

FINANCIAL STABILITY REPORT

FIRST HALF 2021





Financial Stability Report

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The Central Bank of Chile's Financial Policy

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

Financial Policy Conduct and Implementation

The Central Bank conducts its financial policy so as to contribute, within its sphere of competence, to the stability of the financial system. The system has been deepening and stabilizing in recent decades due, in part, to the development and proper application of financial policy tools. This has, in turn, contributed to the effectiveness of monetary policy and increased the economy's resilience to disruptive events.

The Bank implements its financial policy through rigorous processes that support decisionmaking, in joint and coordinated actions with the supervisor and regulator. In particular, the CBC issues and administers financial regulations, decides on the activation and deactivation of the countercyclical capital requirement, prepares reports, and issues opinions on the impact of potential legal or regulatory changes when consulted. In addition, the CBC acts as lender of last resort for banks and provides other liquidity management tools.

Information Disclosure and Transparency

The Financial Stability Report (FSR) is the Central Bank's main instrument for financial policy communication. In accordance with the Bank's mandate, the FSR provides the Board's vision regarding the main risks, vulnerabilities, and mitigators for financial stability.

The FSR is published twice a year, in May and November. In line with international best practices, it is prepared by specialized professionals, led by the Financial Policy Division, and its content is disseminated through various channels. Thus, the Central Bank communicates its analysis and implements its financial policy transparently and actively.



Alejandro Zurbuchen S. / Legal Representative
Institutional Affairs Division
CENTRAL BANK OF CHILE
Agustinas 1180, Santiago, Chile

Tel.: 56-22670 2000
www.bcentral.cl
bcch@bcentral.cl
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*/The data cutoff of the Financial Stability Report was 21 April 2021, unless otherwise indicated.



SUMMARY

Since the last Financial Stability Report (FSR), financial conditions have remained favorable worldwide, and global economic activity shows signs of recovery, while numerous support policies are still in place in many economies. At the local level, the action of different authorities, including the Central Bank of Chile (CBC), and the prudent operation of the financial sector, made it possible to contain the risks to financial stability derived from the unusual shock generated by the Covid-19 pandemic. Thus, unlike previous crises, the cost of financing has remained low, delinquency rates are contained, and credit has continued to flow, although with a recent slowdown. In this context, economic growth showed a significant recovery after a deep retrenchment in the second quarter of 2020, allowing a sizable portion of firms, households, and banks to recover financial strength and be better prepared to withstand stress scenarios with respect to the previous FSR. However, compared to two years ago the situation remains deteriorated, since credit users —households, non-financial companies, and the government— have seen their net worth eroded. This stems from higher leverage or lower savings, especially in economic sectors whose activity has been more sensitive to mobility restrictions. Onwards, various risk factors persist due to the unusual shock caused by the pandemic and the uncertainty related to its evolution. In this sense, abrupt long-term rate adjustments in developed economies, or a deterioration in emerging economies preventing them from keeping pace with the global recovery, may affect local financing conditions. The main challenge for economies such as Chile, where the vaccination process and the economic recovery is moving forward, will be to achieve an adequate balance between policies that underpin the growth seen so far and the necessary recovery of financial margins in the medium-term.

SITUATION OF THE FINANCIAL SYSTEM

Since the last FSR, external financial conditions have remained favorable in a context where support programs are still in place, and the vaccination advances. Fiscal and monetary policy extraordinary measures are still active in many countries. In the United States, a third stimulus plan tailored to alleviate the effects of the health crisis was approved, and discussions regarding a significant investment plan in infrastructure and medium-term alternative energies have begun. These policies have improved the economic outlook and commodity prices and have contributed to maintaining favorable financial conditions. However, the magnitude of the measures in the United States has generated a debate about potential impacts on inflation and long-term interest rates.

In Chile, financial conditions also remain loose, with high liquidity and low interest rates. The financial system has endured a shock larger than those embedded in the stress scenarios of previous editions of this Report, partly due to the policy responses on different fronts. A better external outlook, advances in the vaccination process, and the ability of different agents to adapt to this scenario have contributed to reducing risks to financial stability in Chile, with respect to the previous FSR. Onwards, these financial conditions should remain favorable as long as the global recovery stays in course and the Chilean economy evolves accordingly.



At the local level, the array of support policies remains in place, as a response to the evolution of the health emergency and adapting to the new financing needs of credit users. In this context, the Government expanded the benefits and uses of the Small Business' Guarantee Fund to promote economic recovery (FOGAPE-Reactiva). Along with this program, the Central Bank of Chile (CBC) has continued with its credit-easing policies for banks, accommodating its policies to the needs of an economy that is beginning to recover and requires restructuring debt and adjusting its financial burden. Thus, the new phase of the Financing Facility Conditional on Increased Lending (FCIC III) makes access requirements more flexible relative to the previous stage and extends its operation until August of this year (Box II.1). Meanwhile, the Financial Market Commission (FMC) is once again implementing a temporary regulatory change to favor the forbearance of commercial loans.

Firms' sales have recovered, and their default rates have remained low and stable due to the wide deployment of mitigation policies, a better external and internal economic scenario, and the adaptation of the agents to the current context. Since the last Report, corporate debt has decreased, reaching 125% of GDP at the end of 2020 due to the lower expansion of credit, mainly because of lower demand, and improved activity. Thus, after increasing during the health emergency, aggregate indebtedness returned to the level seen by the end of 2019. Large firms recently improved their profitability and liquidity position and moderated their indebtedness. Meanwhile, smaller firms increased their leverage driven by FOGAPE loans, this was partially reversed due to improved sales, thus maintaining low and stable default indicators. The latter, largely attributed to the mitigation policies, increased liquidity, voluntary loans forbearance, and a better economic growth scenario. However, some economic sectors remain deteriorated due to their difficulties to resume normal operations in a context where mobility is still restricted.

Likewise, households have softened income drops due to mobility restrictions with the help of government programs, by liquidating long-term assets and deferring liabilities. The deployment of support programs has alleviated the financial pressure accumulated since the beginning of last year on household finances. The increased liquidity resulting from pension savings withdrawals and government transfers, together with a lower supply and demand for credit, has resulted in a moderation of household indebtedness, around 50% of GDP as of the first quarter of 2021, and an increase of liquid assets. Along with the above, voluntary loan postponements have reduced delinquency levels to historic lows. However, the labor market has recovered only partially, with a lagged evolution with respect to economic activity.

The stress test shows that the banking system remains resilient and has a better solvency position compared to that at the previous FSR. Since the last Report, the banking system's solvency has increased due to changes in the portfolio risk composition and more complementary capital. Meanwhile, aggregate profitability maintained its downward trend during 2020, then early this year it stabilized, despite the decrease in the cost of funding, in the context of hikes in provisions and other prospective credit risk indicators. The stress test indicates that the banking system remains solvent and with improved figures compared to the previous exercise, even in the face of severe stress scenarios of further deterioration related to the development of the pandemic and financial conditions. These results are largely because the set of support policies has supported the solvency of the productive sector, liquidity, and the proper functioning of the financial markets. These elements have been reinforced with the precautionary behavior of banks and the constitution of provisions.

RISKS, VULNERABILITIES AND MITIGATORS

Looking ahead, the risk of events that could delay the recovery and deteriorate the currently favorable financial conditions remains latent at the global level. Since the beginning of this year, the management of the pandemic and the vaccination process has improved the global outlook for growth, although with different



degrees of progress among countries. In the future, the possibility of new waves of infections and the risk of resistance of specific variants of the virus to the available vaccines have not dissipated. This adverse scenario would imply further confinement and a worsening of the economic outlook. In this sense, although uncertainty about the evolution of the economy has reduced, it remains high.

Abrupt adjustments in financial conditions in some of the largest economies could negatively affect countries lagging behind in their economic recovery. Early this year there were increases in long-term interest rates among advanced, emerging, and the local economy, this is perceived as a natural response to a better outlook about the management and evolution of the pandemic in different latitudes. However, this process occurs in a context of protracted high uncertainty and heterogeneity in the speed of economic recovery between countries. In a scenario of macroeconomic imbalances or a sudden reversal of monetary policy in advanced economies, financial conditions for emerging countries could tighten even beyond expectations. The latter would have an impact on more leveraged sectors, including governments. The fiscal financial fragility prevalent in some economies, paired with additional difficulties in controlling the health emergency, and an increased lag in growth rates with respect to their international counterparts, could trigger abrupt increases in their sovereign risk premiums.

Although it has facilitated the recovery of the world economy, high global liquidity has led to a greater search and valuation of risky financial assets, which is perceived as a vulnerability that could trigger abrupt reversals. Many policies aimed to contain the initial impact of the pandemic have been key to the recovery and stabilization of the markets. However, in a context of high global liquidity, the greater risk appetite of investors has driven an increase in financial prices and a greater demand for riskier assets. This greater demand could increase the probability of reversals and deepen their adverse effects in the face of abrupt changes in risk perception.

