banco central Chile

FINANCIAL STABILITY REPORT

SECOND HALF 2022

PUERTO NATALES
Región de Magallanes y
Antártica Chilena

FINANCIAL STABILITY REPORT

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Financial policy of the Central Bank of Chile (BCCh)

The Central Bank of Chile has as its purpose to ensure the stability of the currency and the normal functioning of internal and external payments. To fulfill this second objective, it must safeguard the stability of the financial system within the perimeter of its legal powers, implemented from a macro-financial perspective. The decisions and actions derived from its powers are part of its financial policy framework. In this context, financial stability is considered to exist when the system performs its functions normally or without significant disruptions, even in the face of adverse temporary situations. Identifying potential risk events, vulnerabilities and mitigators, together with assessing their impact on the financial system, are at the core of the Central Bank of Chile's financial policy analysis.

Financial policy conduct and implementation

The BCCh conducts its financial policy seeking to contribute, within its scope of competence, to the stability of the financial system. This has been deepening and gaining stability in recent decades due, in part, to the development of financial policy tools and their adequate application, which in turn has contributed to monetary policy effectiveness and increased the economy's resilience to disruptive events.

The Bank implements its financial policy through rigorous decision-making processes, in joint and coordinated actions with the supervisor and regulator. In particular, the BCCh issues and administers financial regulations, decides on the activation and deactivation of the countercyclical capital buffer, prepares reports and issues opinions on the impact of potential legal or regulatory changes on which it is consulted. In addition to these measures, it may exercise the role of lender of last resort for banking companies and other liquidity management tools..

Information disclosure and transparency

The Financial Stability Report (FSR) is one of the BCCh's main financial policy and communication instruments. In view of its mandate, the FSR delivers the Board's view on the main risks, vulnerabilities and mitigators affecting financial stability.

The FSR is published twice a year, in May and November. In line with international best practices, it is produced by specialized professionals and is led by the Financial Policy Division. Its contents are disseminated through various channels. In this way, the Central Bank communicates its analysis and implements its financial policy in a transparent and active manner.

Cover picture: Puerto Natales / Región de Magallanes y Antártica Chilena.

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*/ This is a translation of a document originally written in Spanish. In case of discrepancy, the original version prevails. The statistical cutoff date for this Financial Stability Report is 26 October 2022, except where noted otherwise.

SUMMARY

Further deterioration of the international scenario has become the main source of risks to global financial stability. The last few months have seen a significant increase in risk aversion in world markets, amid adjustments in monetary policies, the unfolding of the Russia-Ukraine war, a further weakening of the Chinese economy and certain financial tensions in Europe. Thus, the risks of abrupt asset price corrections and capital outflows, especially from emerging economies, have increased. The Chilean financial market has been affected by global trends, where worth noting is the greater volatility of the peso and long-term interest rates with respect to their historical trends. This stems from less capital market depth, which reduces the economy´s ability to accomodate external financial pressure. The assessment of the financial situation of households, firms and banks suggests that there are no sources of systemic vulnerability, despite some areas of concern in lower-income households and businesses in the real estate and construction sectors. Banks are resilient, although they face the challenges of a more deteriorated economic environment and financing conditions. A deep capital market is critical to support economic development and the population's well-being. It is crucial to prioritize initiatives that contribute to strengthening the functioning of the financial system and avoid those that could harm it.

The external macroeconomic scenario has evolved negatively in recent months, becoming the main risk threatening global financial stability. The sharp rise in inflation—augmented by the intensification of the conflict between Russia and Ukraine—has led to a response by central banks, who have considerably increased their monetary policy rates. In turn, this has tightened financial conditions and liquidity, increasing the likelihood of a global recession in 2023. The Fed's tightening of tone and decisions—plus the uncertain future trajectory of its policy—has contributed to a global dollar strengthening cycle and has increased the sensitivity of financial markets to new developments.

In this context, the appetite for risk has decreased, affecting asset prices and increasing the volatility of global financial markets. Since the close of the previous Report (early May) risk premiums as measured by CDS have risen across the board, around 50bp in Latin America and Chile. Since the beginning of this year, volatility implicit in options, in both equity and bond markets in the United States, increased by 8 and 80pp, respectively. This has taken place in the midst of a widespread fall in stock indexes, which dropped 7.9% in developed economies and 7.5% among emerging economies.

The challenging external macroeconomic environment has put pressure on various markets and shapes a scenario with multiple sources of risk for global financial stability. On the one hand, the corporate sector has endured a period of significant cost increases that have put pressure on its margins, amid high leverage and tight financial conditions. In this regard, the weakness of the housing markets, especially in advanced countries, stands out. On the other hand, concerns about the level of indebtedness have weakened sovereign bond markets, mainly in emerging economies. In addition, the situation in the Chinese real-estate sector, which has grown weaker as a result of new mobility restrictions, has continued to strain the financial position of firms in the sector. Given the numerous interconnections of this market

with the rest of the Chinese economy, a further deterioration could affect its banking system and negatively feed back to the financial system. Finally, in recent weeks, certain tensions have been observed in Europe, an example of which is the failed fiscal plan of the United Kingdom, which added volatility to the markets and made evident the greater sensitivity to the occurrence of adverse events.

Since our last Report, domestic financial prices have been aligned with global movements. This year to date, the peso depreciated 15%, the local stock market rose 20% and the long-term interest rate (BCU10) increased 26bp. In addition, during the first two weeks of July, the peso depreciation was unusually sharp and volatile, which strained price formation in the forex market, amplifying the risk of distortions in other markets. Given that the persistence of such a scenario increased the likelihood of significant distortions in the functioning of the financial market, the Board announced an intervention program on July 14th. Said program ended on September 30th, having achieved its objective of supporting the proper functioning of the forex market.

It is worth noting the greater volatility shown by the peso and long-term interest rates in the face of international financial stress, which is more than the average of comparable economies. This contrasts with conditions prior to 2019, when Chile was generally at the lower end of the long-term rate volatility distribution. This behavior occurs in an environment where—as has occurred in other emerging markets—non-resident investors have shown greater sensitivity to local events, and have reduced their exposure to fixed-income instruments.

The higher volatility of the exchange rate and local interest rates takes place in a context of less capital market depth, which reduces its ability to stabilize external pressure and where uncertainty levels are at historic highs. Although the capital market has not deteriorated further, the liquidation of long-term savings, the weakening of the macroeconomic environment and greater uncertainty have affected the investment profile of various agents and the dynamism of the financial market. This has reflected on a reduction in the issuance of instruments, the amounts traded, the duration and liquidity of institutional investors' portfolios and on their participation in the forex derivatives market.

The Chilean economy is still in a normalization phase of imbalances accumulated in 2021. Residents' capital outflows have moderated, going from US$15 billion in September of 2021 to around US$5 billion during the same month this year. Also, the output gap has lowered its level and there has been a relevant effort to adjust fiscal spending. All of the above sets up a scenario in which, according to the central forecast of the September Monetary Policy Report, by 2024 the economy would resume expansion rates in line with its potential. This contributes towards restoring the macroeconomic equilibrium needed to better accommodate various shocks.

At the aggregate level, businesses exhibit a stable financial situation, with moderate non-payment and vulnerability pockets that are concentrated in the groups most affected by the pandemic and its aftermath. Although corporate profitability and sales levels have rebounded since the pandemic, lower activity due to the business cycle and increases in production and financing costs have squeezed margins. As of the second quarter of 2022, aggregate corporate indebtedness was 119% of GDP, similar to where it was at the end of last year and lower than the peak reached at the onset of the pandemic.

In general, no relevant currency mismatches are observed, which contributes to cushion the impact of the peso depreciation on the firms' bottom line. As stated above, there are pockets of vulnerability among smaller firms, where delinquency has rised mostly for those who delayed debt payments during the pandemic and—to a lesser extent—among those that received special credit facilities. By industries, it is worth noting the tight financial situation of firms in the real estate and construction sectors.

The financial difficulties in the real-estate and construction sectors have been of particular concern at this juncture. These businesses have experienced significant cost increases, which, combined with lower activity, have compressed their margins and eroded their payment capacity. The residential real-estate sector faces a significant reduction in the dynamism of its sales, consistent with more stringent financing conditions and weak demand. New home sales have seen historical declines of 52% per year as of the third quarter with prices that have recently shown decreases. The non-residential segment continues in a process of rebalancing among different asset classes, as a result of structural changes in preferences for remote work and e-commerce. In this context, there have been episodes of insolvency and reorganization of companies in the sector. It should be noted that the prudential measures that have been put in place over the years—together with a decrease in their exposure—have allowed the banking sector to appropriately deal with the incubation of risks.

Households also face a more challenging economic scenario, due to higher financing costs, slower jobs creation and reduced real wages. Although delinquency levels have remained low, there has been an increase in consumer debt arrears and greater use of revolving loans. In this environment, their financial situation is highly heterogeneous. Lower-income households have seen a reduction in their liquidity availability, resorting to shorter-term indebtedness, which increases their exposure to changes in interest rates. Although default remains below its historical average, delinquency is steadily rising in the consumer portfolio, which has been more pronounced among lower-income debtors.

The banking sector shows resilience, with contained risks and high levels of provisions, liquidity, capital, and profitability. Lending has reduced its dynamism, which is consistent with the process of normalization of imbalances, tighter supply conditions and weakened demand, according to the third quarter Bank Lending Survey. Although non-performing loans have increased somewhat, their levels remain low. Banks have been preparing for a possible further deterioration of the loan portfolio by increasing their provisions, both specific and additional. Currency mismatches are limited and, together with adequate levels of liquidity, they have allowed banks to weather the increased volatility in exchange rates and interest rates. Profits rose significantly in the last year. This is the result —among other factors— of the increase in the monetary correction margin and greater operating efficiency, which have compensated for the lower interest spreads. Stress tests show that banks would remain solvent and with adequate liquidity to face possible severe stress scenarios.

RISKS, VULNERABILITIES AND MITIGATORS

On the external front, the main financial risk for emerging economies is that changes in the markets' perception of Fed adjustments, or new tensions, could trigger an increase in risk aversion, with the consequent outflow of capital or episodes of high volatility. Although at this juncture the developed economies also seem vulnerable to the strengthening cycle of the dollar, new episodes of volatility would particularly affect the emerging economies, which are more sensitive to an abrupt change in external financial conditions due to the recent acceleration of their indebtedness.

Regarding international banks, given the implementation of more demanding capital and liquidity standards, they appear to be in a stronger financial position than in previous periods of financial stress. The possible portfolio adjustments of international banks do not seem to be an amplifying factor at this point in time, as they were during the Global Financial Crisis. However, there is less certainty about the vulnerability of non-bank agents in financial markets. The case of institutional investors and global investment funds stands out, which could abruptly adjust their portfolios —in the face of sudden changes in their liquidity positions or significant drops in profitability— thus exacerbating the volatility of financial markets.

At home, the greatest vulnerability comes from the capital market´s reduced depth, which has decreased its stabilizing role in the face of external financial pressures. Despite the progress made in resolving the imbalances accumulated in recent years —and the recent moderation in the loss of local capital market depth—, the domestic capital market continues to be less capable of providing long-term financing and requires additional efforts to restore its role as a shock absorber in the financial system. In order to strengthen its international liquidity position, the Central Bank of Chile contracted a special credit line with the International Monetary Fund for US$18.5 billion. This reinforces the economy's capacity to face external shocks by increasing the precautionary availability of foreign currency liquidity.

It is particularly important that in these more challenging times, priority be given to measures and policies aimed at promoting stable long-term savings. This type of initiative will contribute to recovering the depth of the financial system and its capacity to cushion external turbulence. At the same time, it is crucial to avoid measures that affect the normal functioning of the financial system or jeopardize its ability to contribute to the financing of long-term projects.

For borrowers, the main risk is a further deterioration of financial conditions and of the macroeconomic environment. At the current conjuncture, the increase in financing costs and the reduction in activity and real income have shrunk the payment capacity of households and businesses. Stress scenarios suggest that these developments would give way to higher default risks in certain groups, especially lower-income households, with greater exposure to revolving debt, and among firms in the real estate and construction sectors. The main risk derived from the latter is that a deepening of their lower activity could spill over to the rest of the economy through its many interconnections. All in all, in a context of greater volatility and considering that the economy is already in a process of adjustment, it is important that borrowers seek to maintain sustainable levels of debt and efforts of fiscal consolidation are maintained.

The current conditions and the future evolution of the macroeconomic scenario pose several challenges to the local banking system. Credit could weaken even more during the downward phase of the economy, which could also be accompanied by a reduction in the quality of the portfolio and its collaterals. This, together with a greater increase in financing costs, would continue to put pressure on the banks' intermediation margins. Likewise, future international financial disruptions could hinder the normal operation of banking institutions by compromising their liquidity position in foreign currency. Meanwhile, the higher incidence of cyber-attacks associated with the change in digitalization trends seen during the pandemic represents a relevant operational risk.

Going forward, the convergence to new Basel III capital and liquidity requirements will continue to strengthen the banking industry. In this sense, notwithstanding the fact that the banking sector is resilient, it would be positive for banks to reinforce their solvency levels, taking advantage of the higher profits achieved during this year. Likewise, it is necessary for banks to adjust their balance sheet structure to meet the obligations acquired during the pandemic, while maintaining appropriate liquidity levels. These elements will contribute to appropriately cover the different sources of risk and thus preserve financial stability and credit supply.

The Central Bank's financial policy agenda is consistent with the challenges set out in the Report and aims to promote a stable, resilient, and inclusive financial system. The Bank completed the convergence of its liquidity risk regulation to international standards and continues to modernize its foreign exchange regulation. In addition, in June it modernized its regulation on savings accounts to make this product more accessible to households and facilitate its digital implementation. The Bank continues to focus on consolidating a payments system with new players and inclusive for users. In addition to the development of its digital payments and financial infrastructure agenda, following up on initiatives for low-value and high-value clearing houses in foreign currency. Also noteworthy is the progress made in initiatives such as the Financial Innovation Law —known as the Fintech Law— which will contribute to boosting competition and inclusion in this area, and the draft of the financial sector's Resilience Law.

In the Financial Policy Meeting held during the second half of 2022 the Board decided not to activate the Countercyclical Capital Buffer. Even though there are focalized vulnerabilities in certain sectors of the economy, and agents face a more complex international outlook, the systemic risk analysis indicates that banks' solvency allows them to withstand the effects of the stress scenarios.

I. FINANCIAL MARKET TRENDS

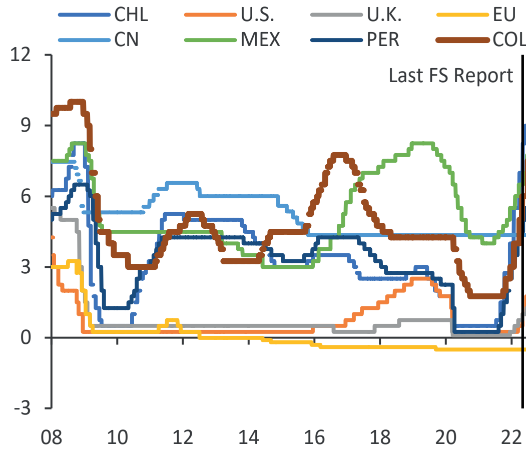
The external macroeconomic scenario has deteriorated significantly since our previous FSR, becoming the main source of risks to global financial stability. The sharp rise in inflation plus the response of central banks have tightened financial conditions and liquidity, contributing to increasing the likelihood of a global recession in 2023. In an environment of a globally strengthening dollar, risk appetite has been reduced, affecting asset prices and increasing volatility in global financial markets, especially fixed-income instruments. This scenario is compounded by multiple sources of vulnerability, including the weaker international corporate sector and the dwindling Chinese economy with its real-estate sector, which is also a cause for concern in the developed world. Locally, and in a context of still high uncertainty, the financial market has attached to global trends, although the greater volatility of the peso and long-term sovereign rates stands out. Going forward, the main threat for emerging economies is that a worsening of the international scenario will intensify capital outflows and trigger episodes of high volatility. In the country, the greatest vulnerability comes from the capital market, which has been unable to restore its depth and stabilization capacity in the face of financial pressures from abroad. Thus, at this juncture, it is necessary to prioritize measures and policies aimed at promoting stable long-term savings.

INTERNATIONAL FINANCIAL SITUATION

Global inflation remains stubbornly high, which has called for strong monetary adjustments in several economies. Inflation worldwide has reached its highest levels in decades, partly due to the delay in withdrawing the strong fiscal and monetary stimulus implemented to deal with the pandemic, especially in developed economies. This was coupled with the intensified armed conflict following Russia's invasion of Ukraine, which has continued to put upward pressure on the prices of energy and other commodities. This scenario has required a greater monetary tightening than was anticipated a few months ago. Thus, the Fed and the European Central Bank raised their benchmark rate by 75bp for the fourth and second consecutive time, respectively, while the Bank of England raised it by a combined total of 200bp over its last four meetings (figure I.1).

