



COLOMBIA

FINANCIAL SYSTEM STABILITY ASSESSMENT

April 2022

This paper on Colombia was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on March 10, 2022. This paper was discussed by the IMF Executive Board on March 25, 2022.

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March 10, 2022

KEY ISSUES

Context: The pandemic led to Colombia's largest recession on record, but the economy bounced back strongly in 2021. The banking system has so far weathered the shock well, with the help of a strong policy and support response and strong initial position. Colombia is exposed to elevated external financing risks and the further prolongation of the pandemic. Large and complex financial conglomerates with increasing cross-border exposures dominate the financial system. The consumer-credit portfolio deserves attention as it has been growing fast and had high impairment rate during the pandemic.

Findings: Overall, banks are largely resilient to solvency and liquidity shocks. But it is essential to monitor interconnectedness and contagion in view of the complexity of financial conglomerates and increasing cross-border exposures. Bank supervision has been enhanced, including by introducing a comprehensive framework for conglomerates. Macroprudential oversight is overall effective. The crisis management and safety net framework has been strengthened significantly. Colombia's efforts in climate risk assessment and capacity building measures are commended.

Policies: Banking supervision should be strengthened by giving more specific guidance on certain risks and related-party transactions and by introducing additional formal safeguards to enhance the operational independence of the Superintendency of Financial Institutions. Recovery and resolution planning needs further improvements, including for cross-border institutions. The mandates and tasks of the resolution unit and the deposit insurer should be streamlined. To address leakages and risks from potential rapid household debt growth, some macroprudential tools and data collection should be expanded. More effective cross-border exposure monitoring requires filling data gaps on the exposures and risk metrics of ultimate subsidiaries.

- The FSAP team was led by Zsofia Arvai (IMF) and Raquel Letelier, World Bank (WB), and included Cristina Cuervo (IMF) and Julian Casal (WB) as Deputy Mission Chiefs, Jorge Alvarez, Marco Arena, Aleksandra Babii, Carolina Claver, Lucyna Gornicka, Ziya Gorpe, Manuel Perez Archila, and Can Sever (all IMF); David Hoelscher and José Tuya (IMF experts); and Eva Gutierrez, Craig Thorburn, Maria Teresa Chimienti, Alexander Berg, Graciela Miralles, Andres Martinez, Oliver Masetti, Gonzalo Martinez, Cindy Paladines, Noelia Carreras and Ruben Barreto (all WB); and Ludovic Fagette, Miguel Otamendi, and Claudia Meek (WB experts). Research and administrative assistance were provided by Manuel Perez Archila, Alice Mugnier, Charmane Ahmed, and Anna Konopatskaya, respectively.
- The mission met the General Manager of the Central Bank (BR), the Financial Superintendent of Colombia (SFC), senior staff of the Ministry of Finance and Public Credit (MHCP), Financial Regulation Unit (URF), Superior Judiciary Council, Taxes and Customs Directorate (DIAN), Financial Entities Guarantee Fund (Fogafin), Superintendency of Solidary Economy (SES), Superintendency of Industry and Commerce (SIC), Superintendency of Companies (SS), Superior Court of the Judicial District of Bogotá, and also held many helpful meetings with other official agencies, financial sector representatives, industry representatives, and other stakeholders.
- FSAPs assess the stability of the financial system as a whole and not that of individual institutions. They are intended to help countries identify key sources of systemic risk in the financial sector and implement policies to enhance its resilience to shocks and contagion. Certain categories of risk affecting financial institutions, such as operational or legal risk, or risk related to fraud, are not covered in FSAPs.
- This report was prepared by Zsofia Arvai and Cristina Cuervo with input from the FSAP team.

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This report is based on the work of the Financial Sector Assessment Program (FSAP) mission that visited Colombia in November 2021. The FSAP findings were discussed with the authorities during the Article IV consultation mission in February 2022.

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Glossary

AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
AUM	Assets Under Management
BCP	Basel Core Principles
BO	Beneficial Ownership
BR	Central Bank of Colombia (<i>Banco de la República</i>)
CAR	Capital Adequacy Ratio
CCSSF	Financial Sector Coordination and Monitoring Committee (<i>Comité de Coordinación y Seguimiento del Sistema Financiero</i>)
CET1	Core Equity Tier 1
CF or FC	Financial Conglomerate (<i>Conglomerado Financiero</i>)
CI	Credit Institution
CIF	Collective Investment Funds
CIR	Resolution Intersectoral Commission (<i>Comisión Intersectorial de Resolución</i>)
COP	Colombian Peso
DIAN	Taxes and Customs Directorate (<i>Dirección de Impuestos y Aduanas Nacionales</i>)
ELA	Emergency Liquidity Assistance
FCL	Flexible Credit Line
Fogafin	Financial Entities Guarantee Fund (<i>Fondo de Garantías de Instituciones Financieras</i>)
GR	Resolution Group (<i>Grupo de Resolución</i>)
ICR	Interest Coverage Ratio
IFRS	International Financial Reporting Standards
IRL	Liquidity Risk Index (<i>Índice de Riesgo de Liquidez</i>)
LCR	Liquidity Coverage Ratio
LTV	Loan to Value
MHCP	Ministry of Finance and Public Credit (<i>Ministerio de Hacienda y Crédito Público</i>)
MER	Mutual Evaluation Report
NPL	Nonperforming Loan
NSFR	Net Stable Funding Ratio
PAD	Program to Support Debtors (<i>Programa de Acompañamiento de Deudores</i>)
PEP	Politically Exposed Person
RAM	Risk Assessment Matrix
RRP	Recovery and Resolution Planning
RWA	Risk Weighted Assets
SFC	Superintendency of Financial Institutions (<i>Superintendencia Financiera de Colombia</i>)
SIC	Superintendency of Industry and Commerce (<i>Superintendencia de Industria y Comercio</i>)
SIFI	Systemically Important Financial Institution
SS	Superintendency of Companies (<i>Superintendencia de Sociedades</i>)
URF	Financial Regulation Agency (<i>Unidad de Regulación Financiera</i>)
WEO	World Economic Outlook

EXECUTIVE SUMMARY

The banking system entered the COVID-19 pandemic from a position of relative strength, and the authorities mounted a strong policy and support response. In addition to a substantial fiscal and monetary response, the Superintendency of Financial Institutions (SFC) allowed the release of countercyclical provisions, and banks were allowed to provide temporary grace periods, extensions, and other loan modifications. Further, the SFC launched the Program to Support Debtors (PAD) to support viable borrowers, which was phased out at end-August 2021. The corporate vulnerability analysis shows that while the pandemic shock led to a deterioration in repayment capacity and profitability in 2020, it did not trigger widespread systemic failures thanks to pandemic-related policy actions.

Although the financial system has weathered the pandemic relatively well so far, it faces some structural and emerging risks. The financial system is dominated by large and complex financial conglomerates (FC) with increasing cross-border exposures that make the monitoring of interconnectedness and contagion channels essential. Colombian conglomerates have become systemic players in several Central American countries. While considerable progress has been made in cross-border information sharing and supervisory cooperation, further development of monitoring tools to bolster early-warning systems (EWS) is recommended. Moreover, resolution planning for cross-border institutions should be strengthened. In the domestic banking system, although overall pre-pandemic credit growth was contained, consumer credit growth, particularly in the unsecured segment was growing rapidly, and this portfolio subsequently had high impairment rate during the pandemic. As lending to households is expected to grow strongly after the pandemic, closing data and oversight gaps on the indebtedness of households would be necessary.

Bank solvency appears resilient to stress, while liquidity stress tests indicate some vulnerability to very severe pressures. A severe test of resilience to a combination of risks arising from global resurgence of the pandemic, tightening of global financial conditions, political uncertainty, and fiscal deterioration shows that the banking system overall would stay above the regulatory minima, assisted by well-capitalized banks and relatively strong profit buffers. The banking system is largely resilient to liquidity stress with liquidity shortfalls relatively small in the extreme funding shock, but liquidity risk would arise in the very extreme scenarios for some banks with heavier reliance on wholesale unsecured funding and relatively lower holdings of liquid assets.

The authorities have taken important steps to strengthen and develop the financial system since the last FSAP. Financial supervision and systemic risk oversight have been enhanced. Importantly, the law giving the SFC supervisory and regulatory powers over the holding company of a financial conglomerate (“Conglomerates Law”) was approved in 2017. Strong and sustained public sector commitment towards financial inclusion coupled with relevant legal and regulatory reforms paid off with the achievement of access targets, though digital payments are lagging, and inequalities persist due to high costs and frictions among others. A thorough diagnostic and consensus building between public and private stakeholders under the 2018 Capital Markets Mission has led to several legal reforms, though challenges remain. Finally, Colombia is at the

forefront in the region in developing a supportive regulatory environment to facilitate capital mobilization toward sustainable projects and enhance the financial sector's role in managing climate-related risks. The successful launch of sovereign green bond and the upcoming adoption of a green taxonomy for securities issuers are important policy reforms.

The Basel Core Principles (BCP) review shows significant improvements to the regulatory and supervisory framework and highlights a few areas for further enhancement.

The implementation of the Conglomerates Law and the authorities' move to gradually implement Basel III requirements have resulted in a stronger framework for banking supervision. Although, the operational independence of the SFC has been largely enhanced since 2015, the SFC and its staff continue to lack legal protection for acts carried out in good-faith performance of their official duties. The recommendation to make large exposure and related-party limits more comprehensive and streamlined has not been implemented yet but appears to be in progress. Areas for further improvement include developing more specific guidance on concentration, transfer and country risks, related party transactions, internal capital assessment and the interest rate risk in the banking book, introducing additional formal safeguards to enhance the operational independence of the SFC, and adjusting or defining some parameters used in the computations of the local liquidity ratios to further align with Basel III requirements.

The institutional framework has been effective for conducting macroprudential policy so far.

The systemic risk monitoring framework is advanced, and the macroprudential toolkit has been enhanced in line with Basel III recommendations. Nevertheless, it would be useful to prepare a macroprudential oversight strategy, jointly drafted and signed by all relevant institutions. The central bank's role in macroprudential policy could be strengthened to harness its expertise in macro-financial analysis. To address potential leakages and risks from potential rapid growth in household indebtedness, the Loan-to-Value (LTV) and Debt-Service-to-Income (DSTI) tools could be expanded to cover leasing products and nonbank credit, and the DSTI tool to include nonmortgage debt.

The authorities undertook a series of wide-ranging reforms, but some features of the crisis management and safety net framework need improvement.

This includes the introduction of new resolution mechanisms and tools, identification of tools for systemic and non-systemic crises and streamlining information exchange and coordination within the safety net. The FSAP recommends enhancing several areas of the framework, particularly: (i) strengthening the operational independence of the resolution unit within the SFC; (ii) reviewing the responsibility for developing recovery and resolution plans and expanding the content of recovery plans; and (iii) strengthening the safeguards for Fogafin's fund and providing unambiguous access to a back-up liquidity facility.

While good progress is noted in some areas, efforts should continue to enhance the effectiveness of the AML/CFT regime. Colombia should enhance sanctioning practices so that effective, proportionate, and dissuasive sanctions are applied for AML/CFT breaches, address ML/TF risks associated with crypto assets and ensure virtual asset service providers are properly licensed, monitored and supervised for AML/CFT compliance.

Table 1. Colombia: FSAP Key Recommendations

Recommendation	Paragraph	Timing¹
Banking supervision		
Introduce necessary legal amendments to strengthen the independence of the SFC: (i) specifying that the Superintendent is appointed for a minimum term and removed from office only for reasons specified in the law; and (ii) provide explicit legal protections to the SFC.	29	MT
Develop more specific guidance/regulations on concentration, transfer and country risks, related party transactions, internal capital assessment and the IRRBB.	31	MT
Establish a consolidated body of requirements on related-party transactions.	31	ST
Readjust or determine some parameters used in the computation of the local LCR and NSFR ratios to further align with Basel III requirements and require the local NSFR ratio to be also calculated at a consolidated level.	33	MT
Maintain a direct and intrusive supervision of banks by the SFC, including an adequate level of on-site inspections, and avoid over-reliance on external and internal auditors when performing supervisory tasks.	34	ST
Macroprudential Oversight		
Strengthen the role of the central bank in systemic risk monitoring and of the Banco de la República (BR) and the Superintendency of Financial Institutions in macroprudential decision-making.	37	ST
Expand LTV and DSTI tools to cover leasing products and the DSTI tool to include non-mortgage debt.	39	ST
Close data gaps in the areas of cross-border exposures and household indebtedness.	38	I
Risk Analysis		
Strengthen the ability to monitor cross-border exposures and conduct a fully consolidated stress-testing by filling data gaps on the exposures and risk metrics of ultimate subsidiaries.	18	ST
Extend data collection to monitor liquidity risks by currency. Collect more granular data on assets and liabilities generating cashflows, including those related to cross-border exposures.	21	ST
Develop network analysis tools and improve data coverage to bolster EWS for domestic and cross-border contagion.	23	ST
Climate risks and opportunities		
Adopt a risk-based approach in supervision for climate-related risks and continuously improve information disclosures (both by nonfinancial corporates and by financial institutions) and data availability.	27	MT
Resolution, Crisis Management and Safety Nets		
Strengthen the operational independence of the Resolution Unit (GR).	41.b	ST
Make the financial institutions responsible for recovery planning, requiring use of a wide range of risk scenarios and identification of mitigating measures. Make the GR responsible for resolution planning.	41.a	ST

Table 1. Colombia: FSAP Key Recommendations (concluded)

Recommendation	Paragraph	Timing ¹
The mandates and tasks of the resolution unit and the deposit insurer (Fogafin) should be streamlined. These entities manage different parts of the resolution process that should be brought together.	41.b	MT
Strengthen resolution tools by: (i) giving Fogafin the flexibility to conduct purchase and assumption powers with only insured deposits (as opposed to current obligation to package all deposits, both insured and uninsured); (ii) restrict the ability of Fogafin to be the shareholder of restructured or bridge banks; and (iii) consider establishing bail-in powers as a resolution tool.	41.c	MT
Fogafin's financing should be limited to resolution funding (i.e., financing that is used to support the use of resolution powers and achieve the resolution objectives).	41.b	ST
Establish guaranteed backup liquidity facility for Fogafin.	41.d	ST
<i>Anti- Money Laundering/ Combating the Financing of Terrorism</i>		
Ensure a swift implementation of the 2018 MER's recommendations to strengthen the overall effectiveness of the AML/CFT regime.	42	MT
Continue efforts to enhance sanctioning practices so that effective, proportionate, and dissuasive sanctions are applied for AML/CFT breaches	42	MT
Address ML/TF risks associated with crypto assets and ensure virtual asset service providers are properly licensed, monitored and supervised for AML/CFT compliance	42	ST
¹ I-Immediate" is within one year; "NT-near-term" is 1–3 years; "MT-medium-term" is 3–5 years.		

BACKGROUND

A. Macroeconomic Context

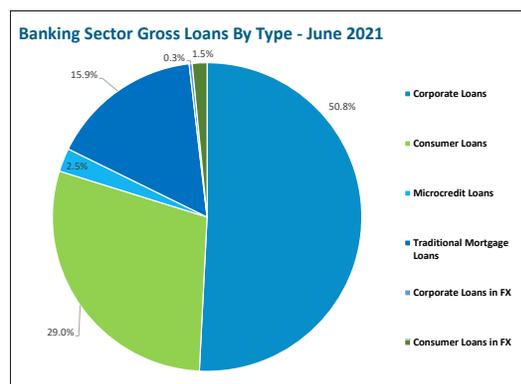
1. Colombia's economy is well managed but nonetheless remains vulnerable to shocks.

With commodity exports amounting to about half of total exports, the economy is highly exposed to terms of trade shocks. Colombia is also vulnerable to changing external financial conditions given its large current account deficit and external financing needs. Over the last two years, the authorities have used the flexibility of their macroeconomic framework to deliver a coordinated and timely response to mitigate the impact of the pandemic. Foreign reserves remain adequate, following the IMF Assessing Reserve Adequacy (ARA) metric; Colombia also has access to the Flexible Credit Line (FCL) from the Fund.¹ However, external vulnerabilities remain high while significant external buffers help manage the attendant risks associated with them.

2. The pandemic led to Colombia's first recession in over 20 years and the largest on record. GDP fell by 7 percent in 2020 in response to lockdowns, spillovers from lower oil prices, and the collapse of global growth (Figure 1 and Table 2). The severe downturn and the need to respond to the pandemic led to a substantial widening of the budget deficit, and the fiscal rule was suspended. The contraction triggered job losses, with unemployment reaching record levels and labor force participation dropping. As restrictions were eased in Q3 2020, activity started to recover, and economic growth bounced back stronger than expected at about 10.6 percent in 2021.

3. Prior to the pandemic, credit had recovered in line with the economic cycle after the 2014–16 oil price shock. Increased competition in the banking sector had reduced costs and boosted consumer credit growth (Figure 2). Particularly, growth in unsecured lending (“Libre inversion”) was high and concentrated in the two largest FCs. Overall mortgage loan growth was more modest and concentrated in the subsidized housing loan segment. Rising only gradually to about 23 percent of GDP at end-2021, household indebtedness is relatively low, but there are shortcomings in the data for consumer debt. FX lending by banks is low, and the rise in corporate

FX debt relative to GDP in recent years is mostly due to the peso's depreciation following the oil price shock in 2014–16 (Figure 2). Leverage of large corporates increased significantly after 2013, mostly due to the aforementioned depreciation. FX-denominated debt is about 35 percent of the private sector corporate debt. This relatively high level of corporate FX debt makes corporates vulnerable to a potential tightening of global financial conditions and to exchange rate risks.