The Chilean financial market contains a high share of non-bank lenders (NBLs), which have contributed to its development and deepening but involve risks requiring a solid regulatory framework to mitigate them. Domestic financing alternatives make our economy less sensitive to fluctuations in international markets and promote greater access to them. Institutional investors have been relevant in promoting long-term savings and channeling resources to the rest of the economy. Meanwhile, nonbank lenders cover credit segments less served by banks, supporting access to financing for households and smaller companies. However, NBLs could incubate some vulnerabilities. Although the group of institutional investors has acted, in general, as a stabilizer of the cycle, if the financial agents do not have adequate liquidity or solvency requirements, their interconnected structure could facilitate the propagation of shocks. In the case of non-bank credit providers, by increasing their indebtedness through commercial loans, they indirectly expose banks to segments more sensitive to the economic cycle. The robust regulatory framework to which the main NBLs are subject and its development contribute to mitigating these risks and facilitate benefiting from the advantages they offer to the market. Given the relevance of this topic for financial stability, this Report includes a thematic chapter that addresses the role of these entities and the risks and vulnerabilities associated with them.

Credit users have reduced their margin to withstand new stress scenarios in the future, thus increasing their credit risk. Loan delinquency has remained low. However, there are pockets of risk in certain sectors more hardly hit by the Covid-19 pandemic, particularly among those with higher income drops and faced with less favorable funding conditions. Therefore, a new economic slowdown would find both households and firms with a weaker financial situation than the beginning of the pandemic, which in turn increases their probability of default in the future under such scenario and reduces their access to credit. Regarding banks, they have had access to exceptionally favorable financing conditions, which have enabled them to maintain the flow of credit. The increase of risks has reduced their operation margin, making their lending standards more sensitive to new stressed scenarios or higher credit risk.



Even though the array of mitigation policies has contributed to alleviating the effects of the health crisis, the margins to face additional disruptive events are lower than before and must be restored. As for the Central Bank, it has policy tools that will be used if necessary. Among these, there is access to international liquidity and the law that enables, under exceptional circumstances, the purchase of debt securities issued by the government to deal with financial stability risks. These tools are complemented by a gradual acquisition of reserves, with the aim of being better equipped for future contingencies. However, it must be noted that the use of reserves, external liquidity lines, and the prerogative to intervene in financial markets, while effective in mitigating temporary increased volatility episodes, may not be able to correct structural changes in the economy. Regarding fiscal policy margins, gross government debt remains at low levels, reaching 33% of GDP by the end of 2020. Nevertheless, a sustained increase of sovereign debt, without fiscal convergence or recovery of margins, is a vulnerability since it involves less room for facing new disruptive events when the underlying risks have not yet disappeared.

Although there has been an urgent containment of the pandemic, the structural regulatory agenda of the different authorities has kept on moving forward, with important developments. At the international level, there is an active debate about the replacement for LIBOR and the consequences of a transition towards selected benchmark rates (Box V.2). The Central Bank has advanced its regulatory plan focusing on financial integration, the internationalization of the Chilean peso, and the strengthening of payment infrastructures (Box V.1). Together with the FMC, it has moved towards the final stages of Basel III standards implementation. Also, the FMC issued a general norm, up for consultation until May 2021, related to the adoption of IFRS17 accounting standards for the constitution of technical reserves among local insurance companies. Finally, Congress approved a law about market agents, establishing new transparency requirements and reinforcing responsibilities among these agents.

The margins built through the years, along with a deep financial market and the action of the authorities, have been crucial to withstand the biggest threat to financial stability in decades. The health emergency has exceeded previous risk scenarios, leading to relevant damage on the finances of vulnerable households and firms, but without triggering systemic risk events. In this context, the financial system has not just withstood, but it has also contributed to overcoming this crisis by providing a bridge of funding, along with fiscal, monetary, and regulatory support policies. Thus, the local economy has evolved better than what was expected a year ago. Nevertheless, this wide array of policies has used a significant amount of resources, which in turn has reduced the capacity to face new disruptive events in the future in a context of risks that are still far from dissipating. Looking ahead, the main challenge for the Chilean economy is to reach an adequate balance between policies that foster economic growth, provide support to weakened sectors and propitiate the necessary recovery of financial margins towards the mid-term.



I. FINANCIAL MARKET TRENDS AND EXTERNAL EVENTS

Despite the ongoing pandemic throughout the world, economic activity has shown signs of recovery in advanced economies, due to the implementation of vaccination processes and the new fiscal packages announced in recent months. These signs of recovery have translated into higher expected inflation and higher long-term sovereign rates, which have been transmitted moderately to emerging economies. Emerging markets have seen a somewhat slower recovery than advanced countries, as a result of a tighter fiscal situation and a still-high coronavirus contagion rate. At the local level, the financial system maintains abundant liquidity, and low and stable interest rates, which increase slightly at the margin. This is due, in large part, to the different support measures implemented by the authorities to address the effects of the pandemic.

INTERNATIONAL FINANCIAL SITUATION

Since the last Financial Stability Report (FSR), although there have been setbacks in terms of renewed lockdowns and personal mobility restrictions, the economic outlook in advanced countries has improved due to the implementation of vaccination programs and the expansion of monetary and fiscal policy mitigation measures in some jurisdictions.

Despite the large magnitude of the shock and the rapid and widespread deterioration of the global economy in 2020, economic growth has rebounded in developed countries since the last FSR. In the United States and Japan, in particular, expected growth for 2021 was revised upward by more than 3 and 2 percentage points (pp), respectively (WEO, April 2021). These higher growth expectations coincide with large fiscal stimulus packages and progress in controlling the pandemic. In this context, the recent approval of a US\$ 1.9 trillion stimulus package in the United States (9% of GDP) has raised medium- and long-term inflation expectations implied by market rates to above 2% for five and ten year horizons. Meanwhile, the developed countries continue to implement unconventional margin. In fact, their balance sheets policies, through the purchase of financial assets. However, these purchases have slowed at the margin. In fact, their balance sheets: their balance sheets increased by about US\$ 2.0 trillion since the last FSR, which contrasts with purchases amounting to US\$ 6.0 trillion in the first half of 2020.

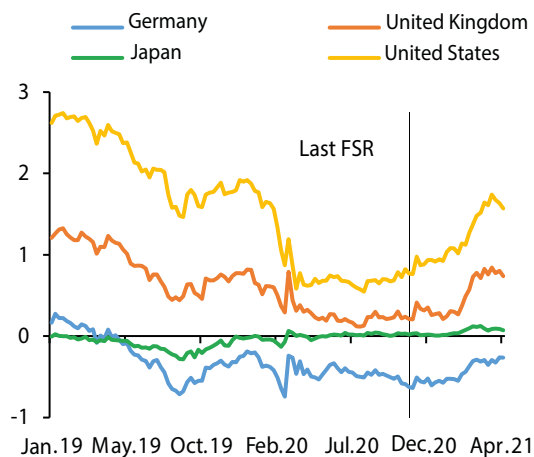
The counterpart to the mitigation measures is an increase in central bank balance sheets and higher sovereign debt levels in developed and emerging countries.

The deployment of quantitative easing measures in the United States, the United Kingdom, Japan, and the Euro Zone has been significant, totaling US\$ 8.967 trillion since the start of the pandemic. As a result, the size of the central banks' balance sheets in these jurisdictions has increased, reaching US\$ 25.392 trillion as of March of this year. At the same time, fiscal stimulus packages have continued to increase sovereign debt at a rapid pace, for both advanced and emerging countries. Thus, debt grew nearly 20 pp of GDP annually in advanced countries during 2020, whereas for emerging countries is just over 10 pp in the same period.^{1/}

^{1/} Weighted averages using the GDP of each economy.

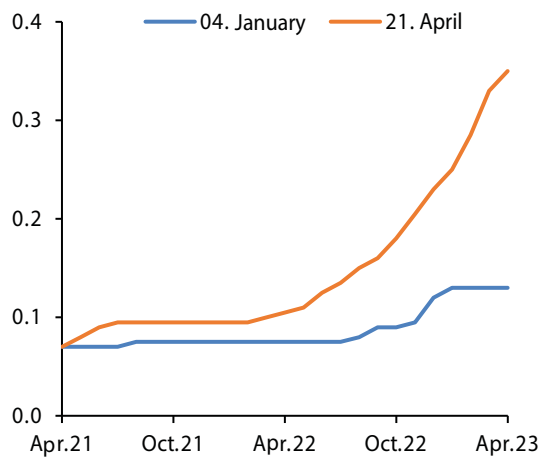


FIGURE I.1 10-YEAR SOVEREIGN BONDS RATES IN DEVELOPED ECONOMIES (*)
(percentage)



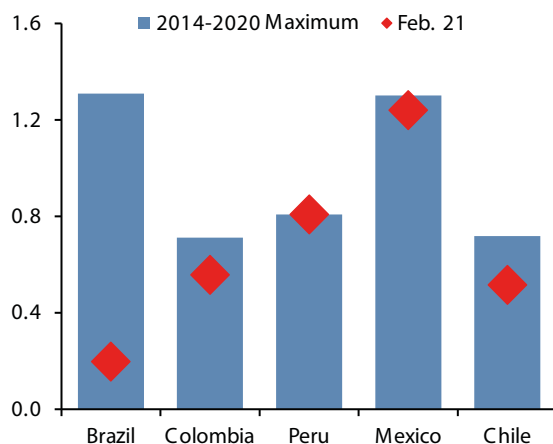
(*) Weeekly data, updated in April 2021.
Source: Central Bank of Chile, based on data from Bloomberg.

