real terms (Graph S3.3). Regarding deposits, those with a maturity of more than one year strengthened, and their balance rose after having shown declines since mid-2020. In spite of the recent surge, the long-term deposit share of total deposits remains below pre-pandemic levels⁶ (Graph S3.4).

Graph S3.3
M3 and Its Components
 (balance and annual percentage change, four-week moving average: data as of Friday)

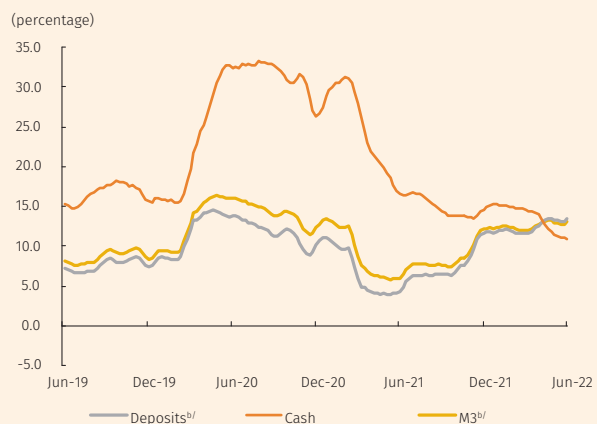
A. Nominal Balances



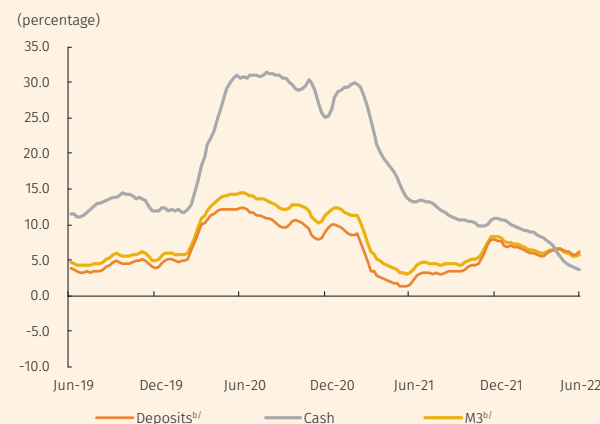
B. Real Balances^{a/}



C. Nominal Changes



D. Real Changes^{a/}



a/ The CPI excluding food is used as a deflator.

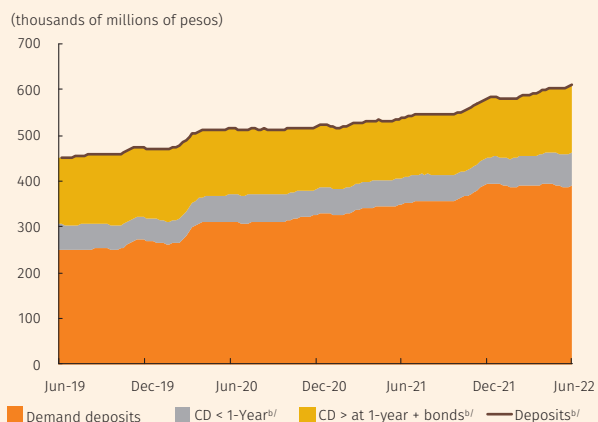
b/ Excludes CDs and bonds held by Banco de la República.

Sources: Financial Superintendency of Colombia, and Banco de la República, calculations by Banco de la República.

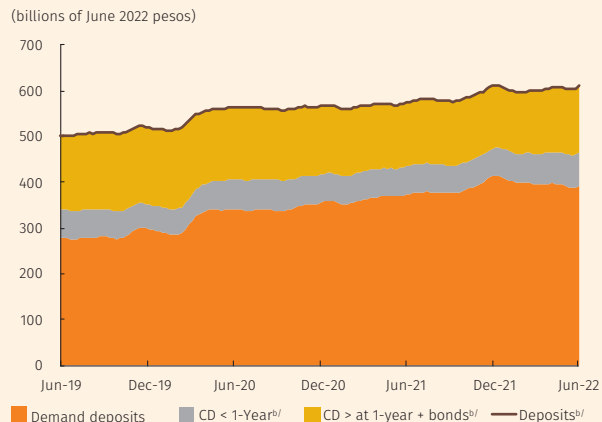
6 On average, demand deposits accounted for 55.4% of total deposits in 2019, deposits with a maturity of more than one year accounted for 32.6%, and deposits with a maturity of less than one year accounted for 12%. In June 2022, the shares of the total were, in the same order, 64.1%, 24.1%, and 11.8%.

Graph S3.4
Demand and Term Deposits
 (balance and annual percentage change, four-week average)

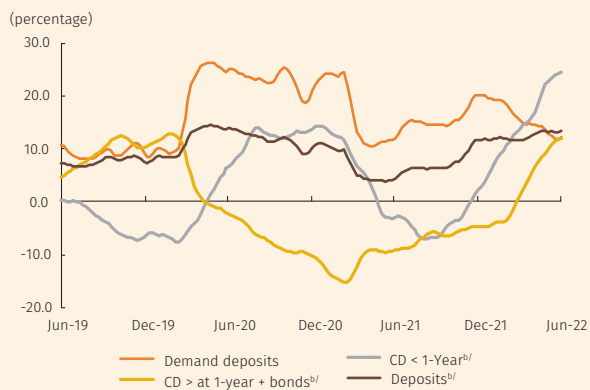
A. Nominal Balances



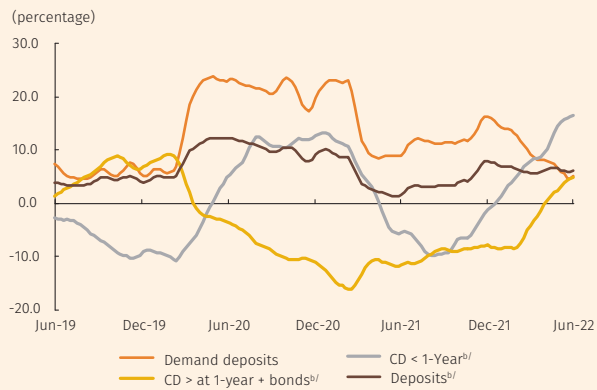
B. Real Balances^{a/}



C. Nominal Changes



D. Real Changes^{a/}



a/ The CPI excluding food is used as a deflator.

b/ Excludes CDs and bonds held by Banco de la República.

Sources: Financial Superintendency of Colombia, and Banco de la República, calculations by Banco de la República.

Shaded section 4

Main Factors that Affect the Profits of the Foreign Reserves

Table S4.1
Classification of Holders of Bonds Issued by the US Government

Investor	Share (percentage)
Central Banks	39.3
Local Mutual Funds	14.1
Foreign Funds and Institutions	14.0
Local Pension Funds	13.6
Local Banks	6.9
Local and Regional Authorities	5.7
Individual Local Investors	3.4
Local Insurance Companies	1.5
Others (percent)	1.5
Total	USD 23.3 billion

Source: Security Industry Financial Market Association (SIFMA).

In Colombia, the foreign reserves are mostly invested in public debt bonds issued by governments considered to be of very low credit risk, mainly the United States.

Because they are considered to be of very low credit risk, these bonds form an important part of the investment portfolios of all central banks worldwide as well as of institutional investors such as sovereign funds, pension funds, specialized investment funds, commercial banks, etc.

For example, as shown in Table S4.1, at the end of the first quarter of 2022 the outstanding value of US government bonds, which are considered one of the lowest risk assets in the world, was USD 23 trillion (t), of which about USD 9.2 t was held by central banks.

Table S4.2 also shows that nearly 70% of the investments of the global foreign reserves are in public debt bonds issued by governments with high credit ratings and similar entities such as supra-nationals and government agencies.