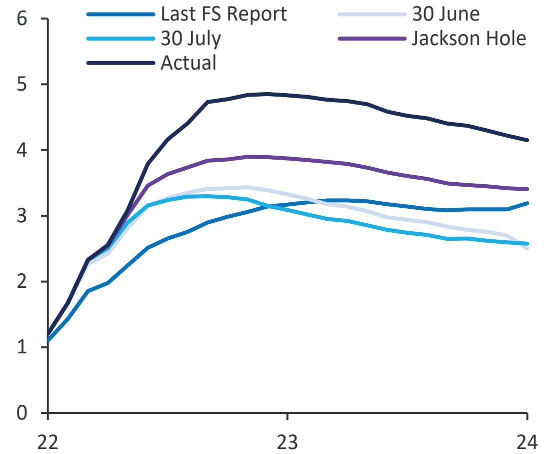
Global financial and liquidity conditions have worsened, magnifying the risks to emerging economies (box I.1). The recent hardening of the Fed's tone and decisions, together with the uncertainty surrounding the future path of its monetary policy, have led to a cycle of global appreciation of the U.S. dollar. Thus, in the face of an increase in global risk aversion, financial conditions have tightened and relative demand for short-term liquid financial assets has increased. This has put pressure on term premiums and has reduced the liquidity of sovereign fixed-income instruments. (figures I.2 and I.3; Acharya et al., 2022).

FIGURE I.1 MONETARY POLICY RATES
(percent)



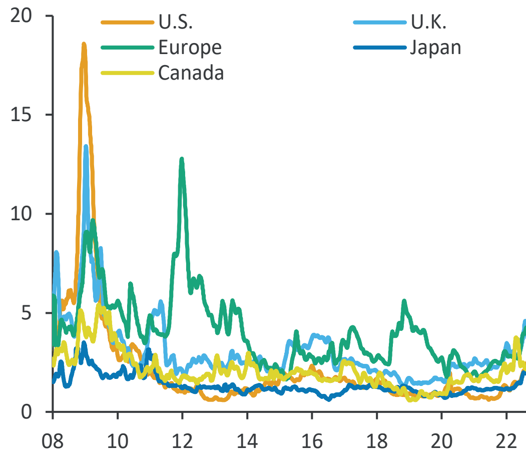
Source: Central Bank of Chile based on data from respective central banks.

FIGURE I.2 FORWARD FFR CURVES (*)
(percent)



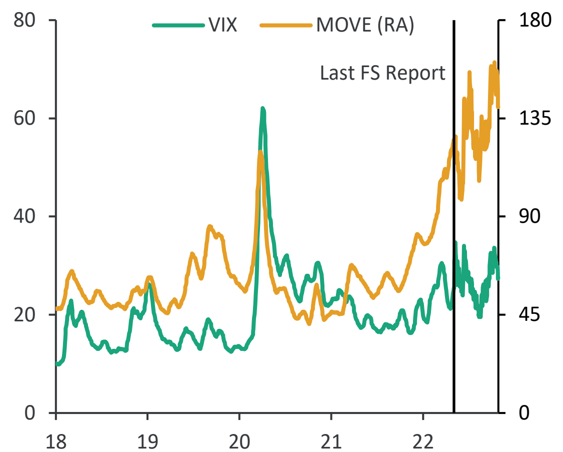
(*) Fed Fund Rate at statistical cutoff date.
Source: Central Bank of Chile based on Bloomberg data.

FIGURE I.3 LIQUIDITY CONDITIONS IN SOVEREIGN DEBT MARKET (*)
(moving 30-day average, basis points)



(*) Mean forecast error of yield curve for 1-year or longer maturities. Thus, when liquidity conditions are favorable (tight), the mean forecast error is smaller (bigger).
Source: Central Bank of Chile based on Bloomberg data.

FIGURE I.4 IMPLICIT VOLATILITY (*)
(percent; Index)



(*) Moving 30-day average. VIX: Implicit volatility of one-month options on S&P500 in the U.S.; MOVE: Implicit volatility of one-month U.S. T-bills with different maturities.
Source: Central Bank of Chile based on Bloomberg data

International developments have affected the prices and volatility of various financial assets. Since the last FS Report, sovereign interest rates have risen across the board, both for emerging and developed economies (see statistical appendix), risk premiums measured by the CDS seen widespread increases of around 50bp for Latin America, including Chile. In turn, stock indexes have fallen everywhere, with declines of around 7.9% in developed economies and 7.5% in emerging ones. In the U.S., the volatility implicit in stock market options has risen by around 8pp since the end of last year, while the fixed-income market has seen high volatility, approaching the levels at the start of the pandemic (figure I.4).

Funding costs have risen and stress episodes have strained the markets. The deteriorated financial conditions have put pressure on corporate sector costs in developed economies, affecting the most leveraged and vulnerable industries (figure I.5). In Europe, September and October saw some episodes of financial stress related to the United Kingdom's failed fiscal plan and the debilitated financial situation of Switzerland's second largest bank. Although these events meant a one-off deterioration in liquidity, they resulted in episodes of high volatility and evidenced the greater sensitivity of these markets to stressed events (MP Report, September 2022; GFSR, October 2022). This context has resulted in a reduction of liquidity in sovereign fixed-income markets and a more than 50% rise in the probability of a recession in developed countries in the next twelve months (figure I.6).

In various economies, housing prices rose considerably during the pandemic, but have seen a moderation recently due to a drop in demand. In an environment of low interest rates and multiple extraordinary fiscal and monetary policies, prices remained on the rise. Recently, the policy response to higher inflation has raised credit costs (Igan et al., 2022), which opens up possibilities of significant price moderation or falls. This is particularly relevant in economies where there is a higher proportion of short-term or variable-rate mortgage lending, or high levels of mortgage debt burdens, such as Norway, Australia, and the United Kingdom (Bank of Australia's Financial Stability Report)[1]/. Although these vulnerabilities are less prevalent in the U.S., where long-term, fixed-rate loans are granted, there have seen significant drops in their activity levels in the face of tightened financial conditions.

The construction and real-estate sectors continue to lag around the world, which is a source of additional vulnerability that jeopardizes financial stability. An example among developed countries is the United States, where third-quarter data show a further deterioration in the construction sector, which again had a negative impact on residential investment, registering a contraction of just over 26% during the period. In Europe, the real-estate sector has also been affected by the increase in the prices of energy and other inputs, interest rate hikes, and weak economic growth, which has deteriorated investment prospects all year. In this sense, nine of the top ten European economies have seen their transaction volumes decline[2]/. In China, in a context of new mobility restrictions, the government's recent investment in infrastructure failed to reverse the contraction in housing sales, which fell by around 20% annually last August (figure I.7).

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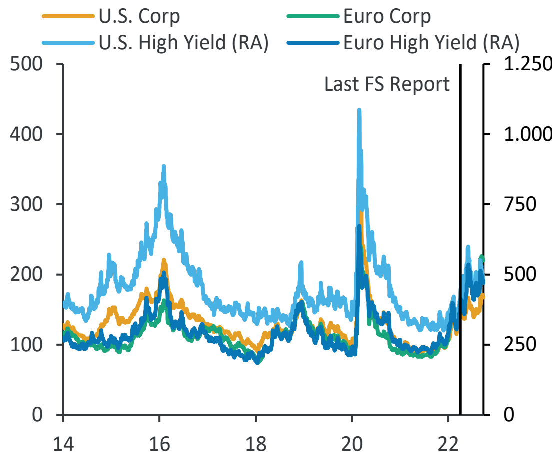
[1]/ In this sample of countries, the mortgage debt burden is above 10%, credit maturities are less than 5 years and they have a high proportion of variable-rate debt.

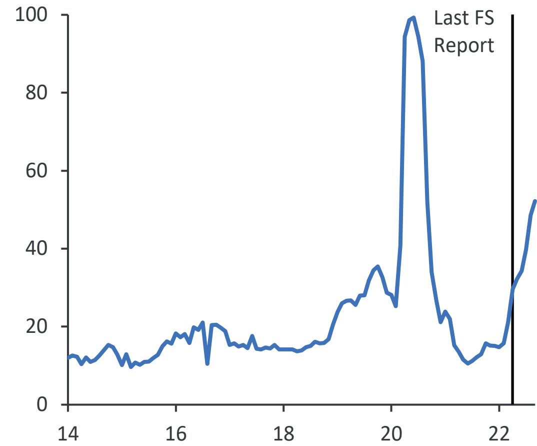
[2]/ During the third quarter of this year, real-estate investment in Sweden, Germany, and the United Kingdom contracted by 77%, 36%, and 33%, respectively, compared to the same period last year.

FIGURE I.5 CORPORATE SPREADS
(basis points)



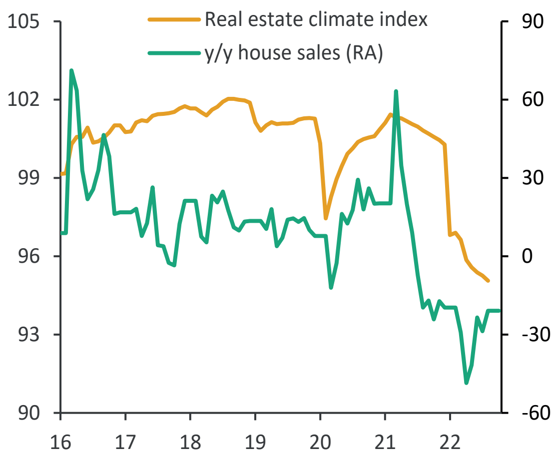
Source: Central Bank of Chile based on Bloomberg data.

FIGURE I.6 PROBABILITY OF A RECESSION IN 12 MONTHS, DEVELOPED COUNTRIES (*)
(percent)



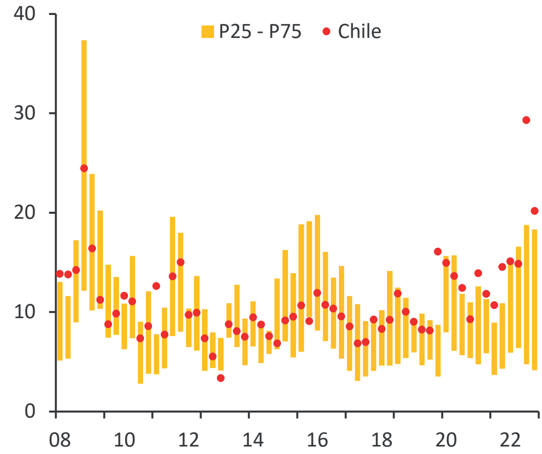
(*) Includes U.S., U.K., Germany, France, and Japan. Calculated using average responses to respective economies' surveys, PPP weighted.
Source: Central Bank of Chile based on Bloomberg data.

FIGURE I.7 REAL-ESTATE CLIMATE INDEX AND HOUSE SALES IN CHINA (*)
(index 2012=100; percent)



(*) The Real Estate Climate index is an indicator developed by China's National Bureau of Statistics based on monthly statistics on the Chinese real estate sector. It considers land, capital, and sales.
Source: Central Bank of Chile based on Bloomberg data.

FIGURE I.8 EXCHANGE-RATE VOLATILITY IN EMERGING ECONOMIES (*)
(percent)



(*) EMEs include Brazil, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Poland, Russia, and Turkey. Annualized standard deviation of daily return during each quarter.
Source: Central Bank of Chile based on Bloomberg data.

THE LOCAL FINANCIAL SITUATION

Most recently, movements in the local financial market have mirrored the trends around the world. Since the beginning of the year, the Chilean peso has depreciated 12% against the dollar and 3% against a basket of currencies, matching the trend observed in other comparable emerging economies (statistical appendix). Meanwhile, the stock market rose 20% and the cost of financing continued to escalate locally. The long-term sovereign interest rate in UFs (BCU10) has risen nearly 26bp since the beginning of the year and has stabilized at around 2.6% (statistical appendix).

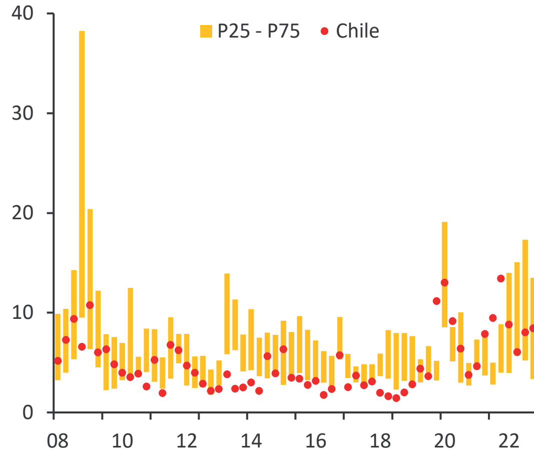
The exchange rate and long-term interest rates continue to exhibit unprecedented degrees of volatility. Exchange rate volatility is in the higher part of the distribution of a sample of countries (figure I.8). Last July, the peso depreciated with unusually high intensity and volatility, which strained price setting in the forex market and augmented the risk of spilling over to other assets. In view of these events, the Board of the Central Bank of Chile announced a foreign exchange intervention program —in force until the end of September— which provided support for the proper functioning of this market. In terms of long-term sovereign rates, Chile used to show lower volatility than the group of comparable economies, but in the last two years the local economy moved to the middle of the distribution of countries in this dimension (figure I.9). In addition, the usually negative relationship between exchange rate movements and long rates has been reversed from the beginning of 2021. These developments have occurred in a context of a shallower capital market and greater economic uncertainty since the end of 2019 (figure I.10).

This higher volatility reflects that the capital market has been unable to regain its former depth and capacity to cushion external financial stress events. As of the third quarter of 2022, pension fund assets stood at 57% of GDP, down by 25pp from the end of 2019 (figure I.11). This decrease has been accompanied by a change in the presence of institutional investors in different markets. Such is the case of pension funds which, since mid-2019, have reduced their exposure in the sovereign fixed-income market by 10% and in the forex derivatives market by 39% of net position in the same period (statistical appendix). The volume of transactions in long-term instruments in the local secondary market has also decreased, approaching the levels of the Global Financial Crisis (figure I.12). These changes in the market become relevant in a context of greater uncertainty, where non-resident investors have been unable to find the same level of local counterparties as they did in previous episodes (figure I.12) (statistical appendix).

Lately, there have been signs that this deterioration has not deepened further. In the absence of new anticipated withdrawals of pension savings and relatively limited transfers across multifunds, pension funds have regained some of their share in more liquid instruments in the local fixed-income market (figure I.13). Since last year, corporate and bank bond issues have recovered somewhat (figure I.14). Likewise, capital outflows by resident investors, which amounted to more than US$15 billion in annual terms during 2021, have moderated and have recently been a third of that amount (statistical appendix).

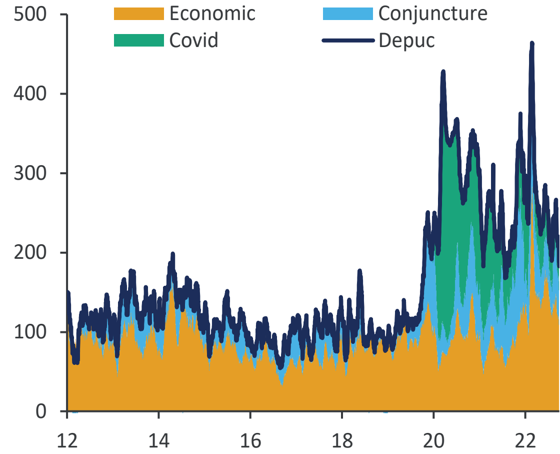
Among institutional investors, the liquidity position of mutual funds has remained tight due to continuous reshuffling of their investment portfolios. In response to the scenario described above, mutual fund (FM) investments have shifted to shorter maturities or inflation hedges. Thus, FM1s —which contain short-term instruments with durations shorter than or equal to 90 days— have increased their volume by 27% since mid-2019, while FM3s —composed of short-, medium- and long-term debt instruments with durations over 365 days— have fallen by 38%. The latter have seen their liquidity reduced since mid-2021, in the face of increased sales of more liquid assets to meet redemption requirements. Thus, last September, the fraction of liquid assets available in these episodes was slightly over 80%, a figure that is still low by historical standards. (statistical appendix).

FIGURE I.9 SOVEREIGN-RATE VOLATILITY IN EMERGING ECONOMIES
(basis points)



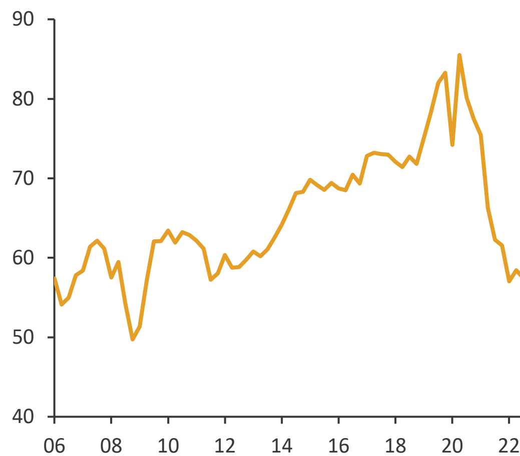
(*) EMEs include Brazil, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Poland, Russia, and Turkey. Annualized standard deviation of daily return during each quarter.
Source: Central Bank of Chile based on Bloomberg data.

FIGURE I.10 ECONOMIC AND POLITICAL UNCERTAINTY (*)
(index, 1 January 2012=100)



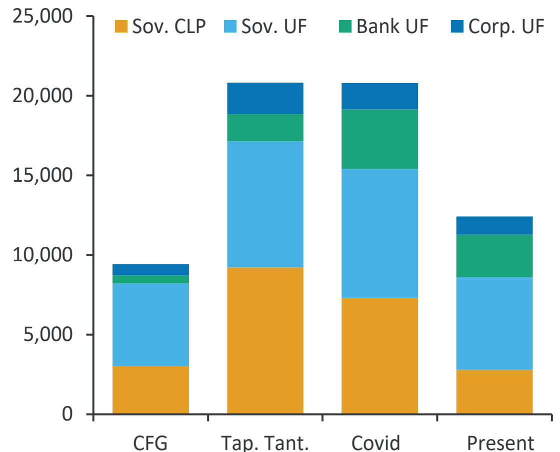
(*) Moving 30-day average.
Source: Central Bank of Chile based on Becerra and Sagner (2020).