¹ The current FCL arrangement expires on April 30, 2022.

4. The authorities mounted a strong response to help banks deal with the crisis and avoid a tightening of credit supply. The SFC allowed the release of countercyclical provisions built up in the past. Banks were allowed to provide temporary grace periods, extensions, and other loan modifications on a case-by-case basis, without affecting the debtor's credit rating or leading to a reclassification of the loan as nonperforming, but provisioning rules were not relaxed. The SFC launched the Program to Support Debtors (PAD) to support viable borrowers, which was phased out at end-August 2021. It triaged borrowers according to the degree to which they had been affected by the crisis, with higher provisioning for those debtors severely affected by the pandemic.² The transition of loans under the PAD to the ordinary regulation is expected to be relatively smooth; by the end of the PAD, loans under this program represented only 6.8 percent of total gross loans.

5. The impact of COVID-19 on nonbank financial institutions has been mixed. Most notably, collective investment funds (CIFs) faced significant investor withdrawals of COP 24.6 trillion during March 2020, resulting in 32 percent decline in total assets. The fire sale pressure on CIFs was subsequently alleviated by extraordinary liquidity support by the Central Bank (BR). This led to an increase in retail deposits at banks, and CIFs' Assets Under Management (AUM) returned to pre-pandemic levels by end-2020. COVID-19 also had an impact on insurance companies, as claims on life insurance products saw a sharp increase, cutting profitability in 2020.

B. The Financial System

6. Colombia's financial system is large and complex. Credit institutions' assets are equivalent to about 76 percent of GDP, followed by trust companies and private pension funds and, to a lesser extent, insurance companies. The share of pension funds and trusts has increased considerably since the last FSAP.

7. Financial conglomerates lie at the core of an interconnected financial system. Domestically, conglomerates own assets of both financial and nonfinancial entities, with the five largest conglomerates controlling 60 percent and 80 percent of financial system and banking sector assets, respectively. Banks lie at the core of the financial network, providing the main source of financing for households and nonfinancial corporations, while figuring prominently as an asset in the balance sheets of investment funds, insurers, securities firms, and trusts. Asset concentration in bank securities is due in part to the limited development of domestic capital markets (with market capitalization of about 40 percent of GDP), which restricts domestic investment alternatives beyond government and bank securities for institutional investors.

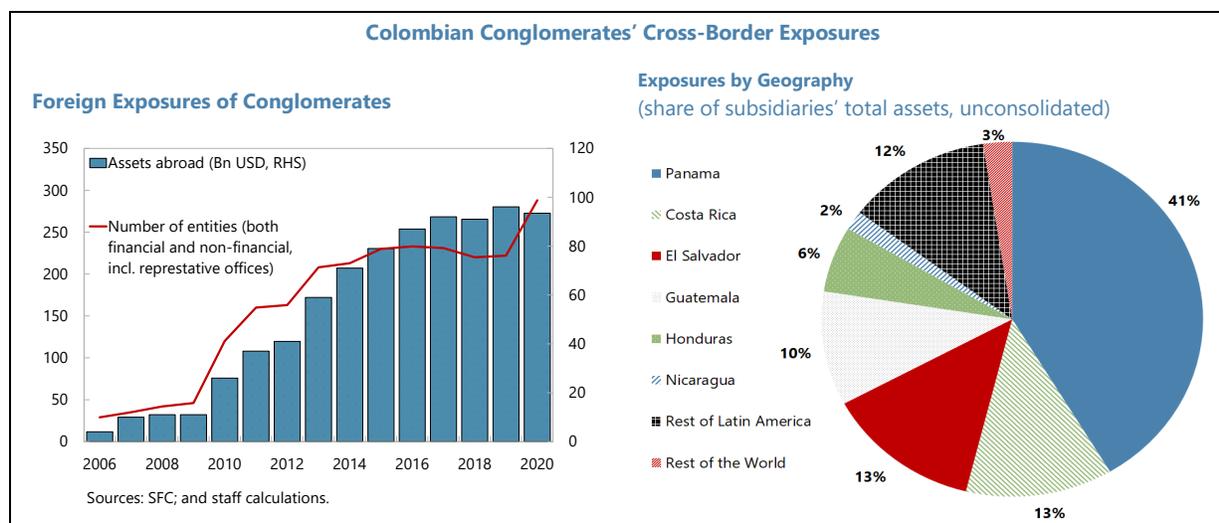
² Two additional regulatory provisions were introduced to account for: (i) accrued but not collected interest from grace periods granted during the first wave of measures; and (ii) the expected losses that may arise from a further deterioration in economic outlook, resembling the IFRS9 forward-looking estimates.

Colombia: Financial Sector Structure				
(At end-2020)				
Type of Financial Institution	Assets (billion, COP)	Assets (% of GDP)	Percent of total financial sector assets	No. of entities
Credit institutions	768,724	76.2	34.9	46
Commercial banks	701,990	69.6	31.9	24
State-owned bank	27,851	2.8	1.3	1
Other	38,883	3.9	1.8	21
Pension funds	383,761	38.1	17.4	5
Pension funds	325,138	32.2	14.8	
Other retirement funds	47,927	4.8	2.2	
Prima media	10,696	1.1	0.5	
Mutual funds	135,027	13.4	6.1	279
Collective investment funds	76,039	7.5	3.5	
Private equity funds	19,412	1.9	0.9	
Other	39,577	3.9	1.8	
Insurance	94,820	9.4	4.3	45
Life	58,358	5.8	2.7	20
General	33,137	3.3	1.5	25
Other	3,326	0.3	0.2	
State-owned Financial Institutions¹	88,120	8.7	4.0	11
Other	69,191	6.9	3.1	
Trust services	660,546	65.5	30.0	23,680
Management and Payment	179,000	17.8	8.1	11,986
Social Security Resources	88,000	8.7	4.0	103
Real Estate Development	76,000	7.5	3.5	8,572
Secured Finance and Collateral Mgmt	72,000	7.1	3.3	3,010
Investment	15,000	1.5	0.7	404
Securities custody	222,173	22.0	10.1	
Other	8,373	0.8	0.4	
TOTAL FINANCIAL SYSTEM	2,200,188	218	100	

Source: SFC.

¹ This category includes only nonbanks and does not include the state-owned bank (Banco Agrario), which is reflected under credit institutions.

8. The growing size and complexity of financial conglomerates have come with increasing cross-border exposures. Colombian conglomerates are now present in 14 countries in various business lines, including banking, insurance, and asset management services, and have become systemic players in selected Central American markets. Financial entities abroad increased in number from 46 to 288 between 2009 and 2020, with corresponding exposures rising over eight-fold from US\$11 billion to US\$93 billion during the same period and more than doubling since the last FSAP. About 83 percent of these assets are held in Central American countries and, although system-wide geographical concentrations of loans and deposits is moderate, specific entities can be highly exposed to specific countries, such as Panama, Costa Rica, El Salvador, and Guatemala.



FINANCIAL STABILITY ANALYSIS

A. Vulnerabilities and Risks

9. The financial system was impacted by the Covid-related economic contraction in 2020, but so far it appears to be resilient. Banking sector soundness indicators already show improvement toward pre-pandemic levels as of June 2021 (Table 3 and Figure 4). Banks entered 2021 with markedly higher capital ratios compared to pre-pandemic levels due to converge to Basel III and strengthening of regulatory capital through subordinated debt and retained earnings.³ Bank profitability also bounced back from the previous downturn; thus, banks entered the pandemic with relatively strong buffers.

10. Notwithstanding the above, downside risks remain (Table 4). Risks to the ongoing recovery include: (i) uncontrolled COVID-19 local outbreaks and global resurgence of the pandemic; (ii) de-anchoring of U.S. inflation expectations and rise in global risk premia; (iii) disorderly structural transformations triggered by COVID-19; and (iv) increasing fiscal pressures. These risks can individually or collectively lead to a downturn in economic activity, higher risk premia and financing difficulties for leveraged firms and banks, capital outflows, depreciation and inflation pressures, higher cost for sovereign financing, and a sharp fall in asset prices.

11. The main vulnerability to banks stems from credit risk. Just prior to the pandemic, Colombian banks had almost recovered both in terms of profitability and asset quality from the 2014–16 downturn, which mainly impacted the commercial portfolio, coupled with an acceleration of credit growth, particularly in consumer lines. After initially declining partly due to debtor support and regulatory relief programs, NPLs peaked later in 2020 but started declining in 2021. However, if growth slows down again—for example, because of a prolonged pandemic—borrowers could come

³ Banks benefited from the inclusion of new items in the CET1 and lower risk-weighted assets. All banks follow the standardized approach for risk weights, which resulted in smaller RWA under Basel III for most banks.

under built-up pressure resulting in larger than expected risk revelation, especially for consumer portfolios and sectors that are most affected by the pandemic. Furthermore, though banks have maintained healthy net interest margins so far, these could be compressed if global financial tightening risks were to materialize.

12. The corporate sector was materially impacted by the Covid-19 pandemic, increasing its vulnerability to a disruption in economic recovery and an adverse event. Both corporates and small-and-medium enterprises (SMEs) exhibited a relatively stable level of liquidity, leverage, solvency, and profitability during the pre-pandemic years. However, the pandemic shock worsened their repayment capacity and profitability indicators in 2020.⁴ Due to the nature of the shock, both corporates and SMEs accumulated more cash, which raised their cash available ratio (Figure 6). Leverage indicators (debt-to-assets and debt-to-equity) showed a slight decline. At the sectoral level, some financial indicators (e.g., repayment capacity and profitability) showed a deterioration across many sectors, which signals an increase in firms' vulnerability, especially those related to the services sector.⁵ At the same time, the debt share of firms with an interest coverage ratio (ICR) of less than 1 increased across most economic sectors.

13. Banks hold ample liquidity, but they rely significantly on wholesale funding. Almost 80 percent of funding comes from mainly unsecured domestic wholesale (nonfinancial corporates and financial institutions) sources (Figure 5). Wholesale funding is dominated by demand deposits, followed by term deposits, with bonds and bank loans accounting for a relatively low share. Retail demand and term deposits comprise about 16 percent and 7 percent, respectively, of total funding. The Net Stable Funding Ratio (NSFR) and—even more so—the local Liquidity Coverage Ratio (IRL, for its initials in Spanish) increased during 2020, mainly due to higher holdings of liquid assets by banks. Liquidity had benefited from substantial support from the BR, as well as from the reallocation of funds to the banking system due to a flight-to-safety motive, and from slower loan growth. The data do not indicate significant exposure to exchange rate risks.

14. Conglomerate banks are at the core of the network and provide multiple transmission channels across the domestic system and internationally, making the system vulnerable to contagion risk. FCs consist of complex interconnected networks of not only banks, but also trusts, insurers, pension funds, securities firms, and other institutions. This complexity motivates the need to properly understand intra- and inter-conglomerate contagion channels. Financial conglomerates' sizeable cross-border exposures present an important vulnerability to cross-border contagion risk.

15. The forward-looking risk assessment for Colombia has four components: (i) solvency risk; (ii) liquidity risk analysis for the banking system; (iii) domestic and cross-border

⁴ This analysis uses information from *Supersociedades*: end-December financial and income statements of corporates and SMEs for the period 2016–2020 in 21 industries. For the methodology, see the Technical Note on Risk Analysis.

⁵ For the oil sector, the ratios also exhibit the effects of the sharp oil price decline.

interconnectedness and contagion analysis for the financial system, and (partly) other sectors of the economy; and (iv) corporate stress test.

B. Solvency Risk Analysis

16. The solvency risk analysis is based on the assessment of banking sector vulnerabilities and risks, particularly those emanating from a prolongation of the pandemic. The stress-testing exercise included 12 banks (at individual levels) comprising 94 percent of banking system assets and was based on full-fledged macroeconomic scenarios comprising a baseline and a severe but plausible adverse scenario reflecting risks noted above (Figure 7). The scenarios stretch over a three-year horizon from mid-2021 through mid-2024.

- The **baseline** scenario is aligned with the October 2021 World Economic Outlook (WEO) projections, with an underlying strong 2021 rebound from the largest recession on record.
- The **adverse scenario** features a protracted recession incorporating key macrofinancial risks from both global and Colombia-specific factors identified by the Risk Assessment Matrix (Table 4). Prolonging of the pandemic continues to be a threat to sustainable economic recovery. Colombia's elevated financing needs make it vulnerable to external risks, including a general risk-off episode in financial markets, and to a renewed weakness or volatility in energy prices. Domestically, increasing fiscal pressures can lead to further sovereign downgrades and test market access. Political and social uncertainty imply the risk of capital outflows and have the potential to slow down economic activity and delay reforms. The two-year cumulative shock to GDP under the adverse scenario corresponds to about 2.5 standard deviation relative to the baseline (see Table 5 and Figure 7 for the full set of scenario assumptions).⁶

Results of the Solvency Stress Test Exercise							
	Tier 1 (year 1)	Total CAR (year 2)	Leverage ratio (year 1)	Number of banks depleting buffers 1/	Number of undercapitalized banks	Number of over-leveraged banks	Maximum capital shortfall (in % of GDP)
Before stress	15.1%	20.2%	10.5%	0	0	0	0
Baseline scenario	15.8%	20.5%	11.0%	0	0	0	0
Adverse scenario	12.8%	17.4%	9.4%	3	2	1	0.01%

¹ Banks' depleting buffers refer to those banks that are still above their minimum requirements but within the range when applicable capital buffers are added to the respective minimum thresholds. For DSIBS, capital buffers include both capital conservation buffer (CCoB) and systemic risk buffer, whereas only CCoB applies to smaller banks. Both buffers are currently being phased in and the exercise considers only the phased-in portion of respective buffers at each point in time.

⁶ See Appendix II for a detailed description of the macro scenario and the relevant assumptions and calibrations.

Results of the Concentration Risk Sensitivity Analysis (December 2020)

	Exposures net of financial guarantees				Exposures before financial guarantees			
	Tier 1	Total CAR	Number of undercapitalized banks	Maximum capital shortfall (in % of GDP)	Tier 1	Total CAR	Number of undercapitalized banks	Maximum capital shortfall (in % of GDP)
Before stress	11.5%	16.3%	0	0	11.5%	16.3%	0	0
Top 1	10.8%	15.5%	0	0.00%	10.4%	15.2%	1	0.00%
Top 5	9.0%	13.8%	2	0.03%	8.1%	12.8%	5	0.28%
Top 10	7.4%	12.2%	5	0.21%	6.0%	10.8%	9	0.71%
Minimum requirement	4.9%	9.0%			4.9%	9.0%		

Note: The sensitivity analysis used December 2020 data on counterparty-level exposures data as well as the corresponding data on banks' capital adequacy ratios at end-2020.

17. Stress test results indicate that the banking system is broadly resilient to severe but plausible shocks, albeit with pockets of vulnerabilities in a few banks. High starting levels of system-wide capital and strong profit buffers allow most banks to absorb a large shock under the adverse scenario and retain substantial buffers, with domestic systemically important banks (DSIBs) impacted somewhat less than non-DSIBs (Figures 8 and 9). Similarly, domestically owned banks are less impacted than foreign-owned banks. Sensitivity tests show that some banks would be vulnerable to the default of their largest nonfinancial corporate exposures. Overall, the maximum capital shortfall for the banking system resulting from an adverse shock is negligible.

18. To strengthen the authorities' ability to monitor cross-border exposures, it would be important to fill data gaps on the exposures and risk metrics of ultimate subsidiaries. This would also enable the authorities to conduct a fully consolidated stress testing, incorporating potential contagion channels, and establish early-warning indicators to detect vulnerabilities as they are building up.

C. Liquidity Risk Analysis

19. The banking system is largely resilient to liquidity stress, with liquidity shortfalls relatively small in the very extreme funding shock. To assess the short-term resilience of banks to an abrupt withdrawal of funding, the stress tests, based on the Liquidity Coverage Ratio (LCR), included adverse scenarios that impose more severe assumptions on run-off rates for demand deposits than the regulatory scenario. These adverse scenarios simulate retail and wholesale demand deposit runs. The "wholesale" and combined adverse scenarios reveal some weaknesses in the event of very large deposit withdrawals. The stronger impact of simulated funding shocks on DSIBs reflects the fact that, even though their reliance on wholesale deposit funding is similar to non-DSIBs measured as a share of total assets, DSIBs hold relatively lower amounts of liquid assets. However, even in the very extreme scenario, the aggregate liquidity shortfall is of a manageable magnitude at 1.7 percent of total assets of banks in the sample, and liquidity shortfalls for the individual banks do not exceed 3 percent of total assets.

Results of the LCR-Based Test ¹												
	Regulatory			Retail Shock			Wholesale Shock			Severe Shock		
	Top 12	DSIBs (4)	Non-DSIBs	Top 12	DSIBs (4)	Non-DSIBs	Top 12	DSIBs (4)	Non-DSIBs	Top 12	DSIBs (4)	Non-DSIBs
Agregate LCR	188%	163%	241%	143%	123%	186%	123%	107%	156%	102%	88%	131%
No. of banks with LCR<100	0	0	0	0	0	0	2	1	1	5	3	2
Liquidity shortfall												
COL Trillion	0	0	0	0	0	0	2.3	2.2	0	11.9	10.5	1
Percent of GDP	0	0	0	0	0	0	0.2%	0.1%	0.1%	0.5%	0.3%	0.2%
Percent of bank's assets in sample	0	0	0	0	0	0	0.3%	0.3%	0.0%	1.7%	1.5%	0.2%

1\ Liquidity shortfall is the amount of liquid asset needed to restore IRL at 100

20. The cashflow-based analysis identifies small liquidity shortfalls for some banks under very severely adverse conditions. However, even in the extreme case, the combined shortfall of 1.6 percent of assets for banks in the sample is manageable, given the BR's ability to provide liquidity to the system. The cashflow analysis supports the results of the LCR-based test.