Public debt bonds are part of a group of financial instruments called “fixed income assets” due to their most important characteristic: they oblige the issuer to disburse, in favor of the bondholder, a pre-established flow of funds. This flow can be, for example, a fixed monthly sum for a certain number of years, or a fixed quarterly or annual sum, or even a single disbursement at maturity of the contract. This contrasts with what are known as “variable income assets”, mainly shares in companies listed on stock exchanges, where the issuer does not acquire an obligation of this type.

Holders of fixed-income securities such as *Banco de la República* derive profits from two main sources: 1) interest received on investments, and 2) changes in investment prices.

The **first** materializes when the cash flows associated with the interest defined in each of the various bonds are received from the issuers. If the Bank purchases a bond with a face value of USD 1,000 on the day it is issued, and that bond has an interest rate of 5.0% per annum, the Bank receives USD 50 each year until the maturity date of the bond.

We saw that the US government bond market is huge in the example in Table S4.1, and thousands of accredited financial players are interacting within it, practically 24 hours a day. In times of calm financial markets with controlled inflation and

Table S4.2
Breakdown of International Reserve Investments

Type of Investment	Global (total percentage)	Colombia (total percentage)
Deposits	13.90%	0.00%
Investments	85.10%	99.94%
High credit-rating government bonds and the like	68.10%	96.26%
Governments	59.00%	79.02%
Supra-national	3.10%	1.92%
Agencies / Guaranteed	6.00%	15.31%
High Yield Bonds	9.90%	3.68%
Securitizations	4.00%	0.14%
Investment grade corporate bonds	5.70%	2.05%
Speculative grade bonds	0.00%	0.00%
Emerging market bonds	0.20%	1.49%
Stocks	7.10%	0.00%
Stocks of developed countries	6.70%	0.00%
Stocks of emerging countries	0.30%	0.00%
Others	1.00%	0.06%
Total	100.00%	100.00%

Source: Central Banks, IMF, State Street Global Advisors, and Official Monetary and Financial Institutions Forum (OMFIF)

a normally functioning credit system as was seen for several years prior to the 2008 crisis, for example, fluctuations in the price of low-credit-risk government bonds were not significant and, therefore, did not have a major impact on the value of the portfolios that cover them.

On the contrary, and this is the **second** major source of variations in the profits of foreign reserves, in times of financial unrest and stressed and volatile credit markets, the price of public debt bonds fluctuates to a greater degree and thus affects the value of the portfolios that hold them.

1. Changes in the Prices of Investments

To understand the reason why a fixed income instrument can have a very strong impact on the value of the foreign reserves investment portfolio and, therefore, on the Bank's profits, we must begin by pointing out that the price of a public debt bond depends critically on the prevailing market conditions at the time of valuation.

As argued, the public debt bond guarantees its holder a pre-established flow of funds throughout the period until its maturity. Let us call these flows FC1, corresponding to the first period, FC2 to the second period, and so on. In addition, at each point in the life of the bond, the financial market establishes a certain interest rate which, because of this, we call the market rate.

It is very clear, then, that although the FC1, FC2, etc. flows are fixed, the economic value of the public debt bond is not. The reason is that the market interest rate is not fixed and changes according to its various determinants. For example, if between one

month and the next the interest rate goes up, the value of the bond goes down. The reason is that the eventual buyer of the FC1, FC2, etc. fixed flows has better alternatives than he had a year ago since he can buy a newly issued bond.

In short, the reason why fixed flows of income have an economic value that is not fixed is that they have substitutes throughout the market.

Slightly more formally, the price P of the public debt bond, issued at N periods, can be defined as:

$$P = \frac{FC_1}{(1+i)} + \frac{FC_2}{(1+i)^2} + \frac{FC_N}{(1+i)^N}$$

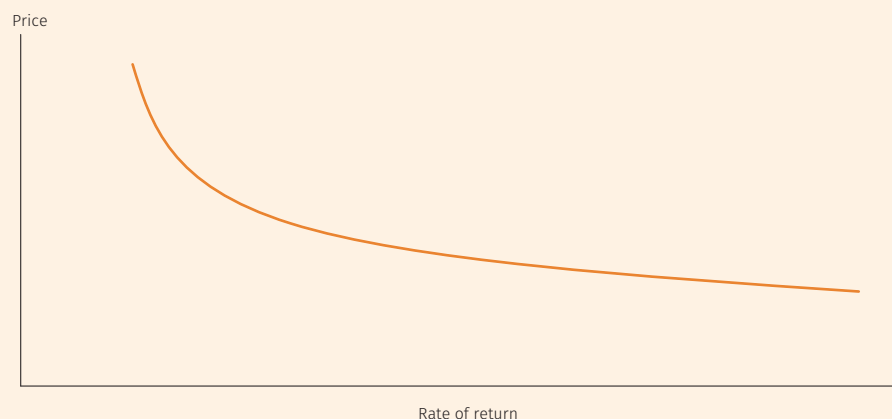
If today's market rate is 10%, for example, and the bond matures in one year and the issuer's commitment is to pay the holder an FC1 of USD 1,000, the bond price is USD 909. But if the rate were to drop from 10% to 5.0% today, the price of the bond would rise from USD 909 to USD 952.

An aspect of enormous relevance when determining the effect of a given interest rate fluctuation on the value of the public debt bond is the number of periods that the issuer commits to, i.e., the value of N in the above equation. This is so because for the holder of the public debt bond, an FC1 value of USD 100, for example, is not equal to an FC3 value of USD 100.

Continuing with the previous example but using $N = 2$ instead of $N = 1$, let us assume that $FC_1 = 0$ and that $FC_2 = \text{USD } 1,000$. In other words, the bond pays everything at the end of its maturity. With a market interest rate equal to 10%, the price of the bond would be USD 826.4, instead of USD 909 in the previous case. And if the rate drops to 5.0%, the bond price would be USD 907 instead of USD 952.

As a corollary, the price of the security increases when its rate of return decreases and vice versa, as shown in Graph S4.1. All this is because, in order to value future cash flows (FC) at today's prices, it is necessary to bring them to present value, and, to do this, they are divided by the interest rate $(1 + i)$ applied to them. As a result, the values of the flows at today's prices, and thus the prices of the securities are further reduced as they are divided at higher rates.

Graph S4.1
Relationship Between Bond Prices and Interest Rates



Source: Banco de la República.

The level and movement of rates on instruments issued in a currency (i) are influenced by the prevailing degree of financial stability, i.e., inflation and exchange rate expectations, the perceived soundness of credit markets, and the perceived sustainability of public finances. As a result, foreign reserve investments tend to appreciate in periods when the main central banks reduce interest rates, and to depreciate when central banks tighten monetary policy (raise rates). In periods when monetary policy remains stable, foreign reserves do not show significant gains or losses due to this factor.

Another important aspect that determines the yield rates of a large part of the fixed income instruments, particularly bonds issued by issuers other than governments, is the spread, i.e., the difference between the yield rates of non-government and government bonds. This margin is specific to each issuer and depends mainly on the credit quality of the issuer (lower spread equals better credit quality and vice versa). This means that the higher the credit quality of the security issuer, the lower the contractual rate at which it can issue fixed-income securities. This margin changes as investors alter their perception of credit risk for a given issuer. Thus, an improvement in credit quality reduces the spread, lowers the interest rate of the fixed-income instrument, and increases its value. Similarly, a deterioration in credit quality has the opposite effect on the asset.