FIGURE I.2 FED FROM FUTURES POR IMPLIRD BY FUTURE CONTRACTS
(percentage)



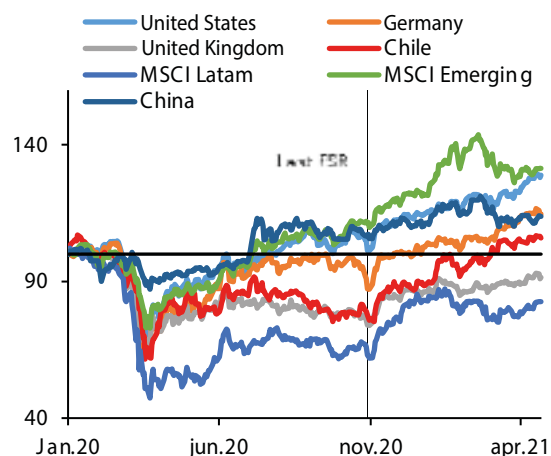
Source: Central Bank of Chile, based on data from Bloomberg.

FIGURE I.3 PASS-THROUGH COEFFICIENT FROM 10-YEAR T-NOTES TO EMERGING MARKETS SOVEREIGN RATES (*)
(coefficient)



(*) Pass-through coefficient is the ratio of the accumulated response of the local rate to a shock in its external counterpart and the response of the external rate to the same shock, both evaluated at three months. Coefficient was calculated using a 60-months rolling window using a VAR(1) mode for the following variables in levels: 10-year T-Note yield, expected exchange rate depreciation, EMBI, and 10-year sovereign bond yield. Statistics corresponding to the pass-through coefficient from January 2014 to February 2021.
Source: Saavedra and Sagner (2021).

FIGURE I.4 STOCK INDEXES (*)
(index: 01.Jan.2020=100)



(*) United States: S&P 500; Germany: DAX; United Kingdom: FTSE100; Chile: IPSA; China: Shanghai Composite.
Source: Central Bank of Chile, based on data from Bloomberg.



Higher expectations for global economic recovery have translated into a moderate rise in sovereign rates in advanced and Latin American economies.

The normalization of sovereign rates in developed countries has led to expectations that their monetary policy rates will increase, as well. In the United States, for example, 10-year Treasury rates rose about 50 basis points (bp) in February, to around 1.6%, which is still low from a historical perspective (figure I.1 and Monetary Policy Report, First Quarter 2021). This trend is similar to what happened during the Taper Tantrum in 2013, although the nature of the two events is different and, as in the earlier episode, it is synchronized with other advanced countries. At the same time, the better economic outlook in the United States has led to upward adjustments in inflation expectations and monetary policy reactions. Thus, from January to date, Federal Funds Rate (FFR) futures have increased by at least 25 bp for a two-year horizon (figure I.2).

Long-term rates have also risen in Latin America, although they remain low thus far. With the exception of Brazil, where in general financing costs have mostly reacted to idiosyncratic factors, the rest of the countries in the region have increased their interest rates in line with the United States economy, and their pass-through coefficients are in the upper part of the historical range. In Mexico, in particular, the pass-through has been somewhat higher with respect to international rate changes. Chile, Colombia, and Peru, in turn, have been moderately sensitive to these increases in absolute terms, with coefficients below 1.0 in February 2021 (figure I.3).

Stock prices have continued to rise, hand in hand with greater global liquidity and limited risk aversion.

The major global liquidity stimulus measures continue to keeping financial conditions around their pre-pandemic levels. This abundance of liquidity and the improved local forecasts have translated into lower risk aversion from agents, which has encouraged the search for higher returns, particularly in equity assets and high-yield bonds. In fact the VIX has fallen since the beginning of the health emergency, when it peaked at above 50, and has settled below 20 in the most recent period. Stock markets in the United States and emerging Asia reflect this trend, currently exceeding their pre-pandemic levels (figure I.4).

LOCAL FINANCIAL SITUATION

Domestic financial conditions remain favorable, and the perception of risks to the local economy is low. In addition, liquidity is high in the money market as a result of support programs in place.

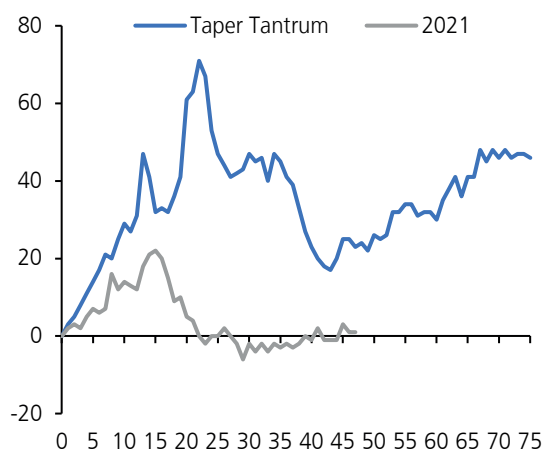
The level of risk perceived by international investors with regard to the local economy remains low and has even decreased since the beginning of the year, which contrasts with previous periods of long-term rate hikes (figure I.5). In this context, corporate and banking spreads in the local fixed-income market continue to adjust downward since mid-2020 (figure I.6). Bond issuance have slowed, however, in line with a lower demand for financing in the second half of 2020 (figure I.7 and chapter II). In the secondary market, deposit rates have fallen significantly compared to a year ago, with less dispersion, which could be related to the purchase window implemented by the Central Bank in August. In this sense, banks have reduced their fixed-term deposits



(FTD) in the face of alternative funding sources, such as the availability of the FCIC and demand deposits. The latter have increased as a result of pension fund withdrawals and the greater availability of liquidity for firms (box I.1 and chapters II and III).

Meanwhile, the Central Bank of Chile (CBC) has implemented a series of massive and unprecedented policies to contain the effects of the pandemic on the markets (Céspedes and de Gregorio, 2021). The peso liquidity measures that have been made available include the REPO program and the Central Bank debt buyback program (García, 2021). Additionally, since the beginning of the year, the current stock of bank bonds has been maintained through

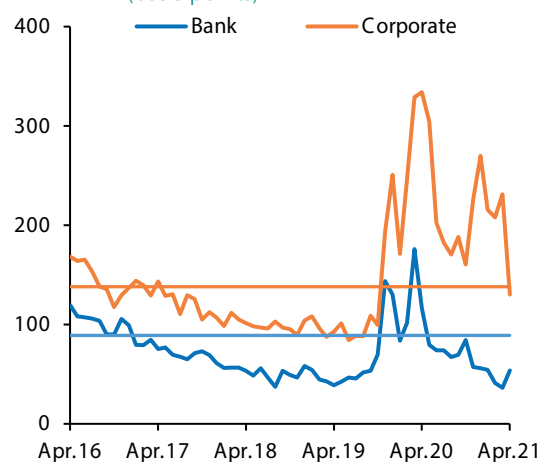
FIGURE I.5 EMBI CHILE (*)
(basis points)



(*) Horizontal axis in days.

Source: Central Bank of Chile, based on data from Bloomberg.

FIGURE I.6 BANK AND CORPORATE BOND SPREADS (*)
(basis points)



(*) Horizontal lines show the 2015-18 average of the respective series.

Source: Central Bank of Chile, based on data from the Santiago Stock Exchange.

the reinvestment of coupons, with a duration of six months starting in January 2021, but this can be revised if market conditions change. Note that although liquidity facilities are effective in mitigating temporary episodes of volatility, they cannot contain more structural changes in the economy.

Along the same lines, the CBC has reinforced its support policy for granting FCIC bank credit, adapting the program to new financing needs.

In 2020, two phases of the Conditional Financing Facility for Increased Loans (FCIC-1 and 2) were made available to the banking system to meet the financing and liquidity requirements of households and companies. These credit facilities amounted to nearly US\$ 31.231 billion, with banks' access conditioned on increased lending to smaller firms (FCIC-1), the granting of state-guaranteed FOGAPE-COVID loans, and credit to nonbank lenders (FCIC-2). In March of this year, the third phase of this program (FCIC-3) was made available to support refinancing and investment operations. This new facility complements the previous phases of the program, which helped maintain the flow of credit to businesses. In this round, the CBC made available the remainder of what was initially budgeted, that is, US\$ 10.0 billion, with a ceiling of US\$ 2.0 billion per institution. The FCIC-3 conditions access directly on the provision of loans under the state-guaranteed FOGAPE-Reactiva program and commercial loans to smaller businesses that have annual sales of not more than a million UF's (unidades de



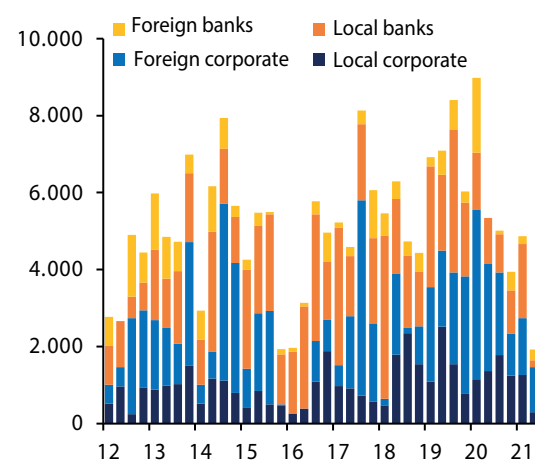
fomento, an inflation-indexed unit of account). As of the publication of this Report, about US\$ 6.289 billion have been channeled through this facility (box II.1).

Since the last FSR, the pension funds have made significant adjustments in the size and composition of their portfolios, which has had limited impacts due to their choice of liquidation strategy and the policies implemented.