FIGURE I.11 PENSION FUND ASSETS (*)
(percent of GDP)



(*) Data for 2022.III are approximated using growth forecast in September 2022 Monetary Policy Report central scenario.
Source: Central Bank of Chile based on Pension Superintendency data.

FIGURE I.12 AVERAGE AMOUNTS TRADED BY INSTRUMENT (*)
(billions of pesos)



(*) Periods considered cover: Global financial crisis (July 2008 to April 2011), Taper Tantrum (May-July 2013), Covid (March 2020 onwards), and Present (January 2022 onwards). Monthly average of amounts traded and weekly average of participation in sovereign debt market.
Source: Central Bank of Chile based on BCS data.

THREATS TO FINANCIAL STABILITY

Going forward, the main threat for emerging economies is a worsening of international conditions that exacerbates capital outflows and triggers episodes of high volatility. Most economies increased their indebtedness during the pandemic. Among emerging countries, the higher leverage stands out, which, coupled with their higher risk premiums, makes them more vulnerable to a new relapse in global financial conditions. In the face of a strengthened dollar, this could trigger volatility episodes prompting further capital outflows on the part of non-resident investors, as has happened in past episodes of financial stress (box I.1, figure I.15).

International banks are now more resilient than in previous periods of financial stress. The convergence to more demanding capital and liquidity standards for banks has resulted in a stronger financial position of this sector compared to other events of financial fragility, such as the Global Financial Crisis, especially in emerging economies, and allows it to better withstand global financial shocks (box III.1).

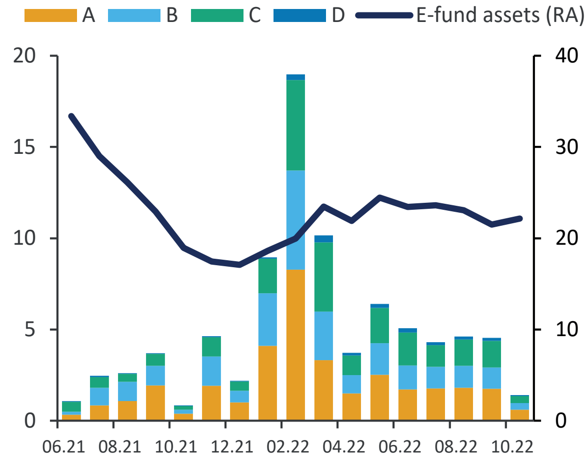
However, non-bank investors have shown some signs of greater vulnerability to the tightening of global financial conditions. Such is the case of U.K. pension funds, which suffered losses due to the reduced liquidity of their portfolios, combined with the uncertainty derived from the failed fiscal adjustment plan. On the other hand, the portfolio changes of Open Ended Investment Funds could incorporate additional vulnerabilities derived from their composition —sovereign and corporate fixed income, and equities, mostly— which has eroded their liquidity and therefore has become highly sensitive to financial stress events (GFSR, October 2022).

At home, the main vulnerability stems from the capital market, which has been unable to recover its depth and stabilizing role in the face of external financial shocks. Since the last FS Report, the Chilean economy has made progress in resolving the macroeconomic imbalances accumulated in 2021 and the capital market has moderated its acquired shallowness (figure I.11). However, it has yet to recover its capacity to provide long-term financing and requires additional efforts to restore its buffering role to deal with external financial pressures.

The Central Bank has bolstered its liquidity position in accordance with these developments. In addition to its own reserves, which in September of this year amounted to nearly US$38 billion, it added complementary liquidity facilities of another US$27.8 billion, including US$18.5 billion subscribed in August through a flexible credit line with the International Monetary Fund.

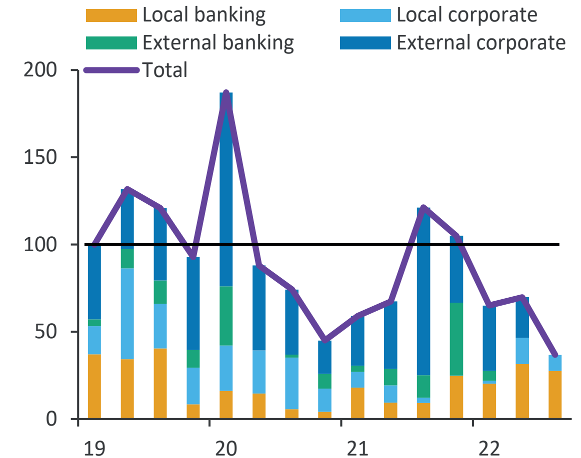
The current more challenging environment underscores the importance of prioritizing reforms aimed at promoting stable long-term saving. The current situation underscores the importance of incorporating considerations on the effects on the capital market of the initiatives underway. It is necessary that they be developed and implemented with due graduality, considering the effects of changes in the agents' investment decisions. It is also crucial to avoid measures that affect the normal functioning of the financial system or jeopardize its capacity to contribute to and favor the stable financing of long-term projects.

FIGURE I.13 PENSION FUND TRANSFERS TO E FUND (*)
(percent of E-fund assets; billions of dollars)



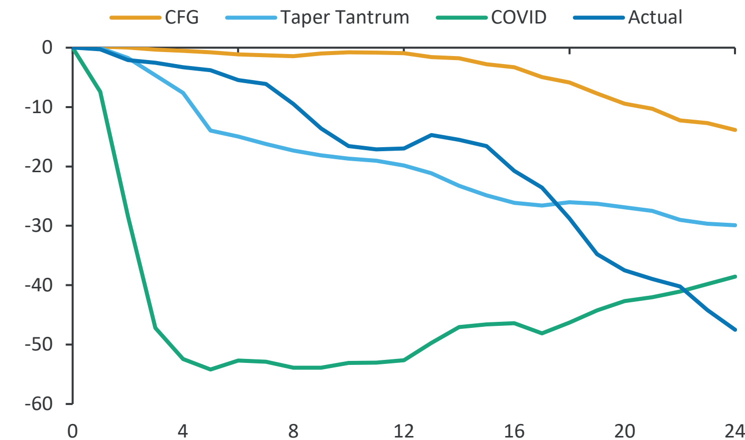
(*) October data cover up to 13.Oct.2022.
Source: Central Bank of Chile based on Pension Superintendency data.

FIGURE I.14 EMISIONES DE BONOS BANCARIOS Y CORPORATIVOS (*)
(index, March.19=100)



(*) Total issuances in March 2019 amount to US$5.73 billion.
Source: Central Bank of Chile based on BCS, DCV, and RiskAmerica data.

FIGURE I.15 NON-RESIDENTS' FIXED-INCOME FLOWS IN EMERGING ECONOMIES (*)
(billions of dollars, weeks)



(*) Cumulative flows since onset of respective event: Global Financial Crisis (June 2008), Taper tantrum (May 2013), Covid (March 2020), Preset (January 2022).
Source: Central Bank of Chile based on EPFR data.

BOX I.1:

The global dollar cycle, international financial conditions and emerging economies

The prevailing context of tight global financial conditions, and the possibility of further tightening, poses risks to the business cycle and financial stability in emerging economies. Historically, episodes of global dollar strengthening —such as the current one— coincided with significant falls in financial asset prices, capital outflows from emerging economies, and slower growth. The magnitude of the impact depends on a number of idiosyncratic factors, notably the level of inflation and the current account balance. Currently, both inflation and the current-account deficit are very high in Chile, hence the importance of continuing to resolve macroeconomic imbalances so as to mitigate the negative impacts of the deteriorating global economic scenario.

The literature has found that a dollar appreciation has a high correlation with a more contractionary monetary policy in the United States —especially if it is sudden—, with lower levels of risk appetite and global liquidity, which has adverse effects on economic growth[3]/. In the past, dollar appreciations have been followed by increases in external financing costs, a decrease in credit (Bruno and Shin, 2015), and capital outflows, resulting in lower economic growth (Obstfeld and Zhou, 2022; Hofmann and Park, 2020). Evidence has it that a less predictable than usual monetary policy in the U.S.—as is now occurring— has a significant impact on emerging economies. These surprises have persistent effects on capital outflows, activity, and the exchange rate (Ciminelli et al., 2022; Iacovello and Navarro, 2019; Hoek et al., 2020). In Latin America, there is evidence that a surprise Fed policy rate increase of 100bp is associated with a 200bp increase in the average spread in the region and has contractionary effects on activity. By country, these impacts show high heterogeneity and are more intense when there is less financial strength at the time of the surprise policy rate increase (Beltrán, 2022).

The magnitude of the impact of a worsening of global financial conditions on emerging economies depends on their own vulnerabilities. Iacovello and Navarro (2019) note that the level of inflation, the current-account deficit, international reserves, and the external debt all play a part in determining the effects of a tightening of U.S. monetary policy on emerging economies. According to the authors, the impact on GDP is more than double in those classified as vulnerable according to these same variables.

At the present time, borrowing and debt service levels are considerably above their pre-pandemic levels in several emerging economies. If the rise in international interest rates and the appreciation of the dollar continue, this could trigger debt sustainability problems (figures I.16 and I.17). Although this phenomenon is not generalized, some countries in this group also have high current-account deficits, which makes them especially sensitive to reductions in global liquidity and sudden capital outflows. Furthermore, most emerging economies have limited monetary and fiscal policy space, given their high inflation levels and pace of sovereign indebtedness. In Chile, current-account deficit levels and above-target inflation highlight the importance of continuing to resolve macroeconomic imbalances in order to mitigate the potential negative impacts of a more complex scenario.

[3]/ *The Global Dollar Cycle,* Obstfeld y Zhou (Brookings Institution, 2022)*; The broad dollar exchange rate as an EME risk factor,* Hofmann y Park (BIS, 2020)*; Capital flows and the risk-taking channel of monetary policy,* Bruno y Shin (JME, 2015)

FIGURE I.16 SOVEREIGN DEBT
(percent of GDP)

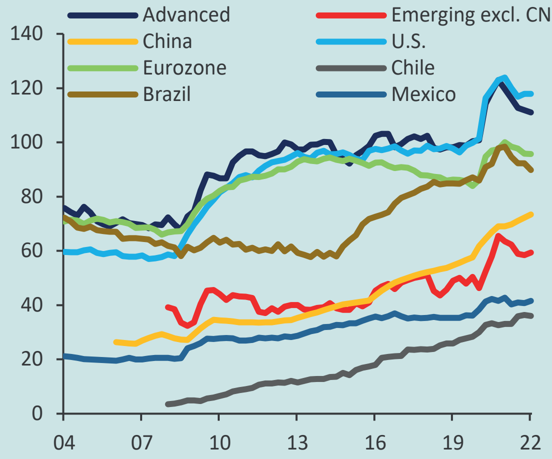
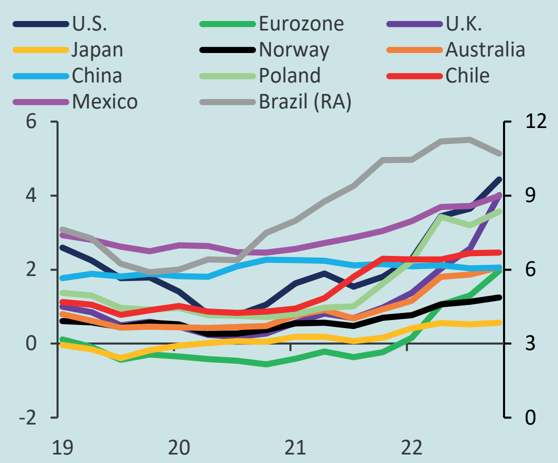


FIGURE I.17 FINANCIAL BURDEN (*)
(percent of GDP)



(*) Calculated using 10-year sovereign rate multiplied by sovereign debt level over GDP.
Source: Central Bank of Chile based on Bloomberg and IMF data.

II. BORROWERS

On aggregate, the financial situation of households and companies has remained stable, with no sources of vulnerability that could pose a systemic risk, despite the more challenging economic scenario. In addition to the deterioration of the macro environment and its outlook, higher financing costs and tightened lending standards have been observed. Corporate indebtedness has remained stable since the previous Report, while households have moderated their leverage. Non-payment has remained limited and at historic lows, with the exception of household consumer credit default, which continues to rise. Groups more vulnerable to the worsening financing conditions have been identified, particularly among smaller firms in the real-estate and construction sectors, and among lower-income households. The residential real estate sector, in particular, has deepened the loss of dynamism described in the previous Report, in a context of more stringent financing conditions, a weak boost from demand and rising construction costs, which has significantly deteriorated its financial position. On the fiscal front, worth noting have been the efforts to recover a trajectory that will correct the cumulative imbalances of recent years and maintain prudent levels of indebtedness. Going forward, the main risk faced by credit users is a further slowdown of the macro-financial scenario causing an increase in defaults.

FIRMS

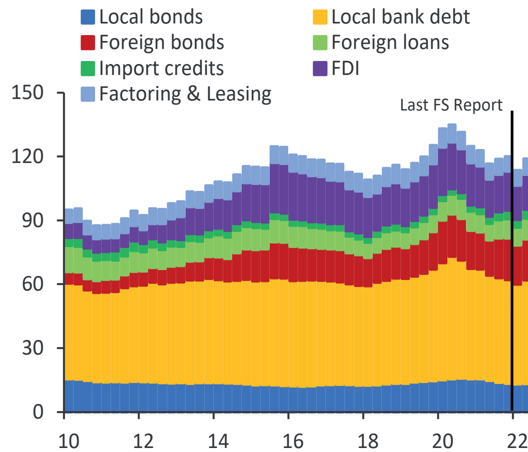
At the second quarter 2022, aggregate corporate debt was 119% of GDP, similar to its level at the end of last year and below its peak at the start of the pandemic (figure II.1). After a fall in the first quarter, the second quarter of this year saw an increase in external issuance and foreign direct investment (FDI), influenced by the peso's depreciation, and offset by the lower dynamism of local bank debt. In the third quarter, the commercial portfolio continued to contract, reflecting the expected reduction in investment and credit demand, plus the still tight credit supply (chapter III)[1]/.

Larger companies continued to normalize upward their financial indicators, approaching pre-pandemic levels. As of the second quarter of this year, profitability continued to recover, reaching 7.9% of assets, its highest level since 2011 (figure II.2). In the same vein, indebtedness in the second quarter was similar to that of the previous year, while annual interest hedging was 3.9 times financial expenses, exceeding its pre-pandemic levels[2]/.

[1]/ Corporate debt excludes banks, which, in addition to certain differences in data sources and valuation methodologies, largely explains the difference with the National Accounts, where other financial companies are also excluded. In this statistic, debt amounts to 108% of GDP as of the second quarter 2022. For more information, see link.

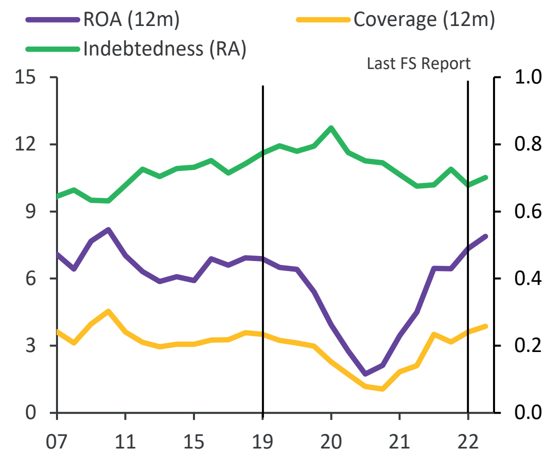
[2]/ For reference, companies that would be unable to cover twice their financial expenses accumulate a combined 23% of corporate sector assets, which compares positively with the 59% recorded at the end of 2020.

FIGURE II.1 TOTAL NON-BANK CORPORATE DEBT BY TYPE OF LOAN (*)
(percent of GDP)



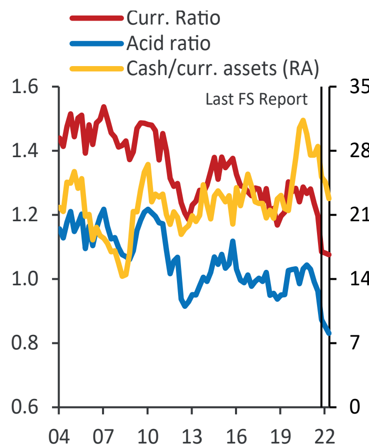
(*) Based on firm-level information except for factoring and leasing, securitized bonds and commercial papers. Commercial university debt not included.
Source: Central Bank of Chile based on Financial Market Commission (FMC) data.

FIGURE II.2 FINANCIAL INDICATORS (*)
(percent of assets; times)



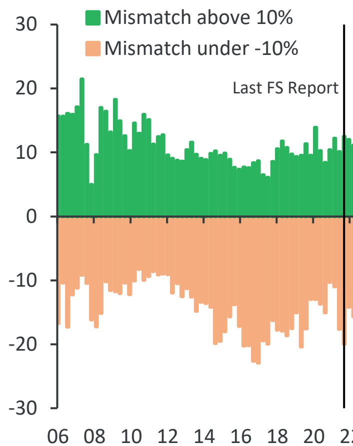
(*) Data at December of each year until 2018, henceforth, quarterly information. ROA: Twelve-month cumulative income before financial expenses plus taxes over total assets. Coverage: Income before taxes and financial expenses over annual financial expenses. Indebtedness: Financial debt over equity. Consolidated data. Does not include state-owned companies or those classified in the financial services and mining sectors.
Source: Central Bank of Chile based on Financial Market Commission (FMC) data.