Another important factor with respect to the performance of the instruments is the duration¹ of the investment portfolio, which will determine the extent to which its valuation will be affected by movements in interest rates (i.e., the change in the value of the portfolio due to changes in the rates of return). A longer portfolio duration represents a greater risk in the event of interest rate increases or decreases. This is due to the fact that the more distant the flows of a security (FC) are, the more times they will have to be divided by the interest rate (i) to value the asset in the present. Consequently, the longer the term of the asset, the greater the impact of the interest rate on the price of the security. In other words, given a general variation in the level of interest rates or yields, portfolios with a shorter duration will experience smaller changes in valuation than those with a longer duration. For example, if interest rates in the economy rise 1.0%, an investment portfolio with a duration of 1.2 will lose approximately 1.2% of its value while one with a duration of 2.2 will lose approximately 2.2% of its value.

2. Interest Received for Investments

Fixed-income instruments have a contractual interest rate, or coupon rate, which corresponds to the interest rate paid by the issuer of the security during the life of the investment as compensation to the investor for the risk assumed. Once established at the date of the issuance of the security, the coupon rate remains unchanged, and the security holders receive fixed interest payments at a specified frequency and during the period established for the investment. The issuer decides the coupon rate at the time of issuance based on different factors such as the prevailing interest rates in the market and its credit quality, etc. For example, if a portion of the reserves portfolio is invested in a US Treasury bond that has a contractual interest rate (coupon) of 2.75%, then, for every USD 100 of face value, the reserves will receive an annual interest of USD 2.75.

Each fixed income instrument has a specific contractual interest rate, or coupon rate. However, when the securities are valued at market prices, the value of each one

¹ The maturity of a bond is the average of the maturity of all the cash flows of that bond; i.e., it expresses how long it will take in years for the cash flows of that bond to be paid.

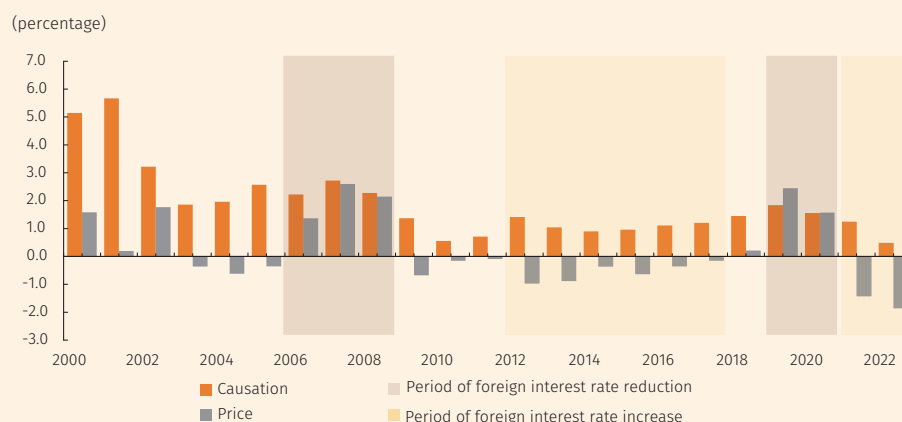
reflects the expected interest rate of return for that security. In other words, the interest rate of the valued security represents the expected return on that investment until maturity, i.e., what would be paid for each security compared to the expected future cash flows (coupons and principal value at the end). For example, if the interest rate (i) of a security is 0%, its value will be the sum of future cash flows (FC), without any adjustment. In other words, in the future cash flows are received that add up to exactly the same value it paid today. Thus, the investor will have a 0% return. If the rate of the security (i) is 1.0%, when the flows of the security (FC) are discounted, the present value will be less than the sum of the flows that will be received in the future. In the second case, the investor will have an expected return of 1.0% because he receives future cash flows for a higher value in that percentage compared to what he paid. Thus, to the extent that the market rates are higher, the security, when valued at market prices, will generate greater value in terms of interest earned.

Along the same lines, given the traditional shape of a yield curve, a portfolio with a short duration will tend to have a lower expected return than a portfolio with a longer term given that normally the yield rates of short-term bonds are lower than those of long term bonds. In contrast, a portfolio with a longer duration will be more sensitive to changes in interest rates but will have a higher expected return over the long term.

In accordance with the above, the investments of foreign reserves should have a level of duration that makes it possible to obtain a balance between the two factors that explain their yield: 1) changes in investment prices, and 2) the accrual of interest received on investments.

Graph S4.2 shows that in the 2006-2008 and 2019-2020 periods (brown shadow) there was a significant positive price change (appreciation) on foreign reserves due to reductions in foreign interest rates. In contrast, in the 2012-2017 and 2021-2022 periods² (yellow shadow) the rise in foreign interest rates, particularly those of US government bonds, caused a devaluation of reserves that affected their performance.

Graph S4.2
Components of the International Reserves Portfolio Earnings

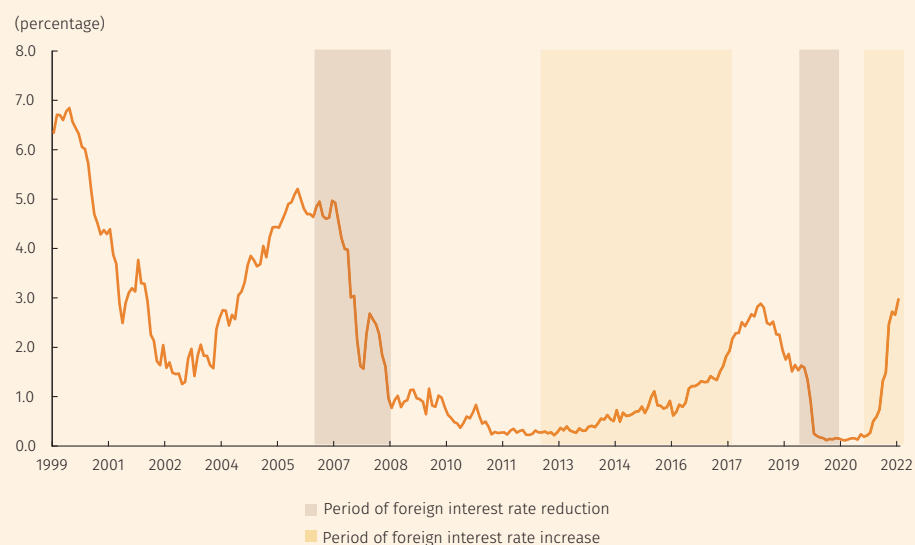


Source: Banco de la República.

² For 2022, it corresponds to the performance noted up until June 30.

The performance of foreign interest rates is presented in Graph S4.3. For the sake of simplicity, only the rates of US government bonds, which represent more than 80% of the foreign reserves portfolio, are considered here. The same areas that are shaded in Graph S4.2 are included in this graph to highlight how changes in rates affect the return on foreign reserves, particularly because of changes in investment prices. It is noted that in the 2019-2020 period there was a sharp drop in interest rates that explains the significant increase in the value of securities that took place during that period. In contrast, note how the sharp and rapid increase in interest rates observed since the end of 2021 has had a negative impact on the valuation of the reserve portfolio investments and, to that extent, on their recent profitability.

Graph S4.3
Interest Rates 2-year U.S. Bonds



Source: Data License, Bloomberg.

Shaded section 5

Share of the Bank for International Settlements held by *Banco de la República*

In compliance with Act 1484/December 12, 2011, which authorized *Banco de la República's* incorporation as a shareholder of the Bank for International Settlements (BIS),¹ this shaded section presents a report on the most relevant activities carried out with that entity in recent months. Based on the authorization conferred on it, the Bank acquired 3,000 shares of the BIS for a price of 65,712,000 in special drawing rights (SDR), which is equivalent to USD 100,978,710 that are registered on the Bank's financial statements at their acquisition cost in SDR under "contributions to international organizations and entities."