Since the last FSR, the pension fund portfolio recorded net sales of about US\$ 2.85 billion in private bonds, mainly bank bonds, and about US\$ 3.85 billion in government bonds. This occurred in a context where the National Congress approved a second pension fund withdrawal last December, and the two withdrawals together amount to about US\$ 35.5 billion. To face this contingency, the pension fund managers (PFMs) have financed the withdrawals through major portfolio adjustments. The impact on local financial prices and indicators has been limited, however, thanks to the existence of CBC windows and the asset liquidation strategy adopted by the PFMs, which used the foreign market for a significant share of close to 50%. Given the recent approval of a third pension fund withdrawal, the PFMs are expected to liquidate an additional US\$ 19.642 billion, according to estimates by the Superintendence of Pensions. As previously, the Central Bank of Chile will implement measures to mitigate the impact of the fund withdrawal on the financial market. Likewise, the regulatory framework that allows operations in the private sector will help to facilitate the necessary liquidity to avoid major disruptions in the market.

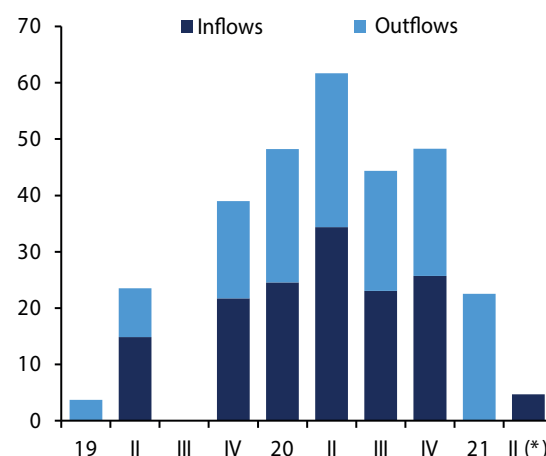
In addition, a bill was approved in March 2021 on the regulation and supervision of private pension advisers that were previously outside the regulatory perimeter. This has reduced the frequency of transfers among pension funds and smoothed the adjustments in PFM investment flows (figures I.8 and I.9). This, in turn, has contributed to reducing the volatility of the national economy's long-term sovereign interest rate, which has decreased relative to the previous year and is once again located in the lower end of the range for a wide group of comparable economies (figure I. 10). Similarly, the exchange rate has appreciated 9.4% since the previous FSR and has been less volatile than some benchmark emerging currencies, although volatility increased in the first part of the year before returning to the lower end of the range for a set of comparable economies in March.

FIGURE I.7 BOND ISSUANCE
(millions of dollars)



Source: Central Bank of Chile, based on data from the Santiago Stock Exchange and Bloomberg.

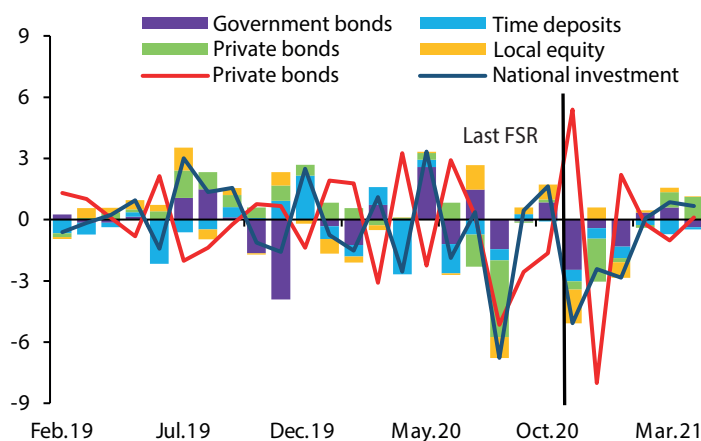
FIGURE I.8 IMPACT OF RECOMMENDATIONS TO CHANGE BETWEEN TYPES OF FUNDS (*)
(percent of type E fund assets)



(*) Accumulated changes five days after the announcement, as a percent of assets in type E funds in the previous month. Data as of 14 April 2021.



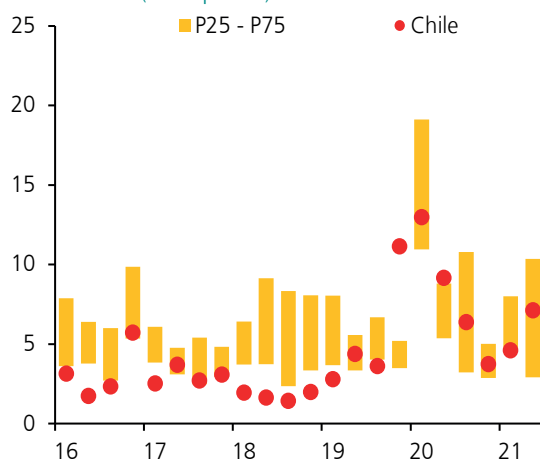
FIGURE I.9 PENSION FUND INVESTMENT FLOWS (*)
(billions of dollars)



(*) Net movements by instrument, including purchases, sales, redemptions, and drawings and excluding derivative maturities, rebates, dividends, and coupon cuts. Includes national bonds and ADRs traded overseas. Updated on 9 April 2021.

Source: Central Bank of Chile, based on data from the SP.

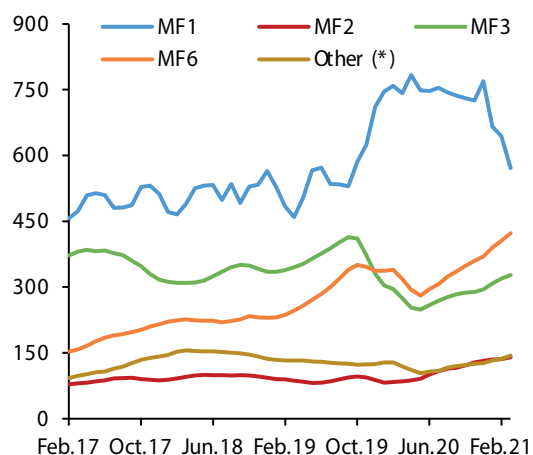
FIGURE I.10 EMERGING MARKETS SOVEREIGN RATE VOLATILITY
(basis points)



(*) EMEs include Brazil, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Poland, Russia, and Turkey.

Source: Central Bank of Chile, based on data from Bloomberg.

FIGURE I.11 MUTUAL FUND EQUITY
(millions of UF, quarterly moving average)



(*) Includes type 4, 5, 7, and 8 mutual funds.

Source: Central Bank of Chile, based on data from the FMC.

Volatility then increased slightly in April, which coincided with some additional recommendations. Finally, the IPSA stock index has recovered to its early 2020 level, in line with emerging countries in the region.

Despite the low interest rates, the mutual funds have had stable assets under management, higher liquidity levels, and lower valuation risk at the margin.

As reported in the last FSR, high levels of liquidity and low interest rates translate into lower profitability and margins for mutual funds (MFs). Nevertheless, assets under management have been fairly stable. Thus, although



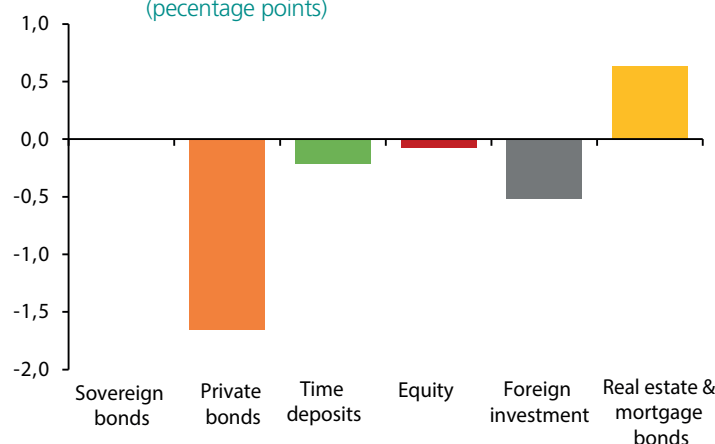
the money market funds (MF1) show a slight reduction in assets, the fixed-income funds (MF3 and MF6) show a recovery (figure I.11). In the most recent period, however, fixed-income funds have recorded some outflows, as a result of medium- and long-term rate hikes in the face of increased volatility linked to the third pension fund withdrawal.

This should be easing off thanks to the support measures from the Central Bank to facilitate the asset liquidation process. Furthermore, the MF3s continue to improve their liquidity levels to address potential sudden withdrawals. Meanwhile, the rate risk of MF1s remains relatively high. Calculations using data through March indicate that an increase in the spread of around 54 bp would produce a massive revaluation of these funds ^{2/}, versus 50 bp in the last FSR; this is similar to the estimate at the beginning of the social protests in October 2019.

Finally, the life insurance companies have improved their asset adequacy for meeting annuity payments, although profitability remains low and they are vulnerable to early payments.

Based on data as of September 2020, the life insurance companies (LICs) increased their solvency position, as measured through asset adequacy testing (AAT), in the context of a regulatory change that softens the price vector applied to cash inflows and outflows. At the same time, they continue to record limited profitability as a consequence of low interest rates and a reduction in annuity sales. In this scenario, the LICs have adjusted their portfolio toward higher-yielding assets, such as real estate, while their positions in private bonds and overseas investments have decreased (figure I.12). In this context, the recently approved constitutional reform that moves up annuity flows will require the sale of instruments that, in general, are less liquid, which could affect market prices. The Central Bank of Chile will implement measures that complement the private channels, to meet the greater liquidity needs that are generated.

FIGURE I.12 CHANGE IN LIC PORTFOLIO, SEPTEMBER 2020 VERSUS DECEMBER 2019
(percentage points)



Source: Central Bank of Chile, based on data from the FMC.