FIGURE II.3 LIQUIDITY INDICATORS (*)
(percent of assets; times)



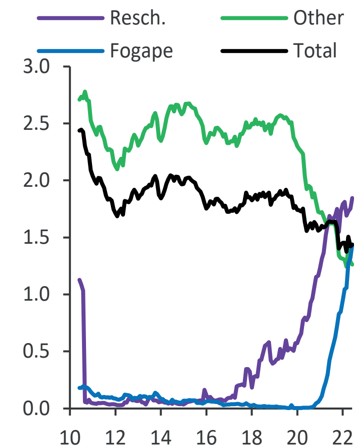
(*) Acid ratio represents current assets minus inventories over current liabilities. Current ratio includes inventories in the numerator.
Source: Central Bank of Chile based on Financial Market Commission (FMC) data.

FIGURE II.4 EXCHANGE RATE MISMATCH (*)
(percent of total assets)



(*) Considers sample of companies reporting their balance sheets in pesos. The mismatch measures dollar liabilities minus dollar assets, minus net position in derivatives, as a percent of total assets. Does not consider state-owned companies or those classified in the financial services and mining sectors.
Source: Central Bank of Chile based on Financial Market Commission (FMC) data.

FIGURE II.5 UNPAID INSTALLMENT INDEX (*)
(percent)



(*) Firms with local bank financing. Rescheduled and Fogape categories are not mutually exclusive. Does not include loans to individuals. Fogape stands for Fogape-Covid.
Source: Central Bank of Chile based on Financial Market Commission (FMC) data.

Companies deepened their downward investment flow trend and their liquidity decreased. Liquidity indicators dropped to record lows, after the precautionary accumulation observed at the beginning of the pandemic (figure II.3). In this context of reduced financial slack, there have been episodes of insolvency in the real-estate and construction sectors, while some regulated companies in the healthcare sector are presenting tight liquidity indicators. Both cases speak to the importance of a correct portfolio risk assessment by the banks, with the purpose of making the necessary and sufficient provisions to cover losses in a timely manner, in accordance with the current regulations issued by the FMC.

In a context of higher exchange rate volatility (chapter I), the corporate sector exhibits a limited currency mismatch (figure II.4)[3]/. Thus, companies with a mismatch of more than 10% accumulate 11% of total assets, while those with a mismatch of less than -10% account for 15%, which is similar to the averages of the last ten years. In any case, the risk remains that a deepening of the peso's volatility could reduce the firms' ability to effectively hedge their exchange rate mismatch, affecting their bottom line[4]/.

For companies financed by local banks, as of June, default remained below its historical average, with pockets of risk still concentrated in the groups that were most affected by the pandemic. At the end of the first half of the year, default stood at 1.4% of commercial loans and 7.6% of all firms (figure II.5). Although the firms with rescheduled loans are a small group[5]/, they remain a source of vulnerability due to their higher default rate. Those that obtained Fogape-Covid loans show a convergence towards the system average, mainly due to higher default among small and medium-sized companies in the trade and construction sectors.

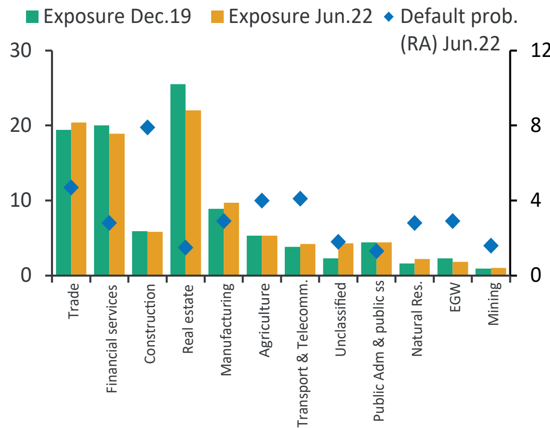
Among construction companies, operating margins have narrowed as a result of lower sales and cost increases. Since the last FSR, the indebtedness of companies in the sector continued to decline, although it remains high from a historical perspective. Small and medium-sized enterprises appear relatively more indebted. The latter presented a greater compression of their operating margins, placing them in a situation of greater vulnerability (figure II.6). In this context, since mid-2021, banks have reduced their exposure to the construction and real-estate sectors, which is also visible in the results of our latest Bank Lending Survey (BLS).

[3]/ It is important to note that financial reports do not yet include scenarios of higher exchange volatility like those of July 2022.

[4]/ Fernández et al. (2019) show that for a group of corporate sector businesses the greater currency mismatch magnifies the subsequent loss in their results due to exchange rate differences.

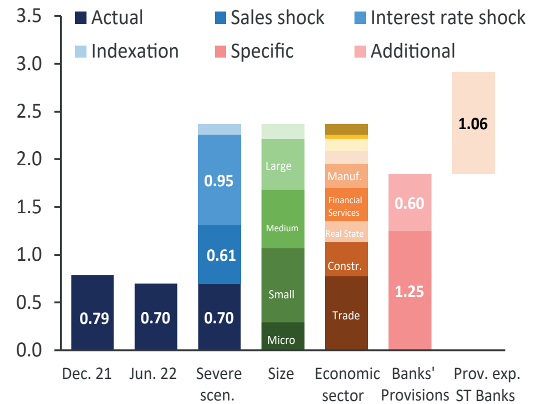
[5]/ As of June 2022, of the universe of bankarized companies, the groups that took no aid measures (49%) and Fogape (40%) account for a combined 89% of the total, while those that rescheduled account for 6%. Thus, in terms of the total debt, the group that took no measures represents 44% of the total debt, while those that rescheduled represent 29%.

FIGURE II.6 EXPOSURE AND DEFAULT RATE (*)
(percent)



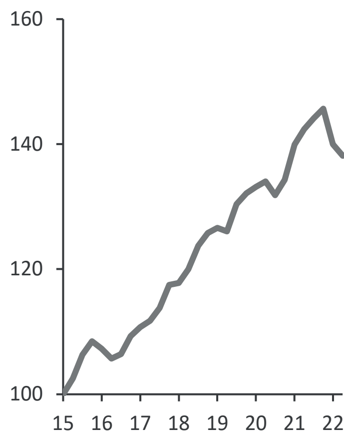
(*) Locally funded firms. Exposure considers commercial and X-M credit. Default rates calculated with data up to June 2022.
Source: Central Bank of Chile based on FMC and Internal Revenue Service (SII) data.

FIGURE II.7 COMMERCIAL DEBT AT RISK (*)
(percent of GDP, 2022)



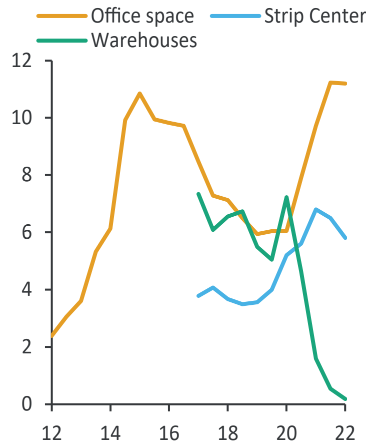
(*) Amounts owed by each firm weighted by their individual probability of defaulting within a year. Rate shock denotes a 600-bp increase in one year in the commercial loans rate. Inflation shock means a 4pp increase (from 12.5% in December 2021 to 16.5% CPI in one year). Sales shock in severe and adverse scenarios consistent with those used in the banking stress test (chapter III). Sales shock in Covid scenario replicates for each firm its sales performance during 2020. Specific and additional provisions effective as of Dec.22 Provisioning expense ST (stress test) Banking as of Dec.22 in severe scenario. Commercial debt at risk by economic sector calculated in severe scenario.
Source: Central Bank of Chile based on FMC and Internal Revenue Service (SII) data.

FIGURE II.8 HOUSING PRICE INDEX (IPV)
(lindex, 2015.I = 100)



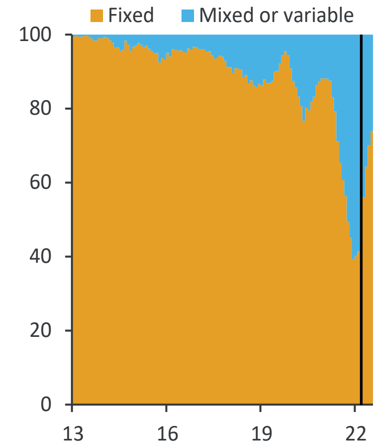
Source: Central Bank of Chile based on Internal Revenue Service (SII) data.

FIGURE II.9 VACANCIES IN NON-RESIDENTIAL LEASE MARKET
(percent)



Source: Central Bank of Chile based on CBRE, Colliers, GPS data.

FIGURE II.10 INTEREST RATES ON MORTGAGE FLOWS (*)
(percent, weighted by amount)



(*) Vertical line indicates last Financial Stability Report.
Source: Central Bank of Chile based on FMC data.

STRESS TESTS FOR FIRMS[6]

The materialization of the stress scenarios presents a similar impact to the one described in the previous Report, with risks concentrated among small firms and in the trade and construction sectors. In our second-half stress test, the initial position is somewhat more favorable than in the previous FSR, given the increase in GDP and lower materialized defaults. Under the stress scenarios, the impact of interest rate and sales shocks on repayment capacity stands out, followed by the indexation shock[7], which is mitigated by low UF-denominated debt holdings (figure II.7). By size, the analysis indicates that prospective risk is concentrated in small and medium-sized enterprises (SMEs). By sector, the biggest potential risks are in trade, followed by construction, financial services, and manufacturing. The impact heterogeneity of this scenario is explained by the composition of corporate debt in terms of duration and currency. This result is similar to the sum of effective trade provisions and the additional expense arising from the banking stress test[8] (chapter III).

THE REAL-ESTATE SECTOR

The housing sector has continued with the low dynamism noted in our last FSR, in a context of tight lending conditions and a weak impulse from demand. New home sales continue to show declines with respect to the previous year, with a 52% decrease at the third quarter. At the same time, the total stock remains high, albeit with a stable level of completed units. This lower activity has been reflected in mortgage credit flows, which have remained low from a historical standpoint (chapter III), and also in the evolution of housing prices, which fell 3% annually in the second quarter of this year (figure II.8).

The non-residential sector continues to adjust to structural changes in preferences, with some insolvency episodes in the industry. Demand for warehouses remains strong while retail premises have dwindled as digital sales become increasingly relevant. The renewed practice of telework has made available formerly occupied office space, and the vacancy rate stabilized at a high level around the middle of this year, due to a slight recovery in leasing volume (figure II.9). Retail premises show vacancy rates exceeding pre-pandemic footage, while storage facilities are hard to find. In the last year, companies whose main line of business is to lease shopping centers and which report their financial statements to the FMC, showed profitability and financial expense hedge below their historical values, but saw some recovery recently. Public real-estate investment funds reduced their rate of expansion in 2022, after their strong increase in 2021.

[6]/ Exercise based on Córdova et al. (2021). Three simultaneous shocks are assumed: a deterioration in activity, an interest rate increase, and an increase in inflation. In activity, a trajectory of company sales similar to that of the Covid-19 pandemic is assumed. A 600bp increase in interest rates and a 4pp inflation increase in one year's time are assumed.

[7]/ This exercise considers inflation increases that directly affect the repayment of UF-denominated debt. It does not consider any additional general equilibrium effects associated with inflationary shocks.

[8]/ This comparison should be considered only as a reference and as an upper bound. Unlike the actual build-up of bank provisions, the stress test with granular firm data does not consider associated collateral.

Some vulnerabilities noted in the past have moderated. In particular, the share of borrowers with more than one mortgage loan has remained stable, while the granting of fixed-rate loans recovered some ground. Borrowers with more than one mortgage loan present a vulnerability because, in addition to being more sensitive to price changes, they could depend on leasing out to meet their mortgage commitments. Thus, the current macro-financial context may reduce their repayment capacity through income shocks that affect tenants. On the other hand, previous reports have highlighted the vulnerability associated with mortgage financing with mixed or variable rates (FSR first half 2021), due to their greater exposure to interest rate risk when the fixed component expires. However, since the previous Report, a decrease of these loans has been observed in the flow of mortgage loans (figure II.10).

The spillover of the deterioration of this sector to the rest of the economy is a major risk at this juncture due to its multiple interconnections and propagation channels. The real-estate and construction sectors combined account for 14% of GDP and 10% of national employment, and are highly interconnected through real and financial channels. At the same time, the debt of the sector's companies represents about 28% of commercial debt, while mortgage loans account for 30% of GDP. Thus, a further downturn could result in negative feedback to activity through lower investment and employment, and to the financial sector through greater credit risk for both individuals and businesses.

HOUSEHOLDS

The macro-financial scenario has deteriorated since the last FSR. The labor market has slowed its recovery process, financial conditions have tightened, and the outlook has been revised down. The financial situation of households has tightened as a result of a weaker labor market and further shrinking liquidity. In addition, real wages have fallen because of high inflation. Towards 2023, the outlook for activity points to a fall in GDP, with consumption also declining, in a context where the imbalances accumulated in 2021 will need to be adjusted (Monetary Policy Report, September 2022)

Household debt continues to decelerate, in line with more constrained supply and weak demand (figures III.1B and III.2). At the second quarter of this year, non-mortgage debt showed a slight recovery driven by credit from non-bank credit providers (figure III.10). Specifically, this growth is the result of greater use of revolving loans, partially offset by a drop in installment loans (figure III.3). Mortgage debt continues to slow down in real terms, which is marginally explained by a net outflow of borrowers, in a context of higher interest rates and tighter lending conditions.

The financial situation of households is very heterogeneous; lower-income households have reduced their liquidity and increased their use of revolving loans, while higher-income households have increased their leverage. Household debt and financial burden have remained rather stable. Thus, the debt to monthly income ratio is 3.9 times for the median household as of August 2022. In lower-income households, it is 3.4 times and is mainly composed of consumer debt, while among high-income households it is 16.8 times, with a higher proportion of mortgage debt. The financial burden is around 22% of the monthly income of both groups (figures II.11 and II.12).

FIGURE II.11 FINANCIAL BURDEN TO INCOME RATIO (*)
(percent of monthly labor income)

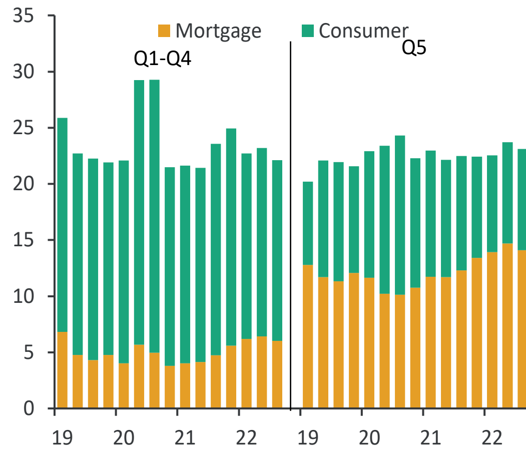
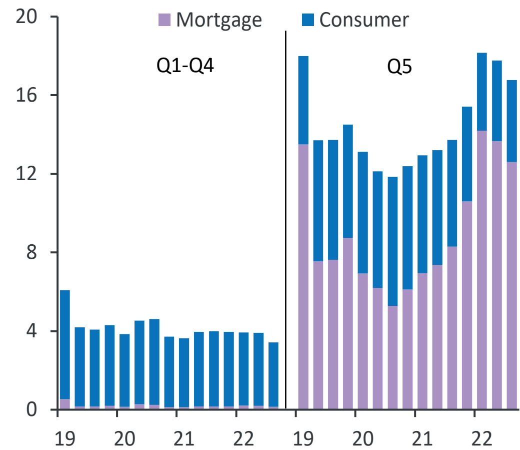
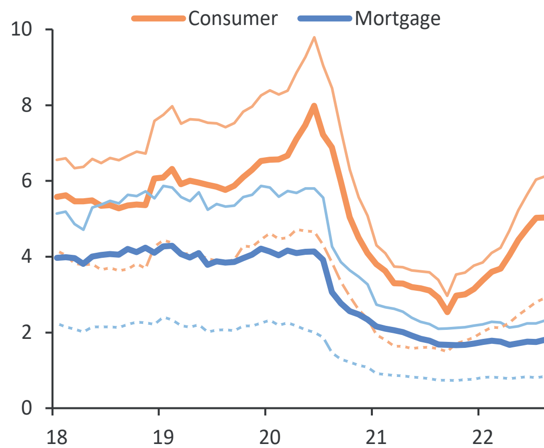


FIGURE II.12 BANK DEBT (*)
(times monthly labor income)



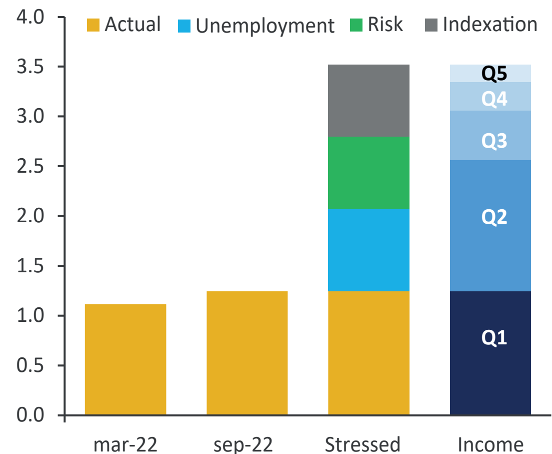
(*) Q1-Q4: up to 1.680.000 pesos; Q5: between 1,680,001 and 2,000,000. For bank debtors who contribute to pension fund AFP: financial burden with respect to bank debts. Data at August 2022.
Source: Central Bank of Chile based on FMC and SUSESO data.