This year, as stipulated by the BIS Board of Governors, the decision was made to pay a normal dividend per share, which represents an increase of 10 SDR compared to the dividend paid in the 2020-2021 period. Thus, the profits for the 2021-2022 period went to the proposed dividend payment, the General Reserve Fund, and the Free Reserve Fund.²

In recent months, the directors of *Banco de la República* have participated actively in the periodic meetings that the organization holds in which recent events and the outlook for the global economy and financial markets are examined. The most recent discussions at the meetings of BIS member country governors have focused on a variety of topics such as the process of monetary normalization, the outlook for inflation, capital flows in a context of monetary tightening, inflation expectations and central bank communication challenges, employment and wage evolution, developments in the housing market, climate change and the business cycle, and decentralized finance.

In the area of BIS consultative groups that coordinate research and analysis in areas such as financial stability and banking operations, the Consultative Group on Risk Management (CGRM) published in April 2022 the report *Business Continuity Planning during and after the Covid-19 Pandemic*.³ Also, *Banco de la República* participated in the regular meetings of the Consultative Group on Innovation and the Digital Economy (CGIDE), where issues related to the architecture of central bank digital currencies (CBDC) and the exchange of data through application programming interfaces (APIs) have been discussed.

The participation of the Bank's senior management in the conferences and seminars organized around the 21st BIS Annual Conference that was held at the end of June this year in Basel, Switzerland, was also noteworthy. On this occasion, discussions focused on inflation and production networks, inflation anchors, cryptoassets, regulating bigtech, digital platforms, and the future of the monetary system. In addition,

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- 1 This international institution was created in 1930 and currently includes 63 central banks. Its mission is to serve such entities in their quest for monetary and financial stability by fostering international cooperation in these areas as well as to serve as bank for member central banks. Its headquarters are located in Basel, Switzerland, and it has two representative offices: one in Hong Kong and another in Mexico City.
 - 2 The purpose of the General Reserve Fund is to have resources available to meet losses incurred by the BIS. The funds remaining from the annual net income are usually allocated to the Free Reserve Fund after the distribution of dividends and the transfer to the General Reserve Fund.
 - 3 The report is available at: <https://www.bis.org/publ/othp49.htm>

in the BIS 92nd Annual General Meeting of the BIS, the organization presented the chapters of the Annual Economic Report 2022. The report is divided into three chapters that focus on: 1) global economic and financial developments over the last year, in terms of the return of inflation, and the macroeconomic policy challenges to dissipate the risks of stagflation; 2) the transition to a high-inflation regime and the role of monetary policy; and 3) the future of the monetary system.

Furthermore, Bank representatives attended several virtual events organized by the BIS such as: 1) the Centenary Conference of the Central Reserve Bank of Peru, that was organized jointly with this central bank, where issues related to monetary policy and inflation, economic recovery and fiscal consolidation, and the main financial risks in the new environment were discussed; and 2) the second edition of the BIS Innovation Summit, which focused on the future of money and payments, central bank digital currencies (CBDC), decentralized finance (DeFi), and new technologies along with other topics. Both events took place at the end of March and brought together central bank governors, senior officials, academics, and private sector personalities to discuss the above-mentioned issues.

Lastly, the BIS held the second meeting of the Green Swan Conference in early June.⁴ This event was organized jointly with the European Central Bank, the Network for Greening the Financial System, and the People's Bank of China. This event is designed to discuss issues related to monetary policy setting and operations in the context of climate change, and the role of finance in climate transition. It also includes transparency and disclosures, transition plans, and financing green innovation.

⁴ The agenda and the recording of the event are available at the following link: https://www.bis.org/events/green_swan_2022/overview.htm

Box 1

Banco de la República's New Liquidity Provision Scheme

1. Introduction

With the onset of the health emergency in March 2020, the Board of Directors of *Banco de la República* (BDBR) adopted a series of measures that would ensure the appropriate flow of loans and facilitate the proper functioning of financial markets and the payment systems.¹ Given the healthy conditions in the financial markets in April 2022, the BDBR adjusted the liquidity provision scheme to adapt it to normal circumstances.

2. Measures taken during the pandemic to regulate liquidity²

In the context of the extreme volatility in the global financial markets caused by the Covid-19 pandemic, the BDBR took some measures to expand the flow of liquidity to the economy. In general terms, the maturities and quantities offered for temporary expansion transactions (repos) auctions were extended, new eligible securities were included, the use of liquidity transactions was extended to new counterparties,³ and the individual limit applied to public debt repos was eliminated.⁴

With respect to repos collateralized with public debt securities, the use of Solidarity securities was allowed as were the already eligible securities, and auctions were held for longer maturities, including nine-month and one-year maturities. The above was supplemented with the definitive purchases of class B TES made by *Banco de la República*.

Moreover, the auctions of repos collateralized with private debt securities were activated, and the definitive purchases of securities with remaining maturities of less than or equal to three years issued by credit institutions through auctions were implemented.⁵ These definitive expansion operations were carried out between 24 March and 20 April 2020 and were open to all entities that were authorized as open market operations (OMO) placement agents with the exception of capitalization companies and pension and severance fund management companies (PSFC) for their proprietary account or on behalf of their managed funds (other than severance funds).

With respect to counterparties in repos backed by public and private debt, access was extended to insurance companies, securitization companies, the National Savings Fund (FNA in Spanish), the National Development Fund (FDN in Spanish), Finagro, Findeter, to the PSFC on their own behalf or on behalf of their managed funds,⁶ and the stock brokerage firms (SBF), trust funds (TC), investment management companies (IMC) on their own behalf and on behalf of their open-ended collective investment funds.

¹ See the March 2021 Report of the Board of Directors to the Congress of the Republic.

² For more information see Box 3: "Analysis of the measures implemented by *Banco de la República* from the perspective of financial stability" (Maria Fernanda Meneses and Camilo Eduardo Sanchez) from the *Financial Stability Report* for the first half of 2020.

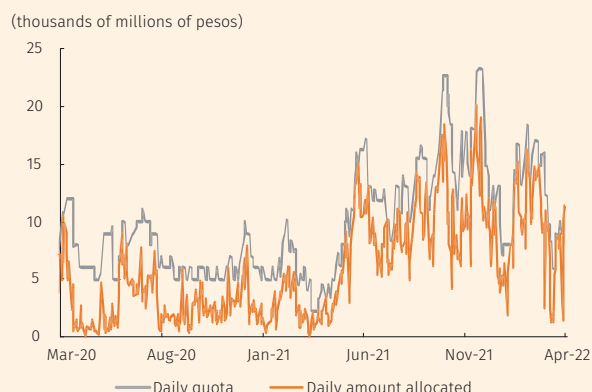
³ The group of entities authorized to carry out temporary expansion transactions is called Open Market Operations Placement Agents (OMO).

⁴ The existing limit applied to credit institutions and brokerage firms belonging to the Public Debt Market Creators Program of the Ministry of the Treasury and Public Credit. In order to gain access to temporary expansion transactions with *Banco de la República* that were carried out with public debt securities, the average balance of such transactions during the last thirty calendar days could not represent an amount higher than the value of each entity's tier capital.

⁵ An individual limit was not applied to repos collateralized with private debt securities.

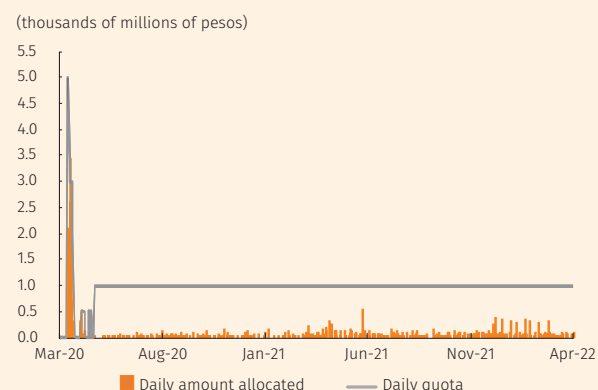
⁶ In the case of repos backed by private debt, the PSFC could participate on behalf of their severance funds only.