Results of the Cashflow Analysis ¹				
Number of Banks (out of 12 in Total) with Liquidity Shortfall				
	Time Period			
	Up to 7 days	Up to 15 days	Up to 30 days	Up to 90 days
Total	0	0	2	6
DSIBs	0	0	2	3
Non-SIBs	0	0	0	3
Liquidity shortfall				
Percent of banks' assets in sample	0.0%	0.0%	0.2%	1.6%

¹ If drawdown of 15% of credit lines in foreign entities of banks experiencing liquidity shortfall is exercised in the case of the extreme funding shock, 1 non-DSIB covers liquidity shortfall, and the cumulative liquidity shortfall decreases to 0.6 percent of banks' assets in sample.

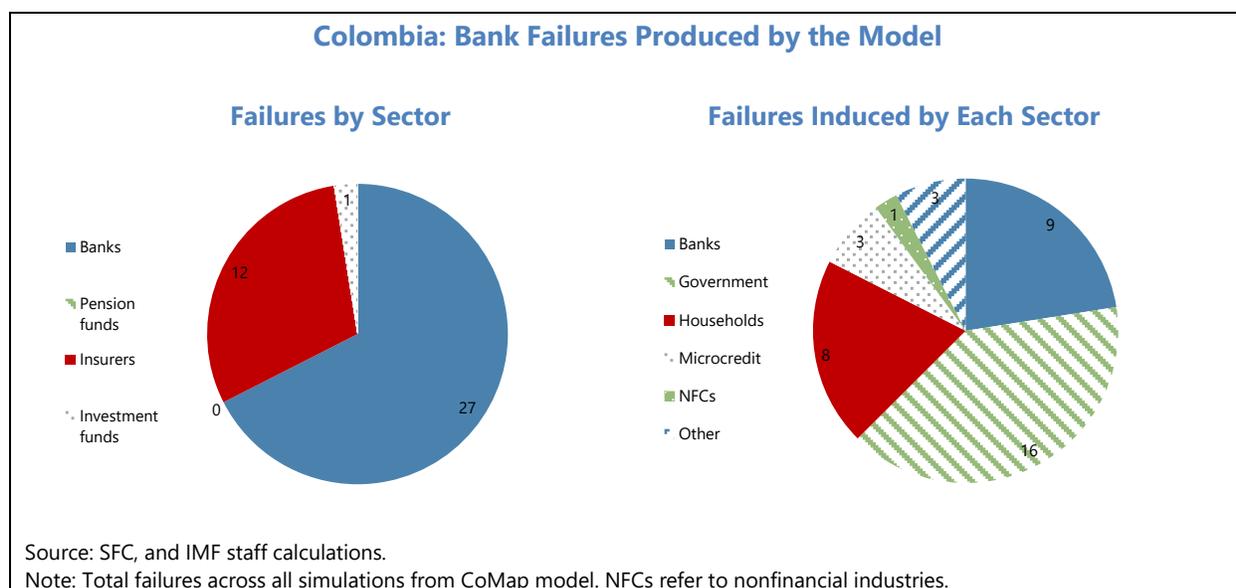
21. Expanded data collection would enhance the liquidity risk analysis. More granular data on assets and liabilities generating cashflows by significant currencies, as well as those related to cross-border exposures, would benefit liquidity monitoring. The regulatory parameters used for computation of IRL and NSFR could be readjusted or determined to be further aligned with Basel III requirements.

D. Interconnectedness and Contagion Risk Analysis

22. To evaluate the interconnectedness of Colombia's financial system and potential stress transmission channels, a network and contagion risk analysis was conducted in three

stages. First, the financial system was mapped at both the sectoral and entity levels across a total of 10 financial and nonfinancial sectors. Second, conglomerates and foreign counterparts were identified, and their role and structure were studied through the lens of network analysis. Third, using multi-layer network data distinguishing across eight different exposure types, contagion was evaluated through the lens of a balance-sheet based model,⁷ yielding several insights:

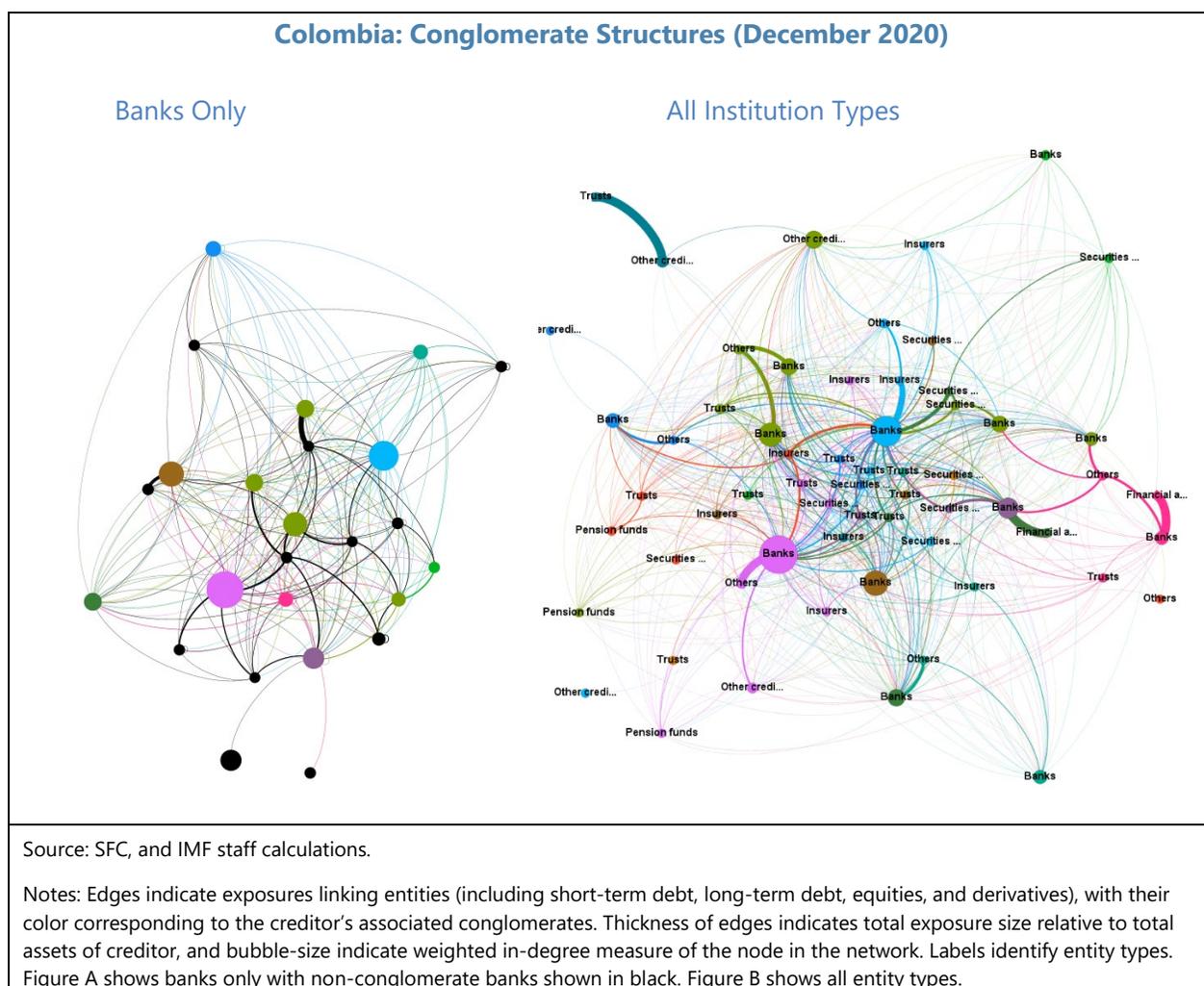
- **Systemic banks are the most contagious in the system—though the network’s structure is such that others can induce entity failures as well.** Overall, bank failures can lead to three contagion failures in other banks, and six failures in nonbank entities.
- **Cascade effects from bank failures are limited.** No bank failure scenarios led, by themselves, to second-round failures in other entities. Although some banks might directly induce the failure of a subset of bank and nonbank entities in the network—the configuration of interlinkages is such that those entities do not spread further failures forward.
- **Cross-border exposures can lead to substantial losses, but no entity failures were suggested by the model simulations.** This applies to shocks through equity exposures in Central America, as well as shocks through large holdings of foreign securities.⁸
- **Stress scenarios stemming from household and government risk produce the most contagion, while other sectors do not produce cascade failures in the system.** From the experiments conducted assuming extreme shock, the government and household default scenarios produce 16 and 8 entity failures, respectively, among multiple contagion rounds.



⁷ For this exercise, we assess contagion risk using an expanded version of the CoMap model from G. Covi, M.Z. Gorpe, and C. Kok. “CoMap: Mapping Contagion in the Euro Area Banking Sector.” In: *Journal of Financial Stability* 53 (2021), p. 100814. For a description of the methodology, see the Technical Note on Risk Analysis.

⁸ Ownership in subsidiaries or related entities abroad are captured in the form of equity (unlisted) exposures in the construction of the network.

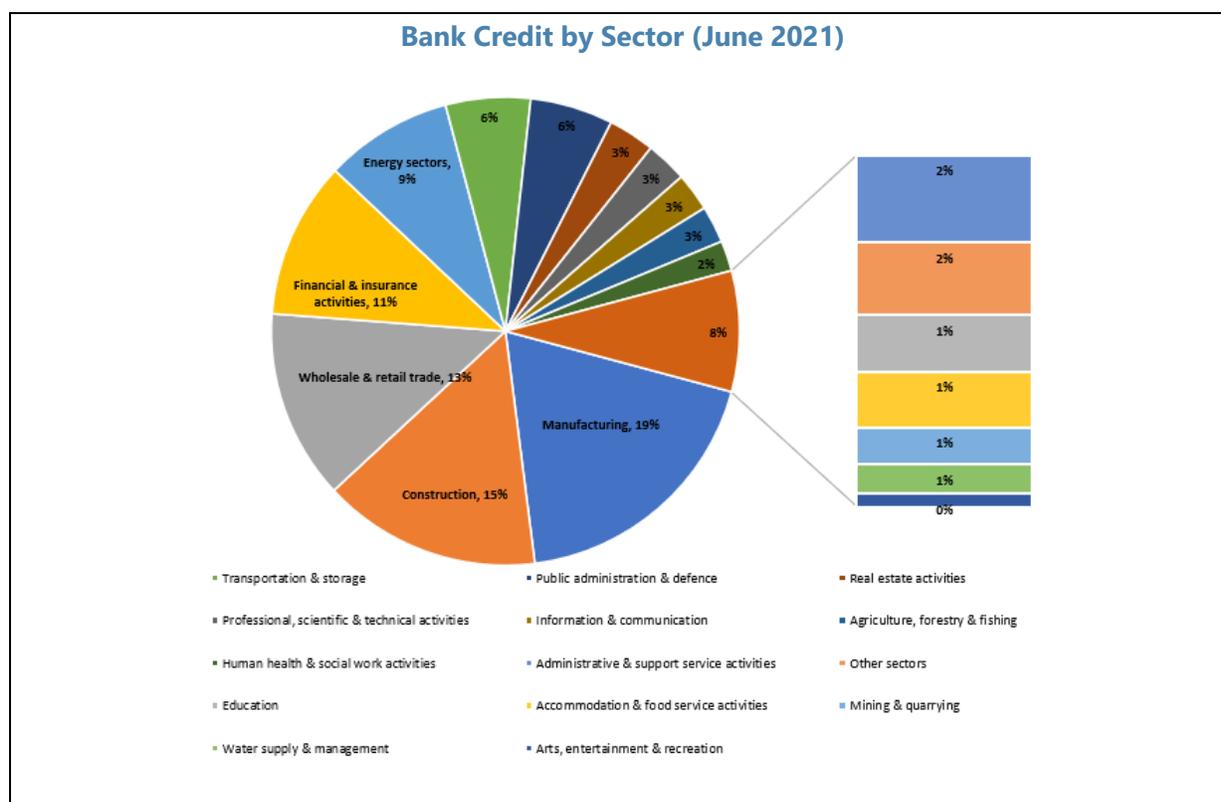
23. Although the system is resilient, the financial network's evolving complexity calls for the further development of monitoring tools. Even though some of these contagion channels might be currently small, they have the potential to grow rapidly. Suggested data coverage and methodology improvements include the incorporation of individual trusts and securities firms in the contagion risk analysis, advancing the identification of foreign creditors on Colombian claims to monitor cross-border funding risks, and gathering further data on the composition of conglomerate subsidiary operations in Central America.



E. Firm-Level Analysis: Corporates and Small and Medium Enterprises

24. The share of firms with lower repayment capacity (ICR<1) and the share of firms with potential borrowing needs increase under an adverse scenario.^{9,10} For both corporates and SMEs, the share of firms with an ICR<1 increases by about 3 percentage points, and the share of firms with a negative cash available ratio increases by 8 to 9 percentage points (Figure 11). Finally, the adverse scenario puts pressure on firms’ solvency position, especially for corporates. The share of corporate firms with a solvency ratio of less than 5 percent increases by about 1.5 percentage points compared to less than 1 percentage point for SMEs.

25. The firm-level analysis suggests that the authorities need to continue monitoring the nonfinancial corporate sector, especially the services sector, to identify potential pockets of vulnerability. An important element for such monitoring is the ongoing work on early warnings (“Alerta Temprana”), which could be broadened to increase the number of firms in the sample. Sharing (part of) the information provided by the early warnings with other supervisory institutions would be useful to complement the monitoring efforts.



⁹ This analysis uses information from *Supersociedades*: end-December financial and income statements of corporates and SMEs for the period 2016–2020 in 21 industries. For the methodology, see the Technical Note on Risk Analysis.

¹⁰ The adverse scenario used for this analysis is the same as the one used for the bank solvency stress test.

F. Climate Risks

Transition Risk

26. The transition risk stress-testing exercise assessed the effects of a higher carbon tax on the banking sector at both a granular and aggregate level.¹¹ The results show that transition risks driven by a higher carbon tax are more concentrated in some sectors: agriculture, manufacturing, electricity, and wholesale and retail trade, and transportation sectors appear to be the most important in the transmission of risk to the banking system. In the first scenario of a sharp US\$70 per ton increase in tax (from the current US\$5 per ton level) to meet the US\$75 per ton target, the risks for the banking system are sizeable, but potentially manageable. Transitions risks are also quantified under alternative scenarios, with lower (US\$20, US\$15, and US\$10 per ton carbon) increases in carbon tax. Risks are much lower in those cases, as could be expected. This suggests that gradual increases to meet the target of US\$75 per ton, instead of a one-time sharp increase, may be preferable in terms of a smoother adjustment for the financial sector and other stakeholders.

Physical Risk

27. A physical risk stress testing exercise was performed at the municipal level to investigate banks' vulnerability to severe riverine floods. Physical risk is another source of climate risk that derives from the financial system's exposure to economic sectors that are vulnerable to natural disaster events.¹² Large-scale riverine floods are the main climate-related disaster risk in Colombia. Three flood scenarios were considered: one based on the 2010 and 2011 floods related to La Niña, and two more severe floods with return periods of once in 500 years. For those three scenarios, Colombian banks experienced an average decline in the CAR between 0.3 and 1.1 percentage points. A fourth scenario, investigating a severe flood coinciding with a recession, finds an average decline in the CAR of 3.2 percentage points, with the losses mostly attributed to the recession and a quarter of the losses caused by floods. Three banks are substantially more vulnerable to flood hazards than most others, owing to high exposures in rural areas or relatively large sovereign exposures. The stress test results show differences in climate-related vulnerabilities in credit portfolios among banks, underscoring the importance of risk-based supervision. Authorities are also encouraged to continuously improve information disclosures (both by nonfinancial corporates and by financial institutions) and data availability.

¹¹ See Perez-Archila, Manuel and Sever, Can (2021): Climate-Related Stress Testing: Transition Risk in Colombia. IMF Working Paper No. 2021/261.

¹² See Reinders, Henk Jan; Calice, Pietro; Uribe, Mariana Escobar; 2021. Not-So-Magical Realism: A Climate Stress Test of the Colombian Banking System. Washington, D.C.: World Bank Group.

BANKING SUPERVISION

28. There have been significant improvements to the legal framework and supervisory process since the last Basel Core Principles (BCP) review in 2012. The SFC is an integrated supervisor, with a purview that includes banks, finance companies, insurance, securities, and other financial intermediaries. Additionally, the SFC is also the bank resolution authority. The Conglomerates Law has strengthened the framework for consolidated supervision by adding holding companies as supervised entities. Moreover, it defined the scope of supervision of financial conglomerates, setting standards with regard to risk management, adequate capital, and corporate governance, as well as minimum requirements for managing concentration risks and conflicts of interest in intragroup and related-party exposures.

29. The SFC's operational independence has been largely enhanced since 2015, but additional formal safeguards could still be considered. The issuance of a new decree in 2015 on the appointment and dismissal of the Superintendent addressed several potential impediments to operational independence. Nevertheless, this decree has been partly censured in 2020. It is then important that the law: (i) specifies that the Superintendent is appointed for a minimum term and is removed from office during his/her term only for reasons specified in it; and (ii) explicitly provides statutory legal protections to the SFC, the Superintendent, and staff for actions taken and/or omissions made while discharging both their duties for supervisory oversight and implementing resolution measures in good faith.