FIGURE II.13 DEFAULT RATE (*)
(percent of debtors by portfolio)



(*) Dotted line represents 5th quintile; thin line denotes Q1-Q4; thick line denotes total. Q1-Q4: up to 1.680.000 pesos; Q5: between 1,680,001 and 2,000,000. For bank debtors who contribute to pension fund AFP. Roughtly 30% of debtors do not report income via pension fund contributions.
Source: Central Bank of Chile based on FMC and SUSESO data.

FIGURE II.14 DEBT AT RISK (*)
(percent of GDP)



(*) Q1: up to 262,000 pesos; Q2: from 262,001 to 556,000 pesos; Q3: from 556,001 to 950,000 pesos: Q4: from 950,001 to 1,680,000 pesos: Q5: from 1,680,001 to 2,000,000 pesos. Risk defined as the effect of an interest rate increase; indexation reflects the way inflation affects UF-indexed debt burden.
Source: Central Bank of Chile based on FMC and SUSESO data.

Non-payment remains below its historical average; however, it continues to increase in the consumer portfolio. The higher default has been concentrated among lower-income borrowers. The sanitary crisis caused a widespread increase in default, somewhat more intense in the first income quintiles. Subsequently, and as a result of aid programs, default decreased to record lows. At present, there is a normalization in the non-payment of the consumer portfolio, with greater intensity among lower-income debtors. (figure II.13).

Households are facing increased restrictions to access credit and an economic environment perceived as further worsened. With data up to September, all the components making up the Economic Perception Index (IPEC) were still below their levels of three years ago. This is endorsed by the third-quarter Bank Lending Survey, which shows that the banks' perception is that credit demand remains weak in the consumer and mortgage portfolios (chapter III).

STRESS TESTING HOUSEHOLDS[9]/

The impact of stress scenarios materialized is similar to that described in previous reports, with a starting point with slightly more materialized risk and a situation that does not incubate risks to local financial stability. These exercises evaluate the potential effect of shocks in extreme, low-probability, high-impact stress scenarios. They are partial in nature, as they do not model all agents' reactions and are not projections. Three simultaneous shocks are assumed above present levels: the first one consisting of a 7pp increase in the unemployment rate in one year; the second, in a 600bp increase in consumer credit interest rates, and a 200bp increase in mortgage rates. The third is an indexation shock of an additional 4pp in one year[10]/. Given the degree of wage indexation in Chile —close to 60% of salaried employees receive some kind of CPI adjustment (see September 2013 and January 2008 MP Report)— a partial pass-through of inflation to real wages is considered.

Going forward, the evolution of the labor market and the cost of financing emerge as the most important drivers of credit risk. Effective debt at risk increases due to higher consumer defaults, while the results show high heterogeneity. Within the stress scenario, the shock with the highest impact is unemployment, followed by interest rate and indexation risk. Lower-income households are relatively more leveraged in short-term consumer loans —such as revolving products— and therefore with a financial burden more exposed to interest rate increases (figure II.14). In higher income brackets, this is led by mortgage debt, with greater exposure to indexation risk. However, the latter is offset by the greater presence of indexation clauses in salaries and, as seen above, by the net outflow of mortgage debtors and the reduced utilization of variable or mixed-rate loans.

THE CENTRAL GOVERNMENT

The fiscal situation has remained tight, although there are signs of consolidation in the coming years. Central government debt remains high from a historical perspective, projecting a gross debt close to 36% of GDP at the end of 2022 (figure II.15). With respect to the actual and structural deficits, after the high levels observed in 2021, the Budget Office (Dipres) communicates their normalization to levels of 1.6% and 0.9% of GDP, respectively, thus meeting the 2022 structural deficit target of 3.3% of GDP[11]/ (figure II.16).

[9]/ This is an extension of the stress test presented in Córdova et al. (2020).

[10]/ This component captures the effects of inflation increases that directly affect the repayment of UF-denominated debts. Additional general equilibrium effects associated with inflationary shocks would be implicitly captured in the deterioration of activity, employment, and financial conditions.

[11]/ Decree No. 755 of 2022, issued by the Ministry of Finance, establishes a structural deficit target of 3.3% of GDP in 2022, to reach 0.3% in 2026 (IFP 2022.III).

For the end of 2027, debt is projected to be around 39% of GDP (IFP 2022.III). Regarding composition, it has shifted towards the short term. Accordingly, while in June of this year 6.3% of bonds matured within one year, in September 2021 the percentage at that term was 3.4%[12]/.

Less favorable scenarios could lead to an increase in gross government debt exceeding what is considered to be a prudent level[13]/. In the September 2022 Report of the Autonomous Fiscal Council (CFA), four alternative scenarios were proposed that could affect fiscal convergence: i) a high and persistent fiscal deficit trajectory, ii) an increase in fiscal spending where the collection of the tax reform in process does not reach 100% of the projected amount, iii) a trend growth below the baseline scenario trend, and iv) a 40% drop in the price of copper. In all cases, gross debt would exceed the prudent level in the coming years.

In the present context of greater uncertainty, deteriorated global financial conditions, and a weakened macroeconomic scenario, it is important to continue on the path of fiscal convergence. The stabilization of debt levels and spending and deficit projections reflect an important effort to put public finances in order, which establishes the path of fiscal convergence after the disruptions caused by the pandemic. A responsible fiscal situation avoids an excessive increase in sovereign debt, reducing the possibility of a deterioration in the perception of local risk, and with it, of the sovereign credit rating. Conversely, a deterioration could have an impact on the financial channel, worsening financing conditions for households, businesses, banks, and the Treasury itself.

FIGURE II.15 GROSS CENTRAL GOVERNMENT DEBT (*)
(percent of GDP)

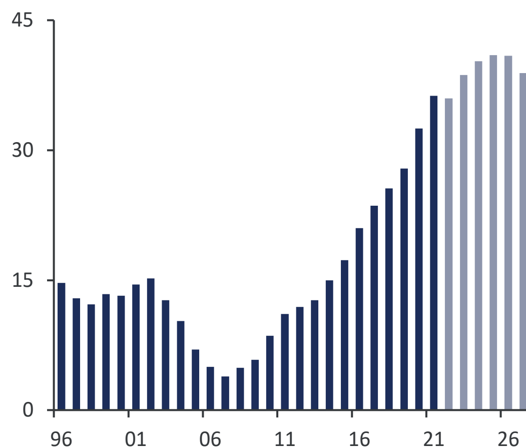
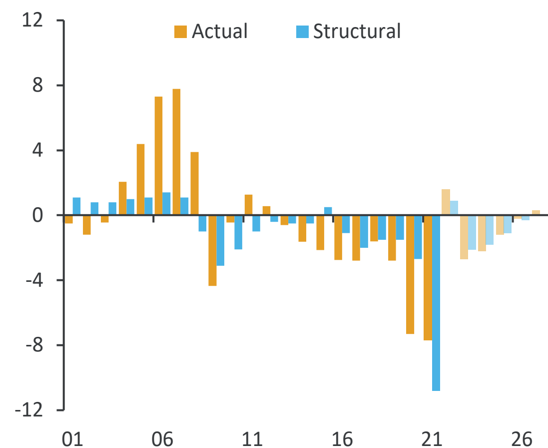


FIGURE II.16 ACTUAL AND STRUCTURAL BALANCE SHEET (*)
(percent of GDP)



(*) Light bars show projections in third quarter 2022 Public Finance Report , Dipres, Finance Ministry.

[12]/ Regarding the currency breakdown during the same period, the debt in dollars went from 21% to 26% of the debt; in pesos, from 36% to 32%; and in euros, from 13% to 11% (Central Government Gross Debt, quarterly report at June 2022).

[13]/ Within the framework of Law 20.128 on fiscal responsibility, and through Decree 755, the present Administration establishes the basis of the fiscal policy for the period 2022-2026. In this context, a prudent debt level of 45% of GDP is determined.

BOX II.1

Non-mortgage debt and financial situation of households during the pandemic

The results of the Household Financial Survey 2021 (EFH 2021) show a decrease in non-mortgage household indebtedness. The aggregate amount of these obligations decreased with respect to the previous EFH, conducted in 2017. In turn, the proportion of households holding non-mortgage debt fell from 61% in 2017 to 50% in 2021 (figure II.17)[1]/. This reduction was sharper in lower-income households, particularly in bracket 1[2]/, and occurred more strongly in products associated with higher interest rates, such as credit cards and credit lines.

There is evidence to suggest that this phenomenon is explained to a greater extent by a contraction in household demand for credit during the pandemic. As has been documented in previous Financial Stability and Monetary Policy reports, household support measures and the liquidation of long-term savings in the form of pension withdrawals more than offset the decline in household income and increased the availability of household liquidity. As a result, household demand for credit appears to have declined during the pandemic, which is consistent with what the Bank Lending Survey indicated for the beginning of the pandemic. According to the EFH, the proportion of households that did not apply to a loan increased from 83% in 2017 to 90% in 2021, while the proportion of households reporting no need for credit rose slightly (figure II.18)

However, the drop in credit demand improved the financial position of households towards 2021. The decline in households' non-mortgage indebtedness also reduced their total financial burden over the past year. Thus, the proportion of households with high financial burden[3]/ fell from 22% to 13% between 2017 and 2021, and more strongly among lower-income groups (figure II.19)[4]/.

Nevertheless, some households, mostly concentrated in bracket 1, maintained high levels of non-mortgage financial burden, mainly because of their greater use of revolving credits. This happens in a context where available liquidity has declined from the las two years. As can be inferred from the stress test, lower-income households are more exposed to hikes in short-term interest rates, and to losing their jobs. These results, combined with a more challenging scenario, suggest that whenever possible they must strive to maintain their debts within sustainable limits, and thus avoid stressful episodes in the people's finances.

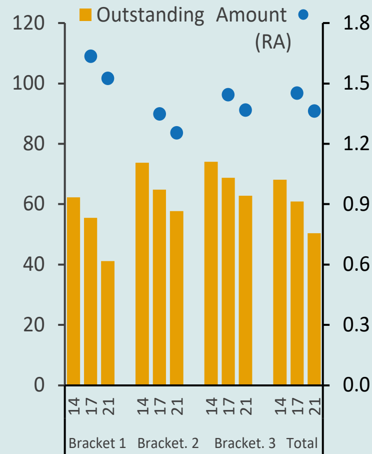
[1]/ Meanwhile, the results of the EFH 2021, show that most households have seen no big change in their mortgage indebtedness, except for those with the highest incomes, where their mortgage burden increased compared with 2017. This is consistent with findings derived from banking administrative data.

[2]/ The EFH classifies households according to their income level. Bracket 1 includes households with incomes up to clp 1,138,860, which comprises 50% of these households.

[3]/ The debt service-to-income ratio (RCI) is calculated as the ratio of a household's monthly financial expenditure to its monthly income. A threshold of 40% is set to define financially vulnerable households.

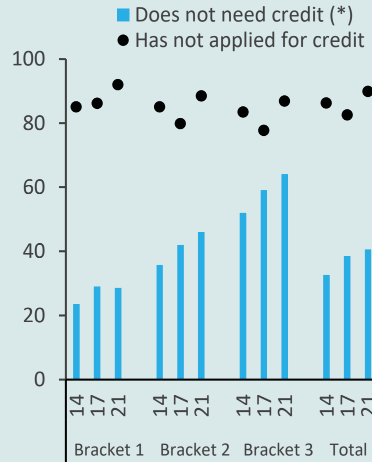
[4]/ The existence of transitory subsidies such as the Universal Emergency Family Income, together with other factors, may also have contributed to this result.

FIGURE II.17 NON MORTGAGE DEBT OWED (*)
(percent)



(*) Amount represents aggregate quantity of debt in December 2021 pesos normalized with respect to 2014 debt.
Source: Central Bank of Chile based on Household Finance Survey (EFH)

FIGURE II.18 DEMAND FOR CREDIT (*)
(percent of households)



(*) Percent of households that have not requested a loan in past 12 months.
Source: Central Bank of Chile based on Household Finance Survey (EFH)

FIGURE II.19 HOUSEHOLDS WITH NO DEBT AND BURDEN-BASED VULNERABILITY INDICATOR
(percent)

Source: Central Bank of Chile based on Household Finance Survey (EFH).

III. LENDERS

The banking system appears resilient, with contained risks and high levels of provisions, liquidity, capital, and profitability. Since the last FSR, credit growth has reduced its dynamism in every segment due to the macroeconomic slowdown, along with weakened demand and tightened lending standards. However, the greater use of revolving products has resulted in an incipient increase in consumer loans. The portfolios present low levels of delinquency by historic standards; however, bank and non-bank consumer portfolios have shown increases that bring them close to their pre-pandemic levels. In this context, banks have built up additional provisions in response to the higher risk of non-performing debtors. All in all, stress tests show that banks would remain solvent and with adequate liquidity to face the materialization of severe stress scenarios, in their convergence path towards Basel III.

THE BANKING SECTOR

Credit has been slower due to supply constraints and weakened demand, consistent with the process of normalization of activity after the imbalances accumulated in 2021. Tighter funding conditions associated with the uncertain environment have curtailed the expansion of bank credit, even more markedly compared to other periods of financial fragility. The Bank Lending Survey (BLS) for the third quarter of 2022 reports weak demand from firms and households (figures III.1A and III.1B) due to changing financial and labor conditions. In addition, macroeconomic conditions have constrained the supply of credit, with escalating interest rates and shortened maturities.

After showing some rebound after the last Report, the commercial portfolio has contracted (figure III.2). The reduced investment prospects, mainly of large companies, have translated into lower demand for commercial credit, and supply remains tight due to the worsening economic scenario. Thus, the flow of new operations only partially offsets the amortization of the FOGAPE aid programs granted during the pandemic.

Consumer installment credit remains weak, although the increased use of revolving products has stimulated the dynamics of this segment. Consumer loans in installments has continued to contract, in contrast with the use of credit cards, particularly by lower-income borrowers, who have shown greater dynamism this year (figure III.3). This is attributable to the lower liquidity of households in this segment, where people resort to using credit cards as a source of financing, while at the same time presenting a higher credit risk (chapter II). Meanwhile, the housing portfolio continues to decelerate, with annual growth down to historic lows. Although interest rates have tended to stabilize and terms have become slightly more flexible, the deterioration of the labor market and higher inflation levels have undermined demand for these loans.

FIGURE III.1A LENDING STANDARDS FOR LARGE ENTERPRISES (*)
(index)

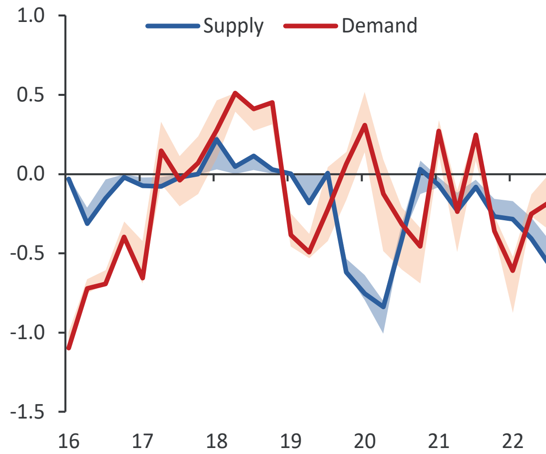
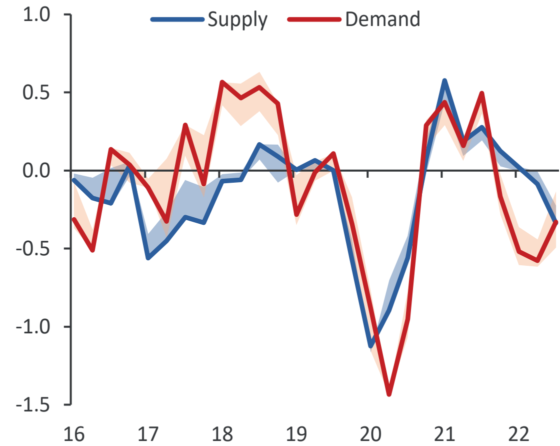
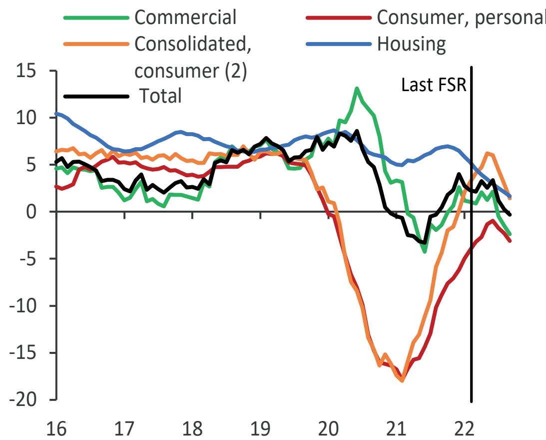


FIGURE III.1A LENDING STANDARDS FOR CONSUMER (*)
(index)



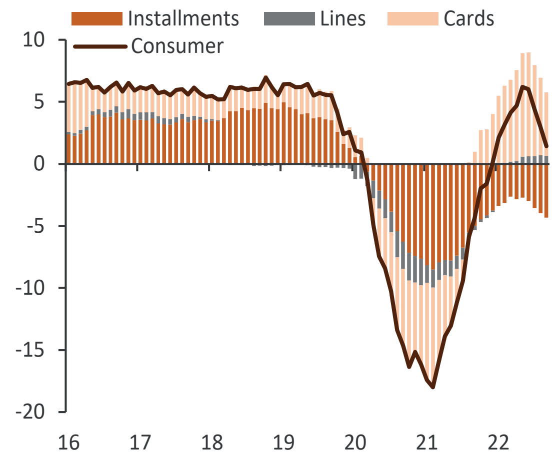
(*) Net percent of responses weighted by bank's share of segment. Interval calculated with jackknife.
Source: Central Bank of Chile.