Graph B1.1
Quota and Daily Allotment Amount of Public Debt Repo Auctions for all Maturities



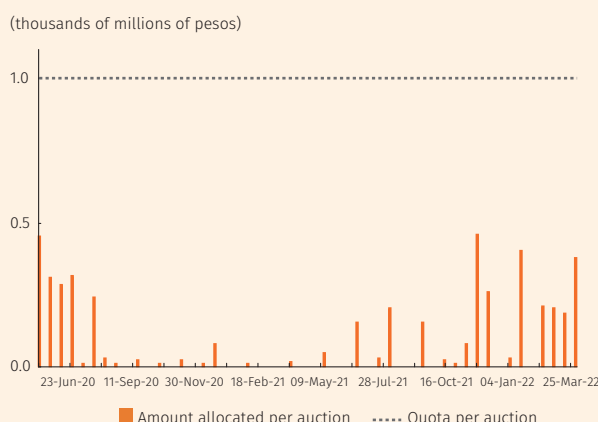
Note: The quota and the amount allocated during the period in which Banco de la República implemented measures in response to the pandemic (March 2020-April 2022) are presented.
Source: Banco de la República; authors' calculations.

Graph B1.2
Quota and Daily Allotment Amount of Private Debt Repo Auctions



Note: the quota and amount allocated starting March 2020 when this feature was activated, to April 2022, when it was deactivated, are presented.
Source: Banco de la República; authors' calculations.

Graph B1.3
Quota and Allotment Amount of the Promissory Note Repo Auctions



Note: the quota and amount allocated in May 2020 when this feature was activated, to April 2022, when it was deactivated, are presented.
Source: Banco de la República; authors' calculations.

Authorization was granted in May 2020 for the repo backed by loans (promissory notes).⁷ These repos had a maturity of six months and could be accessed by credit institutions that were authorized as OMO placement agents. Auctions were held every two weeks on Thursdays, until 31 March 2022.⁸

The structure of the new scheme made it possible to guarantee that the market would have the necessary transitory and permanent liquidity. As for temporary expansion transactions (repos), the increase in quantities offered, counterparties, maturities, and eligible securities meant a significant monetary expansion with respect to what is normally required by the economy. For example, in March 2020, when the highest intensity in the use of these transactions was registered, and public debt securities that are traditionally admitted, private debt securities, and promissory notes were included as collateral, COP 14,662 b, which is equivalent to about 15.6% of the average monetary base for 2019 was injected into the economy (including overnight and longer-period repos). Furthermore, during March and April 2022, the months in which the transactions made under these new measures were concentrated, the Bank purchased COP 8.7 t in private securities and COP 2.8 t in TES. This as a whole came to 12.2% of the average monetary base in 2019. The quantities offered and the allocated amount in repo transactions with public and private debt securities and promissory notes are shown in Graphs B1.1, B1.2, and B1.3. The value of sales of private debt securities and TES is shown in Graph B1.4.

3. New liquidity provision scheme

Given that the risks for the liquidity of the financial system derived from the pandemic have attenuated, and in order to ensure the proper functioning of the payment system, the BDBR decided to adjust the liquidity provision scheme on 31 March 2022 in order to restore it to normal conditions as of 04 April 2022. This adjustment involved a return to the pre-pandemic scheme, but with some improvements.

First of all, the following entities were defined as Banco de la República's counterparties in the repos backed with public debt: 1) credit institutions (including Bancoldex) with public liabilities; 2) credit institutions and brokerage firms acting on their own behalf that participate in the Public Debt Market Creators Program of the Ministry of the Treasury and Public Credit, and 3) SBF, TC, and IMC exclusively on behalf of their open-end collective investment funds. This counterparty system allows for a better transmission of monetary policy while ensuring that access is provided to entities such as open-end collective investment fund managers who, as seen during the pandemic, play a key role in the distribution of liquidity in the financial system, especially in times of crisis.

Secondly, all the entities participating in the CUD system of Banco de la República with the exception of social security information operators, the Ministry of the Treasury and Public Credit, the Colombian Institute of Educational Credit and Technical Studies Abroad (Ice-tex), and financial market infrastructures were authorized as eligible counterparties for the intraday repo and its automatic conversion into overnight. Central counterparty risk clearing houses (CCRC) remained eligible counterparties for these transactions. This change granted securitization companies, insurance companies, capitalization companies, foreign exchange brokerage and special financial

7 A limit corresponding to 15% of the public liabilities was applied to the balance of repo backed by loans.

8 This measure was supplemented by the authorization of its voluntary early termination as of March 2021 with periods exceeding 45 calendar days and provided that at least 30 calendar days had elapsed since it was completed.

Graph B1.4
Definitive Expansion with Private Debt and TES Securities



Note: the quota and amount allocated starting March 2020 when the private debt expansion opportunities were activated, until the end of April 2020 when they were deactivated is presented.
Source: Banco de la República; authors' calculations.

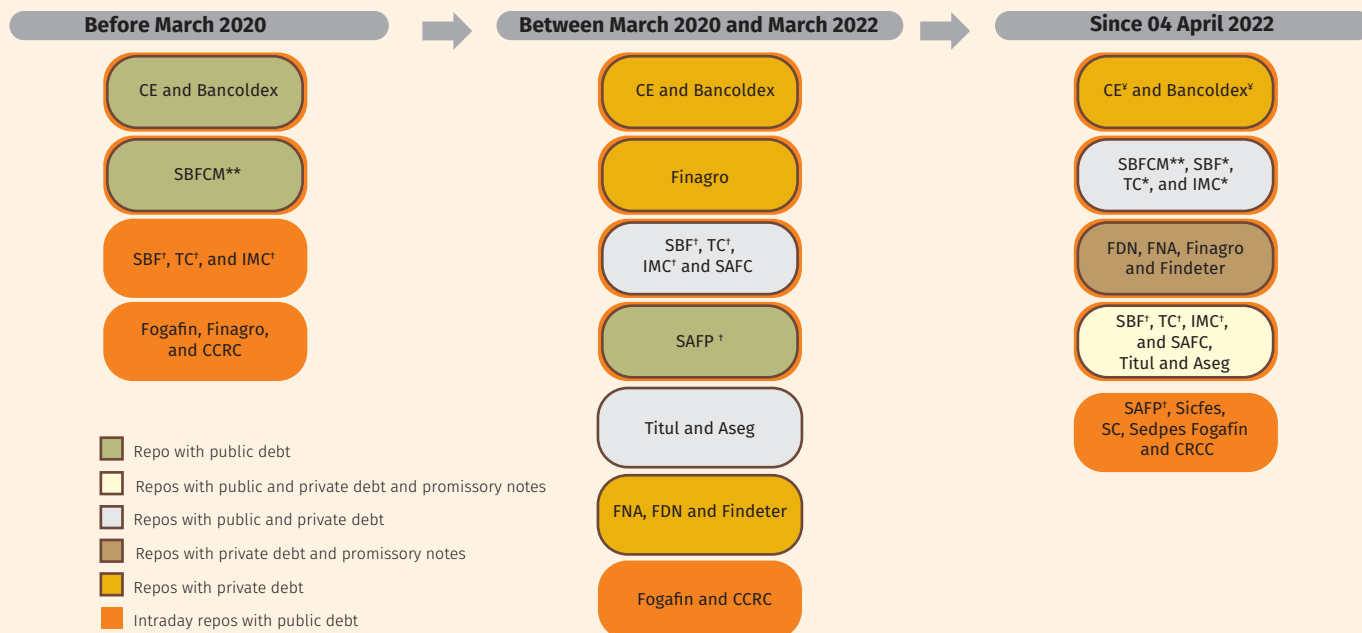
services companies (Sicfes), and companies specializing in electronic deposits and payments (Sedpes) access to the intraday repo and its automatic conversion into overnight repos. This measure contributes to a more efficient functioning of the payment system since it allows a wider group of entities to use the intraday repo facility to manage shocks to their liquidity.