30. Since 2015, the SFC has the power to increase the prudential requirements for individual banks and banking groups based on their risk profile. In the last three years, as part of its regular monitoring, the SFC has ordered an increase of capital to two supervised entities, so that they achieve a CAR of 12 percent. The SFC's assessment is based on published high-level criteria and an internal assessment guideline. This could be supplemented by publishing clear guidance on what supervisory actions might be considered, or what bank actions may be expected to manage the enhanced risk when predetermined guidance triggers or thresholds are reached.

31. The regulations define related parties and apply lending limits but do not establish a consolidated body of requirements on related-party transactions. The legal framework was judged deficient at the last BCP assessment, and the framework has not been amended. The URF is working on a decree that will address deficiencies noted concerning transactions with related parties. It aims to consolidate all exposures with subsidiaries, ensure homogenous treatment of groups of related parties, consolidate the various limits currently in place, and reduce the number of existing exemptions.

32. A regulation on country risk has been drafted, which will include transfer risk provisioning; currently there are deficiencies with the supervisory framework.¹³ Banks have

¹³ Since completion of the BCP analysis, a country and transfer risks' regulation has been enacted, through CE 018/2021.

important exposures in Central America, which expose them to possible transfer and contagion risks. The current framework focuses mainly on country risk ratings and Basel risk-weights. However, given the interconnectedness of Central American economies, the important role played by remittances as a source of foreign currency and the level of bank exposure, detailed guidance, surveillance, and provisioning guidelines are warranted.

33. Since 2012, the Colombian authorities have made progress converging their regulations on capital adequacy, liquidity, and operational risks toward the Basel III framework, but further enhancements are recommended. Now, the definition of capital and risk coverage, including operational risk, are broadly aligned with the relevant Basel III standards, and short- and long-term liquidity ratios have been determined based on the LCR and NSFR standards. However, several regulatory parameters used in the computation of those ratios are not totally aligned with those prescribed by the Basel III standards, or are not determined yet, reducing the comparability between the subsidiaries of financial conglomerates, where different liquidity metrics can be used, depending on the jurisdiction of establishment. It is then recommended to further align the local LCR and NSFR ratios with international standards and, as already envisaged by the SFC, to require the NSFR ratio to be also calculated at a consolidated level.

34. Looking forward, the SFC should continue to maintain a direct and intrusive supervision of banks. The SFC has expanded its offsite exercises and has increasingly requested direct involvement of statutory auditors in a number of supervisory matters over the past years. It is important that the SFC keeps an adequate level of onsite inspections going and avoids over-reliance on external and internal auditors when performing supervisory tasks.

MACROPRUDENTIAL FRAMEWORK

35. Macroprudential policy for the banking sector is a shared competency of the SFC, the central bank, and the MHCP, with the SFC and the MHCP playing dominant roles. The Financial Sector Coordination and Monitoring Committee (CCSSF), which consists of the three institutions and Fogafin, is the main platform for information sharing and cooperation, but it does not have a macroprudential mandate or any formal powers. No agency has been assigned a formal macroprudential mandate, and powers over macroprudential measures are split among the three members of the CCSSF as a part of their own functions and mandate. The SFC supervises asset managers and insurance companies, but there is no formal macroprudential oversight framework for those types of financial institutions.

36. The systemic risk monitoring framework is advanced. The authorities have been proactive in containing financial stability risks, as well as in enhancing the macroprudential toolkit in line with Basel III recommendations. The lack of formal arrangements for the macroprudential oversight contributes to some duplication of functions in the risk monitoring process, with both the SFC and the BR performing their own systemic risk assessment. At the same time, the current framework has been effective in conducting macroprudential policy so far.

Colombia: Implementation Schedule of Basel III Measures	
Requirement	Implementation Schedule
Capital conservation buffer	The capital conservation buffer of 1.5% of RWA must be built up over four years as follows: January 2021: 0.375%, January 2022: 0.75%, January 2023: 1.125%, January 2024: 1.5%.
Capital buffer for systemically important institutions	The capital buffer of 1% of RWA will be implemented over four years as follows: January 2021: 0.25%, January 2022: 0.5%, January 2023: 0.75%, January 2024: 1%.
Net Stable Funding Ratio	The NSFR requirement is differentiated by the systemic importance of the regulated entities (Group 1 and 2), and it will be fully phased-in in 2022: Group 1: March 31, 2020: 80%, March 31, 2021: 90%, March 31, 2022: 100%. Group 2: March 31, 2020: 60%, March 31, 2021: 70%, March 31, 2022: 80%.

37. As the financial system develops further, greater formalization of the process and mandates is recommended. Currently, only the SFC has a statutory responsibility for financial stability, but financial stability is not clearly defined in the law. To strengthen the framework's willingness to act, the authorities could consider preparing a macroprudential oversight strategy jointly drafted and signed by all relevant institutions.¹⁴ The BR's role in macroprudential policy could be strengthened to limit the risk of "blind spots" in systemic risk monitoring. The framework's ability to act would be further enhanced by giving more powers and a more prominent role in the decision making to both the SFC and the BR on LTV, DSTI, and loan-amortization limits.

38. In some areas, monitoring and analysis should be enhanced, and data gaps closed. Close monitoring of foreign exposures and increasing the granularity of data on the portfolios of Colombian FCs' foreign subsidiaries should continue. The monitoring of contagion risks within the financial conglomerates, including their cross-border networks, should be intensified. Closing data gaps in household indebtedness would enhance the assessment of household credit risks.

39. The authorities could further enhance the macroprudential toolkit. The LTV and DSTI tools could be expanded to cover leasing products, and the DSTI tool to include non-mortgage debt. This would help limit potential leakage effects and address future risks stemming from rapid growth in overall indebtedness. Given large foreign exposures of some Colombian banks, consideration should be given to applying short-term liquidity and NSFR requirements on a consolidated basis. At the same time, liquidity regulations by the SFC and the BR could be simplified and better aligned with the Basel III standards. Finally, while the countercyclical provisions have worked well so far, to the authorities could evaluate the possibility of introducing a countercyclical capital buffer at a neutral positive rate. This could help lock-in available capital and complement the countercyclical provisions.

¹⁴ Such strategy should be adopted within the legal mandate of signing institutions; in case it gives them more powers than what is provided under the existing laws, potential amendments to the laws are needed.

CRISIS MANAGEMENT, RESOLUTION, AND SAFETY NETS

40. The bank resolution and crisis management framework has been significantly strengthened since 2015. The bank resolution regime has been improved, with a clearer definition of the roles and responsibilities of supervision and resolution agents. Recovery and resolution planning (RRP) has begun by the four SIFIs. Recovery planning is conducted annually and is based on stress tests designed by the SFC. Results of the resolution planning exercise are expected in April 2022, and consideration is being given to expanding RRP to other banks. Funding of resolution measures is Fogafin's responsibility. The BR may also provide emergency liquidity assistance (ELA) funding but has not done so in recent years.

41. The FSAP recommends several changes to further strengthen the framework:

- a. **The framework for RRP should continue to be developed.** Particularly, recovery and resolution plans should be expanded and applied proportionally to all financial institutions. Recovery plans should be the responsibility of the financial institutions and additionally feature a scenario-based exercise, with a range of severe but plausible firm-specific scenarios, including both idiosyncratic and system-wide stress. Resolution plans should be the responsibility of resolution authorities instead of institutions themselves.
- b. **Resolution processes should be further strengthened.** While these processes have been effective so far, they involve a significant number of parties (the SFC, the GR—Resolution Unit within the SFC—and Fogafin) and complex cooperation arrangements. Additional modifications would increase convergence with international best practice and simplify their operability. This can be done by: (i) increasing the operational independence between supervisory and resolution authorities by separating the decision-making process for supervisory and resolution actions; and (ii) placing responsibility for development of the resolution strategy in a single resolution agency. Fogafin's power to provide liquidity to going-concern institutions should be curtailed. Specifically, Fogafin should not provide open bank assistance for liquidity support; this is best provided by the BR under its ELA framework.
- c. **Resolution tools warrant adjustments.** First, Fogafin should be given more flexibility in its purchase and assumption powers to allow for it to transfer only insured deposits. Second, Fogafin should not be the shareholder of restructured or bridge banks because of the potential for conflict of interest between the resolution agent and the bank owner. Rather, ownership could be held by the MHCP or through a bank holding company. Third, developing a framework for bail-in powers as a resolution tool should be considered. This would need to be combined with a requirement that large financial institutions hold sufficient loss-absorbing liabilities as well as a methodology for determining the appropriate level of loss-absorbing securities that limits the exposure of financial

institutions to securities eligible for bail-in, given the interconnectedness of the financial system. The lack of a bail-in authority could pose limitations in the future especially, given the growth of regional conglomerates and the fact that cross-border bank resolution is difficult when resolution tools differ across jurisdictions. Finally, the Resolution Unit should ensure it is given sufficient, full-time staff to oversee the resolution planning and implementation process.

- d. **Consideration should be given to strengthening Fogafin’s safeguards.** Fogafin’s mandate mixes the responsibilities of the deposit insurer, the central bank, and the resolution agent. This is especially worrisome in light of the absence of a formalized liquidity backstop for Fogafin. Such a back-up liquidity facility could be activated in the event that the fund is depleted. Fogafin’s financial position should be protected, given its multiple mandates and responsibilities, by establishing additional safeguards.

ANTI-MONEY LAUNDERING/COMBATING THE FINANCING OF TERRORISM (AML/CFT)

42. Since the last FSAP, Colombia has made significant progress in aligning its AML/CFT framework with the revised Financial Action Task Force standard, but efforts should continue to enhance the regime’s effectiveness. Recent measures include a revised ML/TF national risk assessment and improvements to the legal and regulatory framework, including in the area of entity transparency with the creation of the Beneficial Ownership (BO) Register. The SFC has improved its risk-based approach to AML/CFT supervision in recent years, including with respect to consolidated supervision and cross-border activities for banks. The authorities should enhance sanctioning practices to ensure that effective, proportionate, and dissuasive sanctions are more consistently applied in AML/CFT breaches. The SFC’s risk-based framework and methodology should stay abreast with developments and new risks arising from cross-border financial institutions’ subsidiaries and affiliates. Speeding up the BO Register regulation¹⁵ and its implementation remains critical, while also ensuring that the new framework provides the possibility to obtain BO information for complex corporate structures, including when there is foreign ownership or control. The authorities should address the remaining technical deficiencies identified in the 2018 Mutual Evaluation Report, particularly by strengthening Politically Exposed Persons (PEP) and BO requirements and bringing the remaining Designated Nonfinancial Business and Professions under the AML/CFT regime. The authorities should address the ML/TF risks associated with crypto assets and ensure that virtual asset service providers are properly licensed and monitored/supervised for AML/CFT compliance.

¹⁵ The authorities expect that the BO register will be fully operational by January 2022. Existing companies will have until September 2022 to submit BO information, while new legal persons will have the obligation to submit this within the month of creation.

FINANCIAL DEVELOPMENT

43. As part of the FSAP, the World Bank team covered several areas that are relevant for Colombia from a financial development perspective. Recommendations were provided to authorities on improving the institutional and regulatory framework for competition in the financial sector, increasing clarity in authorities' mandates and coordination for effective oversight of the national payments system, reviewing state-owned financial institutions and broader state interventions to foster inclusion and competition, addressing shortcomings in the personal insolvency system and on a selection of insurance core principles, including ensuring a close supervision of margins and capitals of insurance companies during their transition to IFRS 17 and Solvency II.

AUTHORITIES' VIEWS

44. The Colombian authorities highly supported the FSAP mission and appreciated the engagement with the team during the pandemic period. They highlighted the financial system's resilience during extraordinary economic uncertainty and underscored the financial sector's solid initial position and strong and well-coordinated policy response to the pandemic shock. The authorities noted that the banking system remained well capitalized, profitable, and liquid. As temporary support measures were phased out and the economy was bouncing back strongly, they expected the transition to pre-pandemic regulation and the return of credit risk in banks' portfolios to normal levels to proceed smoothly. They welcomed the FSAP's recognition of the significant progress made since the last FSAP and stressed the value they placed on the FSAP's recommendations to further improve Colombia's financial stability and oversight frameworks. The authorities also welcomed the FSAP's recognition of their institutional architecture and underlined their institutional independence and technical soundness, all of which ensured the adequate implementation of international standards in financial supervision and regulation.

45. The authorities appreciated the FSAP's comprehensive risk analysis and additional analytical tools that can complement their toolkit. They stressed that the FSAP's solvency analysis was based on an extremely severe adverse scenario but acknowledged the challenges of conducting stress testing under pandemic uncertainty. As the liquidity stress tests were based on standard methodology, the authorities noted that the results did not reflect some of their financial system's characteristics. They highly appreciated the interconnectedness and contagion analysis, especially the cross-border insights, and noted that the FSAP's methodology will be a useful addition to the SFC's interconnectedness analytical tool, which is currently being developed. The generally positive results of the corporate stress test were welcome.

46. The authorities welcomed the FSAP's recognition of enhancements in financial sector supervision and largely agreed with the FSAP's key recommendations. As one major achievement, they highlighted the adoption of the Conglomerates Law, enhancing the SFC's ability to supervise financial conglomerates. They underlined recent progress in some of the recommendations

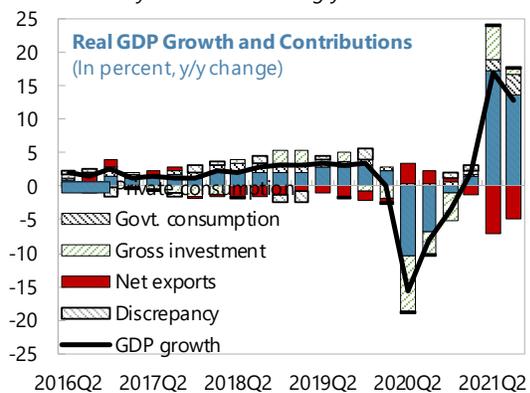
identified by the BCP assessment, notably enacting regulation on country and transfer risks and implementation of Basel III capital and liquidity requirements. They noted the FSAP's macroprudential framework assessment and agreed with the need to fill the identified data gaps. The authorities deemed the current institutional set-up and coordination for macroprudential monitoring appropriate and noted that they have been effective without prejudice of implementing complementary actions to strengthen them.

47. The authorities appreciated the FSAP's safety net assessment but differed with some recommendations. The FSAP recommended clearer delineation of the roles and responsibilities of the SFC, the GR, as part of the SFC, Fogafin, and the CIR. The authorities consider the current arrangements for these entities work well and are clear. They agreed with the FSAP that, while considerable progress was made in information sharing, resolution planning for cross-border institutions needed further strengthening, which depends on the coordinated work with Central American jurisdictions to a considerable extent.

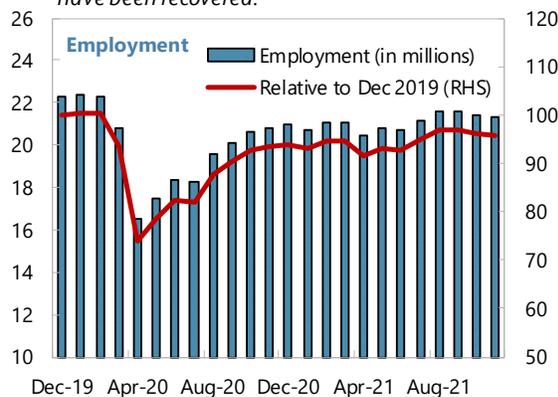
48. The authorities were pleased with the FSAP's recognition of Colombia's efforts in climate risk assessment and capacity-building measures. They noted that they were dedicated to further aligning their frameworks with international best practices.

Figure 1. Colombia: Macroeconomic Context

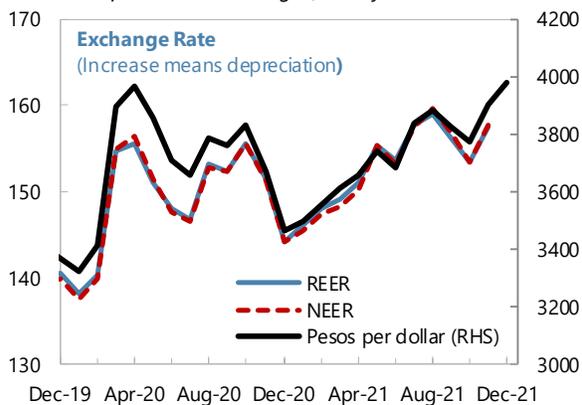
After a record GDP contraction, in 2020, the economy rebounded strongly in 2021.



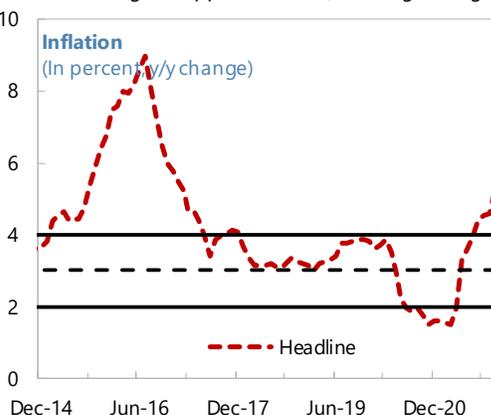
Most of the jobs loss at the peak of the pandemic have been recovered.