THREATS TO FINANCIAL STABILITY

Scenarios involving an abrupt revision of inflation expectations in developed economies could generate sudden increases in long-term interest rates.

Long-term interest rates have increased in advanced and emerging economies and in the local economy since the beginning of the year. This is generally seen as a natural response to an improvement in the economic

^{2/} This estimate is based on the MF1 portfolio for January 2021.



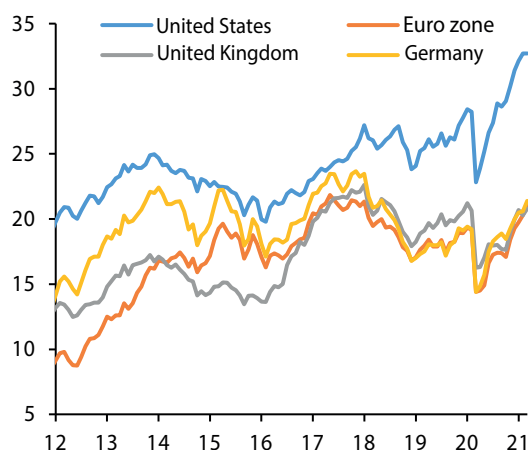
outlook. However, this process is occurring in a context of ongoing uncertainty. Thus, in a global scenario of inflation acceleration, with late action by advanced countries, controlling inflation could require rate increases beyond what is currently forecast, together with an early withdrawal of stimulus policies to counteract the adverse effects on prices. This would significantly increase the financing costs of various economies and could trigger higher volatility scenarios.

These corrections could affect equity markets in advanced economies and other asset classes, causing a sharp reversal in global risk appetite.

Quantitative easing has expanded global liquidity and led to increases in risk appetite, as suggested by the significant reduction in the VIX, noted above. This, combined with low interest rate levels, would have put pressure on financial asset prices in developed countries, measured through the cyclically adjusted price-to-earnings (CAPE) ratio (figure I.13).

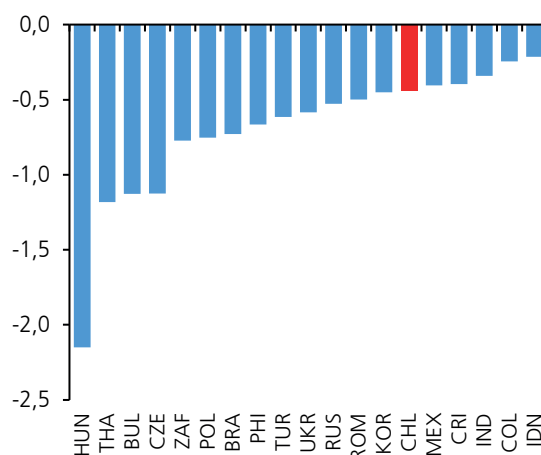
However, when the rate of return implied in the CAPE is discounted using the long-term real interest rate—an approximation of the excess return of the S&P500—the current return level is close to its historical average. This suggests that the current high stock market levels are closely dependent on current liquidity levels and could suddenly be reversed by unexpected increases in long-term interest rates, thereby triggering sharp corrections in investor risk appetite. This phenomenon could be extended to other asset classes (BIS Quarterly Review, March 2021).

FIGURE I.13 CYCLICALLY ADJUSTED PRICE-TO-EARNINGS RATIO (ratio)



Source: Central Bank of Chile, based on data from Bloomberg

FIGURE I.14 95% VAR OF FOREIGN LIABILITY PORTFOLIO FLOWS (*) (percent of GDP)



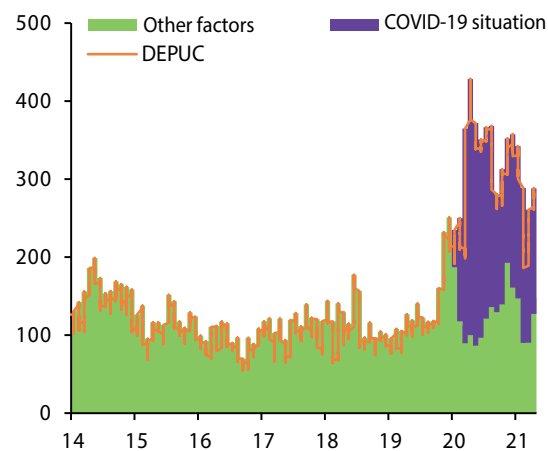
(*) Quarterly flows, 2002-2020.

Source: Central Bank of Chile, based on data from IMF.

The management of the pandemic has involved a major fiscal effort to contain the income reduction caused by the associated mobility restrictions and lockdowns, through programs centered on transfers, access to credit, and liability deferral. While this has provided bridge financing for households and businesses and has surely mitigated the economic consequences in various economies, it has also significantly increased the pace and level of sovereign debt in advanced and emerging economies, deteriorating their fiscal situation. If the most



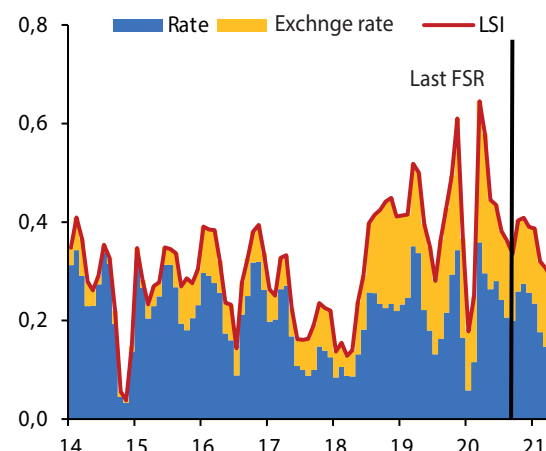
**FIGURE I.15 DAILY ECONOMIC POLICY
UNCERTAINTY INDEX (DEPUC) (*)**
(index)



(*) 30-day moving average.

Source: Becerra and Sagner (2020) and Baker et al. (2016).

FIGURE I.16 LOCAL STRESS INDEX
(index)



Source: Central Bank of Chile, based on the methodology in Hollo et al. (2012)

vulnerable economies maintain this observed trend, going forward they will become more sensitive to and dependent on international financing conditions and the associated sharp corrections. The situation is magnified by a challenging political context of growing social demands and spending needs, especially in the region.

In emerging economies, a slower recovery than in advanced countries could heighten risk perception and increase financing spreads, against a backdrop of tighter fiscal spaces.

Emerging economies have been more vulnerable to rising contagion and the emergence of new strains of the SARS-CoV-2 virus, which could lead to an intensification of mobility restrictions and social distancing measures, thereby threatening the economic recovery. This environment, combined with narrower fiscal space in some countries, could lead to asynchronicity between the advanced and emerging economies, resulting in a significant increase in the perception of risk in the latter group.

Sharp interest rate hikes in developed countries could increase sovereign funding costs for emerging economies, triggering instability and sudden capital outflows from emerging markets and the region.

There is evidence that sudden movements in external interest rates can lead to abrupt portfolio outflows, as well as an increase in sovereign spreads (Koepke, 2019). This could affect emerging countries with a more vulnerable fiscal position and a slower economic recovery. Economies such as Brazil could thus have difficulty rolling over their debt, which could potentially carry over to the rest of the region's economies, through reversals of nonresident capital flows. Past experience, however, point to a positive differentiation for Chile, which is reflected in continued access to international financing on favorable terms. Historically, quarterly foreign liability portfolio flows have recorded outflows that in the extreme—95th percentile—have exceeded 1% of GDP in countries such as Hungary and Thailand, versus 0.4% of GDP for Chile, which positions the local economy at the bottom of the distribution in this sample of emerging countries (figure I.14). However, the general lack of slack in Chile could lead to lower immunity for the local economy from such events.



However, while financing conditions remain favorable in response to the economic recovery outlook, the economic uncertainty surrounding the pandemic remains high.

Local economic uncertainty has not changed since the last FSR, as a result of the significant recent increase in contagion (figure I.15). While the local economic uncertainty index has declined since the beginning of the year, reflecting the better outlook related to the implementation of the vaccination plan, economic uncertainty has grown again in recent months. In this context, local financial conditions remain favorable (figure I.16), but increased exchange rate volatility reveals that the local currency is highly sensitive to external news and events.

Pension fund withdrawals have affected institutional investors in the local financial market, which presents challenges in terms of containing potential vulnerabilities associated with the market's interconnected structure.

In the most recent period, the market share of institutional investors in the local financial market has declined as a result of the pension fund withdrawals. This generated, in the short term, strong pressure to liquidate assets within the prescribed time limits, which was addressed through adequate liquidity management by the fund managers and extraordinary measures taken by the authorities, including the provision of liquidity by the CBC. In the long run, the lower share of these investors reduces the ability to intermediate resources in the economy, affecting long-term economic development. In addition, the extension of this type of measure to other agents—such as life insurance companies, through the early payment of annuity benefits—could affect their liquidity and solvency and create uncertainty in the rest of the market, because it would be a sign of legal uncertainty affecting established contracts.

However, increased development and brokerage opportunities bring challenges in terms of containing systemic risks. In this sense, the interconnections between institutional investors and the local banking system could facilitate the propagation of shocks in one sector or agent toward their counterparties. Regulation must therefore contribute to ensuring the solvency and liquidity of institutional investors to prevent them from generating sudden portfolio shifts in stress scenarios (chapter IV).