Third, the *Banco de la República* announced that it will offer repos with seven-calendar-day maturities based on public debt securities on a daily basis in a cascade system⁹ with the overnight repos. The purpose of the foregoing is to help reduce the operating burden of the entities in the management of liquidity. Normally, a seven-day auction will not be held when auctions of contraction operations are being carried out.

Last of all, the suspension of two mechanisms for liquidity provision implemented in 2020 was also announced: repo backed by private debt and loans, and repos backed by public debt with terms of nine months and one year. The mechanisms may be activated when the economic situation requires them. *Banco de la República* reported that it will continue to monitor market conditions and in the event that they consider it necessary, they will take the necessary measures to maintain an appropriate flow of liquidity in the economy. A summary of the liquidity measures that were put in place before, during, and after the health emergency can be found in Diagram B1.1.

⁹ Cascade system: sequence of repo auctions at different maturities on the same day in which the quantity offered for each auction would depend on what was allotted in the previous auction.

Diagram B1.1
Eligible Counterparties and Securities in Expansion Repos and Intraday Repo



† This indicates that entities may have access for their proprietary account and for the account of third parties or managed funds.

‡ For transitory expansion with public debt, the CIs and Bancoldex must register liabilities owed to the public (PPP) or participate in the market creator program. For transitory expansion with promissory notes, CIs and Bancoldex must register a PPP balance.

* Indicates that SBF, TC, and IMC may participate on behalf of the open-ended collective investment funds that they manage.

** Indicates that SCBCMs may participate only on their own account.

CE: Credit Institutions, SBFCM: Stock Brokerage Firms in Market Creators, SNF: Stock Brokerage Firms, TC: Trust Fund Companies, IMC: investment management companies, Titul: Securitization Companies, Aseg: Insurance entities, FNA: National Savings Fund, FDN: National Development Fund, SAFP: Pension and Severance Pay Fund Managers, Sicfes: Foreign Exchange and Financial Intermediation Special Service Companies, CC: Capitalization Companies Sedpes: Companies specializing in electronic deposits and payments, CCRC: Central counterparty risk clearinghouses, SAFC: SAFP on behalf of their severance funds.

Source: Banco de la República; authors' calculations.

Box 2

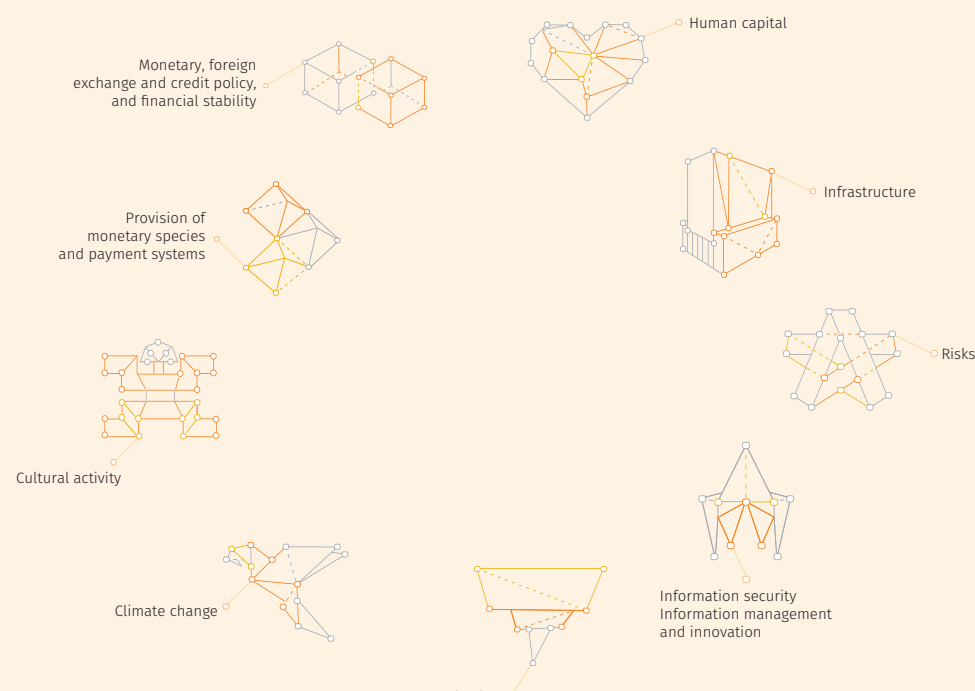
2022-2025 Strategic Plan, Banco de la República

The Board of Directors of *Banco de la República* (BDBR) approved the 2022-2025 Strategic Plan that defined the strategic objectives for the coming years in November 2021. The BDBR will monitor and review this Plan on an annual basis.

The objectives of the Strategic Plan were framed within *Banco de la República's* (Bank) mission to: "To contribute to the well-being of Colombians by preserving the purchasing power of the currency, supporting sustained economic growth, and contributing to financial stability, the proper functioning of payment systems, the generation of knowledge, and the country's cultural activity."¹ The vision guiding the Strategic Plan was defined in terms of: "To be a central bank that generates trust, contributes to the well-being of Colombians, and works with excellence, efficiency, transparency, and sustainability."²

In order to define the objectives of the Strategic Plan in each area, economic, technological, social, legal, and environmental trends were analyzed including the challenges posed by climate change in a context of central banking and its possible impact on the functions of *Banco de la República*. This exercise was particularly challenging given the uncertainty generated by the effects of the pandemic that spurred the use of new technologies and innovation in how people work and provide services. The topics included in the Strategic Plan, which serve as a guide for prioritizing *Banco de la República's* work, are shown in Diagram B2.1.

Diagram B2.1
2022-2025 Strategic Plan



Source: *Banco de la República*.

1 <https://www.banrep.gov.co/es/somos-el-banco-central-de-colombia>

2 For more details see: <https://www.banrep.gov.co/es/el-banco/gobierno-corporativo/plan-estrategico-2022-2025>

1. Monetary, foreign exchange and credit policy, and financial stability

The Bank will continue to reinforce its monetary, exchange rate, and credit policy analysis and evaluation processes, and evaluate and update its role in contributing to the country's financial stability. Likewise, as an important part of the Bank's contribution to society, economic research and its dissemination will continue to be reinforced.

2. Provision of monetary species and payment systems

The Bank will efficiently meet the cash needs that the Colombian economy demands including, among other things, new alternatives for recirculating banknotes in good condition and new technologies for more durable banknotes while maintaining high security standards.

Progress will be made in the implementation of the Bank's public policy on electronic payments with emphasis on the development of online payments. Options for expanding the supply of cross-border payments will be evaluated, and the convenience and risks of issuing a central bank digital currency will be analyzed. In addition, the technological infrastructure will continue to be upgraded to improve the provision of services and the capacity to operate the payment systems in contingency situations.

3. Cultural activity

The presence of the Bank's Cultural Network around the country will be strengthened by promoting innovation in the physical and digital spheres to help close gaps in access to knowledge, collections, programming, and cultural services. To this end, progress will continue to be made on three fronts: first, in fostering the production and exchange of knowledge and collaborative creation with diverse audiences; second, in the transformation of on-site and off-site services, and third, in the understanding of the public and their needs in different contexts.

4. Climate change

A reflection exercise will be carried out to analyze the impact of climate change on the Bank's functions and a strategy will be defined to manage the risks identified. Furthermore, efforts to reduce the generation of carbon footprints will continue, and contributions to discussions on the challenges of climate change in the economy and best practices for its management will continue to be made through a research agenda and educational programs based on cultural activities.