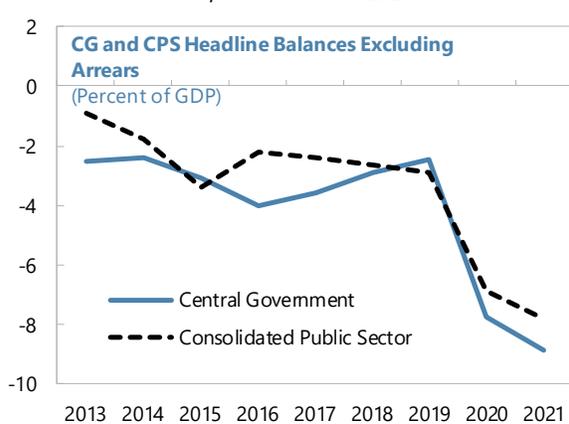
The peso weakened significantly in 2021...



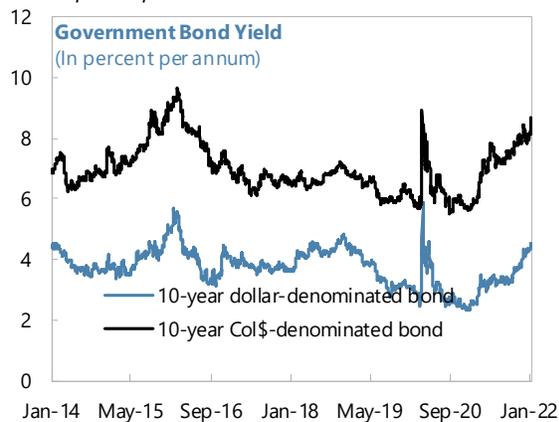
...and headline inflation increased steadily, breaching the upper-bound of the target range.



Government deficits widened in 2021...



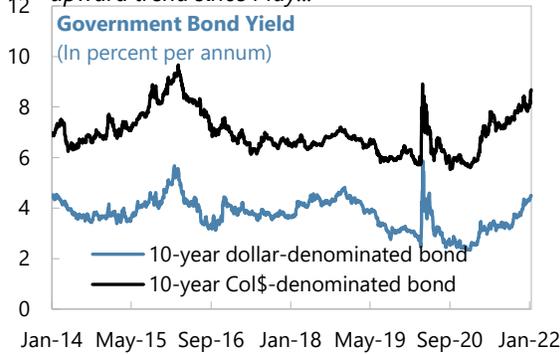
... and sovereign bond yields have been on an upward path.



Sources: Departamento Administrativo Nacional de Estadísticas (DANE), Banco de la República, Ministerio de Hacienda y Crédito Público, and IMF staff estimates.

Figure 2. Colombia: Macrofinancial Developments

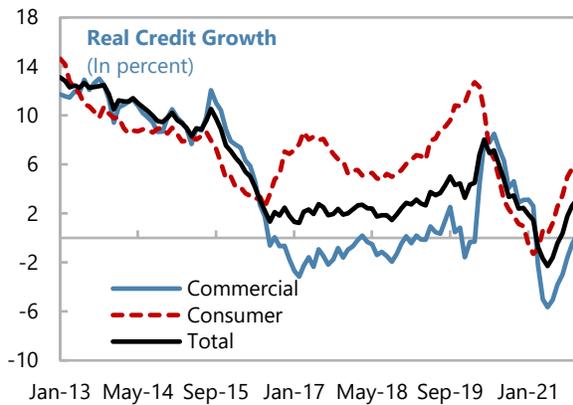
Sovereign bond yields have shown an upward trend since May...



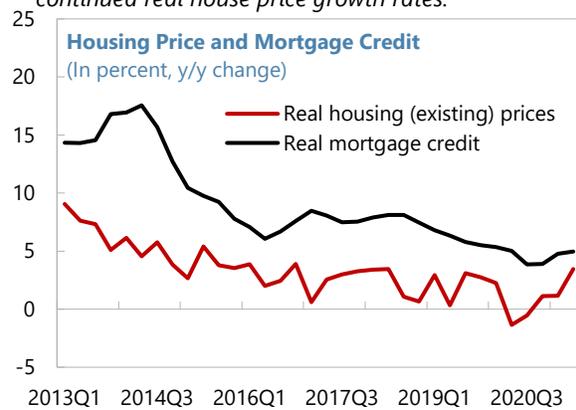
... and the stock market had registered some recovery 2021H2



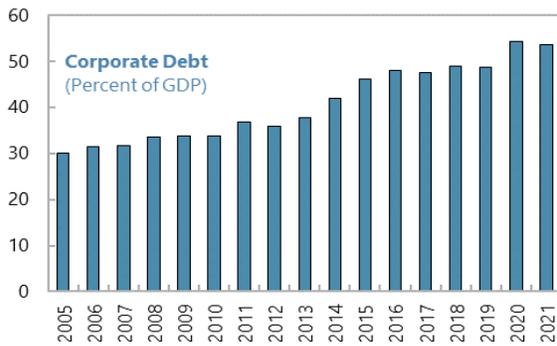
Bank credit had started to increase



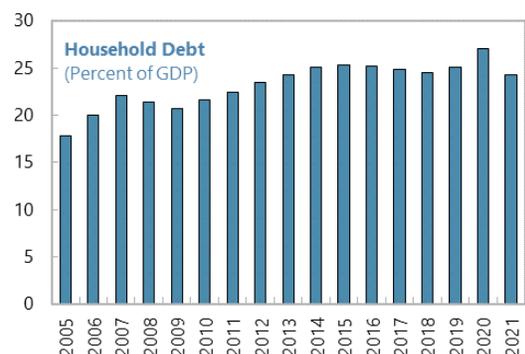
Mortgage credit growth remained dynamic with continued real house price growth rates.



Corporate debt increased markedly after 2014



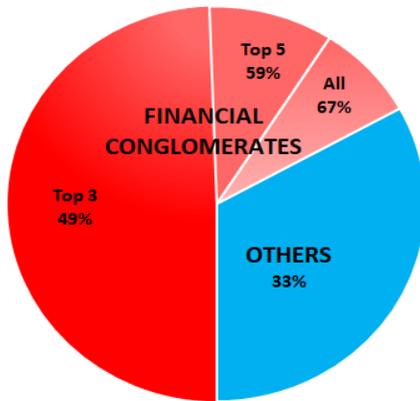
Household debt has been moderate



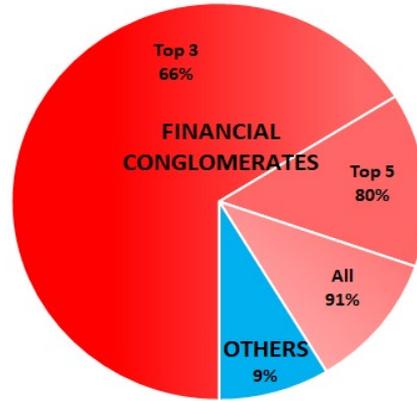
Sources: Banco de la República; DANE; Bloomberg; and IMF staff estimates.

Figure 3. Colombia: Financial Conglomerates and Cross-Sectoral Interlinkages

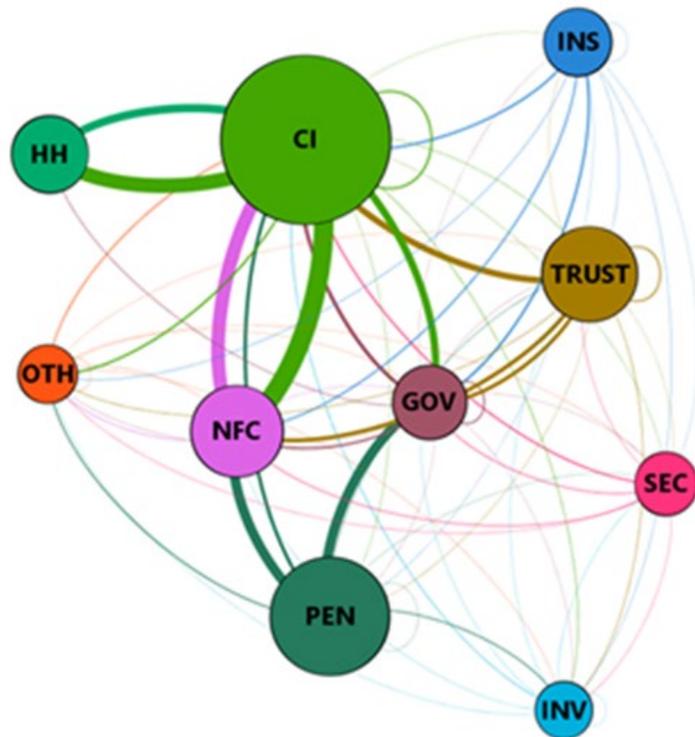
Conglomerate Shares in the Financial System



Conglomerate Shares in the Banking Sector



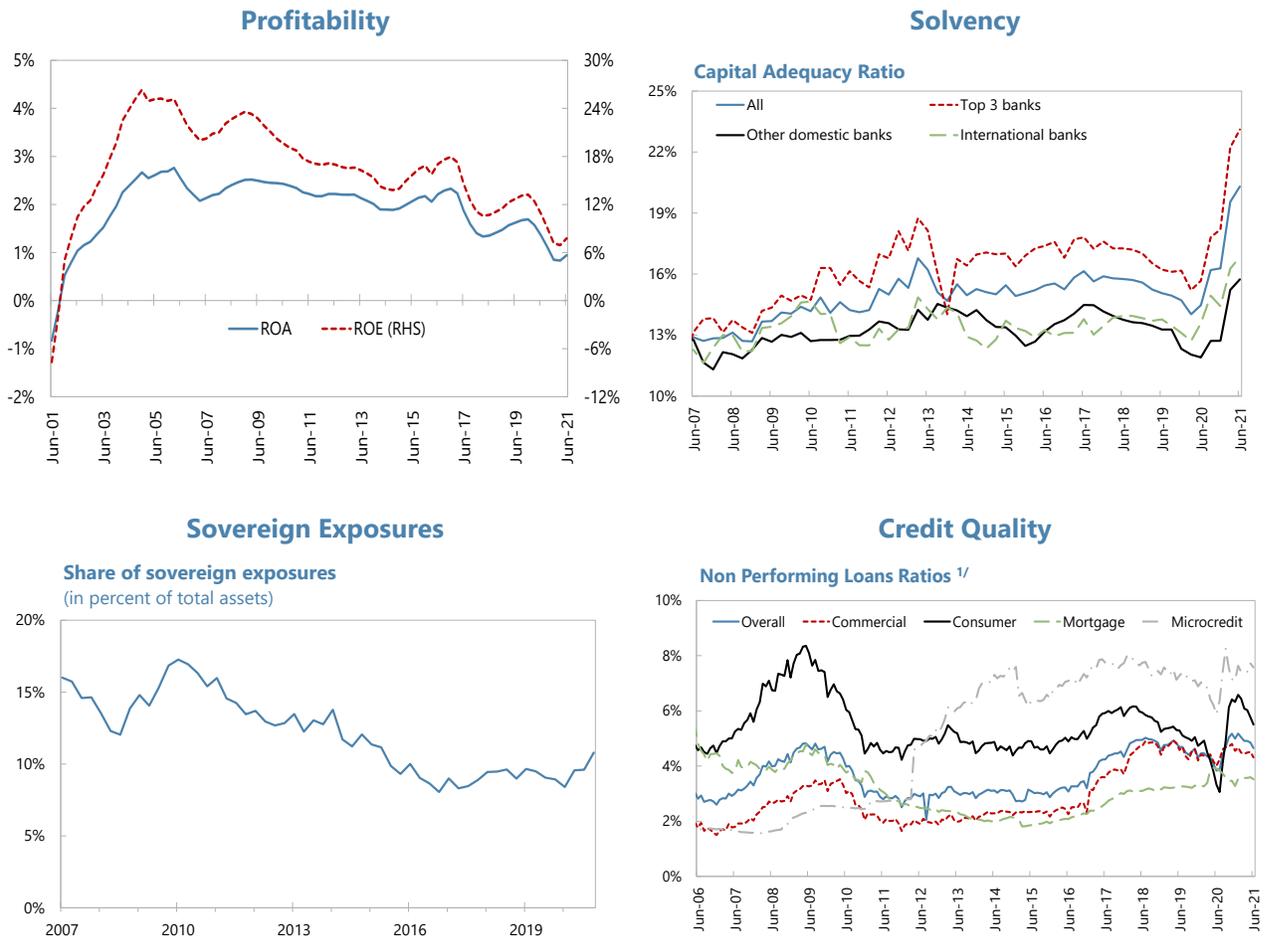
**Interconnectedness of the Colombian Financial System
Network Map of Cross-Sectoral Interlinkages**



Source: SFC, and IMF staff calculations.

Legend: CI: Credit institutions; HH: Households; NFC: Nonfinancial corporates; INS: Insurance firms; PEN: Pension funds; INV: Investment funds; GOV: Government; TRUST: Trust companies; SEC: Securities firms; OTH: Others.

Figure 4. Colombia: Selected Banking Indicators

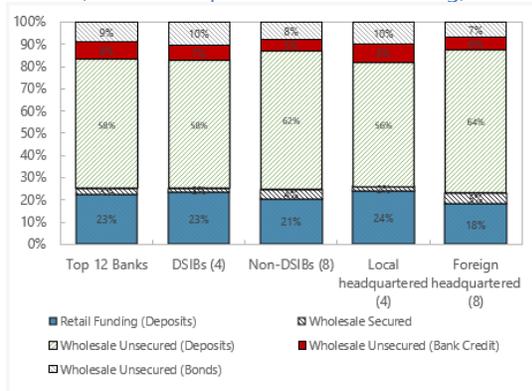


Source: SFC; IMF staff calculations.

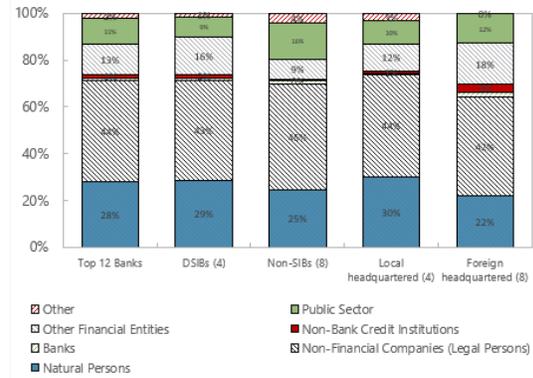
1/ NPL ratios for consumer, commercial, and microcredit segments reflect 30 days or more past due and for mortgages 120 days or more past due.

Figure 5. Colombia: Selected Banking Indicators: Liquidity

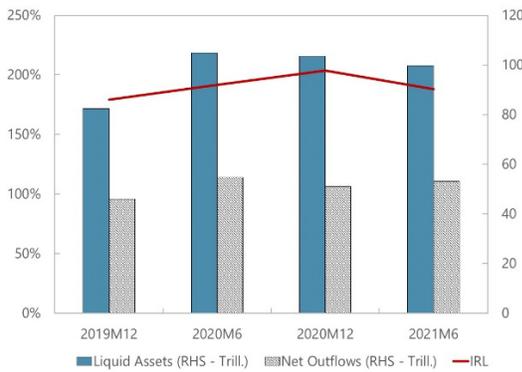
Top 12 Banks: Sources of Funding by Bank Type
(2021M3, in percent of total funding)



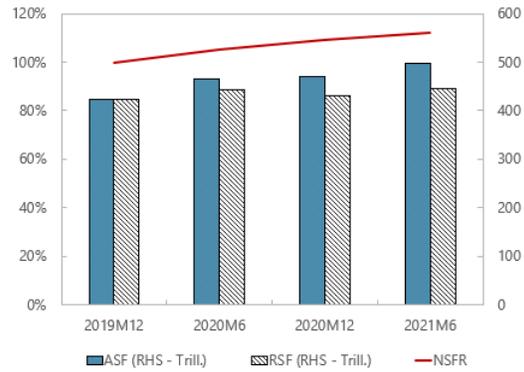
Top 12 Banks: Deposits by Counterparty
(2021M3, in percent)



Top 12 Banks: Liquidity Coverage Index (IRL)¹



Top 12 Banks: Net Stable Funding Ratio



Source: SFC and IMF staff calculations.

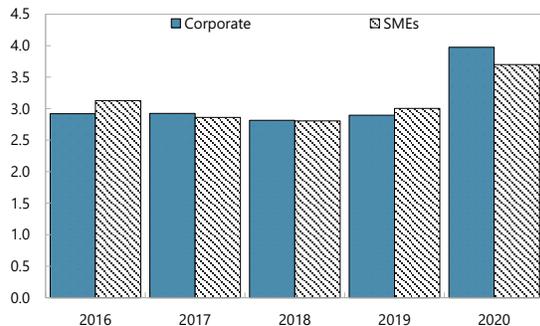
1/ IRL is a national implementation of BASEL III Liquidity Coverage Ratio focusing on the short-term liquidity risks.

Figure 6. Colombia: Firms' Financial Ratios

Firms increased their liquidity positions in 2020...

Cash-to-Total Assets Ratio

(Median of the distribution; in percent)

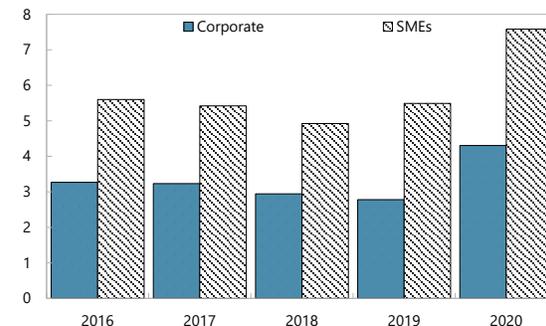


Sources: Supersociedades. IMF staff calculations.