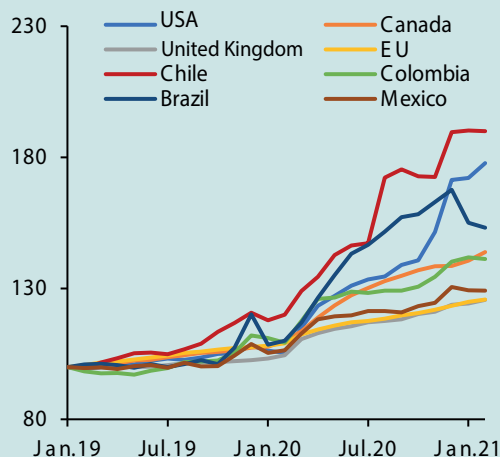


Box I.1:

Evolution of Liquidity during the Pandemic

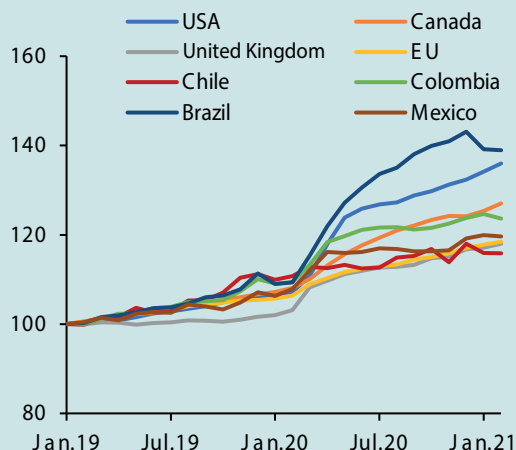
As in many countries, the different monetary aggregates have expanded significantly in Chile over the course of the crisis caused by the COVID-19 pandemic, particularly the narrow aggregates. The extraordinary policy measures implemented in various jurisdictions have implied a significant injection of liquidity, which has been accumulated in short-term assets, in a context of very low interest rates and high uncertainty (figure I.17 and I.18; and Monetary Policy Report, First Quarter 2021). In the local economy, a number of idiosyncrasies have affected these movements, such as the previous social protests, the withdrawal of retirement savings, and an additional reserve requirement for banks. This box describes the changes in monetary aggregates in Chile, analyzes the main reasons behind these movements, and highlights the effects on financial markets.

FIGURE I.17 GROWTH OF M1
(index: Jan.2019 = 100)



Source: Central Bank of Chile, based on data from Bloomberg, Federal Reserve Bank of St. Louis, Bank of the Republic of Colombia, Central Bank of Brazil, and Bank of Mexico.

FIGURE I.18 GROWTH OF M2
(index: Jan.2019 = 100)



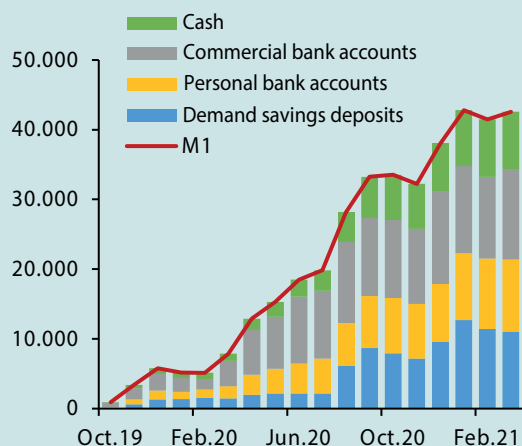
Source: Central Bank of Chile, based on data from Bloomberg, Federal Reserve Bank of St. Louis, Bank of the Republic of Colombia, Central Bank of Brazil, and Bank of Mexico.

The main monetary aggregates

In Chile, the monetary base doubled over the last year, as cash in circulation (coins and banknotes held by people) grew around 70% and bank reserves (coins and banknotes held in the banks' vaults or deposited in the Central Bank) expanded about 150%. Thus, the narrowest monetary aggregate, M1 (currency in circulation and demand deposits), swelled by around 60%, driven by the aforementioned growth in cash in circulation and an increase of around 50% in demand deposits. M2, which includes M1 plus time deposits (TDs) and bank bonds, recorded more moderate growth, since the rise in M1 has been offset by a significant drop in TDs and bank bonds during the implementation of measures to ensure market liquidity (figures I.19 and I.20).

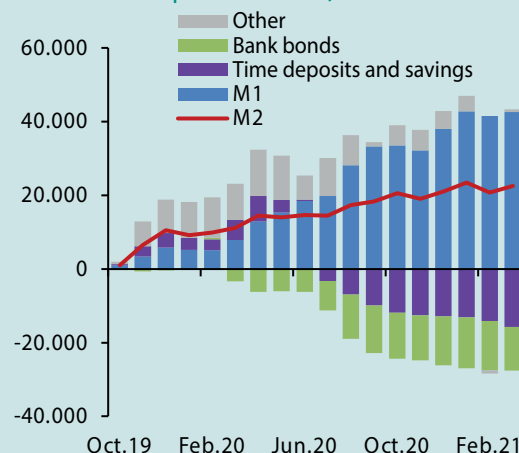


FIGURE I.19 M1 AND COMPONENTS
(accumulated balance since September 2019, millions of dollars)



Source: Central Bank of Chile.

FIGURE I.20 M2 AND COMPONENTS
(accumulated balance since September 2019, millions of dollars)



Source: Central Bank of Chile.

These movements have unfolded in a context in which money market rates are at historically low levels, which suggests an increase in the supply and demand for money. In particular, the 30- and 90-day PDBC rate is 25 basis points below the MPR. The other risk-free rates are also at very low levels. In particular, the one-year swap rate is at 0.75%, and the two-year swap is close to 1.4%.

Determinants of changes in supply and demand

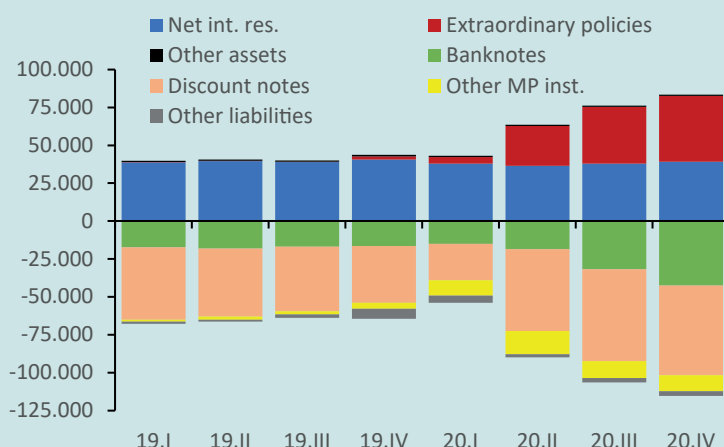
Behind these movements in monetary aggregates is a series of factors affecting both the demand and supply of money, as well as other more liquid financial assets.

On the demand side, uncertainty—which has been high since the beginning of the social protests in late 2019—and low interest rates have increased the preference for highly liquid, low-risk instruments. The withdrawal of pension funds, totaling about US\$ 36.5 billion (13% of GDP), has reinforced this trend: of the withdrawn funds, a significant share is being held in very short-term assets, such as cash, checking accounts, and other demand deposit accounts (Monetary Policy Report, First Quarter 2021).

With regard to the money supply, the Central Bank has adopted a number of measures since the end of 2019 to maintain an expansionary monetary policy stance, provide liquidity to the markets, and contribute to an adequate flow of credit (FSR, Second Half 2020, chapter I), which have had a significant impact on the money supply. In particular, the Conditional Financing Facility for Increased Loans (FCIC) has channeled close to US\$ 37.52 billion (14% of GDP) to stimulate credit expansion during the health crisis (box III.1). In addition, to address the greater liquidity needs deriving from the pension fund withdrawals, the CBC implemented the CC-VP program, involving the simultaneous spot purchase and forward sale of bank bonds, for an accumulated amount of US\$ 8.5 billion and a current balance of US\$ 440 million. Both instruments provide liquidity to the economy, expanding the money supply, while interest rates remain at a level consistent with the monetary policy orientation.



FIGURE I.21 BALANCE SHEET OF THE CENTRAL BANK OF CHILE
(millions of dollars)



Source: Central Bank of Chile.

However, the increase currency in circulation and required reserves, as a whole, has exceeded the growth of M1, due to the additional reserve requirement (reserva técnica) associated with the increase in demand deposits, which implies a reduction in the money multiplier.^{1/} At the same time, the growth of currency in circulation reflects an increase in people's demand for cash as a result of the 2019 social protests and, subsequently, the pension fund withdrawals. This explains why the annual growth rate of the issuance of banknotes and coins surged from 5% to 40% in the most recent period.

Effect on interest rates and the balance sheets of the Central Bank and commercial banks

The Central Bank's actions have made it possible to accommodate the significant increase in the demand for liquidity and to keep funding costs at historically low levels. In particular, the FCIC has provided funding to the banking system at 0.5% for a term of up to four years, conditional on the expansion of credit; this has led commercial banks to reduce the share of time deposits as a source of funding, putting downward pressure on short- and medium-term rates. In response, nonbank agents have strongly increased their demand for other liquid assets, especially Central Bank discount notes (PDBCs) (figure I.21). The CBC has therefore increased its issuance of these instruments so that the very short-term interest rate is within the corridor established by the standing deposit facility and the secured intraday liquidity facility (+/- 25 bp around the MPR), thereby keeping financial conditions consistent with the monetary policy stance.