FIGURE III.2 LENDING GROWTH (1)
(real annual change, percent)



(1) Based on individual financial statements. Vertical line indicates statistical closing of last FS Report. (2) Consolidated consumer loans includes lending by auxiliary financial entities.
Source: Central Bank of Chile based on Financial Market Commission (FMC) data.

FIGURE III.3 CONTRIBUTION TO CONSUMPTION GROWTH (*)
(real annual change, percent)



(*) Based on consolidated financial statements. Series adjusted by bank support companies (SAG) integration and student loan transfers.
Source: Central Bank of Chile based on FMC data.

Non-performing loan (NPL) levels remain low, although there are signs of deterioration, mainly in the consumer portfolio. In this context, banks have accumulated sufficient provisions to hedge this higher risk of debtor default. The consumer segment reaffirms the increase in delinquencies described in our previous Report and shows a trend towards levels similar to those seen at the outbreak of the social crisis (statistical appendix). Meanwhile, the individually-assessed commercial portfolio continues to show a high share of loans with lower credit ratings. In this deteriorating context, banks continue to build up specific provisions and have continued to accumulate additional provisions, totaling more than US$8 billion as of the third quarter of the year. Thus, on average, banks cover 2.3 times the non-performing portfolio, exceeding their 2020 figures.

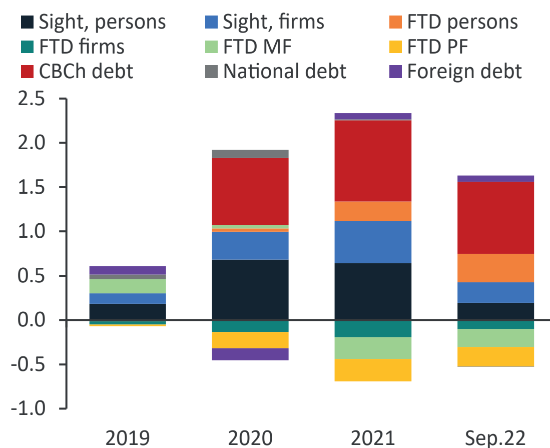
About the sources of bank financing, the lower depth of the local capital market has altered the composition of its liabilities and assets by reducing its share of long-term funding (figure III.4). The increase in sight balances resulting from pension fund withdrawals and government transfers, has recently been reversed. On the assets side, this is reflected in the availability of funds, which follows a similar dynamic to demand deposits and increases in the holdings of financial instruments. Also, credit terms have shortened their terms, especially in the housing and commercial portfolios, thus adjusting their mismatch with liabilities and their exposure to interest rate volatility. Meanwhile, since the beginning of 2022, an increase in time deposits has been observed, given the evolution of the interest rates on these saving instruments.

Banks still maintain a comfortable liquidity position with respect to the pre-pandemic period. Lately, the Liquidity Coverage Ratio (LCR[1]/) of the banking system has stood around twice the net outflows, while that of the banks with the lowest liquidity under this metric exceeds 150%, which is above the regulatory minimum of 100% (statistical appendix). Meanwhile, the decrease in sight balances, which had risen as a result of pension fund withdrawals, reduced the banks' need for liquidity to face the utilization of these resources by depositors.

The system's profitability increased substantially due to an increase in the monetary correction margin and greater operating efficiency (figure III.5). Interest spreads have narrowed further as a result of an increase in term deposit rates, given the adjustment in benchmark rates, while lending rates have narrowed somewhat less responding to the lower demand for credit. These dynamics could continue to reduce the spread between lending and deposit rates. Higher inflation has had a transitory, yet dominant, effect on the recent increase in profitability. This is so because banks have more assets than liabilities in UFs, which is why, in the face of a significant increase in inflation, extraordinary profits are generated. Thus, this recovery in bank profitability should be reversed as inflation eases.

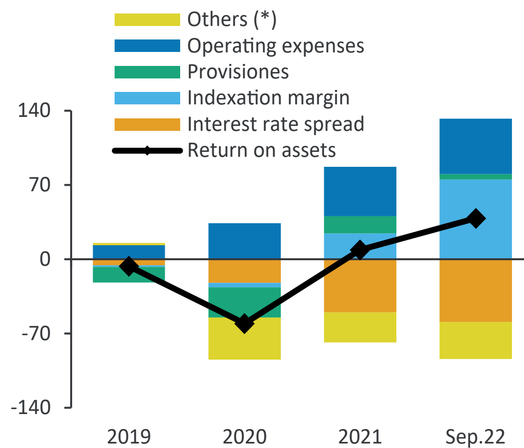
[1]/ The objective of the LCR liquidity indicator is to ensure that banks have sufficient reserves of High Quality Liquid Assets (HQLA) to survive a period of significant liquidity stress lasting 30 days (BIS, 2013).

FIGURE III.4 CUMULATIVE CHANGE OF BANKING SECTOR LIABILITIES WITH RESPECT TO 2018
(billions of UFs)



Source: Central Bank of Chile based on FMC and DCV data.

FIGURE III.5 CUMULATIVE CHANGE IN ROA WITH RESPECT TO 2018 (*)
(percent)



(*) Others include correction for goodwill, commissiones, trading, deterioration, taxes, and other operating expenses.
Source: Central Bank of Chile based on FMC data.

EVALUATION OF STRESS SCENARIOS[2]/

The resilience of the banking system to stress scenarios is maintained, although risks remain significant. This tool uses accounting data for the banking system as of June 2022 and considers an adverse and a severe stress scenario (figure III.6 and statistical appendix). The adverse scenario assumes a slow and persistent slowdown in activity[3]/; the severe scenario represents an abrupt contraction in activity due to a drop in domestic demand, driven by higher funding costs, and a decline in investment. In addition, in both scenarios, substantial declines in external demand and deteriorating financial conditions trigger an increase in interest rates[4]/ and in exchange rate volatility[5]/. Also, due to the policies implemented during the period, as in the previous exercise, the increase in additional provisions is factored in as specific ones[6]/ and the adjustments for government-guaranteed loans are reversed, considering them as traditional commercial portfolio in terms of their provisions and their incidence on risk-weighted assets (RWA).

[2]/ Based on the methodology described in the FSR of the second half of 2013 and in Martínez et al. (2017). Both the analysis and its results are routinely reported to the FMC. Moreover, given their nature, they should not be considered as projection exercises.

[3]/ The adverse scenario is based on the 5th percentile of the September 2022 MP Report projections.

[4]/ Assumptions are a 600bp increase for the nominal short-term interest rate, a 300bp increase in the short-term UF and dollar rates, and a 100bp increase in the long-term rate in all denominations.

[5]/ Calibrated using the historical variations of the peso since 2000; that is, a 20% depreciation for the credit risk computation and a 16% volatility for market risks.

[6]/ Although the transformation from additional to specific provisions has no net effect on expenditure, the former are deducted from the banks' effective net worth.

If the stress scenario materializes, credit risk remains high and the impact of a persistent slowdown in activity increases. Under a severe scenario, the exercise estimates a potential loss of total loans (consumer, commercial, and housing) of 24.5% of the system's capital, similar to the result of the previous exercise (figure III.7). However, in the adverse scenario, this risk increases from 19.4% of the system's capital presented in the previous FSR to 20.8% in the current period, which would indicate a greater sensitivity to the persistence of poor activity.

Lower term and foreign currency mismatches have reduced the banks' exposure to market risks. However, it should be noted that interest rate risk still remains above their pre-pandemic levels, which becomes more important in the face of tighter funding conditions. Meanwhile, currency risk has decreased compared with the previous exercise, given the banks' lower mismatch of foreign currency assets. Likewise, in the short term, banks have sufficient liquidity to meet their foreign currency commitments, even in the face of a depreciation scenario. In turn, the valuation risk of trading book assets remains low.

The banking system has sufficient capital levels to deal with stressed scenarios. The system's initial solvency remained stable compared to the previous year, with the Capital Adequacy Ratio (CAR) went from 14.8% to 14.6% between December 2021 and June 2022 (figure III.8). Meanwhile, the increase in ROE to 23.6% improves the capacity of banks to absorb the risks (statistical appendix). This reduces the share of banks that would exhibit negative returns in the severe stress scenario from 97% to 52% of the system's overall capital[7/]. All in all, the impact of the severe scenario on the difference between initial and final capital would fall from 4.6 to 3.7pp, while after applying the exercise, capital buffers improve with respect to the exercise in the previous FSR (figure III.9). However, it is also worth bearing in mind that banks are in a process of gradual incorporation of capital discounts and increases in regulatory limits in the coming years, within the framework of Basel III implementation.

NON-BANKING ENTITIES[8/]

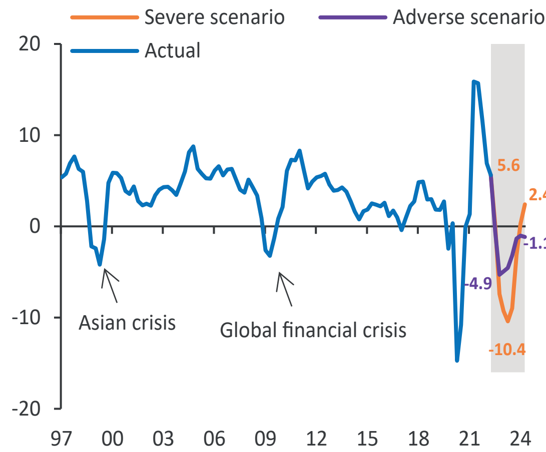
Consumer loans associated with non-bank credit providers (NBCPs) have remained more dynamic than bank loans, driven by the growth of card issuers and the automotive sector (figure III.10). Consumer loans originating by the use of cards from the bank support companies (SAG) show a significant increase over the course of this year, in contrast to installment loans from the parent banks. One factor that could explain this behavior is the search for funding alternatives for households with less liquidity, low savings, and little access to banking products (chapter II).

The delinquency indicators of this portfolio have followed an upward trend, similar to that seen in individual banking (figure III.11). The persistent increase in the delinquency rate of SAGs and commercial banks stands out, reflecting greater exposure to non-payment risk. Likewise, this year there was a downward trend in the profitability of NBFCs, with the exception of cooperatives, due to higher provisioning expenses.

7/ In the adverse stress scenario, banks that together account for about 36% of total core capital would exhibit negative returns, down from 77% in the previous report.

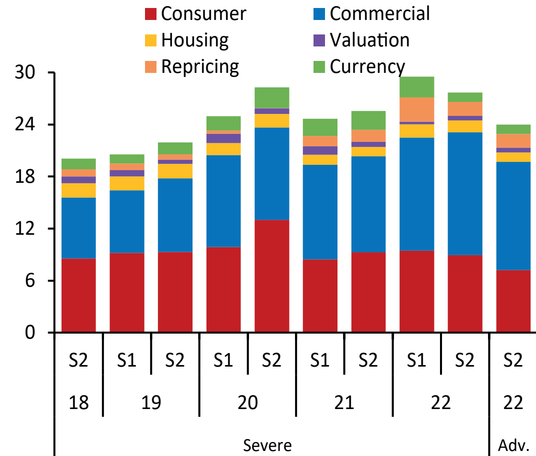
8/ NBCPs grant loans to households and businesses. These entities include bank support companies (SAG), department stores (CC), clearing houses and family subsidies, savings & loans cooperatives, and entities that provide factoring and leasing (FyL) as well as car sale credit.

FIGURE III.6 ANNUAL GDP GROWTH SCENARIOS (*)
(quarterly data, percent)



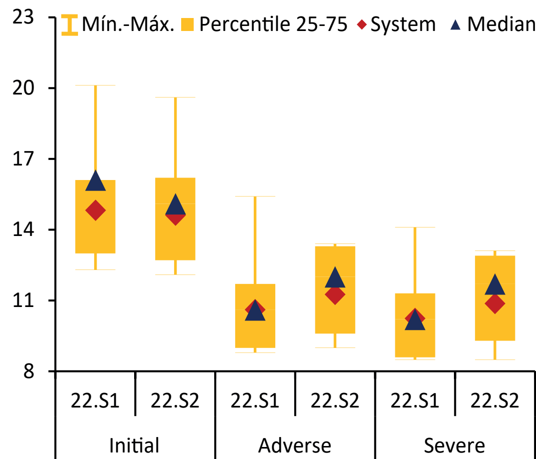
(*) Seasonally-adjusted data. Shaded area illustrates test window.
Source: Central Bank of Chile.

FIGURE III.7 SYSTEM´S CREDIT AND MARKET RISKS
(percent of basic capital)



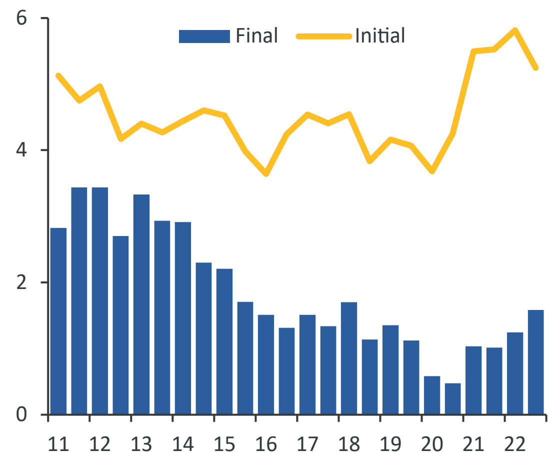
Source: Central Bank of Chile.

FIGURE III.8 IMPACT OF STRESS SCENARIO OVER CAPITAL ADEQUACY INDEX (*)
(percent of risk-weighted assets)



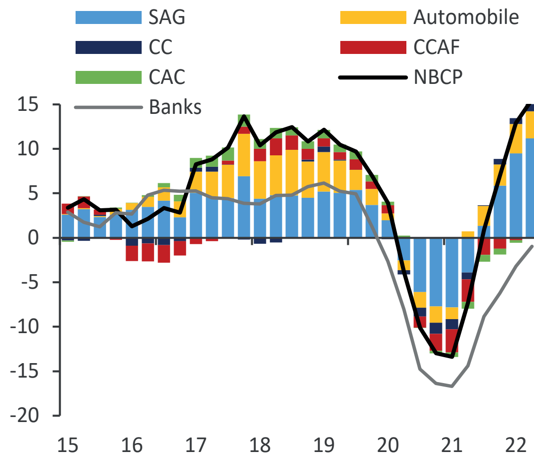
(*) Numbers weighted by basic capital of each institution. Calculations do not consider Foreign trade or Treasury banking, nor consumer banks that have exited the system.
Source: Central Bank of Chile based on FMC data.

FIGURE III.9 CAPITAL BUFFERS UNDER SEVERE STRESS SCENARIO (*)
(percent of risk-weighted assets)



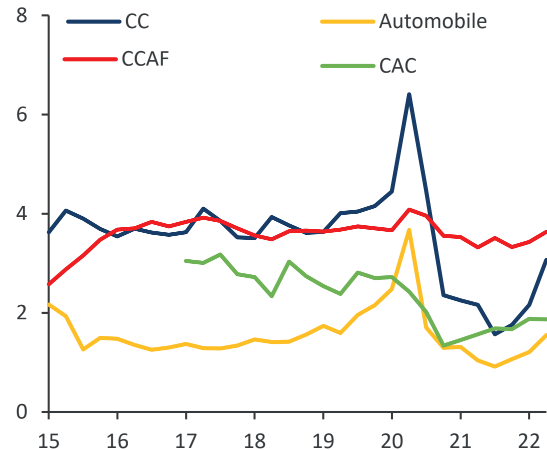
(*) Excess of effective net worth over regulatory minimum. Considers particular limits of each bank. As from 2021, consumer SAGs are considered.
Source: Central Bank of Chile based on FMC data.

FIGURE III.10 CONTRIBUTION TO GROWTH IN NBCP GROWTH
(real annual change, percent)



Source: Central Bank of Chile based on FMC and SUSESO data.

FIGURE III.11 DELINQUENCY RATE (*)
(percent of loans)



(*) Retail companies (CC) include SAG. SAG delinquency obtained from consolidated and individual financial statements of respective parent companies.
Source: Central Bank of Chile based on FMC and SUSESO data.

RISK FACTORS

A further deterioration of the macro-financial scenario and a protraction of the high local and external uncertainty could impact the repayment capacity of households and businesses, and deteriorate the quality of the loan portfolio. The lower investment prospects have led to a drop in funding needs and in job creation. On the other hand, the lower quality of the commercial loan portfolio persists and households' repayment behavior has worsened.

The constrained global financial conditions could affect access to external funds and increase exchange rate volatility. Faced with these risks, banks have reduced their maturity and currency mismatches, while they have recently issued bonds, mitigating the pass-through of interest rates to individuals. However, episodes of greater global liquidity disruption require banks to maintain their efforts to offer diversified sources of funding in foreign currencies.