...pushing up their cash available ratio.

Cash Available Ratio

(Cash + receivables - short-term liabilities), excluding short-term debt

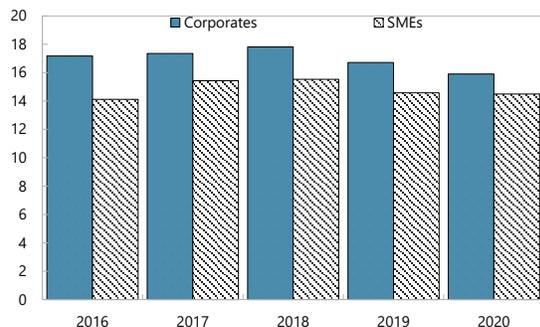


Sources: Supersociedades. IMF staff calculations.

A slight decline of leverage in 2020 for corporates but almost similar levels for SMEs.

Debt-to-Assets Ratio

(Median of the distribution; in percent)

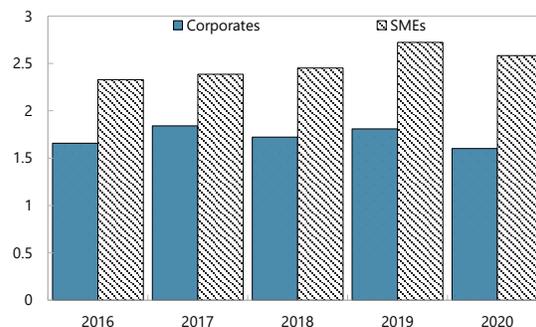


Sources: Supersociedades. IMF staff calculations.

While still above 1, ICR declined in 2020..

ICR

(In percent. Median of the distribution after excluding extreme values)

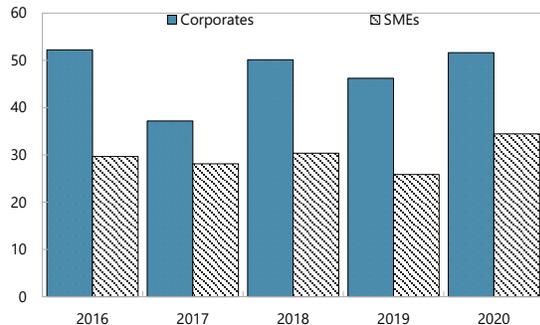


Sources: Supersociedades. IMF staff calculations.

...and the debt share increased.

Debt Share of Firms with ICR < 1

(In percent. Shares calculated after excluding extreme values of ICR)

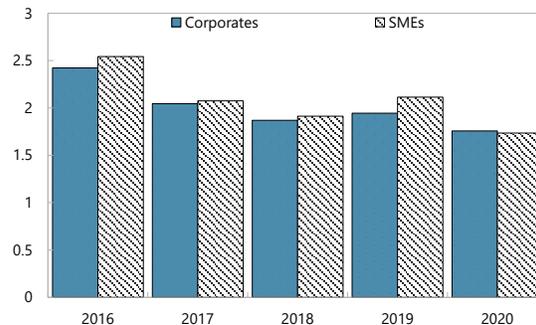


Sources: Supersociedades. IMF staff calculations.

Profitability measures also declined in 2020.

ROA

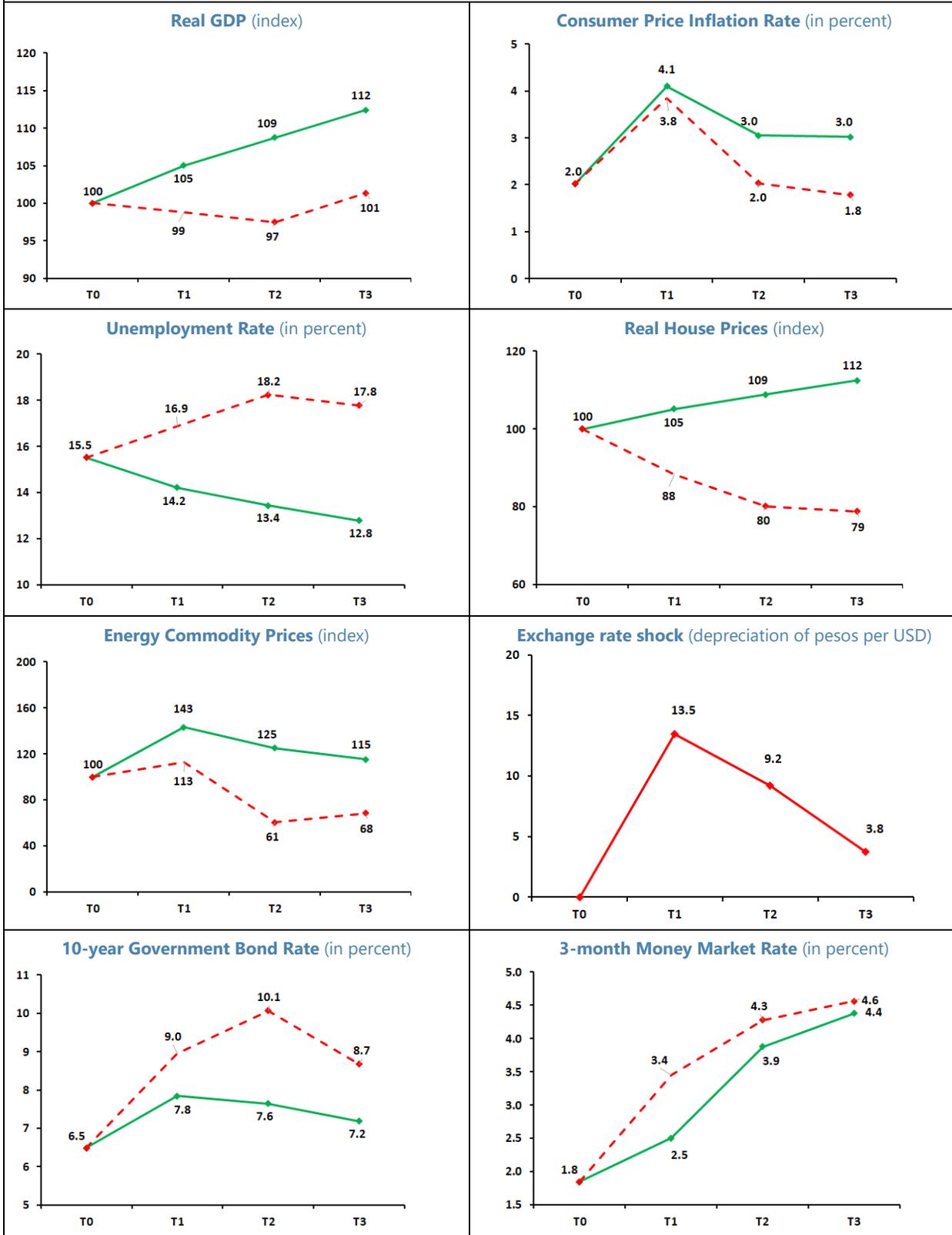
(Median of the distribution; in percent)



Sources: Supersociedades. IMF staff calculations.

Figure 7. Colombia: FSAP Macro Projections

■ Baseline scenario ■ Adverse scenario



Source: World Economic Outlook; IMF staff calculations

Figure 8. Colombia: Main Results of the Solvency Stress Test

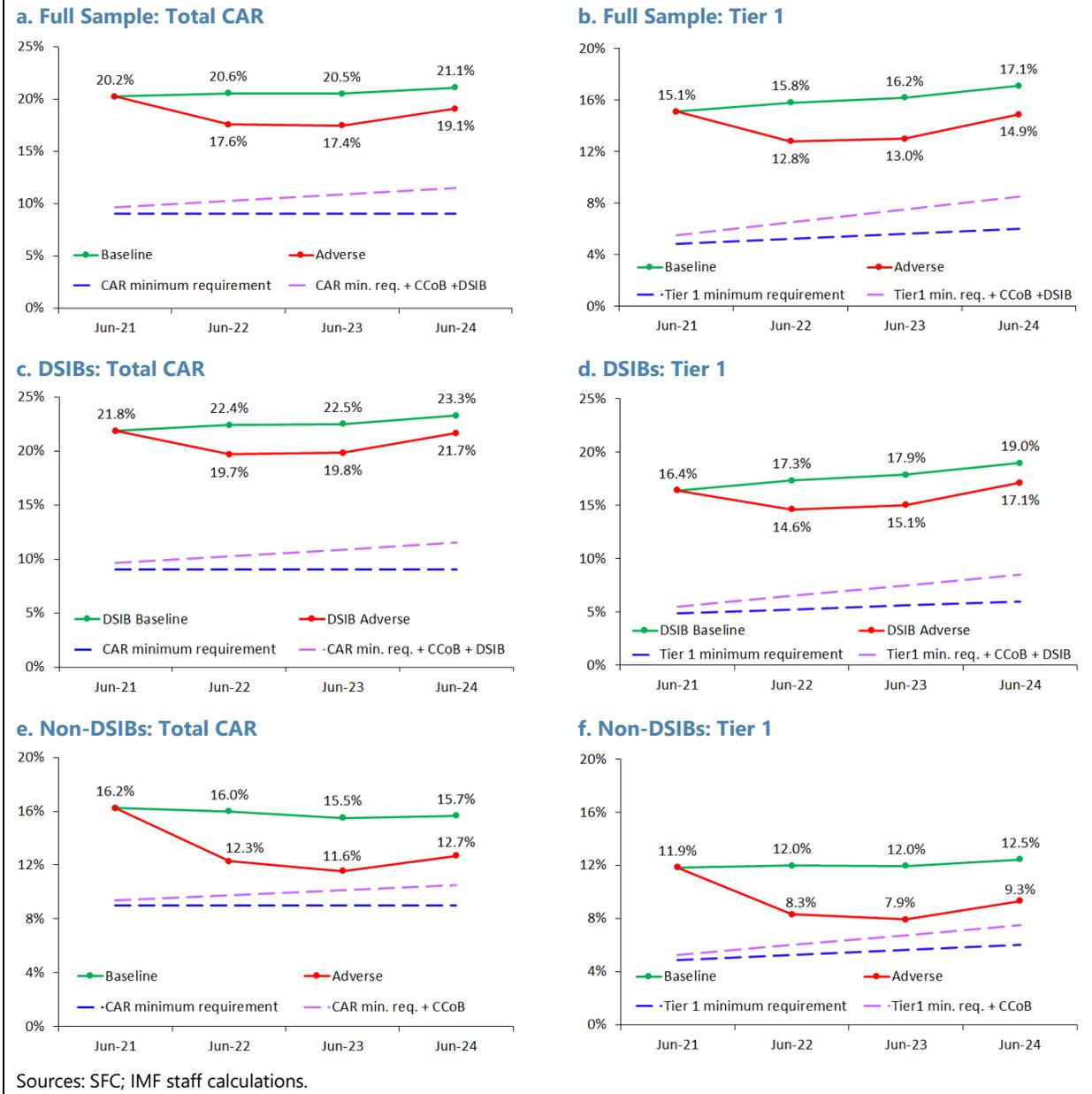
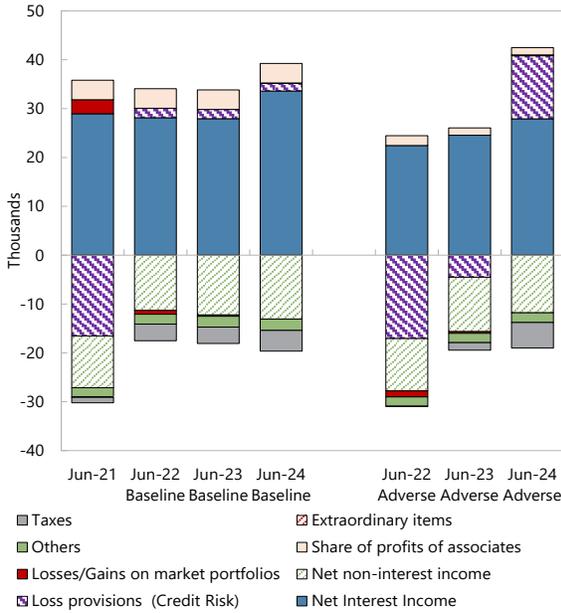
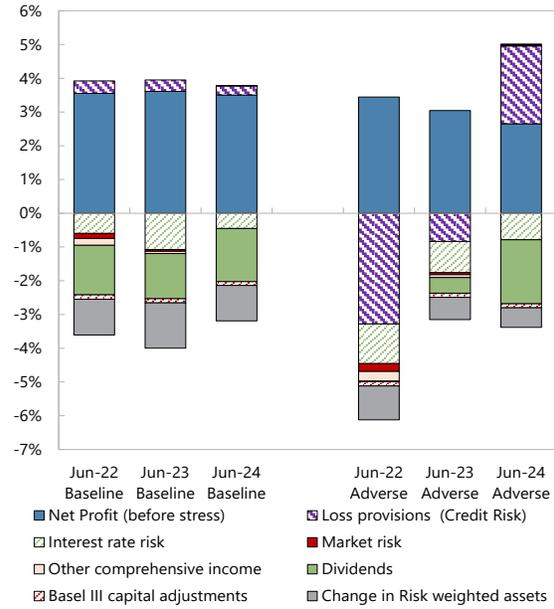


Figure 9. Colombia: Solvency Stress Test Detailed Results

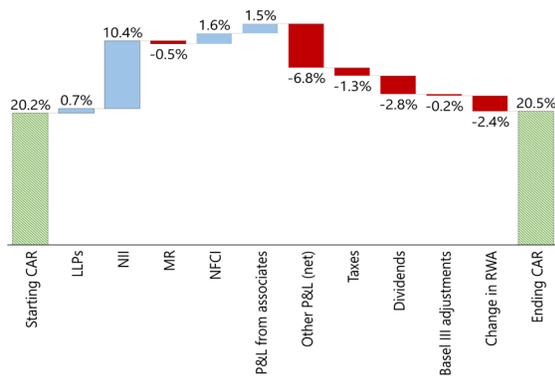
a. Net Income Components



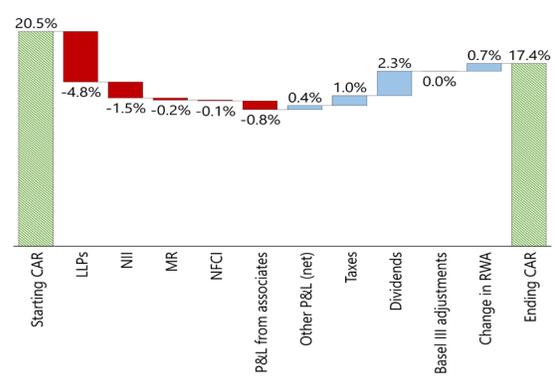
b. Contribution to Change in Capitalization Ratio



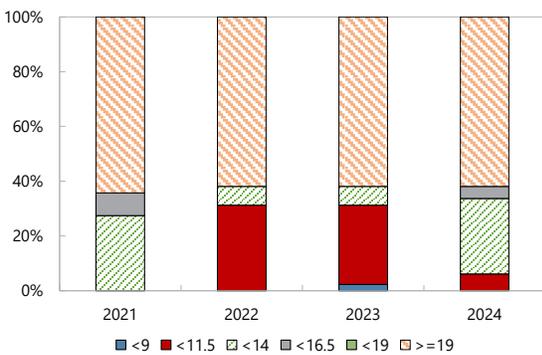
c. Drivers of Change in Total CAR: T2 Adverse



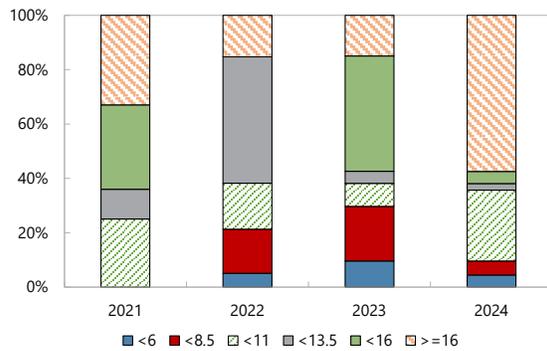
d. Drivers of Change in Total CAR: T2 Delta



e. Banks' Total CAR Distribution: Adverse

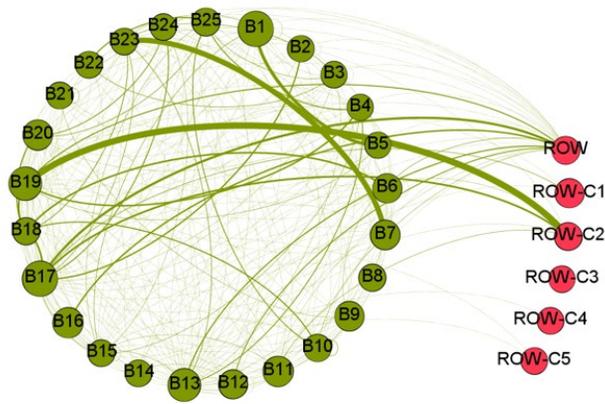


f. Banks' T1 Distribution: Adverse

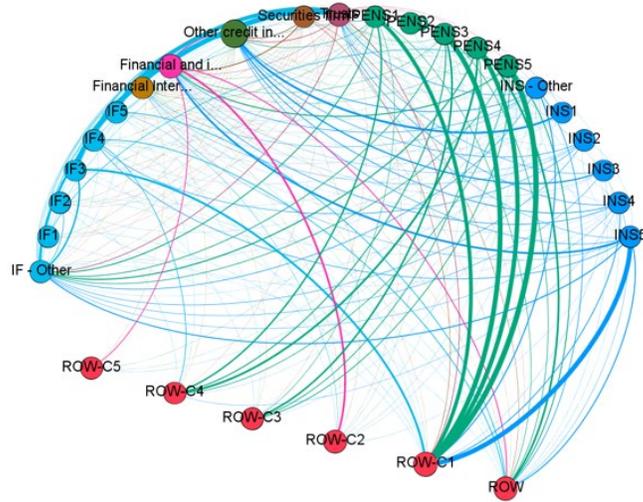


Sources: SFC; IMF staff calculations.