These phenomena have intensified since mid-2020 due to the effect of the pension fund withdrawals. In particular, the low opportunity cost of money and the time it naturally takes for people to decide what to do with their resources have generated an additional, probably temporary, increase in demand deposits,^{2/} putting even more downward pressure on short-term interest rates and increasing M1.

Going forward, the temporary nature of the aforementioned policies and events suggests that, as the FCIC is amortized and as other implemented measures mature, funding through the issue of longer-

^{1/} Banking regulations require banks to hold additional required reserves, known as technical reserves (reserva técnica), equivalent to the full value of deposits in excess of 2.5 times their regulatory capital. This reserve requirement is the counterpart of the Central Bank guarantee for these operations. Thus, once the limit is exceeded, demand accounts do not constitute a source for funding credit growth, which affects banks with a lower capital base relative to the size of

^{2/} In general, users of this type of account are in lower income quintiles, which in turn have a lower tendency to use longer-term bank savings alternatives, including time deposits (FMC, 2016).



FIGURE I.22 ACCUMULATED CHANGES IN BANKING SYSTEM ASSETS SINCE SEP.19 (*)
(millions of dollars)

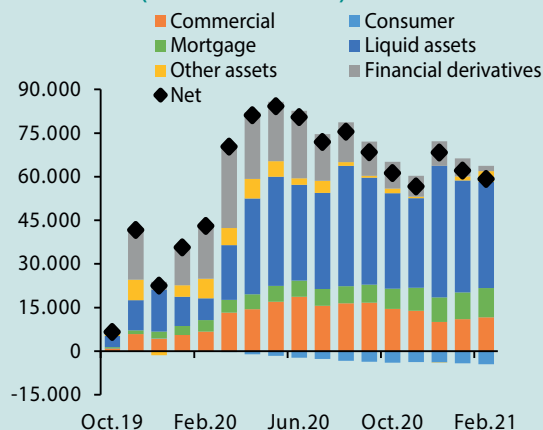
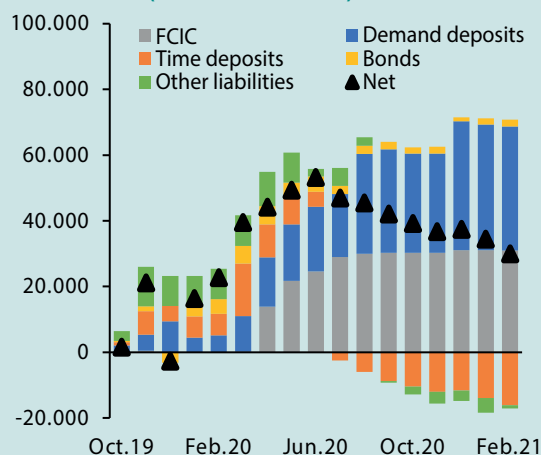


FIGURE I.23 ACCUMULATED CHANGES IN BANKING SYSTEM ASSETS SINCE SEP.19 (*)
(millions of dollars)



term instruments will increase, including time deposits. Likewise, the lifting of health restrictions is expected to revive deferred spending and investment decisions, which will draw down the liquid savings accumulated during the pandemic. The demand for longer-term savings could be reactivated as interest rates gradually normalize. This will reduce the pressure on banks to hold additional reserves and liquid assets, thereby maintaining the space for lending.

The implementation of facilities to maintain the flow of credit, the pension fund withdrawals, and the liquidity management of the banks themselves have caused a significant increase in the size and composition of the balance sheets of the banking sector and the Central Bank. Banks have increased both their liquid assets and their commercial loans, the latter mainly through the FOGAPE-COVID and FOGAPE-Reactiva programs, which have facilitated about US\$ 15.0 billion in loans to smaller businesses. At the same time, the growth of demand deposits, associated with the pension fund withdrawals, has forced banks to record significant additional technical reserves, which represent more than 70% of the increase in liquid assets from September 2019 to date. Time deposits have decreased significantly, in contrast to the increase in demand deposits and FCIC balances (figure I.23 and chapter III).

The deployment of the different policies has also affected the structure of the Central Bank's balance sheet, which doubled in size to nearly 30% of GDP. This is a result of the different programs, some of which will have a short-term impact (such as the foreign currency swap, repo, CC-VP, and deposit purchase programs) while others are more long term (international reserve purchases, bank bond purchases, and the FCIC). In the case of the FCIC, eligible collateral has been expanded to include the loan portfolio. As a result, the banking system's loan portfolio used as collateral now represents 20% of the total assets of the Central Bank as of March 2021. In turn, the Central Bank has become a relevant bank creditor, accounting for 10% of the liabilities of these entities. The bulk of this financing will last until 2024, which provides a reasonable horizon for managing liabilities as financial conditions normalize.



Future challenges

As the macro-financial situation normalizes, the CBC has the appropriate instruments to move toward the normalization of system liquidity. Here, it will be important to identify changes in the demand for money, so as to ensure a consistent adjustment of the supply and avoid unwanted movements in asset prices. Given that this demand is influenced by factors idiosyncratic to the current crisis—namely, uncertainty and consumption restrictions—monitoring it will not be a trivial exercise. It will also be important for banks to make the necessary adjustments in their liquidity positions in the future to prepare for the expiration of the facilities and to face the normalization of money market conditions. As on previous occasions, the Central Bank will take into account the effects of these adjustments on financial markets, so that the process is orderly and consistent with the monetary policy stance and the preservation of financial stability.



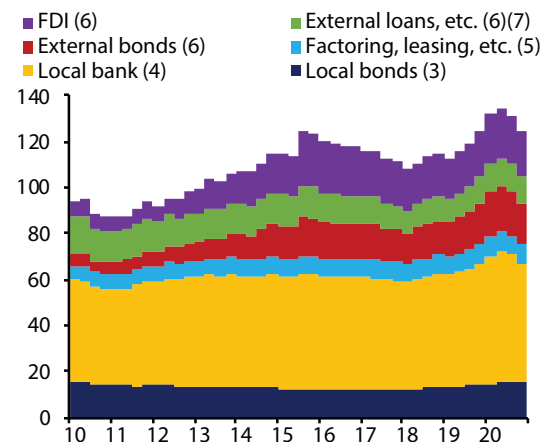
II. BORROWERS

Since the last FSR, the economy has moved toward a recovery phase, while support measures have been expanded and/or adapted. Nevertheless, uncertainty remains high, especially with regard to the evolution of the pandemic. For companies, sales have rebounded since mid-2020, which, coupled with credit support, has allowed many to resume operations. The loan lending and payment deferral measures have been widely used, increasing leverage among those who used of the mechanisms, although this has decreased as activity increased. Households, in turn, were affected by the sharp deterioration in the labor market, which led them to defer payments and liquidate pension savings to compensate for their lower income. Fiscal transfers, the use of savings, and loan forbearance have been effective in counteracting unprecedented shocks, but they have also incubated vulnerabilities. The real estate market recorded a significant drop in sales, which had a marginal effect on prices, followed by a recovery in recent months. Sovereign debt does not constitute a vulnerability in the short term, but the accelerated growth rate requires a convergence toward sustainable levels. Getting through the crisis has weakened market agents' financial position for facing new disruptive episodes. Going forward, the duration of the pandemic and the speed of the economic recovery, in conjunction with the lifting of mobility restrictions, will determine the materialization of risks for these agents.

FIRMS

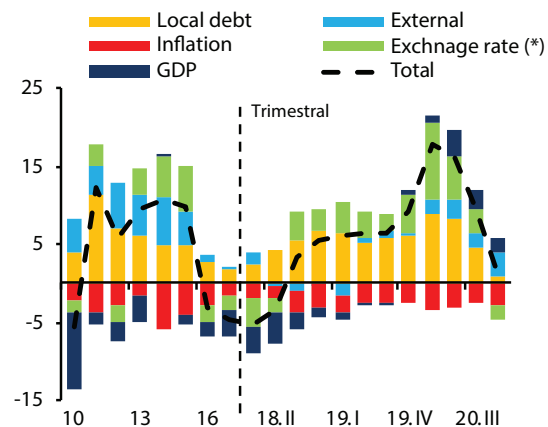
In the last quarter of 2020, the total debt of Chilean firms decreased as a percentage of GDP relative to the last Report. Debt reached 125% of GDP, equivalent to a 9 pp decrease vis-à-vis the second quarter of the previous year (figure II.1). As a result of the slowdown, the debt level is somewhat higher than at the end of 2019, with slightly less activity, inflation and exchange rate adjustments, and a slight increase in external debt (figure II.2 and statistical appendix).

FIGURE II.1 CORPORATE DEBT (1)
(percent of GDP)



(*) Based on firm-level data with the exception of factoring, leasing, etc.; securitized bonds; and commercial papers. Quarterly data. For more information on the series and methodology, see the figure set. Source: Central Bank of Chile, based on data from the Achef and FMC.

FIGURE II.2 CORPORATE DEBT (*)
(annual change, percent)



(*) External debt includes external bonds, external loans, trade credit, and FDI. Annual data through 2017; quarterly data thereafter. Exchange rate is the average of the last month. Source: Central Bank of Chile, based on data from the Achef and FMC.