5. Human capital

The Bank will enhance the professional development of its staff, the continuous improvement of the work environment, teamwork, and the development of leadership and strategic competencies. In addition, in response to a constantly evolving and changing world, the Bank will include in its organizational strategy different work models that adapt to the needs of the different areas. It will also continue to foster an organizational culture that promotes diversity and inclusion.

6. Infrastructure

The Bank will define a policy on infrastructure management to make progress on updating, optimizing, and maintaining its buildings throughout the country. To achieve this, progress will be made in the preparation of seismic-resistance diagnoses of the Bank's buildings and in identifying and subsequently intervening in the physical facilities required for their efficient operation in accordance with the new work methods.

7. Risks

The Bank will strengthen its comprehensive risk management model which will include a reputational risk management component. In addition, the risk framework and risk appetite will be defined in order to improve risk management standards.

8. Innovation, IT security, and information management

The Bank will increase technological efficiency, foster innovation, and strengthen cybersecurity and early detection of cyberattacks. In addition, it will consolidate a data management model that will allow better benefit from, get access to, and use internal and external information.

9. Communication

Through communications about its corporate governance, functions, decisions, and processes, the Bank will contribute to the impact of its policies and credibility. Moreover, relations with outside stakeholders and the pride of its staff in working at the Bank will be reinforced. Likewise, the Issuer will make progress in the communication strategy targeting public opinion with greater attention to digital audiences.

The nine themes of the 2022-2025 Strategic Plan were broken down into 38 objectives. For monitoring purposes, the Bank's Management Board, made up of the five full-time members of the Board of Directors, approved 76 indicators, compliance with which will be evaluated by the Board semiannually.

Appendix

Management Policy for the Foreign Reserve Investment Portfolio

According to good practice recommendations, the management of foreign reserves should be based on liquidity, security, and profitability criteria. In that respect, an attempt must be made to: 1) have enough liquidity in foreign currency, 2) have strict policies regarding the management of the different risks that the transactions face, and 3) generate reasonable, risk-adjusted returns subject to liquidity and other risk restrictions. How these rules are applied in the management of Colombia's foreign reserves is explained below.

1. Risk Management Policy

Banco de la República has a framework for risk management that identifies and assesses the risks to which their transactions are exposed in order to keep them low. Some of the main policies for risk management are as follows:

Liquidity Risk: financial assets that are permanently in demand on the secondary market are invested in, and the portfolio is divided into tranches. This is done in order to have the ability to convert reserve assets into cash rapidly and at a low cost, and so that some of the defined tranches can be liquidated faster.

Market Risk: investment is made into a limited group of eligible assets with strict investment limits on the duration, margin duration, foreign exchange components, and breakdown of the portfolio by sector. The goal is for the value of the portfolio to be moderately sensitive to interest rate movements in the market.

Credit risk: investments are only made in assets with high credit ratings given that these investments have a low probability of defaulting on their payments. The minimum credit rating for governments and entities related to governments is A-. With respect to private issuers, the minimum rating is A+ for exposure to individual issuers, and BBB- (investment grade) when the investment is done through funds. Historically, the percentage of issuers with these ratings that have defaulted on their payments the year after is close to 0%. If the rating of an issuer that the portfolio has invested in directly drops below the minimum allowed, the exposure is liquidated within a short period of time. In addition, the maximum exposure is limited by sector and issuer in order to limit the impact of credit events on the value of the portfolio.

Exchange risk: The impact of the foreign exchange risk is mitigated by the "foreign exchange adjustment" equity account that is dealt with under Decree 2520/1993 number 4 of article 62 (Statutes of *Banco de la República*). This account rises during those years when reserve currencies become stronger with respect to the Colombian peso and decline in those years when they weaken. Therefore, the variations in the currencies do not have any impact on the consolidated profit or loss statement. *Banco de la República*, like the majority of the central banks around the world, has currencies other than the US dollar as part of their currency components in order to cover the country's payments abroad since these are made in many currencies. It is important to keep in mind the fact that the prices of the currencies are highly volatile and do not often have defined long-term trends. This makes it very difficult to reliably predict their behavior.

Counterparty risk: To mitigate the counterparty risk, transactions are settled through payment on delivery mechanisms. Counterparties in fixed income trading are required to be market makers, and the counterparties in currency trading are required to have high credit ratings. The purpose for payment on delivery mechanisms is to make the exchange of papers for cash or exchange of payments in a foreign currency exchange transaction a simultaneous one in order to eliminate the possibility of a default by one of the parties to the trade. The foreign currency exchange counterparties must have a minimum credit rating of

A- if they have an ISDA framework contract.¹ If they do not have said contract, the minimum rating is A+.

2. Tranche of the Investment Portfolio

The investment portfolio is made up of three tranches: the short term, the medium term and the gold tranche.

The purpose of the short-term tranche is to cover potential liquidity needs from the reserves in twelve months. Currently, this tranche consists of working capital and a debt portfolio. The working capital is the portfolio into which the funds that come from intervention in the exchange market are placed and their investments are concentrated in very short-term assets denominated in dollars. Given that the objective of this tranche is to provide immediate liquidity for intervention in the foreign exchange market, the working capital is concentrated in deposits and investments that can be liquidated in one day at a very low cost. As of June 2022, the value of the short-term tranche was USD 27,950.2 m, of which USD 1,238.5 m corresponded to working capital and USD 26,711.7 m to the liability portfolio.

The liability portfolio is the main component in the short-term tranche. This portfolio is characterized by a period and a profile of expected profitability that is higher than what working capital has, a foreign exchange breakdown that is intended to duplicate the performance of the country's balance of payments outflow, and a profitability that is similar to that of its benchmark index.² The liability portfolio is invested in multiple currencies and instruments that are in line with those in a benchmark index defined under the restrictions that the expected return on the portfolio, excluding the foreign exchange component, must be positive in 12 months with a confidence level of 95% and that the expected value of a possible loss must not exceed 1.0%.

The medium-term tranche is intended to raise the expected profitability of the foreign reserves in the long term while preserving a conservative portfolio with a profile of expected profitability that is higher than the short-term tranche and the benchmark index. Its goal is to maximize the risk-adjusted return in US dollars, the currency in which foreign reserves are valued, for the portion of the portfolio that is less likely to be used within a twelve-month period. Thus, the maximum return is sought subject to the restriction that the expected return in US dollars for this tranche be positive with a 95% probability, and that the value expected from a possible loss not surpass 1.0% over a horizon of three years. Currently, the majority of the medium-term tranche consists of actively managed portfolios that seek to generate a return that is higher than the benchmark index.³ As of June 2022, the value of the medium-term tranche came to USD 24,278.3 m.

The last tranche corresponds to investments of foreign reserves in gold. This metal makes it possible to diversify the investment portfolio since its price behaves differently than the prices of the securities which the short- and medium-term tranches are invested in. As of June 2022, the market value of the gold tranche in the reserves came to USD 272.6 m.

The securities in the investment portfolio are deposited in financial institutions known as trustees.⁴ The entities that provide custody service for the securities in the foreign reserves are the New York Federal Reserve, Euroclear, JP Morgan Chase, and State Street. The investments in physical gold are in the custody of the Bank of England.

1 The purpose of the framework contract established by the International Swaps and Derivatives Association (ISDA) is to establish the terms and conditions that govern over-the-counter derivatives traded between entities.

2 The concept and components of the benchmark index will be explained in the next section.

3 The fact that one of the seven active portfolios is managed directly by *Banco de la República* and the rest by external managers is explained in the section "External Management Program." An explanation on how this program functions can also be found there.