Figure 10. Colombia: Cross-Border Exposures
Banks' Cross-Border Exposures



Other Financial Institutions' Cross-Border Exposures



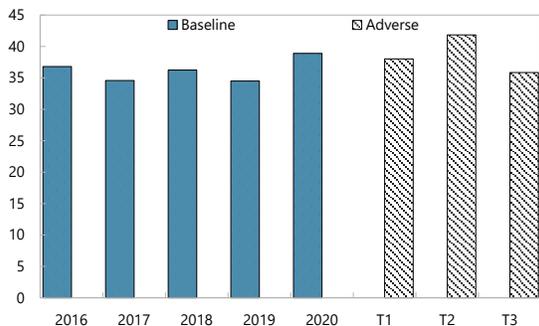
Source: SFC, and IMF staff calculations.

Notes: December 2020 data. Edges in network map indicate exposures between nodes (including short-term debt, long-term debt, equities, and derivatives), with their color corresponding to the creditor's color. Aggregated country categories of foreign counterparts are labeled ROW (Rest of the World). Thickness of edges indicates total exposure size relative to total assets of creditor, and bubble-size indicate weighted in-degree measure of the node in the network. Figure A shows exposures between banks and foreign counterparts (ROW), while Figure B shows exposures between nonbank financial entities and foreign counterparts (ROW).

Figure 11. Colombia: Corporate Stress Test—Impact of the Adverse Scenario

ICR<1: Corporates

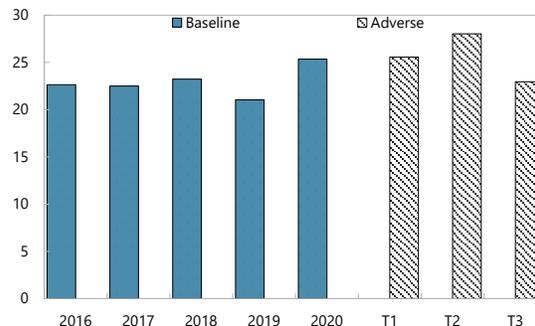
(Share of firms; in percent)



Sources: IMF staff calculations.

ICR<1: SMEs

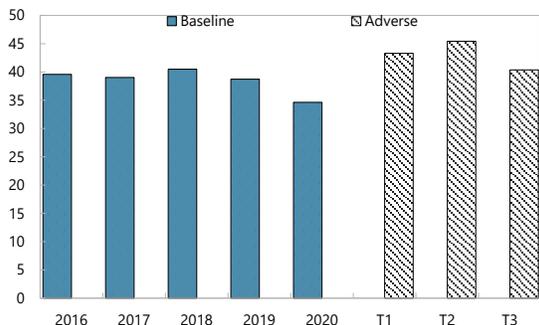
(Share of firms; in percent)



Sources: IMF staff calculations.

Cash available<0: Corporates

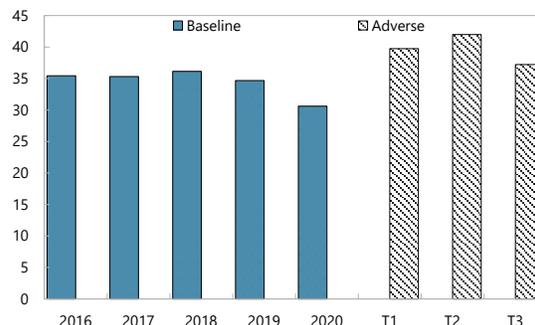
(Share of firms; in percent)



Sources: IMF staff calculations.

Cash available<0: SMEs

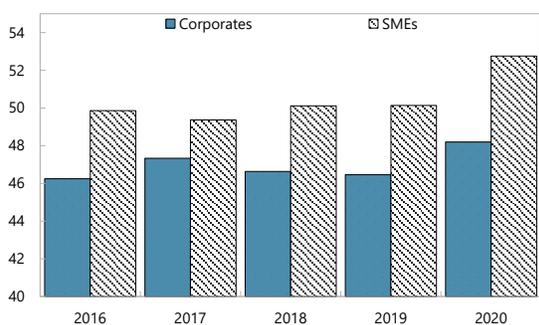
(Share of firms; in percent)



Sources: IMF staff calculations.

Solvency: Equity-to-Total Assets

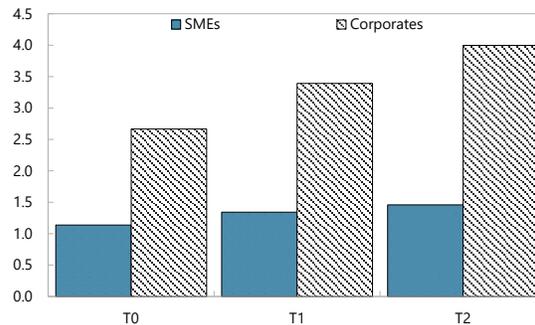
(Median of the distribution; in percent)



Sources: Supersociedades, IMF staff calculations.

Share of Firms with Solvency Ratio < 5 percent

(Adverse scenario; In percent)



Sources: IMF staff calculations.

Table 3. Colombia: Financial Soundness Indicators

(In percent, unless otherwise indicated; end-of-period values)

	2015	2016	2017	2018	2019	2020	2021 2/
Capital Adequacy 1/							
Regulatory capital to risk-weighted assets	16.9	17.5	18.6	17.8	16.9	19.2	22.0
Regulatory Tier 1 capital to risk-weighted assets	11.4	11.4	12.4	12.3	11.8	14.4	17.8
Capital (net worth) to assets	8.7	8.7	9.2	9.4	9.1	9.9	12.1
Asset Quality and Distribution							
Provisions to nonperforming loans	155.5	153.5	134.7	137.1	142.3	152.4	157.6
Gross loans to assets	66.4	68.3	68.1	69.9	69.9	67.0	65.8
Earnings and Profitability							
ROAA	2.4	2.7	1.9	2.1	2.3	1.0	2.3
ROAE	13.0	13.2	9.1	12.7	13.2	5.9	13.5
Interest margin to gross income	58.7	53.7	59.2	61.7	61.2	62.7	61.5
Noninterest expenses to gross income	47.8	45.1	48.3	46.3	47.1	49.0	46.9
Liquidity							
Liquid assets to total assets	18.9	18.0	18.6	18.7	17.2	19.9	20.0
Liquid assets to short-term liabilities	39.9	39.9	42.6	39.3	36.6	37.9	36.1
Deposit to loan ratio	93.2	92.6	92.7	89.9	89.4	98.4	96.7
Other							
Foreign-currency-denominated loans to total loans	8.3	6.9	6.1	6.0	5.2	4.6	5.2
Foreign-currency-denominated liabilities to total liabilities	14.1	11.9	11.1	12.1	11.8	11.4	11.5

Source: Superintendencia Financiera; and IMF staff calculations.

1/ The large changes in capital adequacy between 2020 and 2021 are mostly due to the adoption of Basel III capital definitions and risk weights.

2/ 2021 data is up to Nov 2021.

Table 4. Colombia: Risk Assessment Matrix¹

Nature (Source) of Main Threats	Overall Level of Concern	
	Likelihood of Realization of Threat in the Next 1–3 Years <i>(high, medium, or low)</i>	Expected Impact on Financial Stability if Threat is Realized <i>(high, medium, or low)</i>
Uncontrolled COVID-19 local outbreaks and global resurgence of the pandemic	<p style="text-align: center;">High</p> <ul style="list-style-type: none"> • Outbreaks of lethal and highly contagious Covid-19 variants lead to subpar/volatile growth, with increased divergence across countries. Rapidly increasing hospitalizations and deaths, due to low vaccination rates or caused by vaccine-resistant variants, force lockdowns and increased uncertainty about the course of the pandemic. • Policies to cushion the economic impact are prematurely withdrawn or for many EMDEs, constrained by lack of space. In addition to declines in external demand, a reassessment of growth prospects triggers capital outflows, financial tightening, currency depreciations, and debt distress in some EMDEs, with spillovers to AEs, leading to growing divergence of economic recovery paths 	<p style="text-align: center;">High</p> <ul style="list-style-type: none"> • Renewed or more stringent containment efforts and resulting uncertainty jeopardize economic recovery, reducing growth and straining government resources. • With limited policy space, further extension of relief initiatives to support the economy is either impossible or insufficient, triggering capital outflows, depreciation, and inflation pressures. • Household and corporate vulnerabilities worsen, affecting banks' asset quality.
De-anchoring of inflation expectations in the U.S. and/or advanced European economies	<p style="text-align: center;">Medium</p> <ul style="list-style-type: none"> • De-anchoring of inflation expectations in the U.S. and/or advanced European economies. A fast recovery in demand amid a lagging supply-side response leads to a rapid de-anchoring of inflation expectations, which prompts central banks to tighten policies abruptly. • The resulting sharp tightening of global financial conditions and spiking risk premia lead to currency depreciations, asset market selloffs, bankruptcies, sovereign defaults, and knock-on effects (e.g., lower commodity prices and possible contagion across EMDEs). 	<p style="text-align: center;">High</p> <ul style="list-style-type: none"> • Risk asset prices fall sharply and volatility spikes, leading to significant losses in major nonbank financial institutions. • Higher risk premia generate financing difficulties for leveraged firms (including those operating in unviable activities) and households, and a wave of bankruptcies erode banks' capital buffers. • Increased cost of sovereign financing further raises the stakes for continuing the support programs to mitigate the impact of pandemic on the economy at the expense of fiscal sustainability.

Table 4. Colombia: Risk Assessment Matrix (continued)

Nature (Source) of Main Threats	Overall Level of Concern	
	Likelihood of Realization of Threat in the Next 1–3 Years <i>(high, medium, or low)</i>	Expected Impact on Financial Stability if Threat is Realized <i>(high, medium, or low)</i>
Widespread social discontent and political instability, including from the region	<p style="text-align: center;">Medium</p> <ul style="list-style-type: none"> • Social tensions erupt as a withdrawal of pandemic-related policy support results in unemployment, and amid increasing prices of essentials, hurts vulnerable groups (often exacerbating pre-existing inequities). • Spillovers from regional social tensions reduce capital inflows to Latin America for a sustained period. 	<p style="text-align: center;">Medium</p> <ul style="list-style-type: none"> • Rising unemployment and re-imposition of lockdown measures could increase public discontent, amplifying the negative impacts of the pandemic on labor markets and firms. • Economic activity is disrupted. Growing political polarization and instability weaken policymaking and confidence. • Reversals of capital flows, exchange rate depreciation and fragile recovery would adversely impact banking system through rise in funding costs, liquidity shortfalls and declining asset quality.
Disorderly transformations	<p style="text-align: center;">Medium</p> <ul style="list-style-type: none"> • COVID-19 triggers structural transformations, albeit facing labor market rigidities, debt overhangs, and inadequate bankruptcy resolution frameworks. • This, coupled with a withdrawal of COVID-19-related policy support, undermines growth prospects, and increases unemployment, with adverse social/political consequences. Significant uptake of relief initiatives by borrowers indicates reliance on these temporary measures and make policy exit risky. • Financial conglomerates' sizeable cross-country exposures similarly impacted by scarring and policy reversals in host states. 	<p style="text-align: center;">High</p> <ul style="list-style-type: none"> • Weak economic activity and high unemployment as well as sizeable exit from labor force hinder repayment capacity when support programs are withdrawn. • Banks face a surge in NPLs, especially those exposed more to vulnerable sectors (households, SMEs, etc.), eroding bank capital. • Profitability and solvency of banks come under significant distress, tightening lending conditions and making it difficult to support the economic recovery. • Corporate credit spreads widen further. Regional spillovers further weaken the balance sheet of financial conglomerates.

Table 4. Colombia: Risk Assessment Matrix (concluded)

Nature (Source) of Main Threats	Overall Level of Concern	
	Likelihood of Realization of Threat in the Next 1–3 Years <i>(high, medium, or low)</i>	Expected Impact on Financial Stability if Threat is Realized <i>(high, medium, or low)</i>
Increasing fiscal pressures and/or loss of fiscal credibility	<p style="text-align: center;">High</p> <ul style="list-style-type: none"> Lack of confidence about structural and fiscal sustainability and weakening of debt profile leads to further downgrades triggering a major sell-off event for sovereign bonds and Investment Grade corporates. <p style="text-align: center;">Medium</p> <ul style="list-style-type: none"> Shortfalls in mobilizing revenue leads to large cuts in public investment and social spending, adversely affecting growth and poverty reduction. 	<p style="text-align: center;">High</p> <ul style="list-style-type: none"> Stress in public finances spill over into the financial system given the strong home bias. Banks are negatively impacted through higher funding costs and valuation losses on government debt holdings. Valuation losses on other financial institutions' assets, in particular pension funds.
Build-up of climate-related risks	<p style="text-align: center;">Medium/Low</p> <ul style="list-style-type: none"> As the effects of climate change become more visible and frequent, stronger policy responses are needed for transitioning toward a low-carbon economy (carbon prices/taxes, change in subsidies, etc.) 	<p style="text-align: center;">Medium</p> <ul style="list-style-type: none"> Increase in carbon tax affects profits and balance sheets of nonfinancial corporates. Banks are negatively affected since the asset quality suffers (higher NPLs) due to the financial health of corporate borrowers.

¹ The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path (the scenario most likely to materialize in the view of IMF staff). The relative likelihood is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability between 30 percent and 50 percent). Non-mutually exclusive risks may interact and materialize jointly.

Table 5. Colombia: FSAP Macro Projections—Baseline and Adverse Scenarios

		(In percent)			
		2020Q3- 2021Q2 (T0)	2021Q3- 2022Q2 (T1)	2022Q3- 2023Q2 (T2)	2023Q3- 2024Q2 (T3)
Real GDP growth (percent)	<i>Baseline</i>	1.2	5.0	3.6	3.3
	<i>Adverse</i>		-1.2	-1.3	4.0
Nominal GDP growth (percent)	<i>Baseline</i>	4.2	6.3	8.1	6.1
	<i>Adverse</i>		-1.1	-0.4	3.7
Inflation rate (percent)	<i>Baseline</i>	2.0	4.1	3.0	3.0
	<i>Adverse</i>		3.8	2.0	1.8
Unemployment rate (percent)	<i>Baseline</i>	15.5	14.2	13.4	12.8
	<i>Adverse</i>		16.9	18.2	17.8
Interbank lending rate (percent)	<i>Baseline</i>	1.8	2.5	3.9	4.4
	<i>Adverse</i>		3.4	4.3	4.6
1-year government bond yield (percent)	<i>Baseline</i>	2.3	3.8	4.7	5.0
	<i>Adverse</i>		4.2	4.8	4.7
10-year government bond yield (percent)	<i>Baseline</i>	6.5	7.8	7.6	7.2
	<i>Adverse</i>		9.0	10.1	8.7
Housing price (index)	<i>Baseline</i>	100.0	105.1	108.9	112.5
	<i>Adverse</i>		88.2	80.2	78.8
Equity price (index)	<i>Baseline</i>	100.0	106.3	114.9	121.9
	<i>Adverse</i>		83.0	79.0	87.7
Energy commodity prices (index)	<i>Baseline</i>	100.0	143.0	124.9	115.3
	<i>Adverse</i>		112.9	60.6	68.3
Non-energy commodity prices (index)	<i>Baseline</i>	100.0	110.3	107.7	107.2
	<i>Adverse</i>		100.9	79.5	81.9

Appendix I. Implementation of 2012 FSAP Recommendations

Recommendations	Priority	Horizon	Status	Comments/Details
Independence of SFC				
Include the requirement to appoint the superintendent for a fixed term or to require a public explanation of the reasons for dismissal.	High	ST	In progress	Decree 1817 of 2015 introduced a Term fixed at four (4) years; however, this Decree was partly censured in 2020. New law to reinstate a fixed term of four (4) years is scheduled for Parliament discussion in June 2022.
Legal protection				
Amend legal framework to clarify that liability for failure to perform the regulatory mandate in good faith should be defined as equivalent to acting in bad faith; and that the judicial authorities can limit circumstances in which private parties can sue.	Medium	MT	Not completed	While the 2016 Budget Law authorized Superintendencies to bear the costs of legal processes brought against the superintendents for acts performed in the course of their duties, the legal framework still needs to be completed with provisions that reduce the probability of the SFC staff to be involved in lengthy and unpredictable legal proceedings while they discharge their duties in good faith.
Holding Companies of Financial Conglomerates				
Approve law that gives SFC supervisory and regulatory powers over the holding company of a financial conglomerate.	High	MT	Completed	Law 1870 of 2017. Decrees 246, 774 and 1486 of 2018. Administrative Acts of the of the SFC - External Circulars (CE) 30 of 2020, 12 and 13 of 2019, and 14 of 2018.
Adoption of International Financial Reporting Standards				
Continue implementation of IFRS.	Medium	MT	Completed	Decree 1074 of 2015. IFRS 17 adoption in study. IFRS 9 is in the process of adoption on an individual basis.
Standards for external auditors				
Publish timetable to comply with international auditing standards.	Medium	MT	Completed	Decree 302 of 2015. Effective January 1, 2016.
Bank regulation				
Adopt Basel II, Pillar 2 supervisory framework. Formulate guidelines to undertake ICAAP reviews both at individual and conglomerate level.	High	MT	In progress	Decrees 2392 of 2015 (banks) and 1486 of 2018 (conglomerates). Decree 2392 of 2015 (Article 2.1.1.1.15 Decree 2555/2010), through which banks are required to have an internal capital planning process. E-GU-MIS-007 of 2021 issued by the SFC as the supervision guideline regarding Capital, Profitability, and Liquidity, which includes criteria and elements to assess the risk appetite, stress