A mitigating factor at this juncture is that international and emerging economy banks have moderated their fragility associated with the Covid-19 crisis, which contributes to mitigating global financial shocks (box III.1). Likewise, local banks maintain capital buffers and actively manage their liquidity levels, which allows them to meet their financial commitments and withstand a deterioration in the capital market. At the same time, despite narrower interest rate spreads, the improved efficiency of the banking business has cushioned the increase in credit costs and has allowed them to keep spreads low.

However, there are challenges ahead in a context of weak credit evolution, such as the upcoming phases of Basel III, the expiration the FCIC and the increased risk of cyber-attacks. The banking system will have to face the end of the FCIC in March and June 2024 for amounts accounting for around 5% and 3% of its total liabilities, respectively. Thus, the early adjustment of term mismatches and the diversification of funding sources will contribute to prevent abrupt impacts on the capital market when this facility expires.

Finally, with regard to operational risk, there has been a one-off increase due to external fraud. This episode was recorded by the end of 2021 and, mainly, in July of this year. In particular, with regard to cyber-attacks, cooperation between authorities, both domestically and internationally, is crucial for improving our capacity to respond to these events (chapter IV).

BOX III.1:

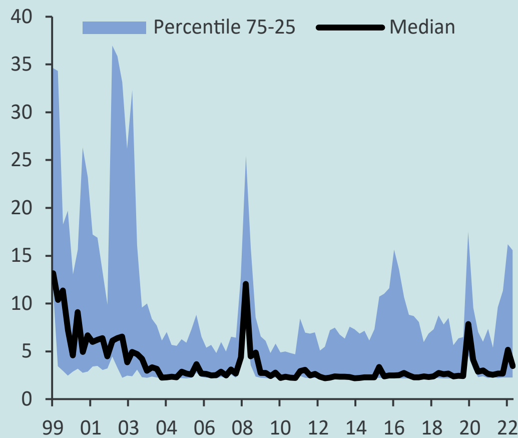
Importance of the banking system's resilience

International evidence reveals that economies with more resilient banking systems are in a better position to buffer global financial shocks. Due to the existing relationships among agents, financial crises have historically produced significant losses not only in the banking sector but also in the rest of the economy. In particular, these events translate into a substantial deterioration of sovereign premiums (Mody & Sandri, 2012). Thus, the resilience of the banking sector becomes more relevant because when an adverse event occurs, it may require potential bailouts, and this in turn has an impact on the economies' risk premiums. Thus, bank fragility events usually occur before deteriorating financial and macroeconomic conditions (Acharya et al., 2014; Farhi and Tirole, 2018).

In emerging economies, bank fragility has receded since the Global Financial Crisis (GFC). This reduction is consistent with the convergence to Basel III solvency and capital standards, as implemented after the GFC, and is also explained by the lower volatility of equity and the longer duration of bank debt since then. Chari et al. (2022) measure the amount of bank debt that would default in the event of an adverse systemic event. The median of this indicator was close to 3.5% of total bank debt for a set of emerging economies by mid-2022, with some dispersion due to idiosyncratic factors (figure III.12). This value is substantially lower than that of late 2008, when the median of this indicator hovered around 12%.

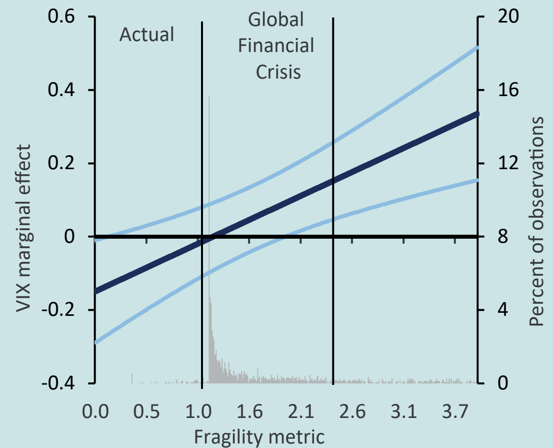
In countries with a high potential loss indicator for banks, the sensitivity of their sovereign spread to increases in volatility is also higher (figure III.13). This is so because banks represent a financing source as an alternative to external financing for the economy's agents (Chari et al., 2022). This is particularly important today, since emerging economies have scaled up their sovereign debt during the pandemic and are relatively more dependent on external financing (FSR, second half 2021). Thus, the reduced fragility of local banks contributes to mitigating the effects of the recent deterioration of global financial conditions, thereby limiting exposure to external shocks (chapter III).

FIGURE III.12 BANKING FRAGILITY IN EMERGING ECONOMIES (*)
(percent of bank debt in default)



(*) Corresponds to the joint loss of the banking system, conditional on the materialization of a systemic event (J-Loss). The sample of emerging countries includes Argentina, Brazil, Bulgaria, Chile, China, Colombia, Egypt, Indonesia, Malaysia, Mexico, Pakistan, Panama, Peru, Philippines, Poland, Russia, South Africa, Turkey, and Venezuela.
Source: Central Bank of Chile based on Chari et al. (2022).

FIGURE III.13 EFFECTS OF VIX ON SOVEREIGN SPREADS CONDITIONAL ON BANKING FRAGILITY (*)
(marginal effect, percent of observations)



(*) Dashed lines indicate 95% confidence interval of estimated marginal effect.
Source: Central Bank of Chile based on Chari et al. (2022).

IV. FINANCIAL POLICY DEVELOPMENTS

The financial policy agenda of the Central Bank of Chile keeps progressing. Among the most relevant initiatives implemented during the period, worth noting are the convergence towards the Basel III framework in terms of liquidity risk, the advances in payment systems and market infrastructures, and the progress in the process of modernizing foreign exchange regulation. Also contributing to the stability of the financial system are legislative advances such as the passing of the Fintech Law and the tabling in Congress of the bill to strengthen the resilience of the financial system and its infrastructures. Finally, at a global level, relevant developments in crypto-assets, cybersecurity, and ' green finance have also been noted.

THE CENTRAL BANK OF CHILE'S FINANCIAL POLICY AGENDA AND ITS CONTEXT

The banking sector

In June, the Bank upgraded its regulations on term savings accounts. One of its objectives is to promote a savings culture, by improving access and availability to individuals and allowing the development of products that are more targeted to their needs and goals. To this end, these regulations now ease certain historical requirements, e.g., for interest and withdrawal limits, and increase transparency standards[1]/. In addition, it simplifies the integration of savings accounts with other products and technological advances within the financial industry. Savings accounts currently constitute less than 5% of bank deposits. The challenge is to expand their use to other population segments that have fewer available alternatives.

These regulations on bank liquidity management issued last March by the BCCh started to be implemented with the incorporation of an Internal Liquidity Adequacy Assessment Process (ILAAP). Working in coordination with the BCCh, the Financial Market Commission (FMC) put out its ILAAP regulation proposal for consultation, to be implemented as of April 2023. The first report to be produced by banks will have a simplified format, which will be based exclusively on their funding planning considering different scenarios provided by the FMC. These would include, for example, the challenges related to the expiration of the Credit Facility Conditional on Increased Lending (FCIC) granted by the BCCh during the 2020 sanitary emergency, bearing in mind that the amounts to be raised for funding substitution are substantial[2]/.

[1]/ For details, see link.

[2]/ According to the CMF, impact estimates looking at the current balance sheet of banks suggest that, if funding sources are not replaced before FCIC maturity, the current Liquidity Coverage Ratio (LCR) levels of few institutions would fall below the regulatory limit (CMF, 2022b). In order to facilitate the orderly maturity process of the FCIC, on November 2nd the Bank announced that it has arranged a program of standardization of eligible collateral, consisting of the replacement of the current stock of pledged credit portfolio with eligible financial instruments in the Central Securities Depository (CSD). The process will be gradual enough to allow for liquidity management in a period in which global financial conditions could add tension to domestic markets. In any case, as always, the BCCh will monitor this process in coordination with the CMF, and if required, will use every tool available to ensure the normal operation of internal and external payments.

Starting in 2025, the regulation will allow for additional High Quality Liquid Assets (HQLA) requirements applicable to specific institutions, depending on the outcome of the FMC's supervisory process. Additionally, as from June of this year, for the first time, banks are required to comply with the long-term quantitative standard defined by Basel III (NSFR), starting at 60% and defining a convergence program up to 100% by 2026. At the same time, the required limit on the short-term indicator (LCR) reached its final level of 100%.

The implementation of Basel III in terms of liquidity and solvency is progressing smoothly, along with the plan to strengthen allowances announced by the CMF. The implementation of the Basel III solvency requirements, formally initiated in late 2021, will be completed in all its components in 2024, as shown in table IV.1. In turn, the FMC's proposal to apply a standard provision model for consumer loans, which was published for consultation last August, would be implemented during the first quarter of 2023. Considering the size of the consumer portfolio as of December 2021, these regulations would result, according to FMC estimates, in an increase of around US$1 billion in provisions (CMF, 2022a).

Current liquidity, capital, and allowance standards suggest that the banking system is robust and resilient enough to absorb these new requirements over time (chapter III). Current LCR levels are around 195% for the banking system, core capital over risk-weighted assets (RWA) is 10.55%, and credit risk provisions are 2.38 times non-performing loans. Nevertheless, the banking system's efforts in the coming years should consider the above timetables of new requirements well in advance.

TABLE IV.1 BASEL III IMPLEMENTATION TIMELINE

Components Basel III framework III		2022 S1	2022 S2	2023 S1	2023 S2	2024 S1	2024 S2	2025 S1	2025 S2	2026 S1	2026 S2
RWA (risk-weighted assets) framework	Credit risk	100%									
	Operational risk	100%									
	Market risk			100%							
Capital conservation buffer			1.25%		1.875%		2.5%				
AT1			0.5%		1.0%		1.5%				
DSIB requirements (1)			25%		50%		75%		100%		
Core Capital Haircuts			15%		30%		65%		100%		
Pillar II (ICAAP)				First IAPE							
Counter-cyclical capital buffer (CCyB)		FP meeting									
Liquidity regulation	LCR	100%									
	NSFR	60%			70%		80%		90%		100%
	ILAAP (2)			First IAL				Additional HQLA			

(1) DSIB stands for Domestic Systemically Important Banks. Percentage of defined charge to apply for each bank, according to systemically important tranche.
(2) Additional High-Quality Liquid Assets (HQLA) requirement depends on the FMC evaluation in accordance with the liquidity self-assessment report (IAL in spanish).
Source: Central Bank of Chile based on information from the FMC.

At the Financial Policy Meeting of the second half of 2022, the Board of the Central Bank of Chile agreed not to activate the Countercyclical Capital Buffer (CCyB). They considered that, despite specific vulnerabilities in some sectors and a more complex international environment, the systemic risk analysis shows that the banking sector has the necessary buffers to withstand severe stress scenarios.

Means of payment

After the regulation allowing the operation of Clearing Houses for Low-Value Payments was published, the BCCh has been working in collaboration with the private sector for its implementation. The regulation issued in January of this year sets an 18-month period for the inclusion into its scope of those institutions that currently clear transactions such as electronic funds transfers and card payments. The Bank has liaised with the institutions interested in managing this type of clearing house, so that they can comply with the applicable regulatory requirements (for example, providing guidance regarding the scope of the regulations on pilot projects, and reviewing the Operating Regulations or internal rules), including the authorization to operate or the existence of the CMF, within the defined deadlines.

The operation of CPBVs will make the clearing process of these payments more robust, bringing it closer to international standards for instant payments. Several countries are working to develop rapid or instant payment systems, which allow payment instructions to be transmitted and funds to be made available to the beneficiary in real or near-real time, and as close to 24/7 as possible. In Chile, while users have been able to transfer funds instantly for several years now, settlement between the involved financial institutions occurs on a deferred basis. Conducting this process via regulated CPBVs will allow these transfers to be final and irrevocable, extend this standard to other types of payments, increase the access to clearing houses to different issuers of bank and non-bank means of payment, and allow a gradual reduction in the time that elapses between a transaction taking place and its settlement.

The BCCh has continued to explore the possible issuance of its currency in digital format or Central Bank Digital Currency (CBDC), and in the coming months, it will expand on the report published in May on this subject. Following the publication of said document, the Bank conducted a public survey and numerous working groups with representatives from different financial industry entities, in order to broaden its view on the potential costs and benefits of issuing an MDBC. This process has provided new inputs for decision-making. The results of the survey and the working groups, as well as the steps ahead, will be communicated in the coming months.

The recent approval of the "Fintech" Law, which aims to promote competition and financial inclusion through innovation and technology in rendering financial services, will allow the BCCh to regulate new activities related to payments generated within this industry. This law confers to the BCCh the regulation of stablecoins as digital assets that represent electronic money as a payment service[3]/. Likewise, any means of payment involving a digital, electronic, or IT representation, issued by banks or nonbanks, shall be subject to the rules to be established by the BCCh. This law also regulates payment initiators, who, with the customer's consent, may instruct payment orders against balances available in the customer's accounts, subject to the regulation of the open-finance framework introduced by this law and, if applicable, to the prudential requirements set by the BCCh to ensure the normal operation of the payments in which they are involved. This measure will make it possible to promote electronic transfers as a means of payment, which will benefit customers holding current accounts, demand deposit accounts, or prepaid accounts, as well as retailers, who will be able to expand their range of payment alternatives.

[3]/ For further details, see Box V.2 of the FSR 2021.2 on digital assets and the new draft law for the Fintech sector.

The implementation of the 4-part model enabled by the Central Bank has made clear progress. The number of acquirers and sub-acquirers has been increasing, bringing a significant number of retailers into the network. However, the transition has been slower than expected and has not been free of friction among the different stakeholders. The process of setting exchange rates, entrusted to the Technical Committee created in 2021 for this purpose, has also continued to make progress. In this regard, it is necessary to promptly and adequately settle all pending issues related to the judicialization of fee aspects, since they affect the decisions of the different agents involved in this market, thus jeopardizing the efficient development of the system. For the BCCh, it is important that the retail-payment market continues to develop in a way that contributes to financial inclusion, under proper conditions of security, efficiency, and competition (box IV.1).

Market infrastructures

The company that currently operates the Local-Currency Clearing House (CCAV NC), Combanc S.A., is developing a project to operate a Foreign-Currency Clearing House (CCAV FX). The operation of this clearing house, which would operate under the regulations issued by the BCCh in June 2021, will allow local banking institutions to clear and subsequently settle their payments from peso-dollar spot transactions using a payment-versus-payment (PvP)[4]/. The Clearing House to be operated by Combanc S.A. can potentially channel payments that are currently cleared by the Local-Currency Clearing House and by the Local-Currency Real-Time Gross Settlement System (RTGS), for the peso segment, and through correspondent banks, for the dollar segment, which payments amount to approximately US$1.17 billion/day on average[5]/. These payments are currently made with a lag of one to two days: the peso segment is settled on the same day, while the dollar segment is settled on the following or subsequent day. The Clearing House will implement a system where both segments are settled at the beginning of the following day, thereby removing the settlement risk (see Table IV.2 for the implementation schedule).

Moving forward regarding the inclusion of the Chilean peso as an eligible currency within the Continuous Linked Settlement (CLS) international payment system continues to be a priority for the BCCh, and therefore it continues to urge for the necessary measures to materialize this initiative. As reported in previous FSRs, the BCCh has promoted incorporating the Chilean peso into the CLS system, a complex process that requires the participation of the BCCh and local banking institutions, which must act as correspondent banks for the international banks[6]/. Although significant steps have been taken, this process involves overcoming difficulties that Chilean banks would face in offering correspondent banking services to foreign banks. In March 2021, restrictions on the use of Chilean pesos in cross-border operations were lifted by the BCCh's 2020 reform of its forex regulations[7]/. Later on, the FMC eased the conditions for non-residents to open checking accounts in Chile. However, there are still difficulties regarding the tax reporting requirements that these operations would entail. The Resilience draft law discussed later in this chapter introduces amendments to the tax code to address this issue, which would allow moving forward on this process with CLS and the local banks involved.

[4]/ See Box VI.1 of FSR 2020.2.

[5]/ Benchmark figure, pertaining to the third quarter of 2022.

[6]/ See Box VI.1 of FSR 2019.2.

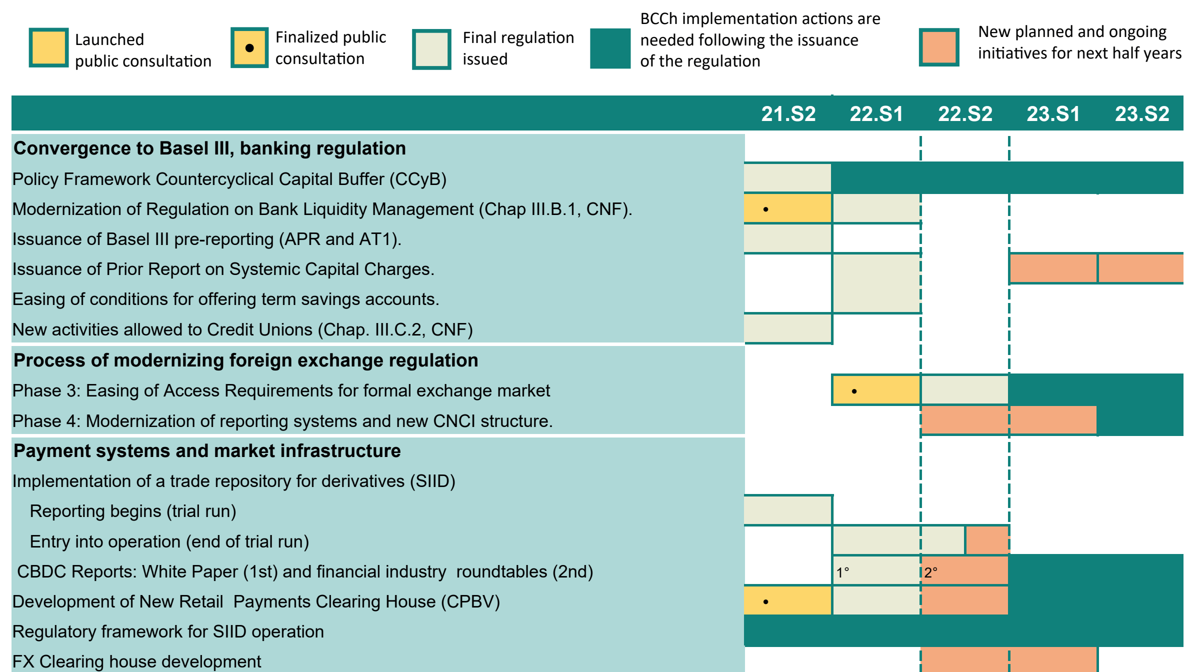
[7]/ See Box V.1 of the IFE 2020.2.