4 Currently, the minimum credit rating allowed for the trustees is A-.

3. Benchmark indices

To manage the reserve investment portfolio, *Banco de la República* has defined theoretical portfolios or benchmark indices⁵ for short- and medium-term tranches. Different indices are built for each one of these tranches in order to reflect their investment goals. The indices serve as a frame of reference to measure the management of each one of the portfolios. The way the two benchmark indices are built is explained below.

In order to build the short-term tranche index,⁶ first of all, objective foreign exchange components are determined. Once the foreign exchange components are defined, a portfolio is sought that maximizes risk-adjusted return⁷ and complies with the loss restrictions defined by this tranche. The foreign exchange components for this index are intended to duplicate the trend of the outflows from the country's balance of payments.⁸ The goal is for the currencies other than the US dollar to appreciate during periods in which the dollar value of the country's payments abroad increases, which would mean that the value of these foreign currencies could decline with respect to the US dollar during periods in which the dollar value of the foreign payments decreases. As of June 2022, the foreign exchange breakdown of the short-term tranche index was 81% US dollars, 9.0% Australian dollars, 4.0% Canadian dollars, 1.0% New Zealand dollars, 2.0% Norwegian krone, and 3.0% Korean won. The loss restrictions defined for the short-term tranche are: 1) having positive returns over a horizon of twelve months with a 95% level of confidence while excluding the exchange rate effect and 2) that the expected value of a possible loss over a horizon of twelve months not exceed 1.0% of the value of the tranche.

A similar procedure is followed for the construction of the medium-term tranche index with two fundamental differences: an exchange rate composition restriction is not imposed and the loss restrictions are defined over a longer horizon. First of all, no currency exchange component restriction is imposed given that the goal of this tranche is to maximize the risk-adjusted return in US dollars. Secondly, the restriction of having positive returns at a 95% confidence level and that the expected value of a possible loss not exceed 1.0% of the value of the tranche is defined for a horizon of three years is intended to reflect the lower probability of using the funds in this tranche in the short term. When building a portfolio that maximizes risk-adjusted profitability in dollars, investments in currencies other than the dollar are allowed.

As of June 2022, the benchmark indices defined for the two tranches have a low level of market risk with an effective duration of 0.74 for the short-term tranche index and of 1.39 for the medium-term tranche. Graph A1.1 shows the benchmark indices approved for the short- and medium-term tranches.⁹

4. External Management Program

Banco de la República manages the short-term tranche, a portion of the medium-term tranche, and the gold tranche directly. The remaining medium-term tranche funds are managed by external portfolio managers. At the end of June 2022, the portion of the investment portfolio that is managed internally corresponded to USD 37,300.7 m (71.05% of the

5 In the capital markets, a benchmark index alludes to a basket of assets with predetermined weights in accordance with certain rules that define their components. In general, an index tries to comprehensively duplicate the trend of a financial asset market and serves as an indicator of the performance of other investment portfolios in the same market. For example, some of the best-known benchmark indices on the stock markets are the MSCI ColCap in Colombia, or the S&P500 and the Dow Jones in the United States (the Bank uses fixed income market indices only).

6 This benchmark index does not apply to working capital since there are no benchmark portfolios that make it possible to properly measure the instruments allowed in this portfolio.

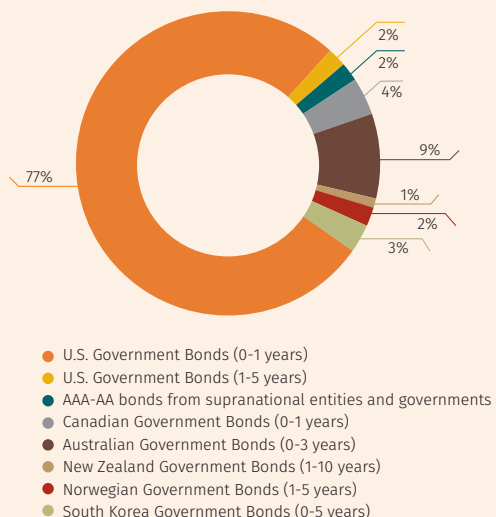
7 A detailed description of the methodology for building the benchmark index is located in the boxes entitled "Technical Explanation of the Methodology for Building the Benchmark Index" and "Market Risk Restrictions on the Optimization Process" in the 2013 and 2019 Management Reports on the foreign reserves.

8 See Box "International-reserve Portfolio's New Foreign Exchange Components" in the *Board of Directors' March 2012 Report to the Congress of the Republic* for a detailed explanation of the methodology for the foreign exchange breakdown of the reserves.

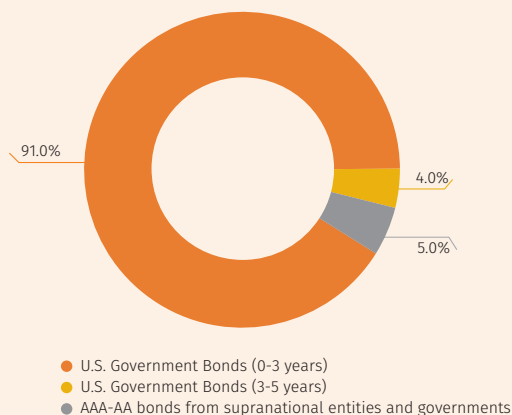
9 For the different sectors that the benchmark index is made up of, the indices published by ICE data indices are used.

Graph A1.1
Breakdown of the Benchmark Index
(information as of 30 June 2022)

1. Short-term Tranche

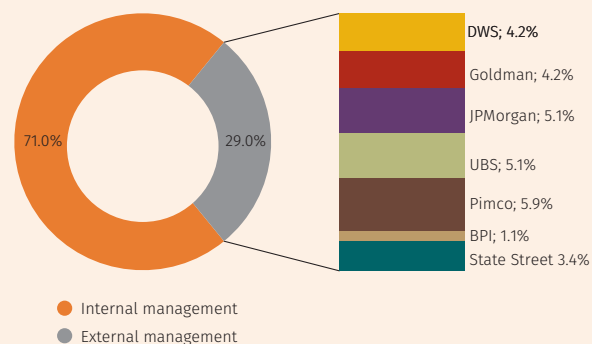


2. Medium-term Tranche



Source: Banco de la República.

Graph A1.2
Management of the Investment Portfolio
(information as of 30 June 2022)



Note: approximate values due to rounding.
Source: Banco de la República.

investment portfolio) while the external management program came to USD 15,200.3 m (28.95% of the investment portfolio).

The main reasons for using external managers are to generate returns that are higher than the benchmark index and to improve the diversification of the portfolio. In this respect, the companies chosen to participate in the program are highly capable in the analysis of financial markets and have a sophisticated infrastructure that can be taken advantage of to define investment strategies and to train Bank officials in the management of international investments. The latter is another objective that the external management program has.

The private firms that participate in the program are chosen through a competitive bidding process and continuously evaluated. Based on the results each administrator obtains beginning with the starting date of their contract, the amount managed will be modified or their continuing to participate in the program will be reviewed. The private companies that participate in the external management program currently are: DWS International GmbH, Goldman Sachs Asset Management, L.P., J.P. Morgan Asset Management (UK) Limited, Pacific Investment Management Company LLC, State Street Global Advisors Trust Company, and UBS Asset Management Inc. (Americas) (Graph A1.2). The funds that these companies manage are in *Banco de la República's* custody accounts, and the administrators' contracts can be canceled whenever considered necessary. The investments in funds managed by the Bank for International Settlements (BIS) are also considered part of the external management program. Only central banks and multilateral entities have access to these funds, and the purpose for them is to invest in the assets that are appropriate for global foreign reserves in an effort by different countries to work cooperatively.¹⁰

10 Investments are currently made in a fund of securities issued by the Chinese government (USD 293.57 m) and a fund of securities issued by non-financial corporations (USD 264.43 m).

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