Recommendations	Priority	Horizon	Status	Comments/Details
				testing, and Capital Self-Assessment Program (ICAAP) of a supervised institution and a financial conglomerate. Final regulation on ICAAP is scheduled for December 2022.
Simplify large exposure limits by reducing number of separate limits as well as the range of exceptions to help manage concentration risk. Ensure that limit on related party lending cover all such exposures.	High	MT	In progress	The technical study was published in Q4 2020, the draft decree was discussed in Q4 2021 by the Council of the URF and the final regulation is expected to be issued later in 2022.
Bank resolution framework				
Reform legal framework to shorten period of possession and limit reliance on options inconsistent with accepted resolution principles.	Medium	MT	Completed	Article 115 of the EOSF establishes a maximum term of two months. Law 1870 of 2017 and Decree 521 of 2018 regulate new mechanisms: Purchase of assets and assumption of liabilities (CAAP) and Bridge Bank. Decree 923 of 2018. established mandatory resolution plans and the Intersectoral Resolution Commission (CIR). CE 027 of 2019 introduced the requirements of the resolution plan.
Macroprudential policy				
Adopt more formal structure of CCSSF through adoption of action plan to manage a systemic crisis	Medium	MT	Completed	Decree 1954 of 2014. The CCSSF has: (i) a Crisis Protocol that aims to coordinate interaction and information sharing between its members during an individual and/or systemic crisis; and (ii) an External Communications Protocol in times of crisis, that develops an orderly and articulated communications strategy between authorities.
Money markets				
Phase out the financial transactions tax faster than currently planned.	Medium	MT	Not completed	Although the financial transaction tax is still part of the tax regime, the government has been working for the last years on developing simplified deposit products aimed to boost digital transactions in Colombia. These products, as well as regular deposit products, are exempt of the transaction tax up to a monthly limit of withdrawals (depending on the type of product: COP\$2.36 million for simplified products and COP\$12.71 million for savings account). In this sense, even though the financial transaction tax represents an additional cost for financial consumers, the abovementioned

Recommendations	Priority	Horizon	Status	Comments/Details
				exemptions allow the financial inclusion process to overcome this cost.
Expand issuance of ST government securities	Medium	MT	Completed	In 2015 short term TES were included again in the Colombian Financial Plan, and auctions were reintroduced in the annual calendar, gaining gradual liquidity in the secondary market. Every maturity is launched with an original tenor of 364 days, and it is sold over the course of 13 auctions, approximately, in order to gain a critical amount (\$3.6 trillion COP on average).
Narrow the range of counterparties in open market ops.	Medium	MT	Completed	In 2015, the BR narrowed the range of counterparties. Only broker-dealers (in their own position) who are market dealers and credit establishments could access the open market operations. With COVID, counterparties were broaden temporarily.
Liquidity Management				
Tighten liquidity standards for broker-dealers and other NBFIs	High	MT	Completed	CE010 of 2014 with its annexes , and CE003 of 2015 with its annexes , introduced the liquidity requirements for Broker-dealers and Open-Ended Investment Funds.
Adopt more rigorous stress testing of broker-dealers and other NBFIs.	High	MT	Completed	Number 5.2.2.1 of Chapter VI and number 5.2.2.1 Chapter XXI of the CBCF requires NBFIs to perform its own liquidity risk and market risk stress testing exercises, which are evaluated in the different supervision exercises. Additionally, the SFC perform in a regular basis stress testing exercises that covers both market and liquidity risk of NBFIs.

Appendix II. Banking Sector Stress Testing Matrix (STEM)

Banking Sector: Solvency Risk		
Domain	Top-down by FSAP Team	
1. Institutional perimeter	Institutions included	<ul style="list-style-type: none"> The top 12 commercial and retail banks.
	Market share	<ul style="list-style-type: none"> Nearly 93.8 percent of total assets in the banking system.
	Data and baseline date	<ul style="list-style-type: none"> Cut-off date: June 2021. SFC bank-by-bank supervisory data including credit risk-sensitive exposures, market risk-sensitive exposures, and interest rate sensitive assets and liabilities as well as historical information on nonperforming loans by portfolio, and details of lending and funding rates. Other market and publicly available data. Scope of consolidation: banking activities on an individual basis.
2. Channels of risk propagation	Methodology	<ul style="list-style-type: none"> FSAP team satellite models and methodologies. Balance-sheet approach with quasi-static balance sheet assumption. All banks follow the standardized approach.
	Satellite models for macrofinancial linkages	<ul style="list-style-type: none"> FSAP team's own model for credit losses from bank lending portfolios. NPL models for each loan segment (commercial, consumer, and mortgage) with bank-specific fixed effects. Models for funding costs with bank-specific fixed effects.
	Stress test horizon	<ul style="list-style-type: none"> Three years (mid-2021-mid-2024).
3. Tail shocks	Scenario analysis	<ul style="list-style-type: none"> Macrofinancial scenario analysis. Baseline scenario based on the projections of October 2021 WEO. The adverse stress scenario is designed as a deviation from baseline forecasts, triggered by a series of global and domestic shocks, capturing the key risks in the RAM.
	Sensitivity analysis	<ul style="list-style-type: none"> Single-factor sensitivity test for concentrations risk, where the banks' top single, five and ten largest exposures are assumed to fail simultaneously.
4. Risks and buffers	Risks/factors assessed (How each element is derived, assumptions)	<ul style="list-style-type: none"> Credit losses from lending: modeled NPLs for three different portfolios (commercial, consumer and mortgage) at a single geography level. Estimated panel regression coefficients with fixed effects using the Bayesian Model Averaging (BMA) approach subject to sign constraints. Provisioning ratios for the NPLs were calculated based on the historical data for each portfolio segment, where specific procyclical and countercyclical provisions were treated uniformly due to data limitations. Therefore, effectively, the team took the conservative approach by not treating countercyclical provisions as additional buffer in the FSAP stress-test exercise. Market risk: losses due to changes in market variables: risk-free interest rates, exchange rate and equity prices, making no allowance for macro hedges. For sovereign and corporate debt securities (under AFS or HFT), a modified-duration formula was used to revalue exposure as function of their residual duration and the relevant bond yield assumptions under the scenarios. Foreign exchange risk and

		<p>equity based on respective net open positions and the paths of equity index and exchange rate under the scenarios.</p> <ul style="list-style-type: none"> • Non-interest income: the impact of funding and lending interest rate shocks on net interest income is estimated by measuring the gap between interest sensitive assets and liabilities by making use time-to-repricing buckets for different asset and liability segments. Effective interest rates were estimated using satellite models and pass-through assumptions. • Other P&L components: Net fee and commission income, other non-interest income and non-interest expenses projected in line with the growth of each bank's balance sheet. Extraordinary income and losses were assumed not to incur during the projection period. • Banks' indirect exposures through subsidiaries: shocked by 50 percent and 25 percent in the first and second years, respectively, of the adverse scenario (as data limitations didn't allow for modeling various risks on a consolidated basis, the exercise captured shocks on the income of their subsidiaries). • Income tax: calibrated as the median of historical tax expense ratios per bank. • Counterparty concentration risk: losses from simultaneous failure of top 1, 5 and 10 largest single-counterparty exposures.
	Behavioral adjustments	<ul style="list-style-type: none"> • Quasi-static balance sheet assumption: The approach assumes that balance sheet grows proportionally with nominal GDP under baseline and adverse scenarios, however, with a lower zero-bound (no ex-ante deleveraging is allowed). • Dividends can only be paid out by banks that remain adequately capitalized and have positive profits. • The impact of new business repricing was consequently calculated under the assumption that maturing instruments were replaced by identical new instruments (of the same segment and with the same initial maturity) but at reference and margin rates implied by the scenario and the pass-through assumptions.
5. Regulatory and market-based standards and parameters	Calibration of risk parameters	<ul style="list-style-type: none"> • Based on credit models estimated by IMF staff. • Given that all banks are the standardized regulatory framework, NPL ratios were projected using panel regression techniques.
	Regulatory/ accounting and market-based standards	<ul style="list-style-type: none"> • The hurdle rate based on the current capital adequacy framework accounting for the phase-in of several components during the projection period. • A minimum total capital adequacy ratio (CAR) of 9 percent applies. As for the tier 1 (T1) ratio, the hurdle rate is currently 4.9 percent (in 2021) and is gradually increased to 6 percent by January 2024 until full convergence. Also, a minimum leverage ratio (tier 1 capital to total assets) of 3 percent applies throughout. • The capital conservation buffer (CCoB) and systemically important bank buffer (DSIB) would be phased in gradually to reach 1.5 and 1 percent of risk-weighted assets by January 2024. The capital projection path also incorporates gradual phase-out of eligible

		capital instruments from additional tier 2, which has the identical impact under both baseline and adverse scenarios.
6. Reporting format for results	Output presentation	<ul style="list-style-type: none"> • Capital ratio decline of the banking system. • Number of banks and the percentage of banking assets (or GDP) in the system that fall below a hurdle rate. • Decomposition of the reduction in capital ratio in terms of drivers (credit risk, market risk, interest rate risk, etc.).
Banking Sector: Liquidity Risk		
Domain	Top-down by FSAP Team	
1. Institutional perimeter	Institutions included	<ul style="list-style-type: none"> • The top 12 commercial and retail banks.
	Market share	<ul style="list-style-type: none"> • 93.8 percent of total assets in the banking system.
	Debt and baseline date	<ul style="list-style-type: none"> • Baseline date: June 2021. Data for December 2019, June 2020 and December 2020 will be used for comparing against before and during COVID-19 crisis. • Source: Data compiled based on national reporting templates 458, 531 and 238, that are regulatory returns monitoring the LCR and the NSFR, additional off-balance sheet data capturing balance of credit/liquidity facilities. Additional data compiled based on reporting template 474 covering the biggest depositors. • Scope of consolidation: individual bank basis.
2. Channels of risk propagation	Methodology	<ul style="list-style-type: none"> • The exercise is based on LCR-based and NSFR-based tests, and cash-flow analysis. • The LCR-based test is in line with IRL—the SFC’s implementation of Basel’s LCR – on individual basis and for all currencies combined. It might be complimented by analysis based on CB’s liquidity metric (IEI) that focuses on exchange rate risk at individual level. • A set of scenarios will be used to produce stressed LCR, exploring retail and wholesale funding shocks, complemented large depositors’ concentration analysis. • Cash-flow analysis will be conducted based on data corrected by the SFC for IRL for the period up-to 90 days on individual basis and for all currencies combined. Scenarios consisting of run-off and roll-over rates, liquid assets haircuts of will be implemented. • NSFR requirements are gradually implemented by the authorities with 100 percent limit for banks with assets greater than 2 percent of total system assets and 80 percent limit for other institutions with credit portfolio being primary activity by March 31, 2022, and informative for the rest of institutions. NSFR-based test will rely on national regulatory parameters, on individual basis and for all currencies combined, with the hurdle at 100 percent.
3. Risks and buffers	Risks	<ul style="list-style-type: none"> • Funding liquidity. • Market liquidity. • Depositor concentration risk, i.e., withdrawal of largest depositors.
	Buffer	<ul style="list-style-type: none"> • The counterbalancing capacity, including liquidity obtained from markets and/or regular central bank facilities (excluding the central bank’s emergency liquidity assistance (ELA) or other temporary measures).

		<ul style="list-style-type: none"> Expected cash inflows are also included in the cash-flow based and LCR-based analysis.
4. Tail shocks	Scenario analysis	<ul style="list-style-type: none"> Stress scenarios on liability outflows reflecting retail outflows, wholesale funding outflows, and large depositors' withdrawals, and scenarios on liquid assets shock.
5. Regulatory and market-based standards and parameters	Regulatory standards	<ul style="list-style-type: none"> LCR per Basel III—the hurdle at 100 percent. NSFR per Basel III—the hurdle at 100 percent. Cash-flow analysis—a non-negative net cash balance, where the balance reflects net funding outflows and counterbalancing capacity.
	Calibration of risk parameters	<ul style="list-style-type: none"> Run-off rates, roll-over rates, and asset haircuts are calibrated based on historical events, empirical evidence, and IMF expert judgment.
6. Reporting format for results	Output presentation	<ul style="list-style-type: none"> Distribution of liquidity positions by groups of banks and aggregated (system wide). Number of institutions with LCR/NSFR below 100 percent and/or negative net cash balance. Amount of liquidity shortfalls.

Banking Sector: Interconnectedness Analysis and Contagion Risk

Domain	Top-down by FSAP Team	
1. Institutional perimeter	Institutions included	<p>Active nodes:</p> <ul style="list-style-type: none"> All 25 banks (DSIBs and non-DSIBs); Top 5 pension funds; Top 5 insurance companies; and Top 5 investment funds. <p>Passive nodes:</p> <ul style="list-style-type: none"> Residual pension funds aggregated; Residual insurance companies aggregated; Residual investment funds aggregated; Other financial sectors aggregated: trusts, securities firms and other financial intermediaries; Nonfinancial corporates aggregated at industry level (20 industries); and Other aggregated sectors: government (Colombia), households (Colombia), top five countries aggregated at country level, rest of the world foreign counterparts.
	Market share	<ul style="list-style-type: none"> Active nodes account for 100 percent of total assets in the banking system.
	Data and baseline date	<ul style="list-style-type: none"> Date: December 2020. Source: supervisory data on bilateral linkages within the banking system and with other entities to construct a large-exposures matrix, and solvency and liquidity related reports to calibrate model parameters. Scope of consolidation: active nodes (banks and other financial entities) on individual basis. Sector residuals and nonfinancial entities are aggregated at sector level. However, exposures among members of a conglomerate are mapped in the network, allowing for the analysis of intra-conglomerate linkages.

2. Channels of risk Propagation	Methodology	<ul style="list-style-type: none"> • Application of CoMap framework (Covi, Gorpe and Kok, 2019), with extensions to model contagion through nonbank financial entities.
	Risks/factors assessed	<ul style="list-style-type: none"> • Credit default channel: impact of an entity defaulting on its obligations to other entities. As a result, a creditor entity incurs losses on a share of its claims depending on the nature and counterparty of its exposures. Exposure-specific loss-given default rates reflect the precise risk mitigation and collateralization that an entity has accounted for in its claims vis-à-vis each counterparty. • Funding shock and liquidity dynamics: impact of a funding withdrawal or non-rolling over by a failed entity. An entity that is facing such a funding shock can meet immediate liquidity needs by using its surplus high-quality liquid assets as collateral to borrow. Once depleted, it must deleverage by selling marketable securities at discount incurring haircut losses. • Cascading defaults due to insolvency and/or illiquidity failures. Insolvency default happens when an entity's solvency threshold is compromised and illiquidity-driven default when an entity runs out of marketable assets that can be sold.
3. Tail shocks	Scenario analysis	<ul style="list-style-type: none"> • Idiosyncratic shocks: hypothetical failure of each entity as a potential trigger event. Exercise comprises as many simulations as there are nodes in the network, where each simulation considers the hypothetical failure of a single node.
4. Reporting format for results	Output presentation	<ul style="list-style-type: none"> • Number of cascade defaults and amplification effects. • Contagion losses induced (contagion index) and experienced (vulnerability index) by each node. • Decomposition of losses by entity types.
Nonfinancial Corporate Stress Test		
Domain	Top-down by FSAP Team	
1. Institutional perimeter	Institutions included	<ul style="list-style-type: none"> • 26,066 firms in cut-off year: 3,346 corporates and 22,720 SMEs. • Covers 21 industries.
	Market share	<ul style="list-style-type: none"> • Represent around 80 percent of GDP.
	Data and baseline date	<ul style="list-style-type: none"> • Cut-off date: December 2020. • Source: firm-level time-series balance sheet and income statement data from the Superintendency of Companies (SS, Supersociedades). • Scope of consolidation: individual reporting basis (unconsolidated).
2. Channels of risk Propagation	Methodology	<ul style="list-style-type: none"> • Following the methodology developed by Tressel and Ding (2021) in Global Corporate Stress Test: COVID-19 Impact and Medium-term Implications (forthcoming). • Assessment of (i) the ability to service debt (ICR); (ii) external borrowing needs based on cash balance (cash available); and (iii) solvency position.
	Models	<ul style="list-style-type: none"> • Dynamic regressions for return on assets (ROA) and leverage • Probit models for cash balance (cash available) and ICR.
	Stress test horizon	<ul style="list-style-type: none"> • Three years (mid-2021-mid-2024).
3. Tail shocks	Scenario analysis	<ul style="list-style-type: none"> • Macrofinancial scenario analysis: the same scenario as the bank solvency stress-test. • Baseline scenario based on the projections of October 2021 WEO.

		<ul style="list-style-type: none"> The adverse stress scenario is designed as a deviation from baseline forecasts, triggered by a series of global and domestic shocks, capturing the key risks in the RAM.
4. Reporting format for results	Output presentation	<ul style="list-style-type: none"> Share of firms with lower repayment capacity ($ICR < 1$) Share of firms with potential borrowing needs ($Cash\ Available < 0$)