Foreign exchange modernization

The BCCh has continued its process towards modernizing its foreign exchange regulations, which simplifies access to the formal exchange market (FEM) and introduces basic standards for foreign exchange transactional platforms. Recent regulatory amendments have simplified the processes required from eligible financial entities to access, suspend, and revoke their authorization to join the FEM, have expedited the submission of information for non-bank FEM entities, and have lifted the requirement to provide a bank guarantee slip for these same entities. In addition, a requirement was incorporated for the FEM entities to verify that the local forex transactional platforms they use comply with the principles of transparency, impartiality, and nondiscrimination, and with the proper operating standards, while the international platforms used by the FEM entities must be regulated or supervised.

The last stage of the modernization process of the foreign exchange regulatory framework is the publication of a new Compendium of Foreign Exchange Regulations (CNCI), which will be put out for consultation in the coming months. The Bank is in the process of reorganizing and streamlining the CNCI chapters and preparing operating regulations that will supersede the current appendixes to the CNCI Manual, which establish the details of the information and how exchange information must be reported.

TABLE IV.2 FINANCIAL POLICY INITIATIVES OF THE CENTRAL BANK OF CHILE



Source: Central Bank of Chile.

OTHER RELEVANT INITIATIVES ON FINANCIAL REGULATION AND LEGISLATION

The enactment of the "Fintech Law" promotes the development of this industry and mitigates the risks it may pose to financial stability. This new law integrates into the regulatory scope of the FMC and the Financial Analysis Unit all financial services activities conducted through technological means (Fintech), an open financial system, crypto-assets, crowdfunding platforms, order routers, payment initiators, financial instrument intermediaries, and so on. In addition, this law adopts measures aimed at promoting financial customer protection in a digital environment and at facilitating the interoperability and access of new players to infrastructures and services essential to their activities. The development of these activities under a regulated environment will promote the growth of the industry while helping to improve financial market competition and operation. It will also help mitigate risks in areas such as cybersecurity, data protection, and prevention of money laundering and terrorism financing. This law sets an implementation period of between 12 and 18 months for the FMC to pass a considerable number of rules, while the Bank shall introduce in its regulatory agenda those aspects of the law that are relevant to its mandate of regulating the payment system.

The bill to strengthen the resilience of the financial system and its infrastructures (Resilience draft law) contributes to the stability of the system via several proposed reforms, among which the following three stand out.

1. Expansion of counterparties eligible for the BCCh's operations. In response to repeated international suggestions to consider extending the BCCh's financial services beyond banking institutions, the IMF provided Technical Assistance in 2020 with specific recommendations on the matter, mainly considering financial stability and market competition criteria, which are included in this draft law[8]/. This initiative introduces amendments to allow the BCCh to extend the provision of current accounts and settlement accounts to Central Counterparty Entities (CCP), Savings and Loans Unions (CAC), Clearing Houses, securities deposit and custody entities, and CPBV participants; as well as the possibility of providing permanent liquidity facilities to CACs that meet prudential standards as defined in the draft law; and to extend the provision of permanent deposit and emergency liquidity facilities to CACs and CCPs for financial stability considerations.

2. Initiatives for the development of the repo market. The use of repos in the local market is limited as compared to other jurisdictions, and its role in the interbank segment is negligible. Considering the benefits of a properly operating repo market for the financial system as a whole (for example, as a source of short-term financing, or as a liquidity management alternative), the latest FSAP recommends promoting its development both within the private sector and within the BCCh. For these purposes, the Resilience draft law specifies the treatment applicable to repo transactions among private actors in default situations, treating them in the same way as the "related liabilities" scheme under the insolvency law, in order to provide greater legal reliability to these transactions. It also lays down a framework under which the BCCh may exceptionally offer repos to market segments in case of financial stress events at market level.

[8]/ For details on technical assistance, see IMF (2020).

3. **Other initiatives to strengthen the operation of specific markets**. The draft introduces specific amendments to (i) Law No. 18,045 on the Securities Market, to strengthen regulation and supervision by conferring additional powers to the FMC for the suspension of transactions in the stock exchanges; (ii) Law No. 20,712 on the administration of third-party funds and individual portfolios, conferring powers to the FMC to strengthen the regulation and liquidity buffer requirements of mutual funds, in line with FSAP recommendations; and (iii) the tax code (LD 830), to smooth cross-border financial transactions with Chilean pesos.

Despite previous important advances in the credit market, a number of recent initiatives could weaken the payment culture and risk assessment of financial institutions, as opposed to projects such as the Consolidated Debt Registry that the BCCh and the financial authorities have been promoting for years. Historically, high standards of transparency toward credit users have been required in Chile, especially in relation to the associated costs. In addition, recently, progress was made with a robust regulatory agenda to achieve greater inclusion and competitiveness in this market, which has facilitated access to better lending standards. Some of the most important of these reforms are the regulation of information on mortgage and consumer credit conditions, the regulation of insurance bids for mortgage loans, the financial portability law, the amendment of the Consumer Law that stipulates the obligation to evaluate the debtor's solvency, and the Market Agents Law that empowers the FMC to define the types of fees that may be charged in credit transactions.

However, in more recent years, there are still certain initiatives that point in the opposite direction, which reduce the quality and quantity of credit information available in the system or aim at the suspension or cancellation of interest payments, among others. Considering that this type of reforms entails undesired side effects, such as additional restrictions in the supply of credit or increases in its costs, and even negative effects on the stability of the financial system, the BCCh has expressed its opinion on this matter on several occasions. This makes it all the more relevant to move forward with the creation of a consolidated debt registry, which has been under discussion for several years and could now become a reality.

The FMC published the first version of its "Guide for the Implementation and Supervision of Sustainability Standards," following international recommendations on making the supervisor's expectations explicit regarding the disclosure of information by regulated entities. This Guide provides general principles and guidelines for a better disclosure of the sustainability indicators established in the FMC's General Accounting Standard (NCG) No. 461, following the standards of the Sustainability Accounting Standards Board (SASB) and the best practices expected by the Commission. The above, in a context of significant local advances in related matters, such as the recent publication of the Framework Law on Climate Change, the revision of the Climate Change Financial Strategy, and the progress made by the Preparatory Committee for the Environmentally Sustainable Economic Activities Classification System ("green taxonomy").

INTERNATIONAL DEVELOPMENTS

In recent months there has been great instability and significant losses in crypto-asset markets, including the collapse of some high-profile platforms and crypto-assets. Consequently, regulatory responses continue to be explored internationally, some of which share some similarities to those considered in the new Fintech Law. Some structural characteristics of crypto-assets, such as their lack of a backup from a monetary authority or their digital nature, have highlighted the need to regulate them in order to mitigate financial stability risks, BIS (2022a). This is also linked to information gaps, the need to recognize regulatory entry points, and international cooperation. The FSB (2022a), in a recent document under public consultation, puts forward a regulatory framework that addresses the concept of "same activity, same risk, same regulation,, recognizing that crypto-assets play roles that are equivalent to those of financial instruments and intermediaries and, to this end, it sets out recommendations for crypto-assets and global stablecoins. This is similar to the pillars of modularity, technological neutrality and flexibility envisaged in the Fintech Law, which regulates both crypto-asset transactional platforms and intermediaries as well as investment instruments and stablecoins, in addition to the requirements for registering and operating in this market.

The growing importance of containing cybersecurity risks calls for greater coordination among central banks, with a view to strengthening the global financial system against these risks. The growing challenges in cyber resilience, posed by more sophisticated and frequent cyber-attacks, led the BIS (2022b) to survey central banks to learn about their priorities and preparedness. While authorities generally have frameworks in place to address cyber-attacks, the financial system's preparedness needs to be improved. In this sense, there is a need for cooperation between authorities, especially in an international context, to improve response capacity. Likewise, the FSB (2022b) also provides recommendations to improve convergence in cyberincident reporting, with greater standardization in communication between the financial sector and the authorities.

Progress has been made in the consolidation and convergence on sustainability and green finance by financial authorities and multilateral organizations such as the Network for Greening the Financial System (NGFS). Several initiatives in recent years are beginning to take shape and consolidate under common frameworks, particularly about the management of financial risks related to climate change and the role of the market in transitioning towards a sustainable economy. In March 2022, the International Sustainability Standards Board (ISSB) published for consultation an information requirements framework that creates a global standard for sustainability disclosures to correctly assess the value of companies, consolidating the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD) and the industry-specific standards (SASB)[9]/, in line with the FMC's developments discussed earlier in this chapter. The NGFS has recently devised specific policy recommendations to improve the availability, quality, and comparability of climate information; it has released a public directory that provides a better understanding of data needs and available sources; and it has updated its climate change scenarios to include the related risks in the work of central banks, supervisors, and financial institutions. Finally, over 20 countries, including Chile, have adopted or are in the process of developing a classification of sectors according to their activity, which combines environmental, economic, and social variables, also known as "green taxonomy."

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[9]/ See Exposure Draft on IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and Exposure Draft IFRS S2 Climate-related Disclosures.

BOX IV.1

Recent developments in card payment systems

For years the payment card market in Chile has operated with a single acquirer, Transbank, which concentrates most of the credit and debit card transactions. This has given rise to numerous complaints before antitrust authorities that have examined this market and has resulted, among other things, in the definition of certain criteria applicable to the fees that this acquirer may charge to merchants that are affiliated with its network. Transbank's fee structure has been challenged in court time and again, even after the company had already changed its operating model. In recent months, the judicial and antitrust authorities have issued new rulings regarding Transbank's fee structure, the enforcement of which is still pending. Therefore, the final scope of the ruling and the possible effects that it may have on the other stakeholders in the industry and, consequently, on the operation and development of the retail payment system in general, remain to be determined.

CORE IDEAS

Payment cards operate in a two-sided market with network externalities. In these markets, one or more platforms enable interaction between end users and encourage them to engage by charging each side as appropriate (Rochet and Tirole, 2006). In the card market, one of the sides is that of cardholders (individuals and corporate users), who purchase goods and services with payment cards issued by different entities that are affiliated with the network. The other side corresponds precisely to the latter entities (merchants and services), which can receive payments from cardholders through the technological functionalities offered by operators or acquirers. Network externalities are present to the extent that for merchants that accept cards to participate in the network, they need consumers to use them, and at the same time, consumers who use cards need them to be accepted at a significant number of merchant's stores.

These markets can be organized in three-party or four-party models. In the first case (M3P), card issuers are closely linked to the acquirer, while in the second (M4P), the relationship between them is via the card brands. In this case, acquirers do not need the consent of issuers to process their cards.

Interchange fees are a key price in this market, as they must balance the incentives for card issuance and development of acquisition networks. These fees compensate card issuers and represent a fraction of the fee charged to stores (merchant discount, MD). Thus, high interchange fees will encourage card issuance but may discourage card acquisition and acceptance by merchants; and the opposite may occur with low interchange fees. The level of these fees is therefore critical to the development of this market[1]/.

[1]/A more detailed explanation of these fees and how M4P works can be found in Box VI.2 of FSR 2018.2.

The fee paid by card-accepting merchants has three components that compensate the parties involved in processing transactions. Apart from the aforementioned interchange fees, there are the branding costs which, as the name suggests, compensate the brand of the card used in a given transaction; and the acquirer's margin is the compensation of the company that affiliated the merchant to its network.

INTERNATIONAL BACKGROUND

In most jurisdictions, M4P tends to prevail and, in a number of them, some form of cap on interchange fees is set. Although there are some card brands and issuers that operate under an M3P, they are much more the exception than the rule. However, the operation of an M4P does not by itself solve competition problems, so regulatory interventions on interchange fees are becoming less and less exceptional.

Regulation of interchange fees is heterogeneous. Regulated form and maximum levels are diverse. Thus, while some jurisdictions have regulated interchange fees for debit and credit cards, others set them only for one type of card. Also, levels can be as low as 0.2% (European Union and Australia, debit cards) and as high as 1.91% (Mexico, credit cards)[2]/. It should be noted that when these rates are regulated, levels set for credit cards are typically higher than for debit cards, due to different processes and risks.

RECENT DEVELOPMENTS IN THE COUNTRY

To facilitate the emergence of alternative models and increase the supply of services for merchants, the BCCh allowed M4P s to operate. Through adjustments to the BCCh regulation, and in line with recommendations made by the Tribunal for the Defense of Free Competition (TDLC), in 2017, M4P was enabled as another acquisition operation alternative in the country.

This regulatory intervention and the Law that allowed the issuance of prepaid cards by non-banking entities have furthered the development of digital payments. Today there are new acquirers providing services or in the process of authorization with the FMC, numerous sub-acquirers (companies that affiliate merchants interacting between them and the acquirers), and new issuers of prepaid cards. This has allowed the number of credit and debit card transactions to increase from 1,429 million per year in 2017 to 2,927 million in 2021. Likewise, there are over 1.2 million taxpayer Id numbers (RUTs) affiliated with some acquirer or sub-acquirer. At the same time, although there is still an acquirer that concentrates the majority of transactions, its relative importance has declined, especially in terms of affiliated merchants.

The transition to M4P has taken time and has been fraught with friction. Currently, all acquirers operate under an M4P. However, this process has encountered difficulties mainly because the largest acquirer operated under an M3P, with a self-regulatory scheme for its merchant discount, subject since 2005 to validation by antitrust authorities, and where there were no explicit interchange fees. When an M4P is implemented, explicit interchange fees arise, which for some transactions are higher than the merchant discount; therefore, it is not possible to cover operational costs in such cases.

[2]/ Payment Systems Report (Central Bank of Chile, 2022).

Since February this year, interchange fees have been capped by a technical committee. Law 21,365, enacted in August 2021, created a committee to set limits on interchange fees. In fulfilling its mandate, the committee must seek the existence of a competitive, inclusive and transparent market with strong penetration, and also safeguard the efficient and safe operation of the retail payment system. In this way, lawmakers established that the committee must play a relevant role in this two-sided market, by setting limits to one of the components of its fee structure. Accordingly, its main role is to maximize network externalities by achieving an adequate balance between both sides of the market.

In other words, it must encourage both a massive issuance of cards to satisfy cardholders' payment needs and a broad affiliation of merchants to facilitate the sale of their goods and services by accepting such means of payment. This committee was created to operate permanently and must make sound decisions autonomously, based on technical grounds, in order to achieve the aforementioned objectives. Last February it published preliminary interchange fees (0.6% for debit cards and 1.48% for credit cards) and will soon publish the final rates, which will be reviewed periodically.

Simultaneous regulation of interchange fees and merchant discount is not consistent with international practice. Regulating merchant discount was justified only when only one single acquirer was in effect operating and there were no explicit interchange fees. However, things are different today: there are interchange fees, a committee was created to regulate them, and new acquirers are emerging. On the other hand, at the international level, Hayashi and Leigh (2020) compile information on interventions by authorities in the card market for different countries, and in none of them are there limits on interchange fees and merchant discounts at the same time. Therefore, it seems reasonable not to restrict the degrees of independence available to the Committee, since if a technical decision would lead to determining interchange fees at higher levels than the MDs (and these cannot increase), it would not be possible to cover the costs of processing transactions, which could also hinder competition from new entrants.

FUTURE CHALLENGES

In Chile, the use of electronic means of payment has increased steadily in recent years. This has been possible due to regulatory improvements by the BCCh, adequate oversight processes by the FMC, actions by the antitrust authorities and certainly due to a variety of innovations in the private sector. Although this market still has a main actor on the acquisition side, things have been changing. To strengthen this change, the role played by new entrants is very important, as well as the new institutional framework created especially by lawmakers in 2021 to regulate interchange fee caps technically and independently.

The Bank has pointed out before that the transition to M4P had produced friction for a variety of reasons. Therefore, along with highlighting the progress that has been made with the emergence of new players, it is important to stress the need to promptly and adequately resolve the pending fee-related issues.

This is an urgent challenge for all those involved, because every participant needs to have certainty about one of the structural prices of this market to be able to make medium- and long-term decisions. In any case, the BCCh considers that, to reconcile the different policy objectives involved, it is essential to take into consideration both the international background and the idiosyncratic conditions, so that the participants and users of the system are favorably affected, and undesired effects in the provision of payment services are avoided, as these are essential for the overall economy to operate and to meet the people's daily needs.

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