REPORTING FIRMS

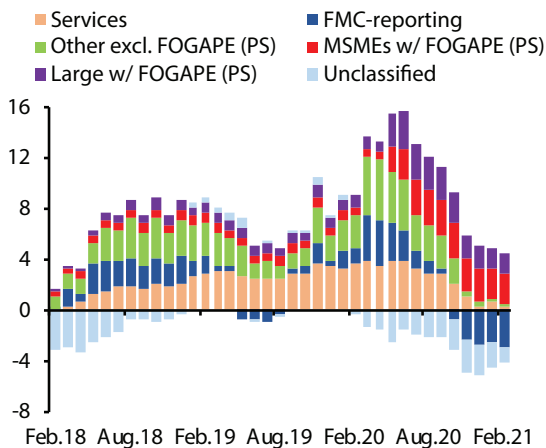
After increasing their leverage in the middle of last year, reporting firms have recently reduced their debt level due to lower issues and bank loans compared to the last FSR.

In terms of funding sources for companies that report to the Chilean Financial Market Commission (FMC), bank credit and corporate issues increased in the second and third quarters, in line with the favorable financing conditions (chapter I). Toward the end of the year, the issue rate and the use of bank funding decreased due to lower investment needs and greater liquid asset holdings (figure II.3). There was a slight increase in the annual growth rate of external debt, mainly explained by external loans.

Financial indicators showed an incipient recovery in late 2020, after deteriorating in previous months. Interest coverage remains weak, however.

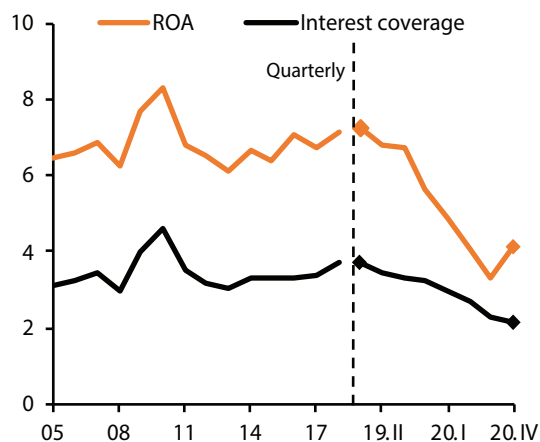
For the set of companies that report to the FMC,^{1/} return on assets (ROA) was 4.1% and interest coverage was 2.1 times at year-end 2020,^{2/} down from 5.6% and 3.2 times the previous year (figure II.4). This deterioration reflects the results of the third quarter of 2020. However, performance improved slightly between September and December 2020, due to the lifting of mobility restrictions toward the end of the year and the resulting uptick in economic activity.

GRAFICO II.3 LOCAL BANK DEBT (*)
(real annual change, percent)



(*)Excludes individuals. The figure identifies firms in productive sectors (PS) that do not report to the FMC and that received FOGAPE loans between May and August of 2020, and shows their contribution to growth before and after May 2020 (dotted line). Strata are calculated based on sales microdata for December 2019 (IRS Form 29). MSMEs include firms that are not assigned to a stratum. Debt includes contingent loans and foreign trade credit. Definition of FMC-reporting firms includes direct subsidiaries. Source: Central Bank of Chile, based on data from the FMC and IRS.

FIGURE II.4 HISTORICAL EVOLUTION OF INDICATORS (*)
(times, percent)



(*) ROA: Earnings before interest and taxes (EBIT) accumulated in twelve months over total assets. Coverage: EBIT over annual financial expense. Consolidated data. Excludes state-owned firms and firms in the financial services and mining sectors. Excludes LATAM Airlines. Source: Central Bank of Chile, based on data from the FMC.

^{1/} Excluding LATAM Airlines.

^{2/} With the full sample, ROA drops to 2.2% and interest coverage to 1.0 times annual financial expenses.



Cost containment limited the fall in interest coverage, but it remains at historically low levels not seen since the Asian crisis. Thus, using historical data from individual financial statements reported to the FMC,^{3/} companies that account for 43% of assets in the corporate sector are not able to cover their interest expense twice.^{4/}

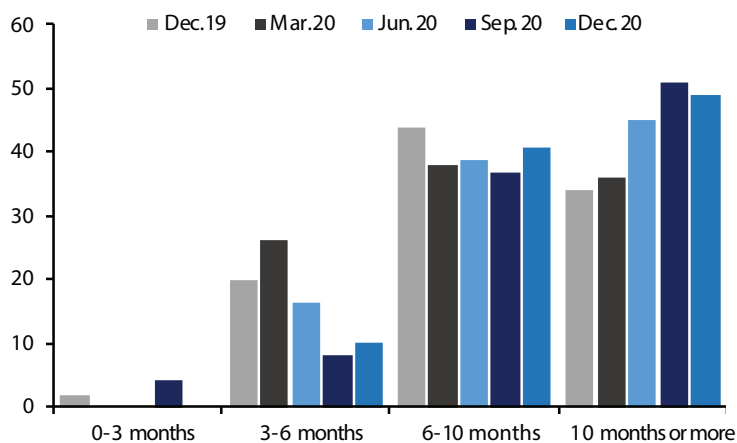
At the same time, however, companies have accumulated significant liquidity, due to greater access to financing in the first, second, and third quarters of 2020 and higher sales and lower expenses toward the end of the year.

Large corporations (which report to the FMC) were not financed with FOGAPE-COVID loans. This group increased its indebtedness via bond issuance, followed by local bank loans in the first half of 2020. This translated into higher cash flow to face the crisis, in addition to the cost containment and investment measures, and it was reflected in an improvement in liquidity indicators. Thus far in 2021, FMC-reporting companies show a drop in the use of bank loans due to the repayment and lower use of this type of debt.

The better liquidity position since the last FSR increased the share of firms that could continue to meet their expenses if their income dropped to zero. This improvement is associated with the higher proportion of cash held by reporting firms, as well as the higher cash flow driven by the better operating results in the second half of 2020. In this context, a simulation exercise was carried out in which companies cease to take in revenue, and then the number of months in which they could pay their expenses is counted. The results indicate that at year-end 2020, firms could generally finance their expenses for a longer period than in the simulation reported in the last FSR, based on data as of June 2020 (figure II.5). This improvement is observed across all the different sectors, except in specific companies that are still experiencing financial difficulties.

FIRMS WITH LOCAL BANK FINANCING

FIGURE II.5 MONTHS OF CASH FLOW WITH NO INCOME
(percent of total reporting firms)



Source: Central Bank of Chile, based on data from the FMC.

^{3/} The exercise uses historical data from 1991 to September 2020.

^{4/} Including large corporations with assets of over one trillion pesos, which recorded lower profits than in 2019.

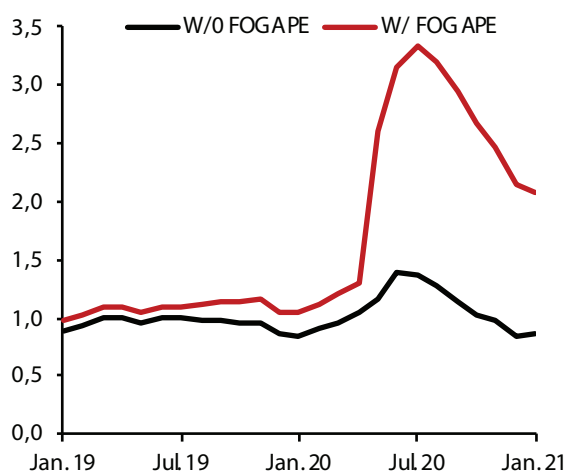


In this group of firms, default levels are contained, and leverage rates have declined since mid-2020, in line with the recovery in sales and ongoing support measures.

Among companies that are financed by local banks, small and medium-sized enterprises (SMEs) contributed positively to the growth of commercial loans, although the flow declined compared to the second quarter of 2020, when most of the FOGAPE-COVID loans were delivered. In general, this mechanism met the funding needs of this group of firms, with loans of US\$ 14.0 billion, ranking as the main source of financing for smaller companies (figure II.3 and chapter III).

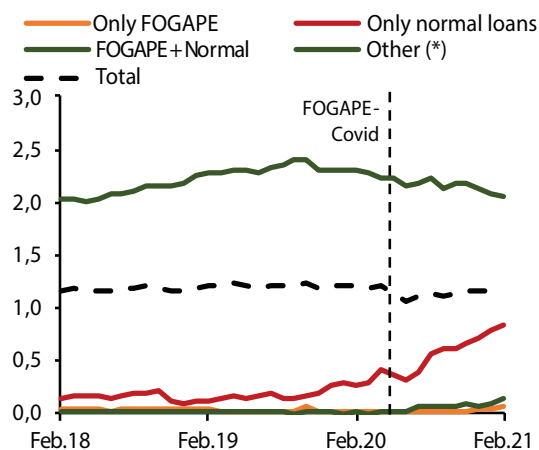
The implementation of the FOGAPE-COVID loan program, in conjunction with the FCIC, has channeled a significant amount of funding. The median firm that was financed through this type of credit tripled its leverage between January and June of last year; subsequently, the recovery in sales in the latter part of the year reversed about half of this increase (figure II.6). This group of firms is characterized, in general, by having a lower number of loans and a smaller average amount, as well as a good credit history, which is a necessary condition for accessing the facility. At the same time, loan rescheduling and liquidity support policies helped contain credit risk. Thus, the arrears rate (AR), calculated for the sample of loans delivered between May and December 2020, has been stable at the aggregate level, with an incipient increase in delinquency among firms that did not access FOGAPE-COVID loans (figure II.7).

FIGURE II.6 MEDIAN LEVERAGE BY GROUP (*)
(debt over sales, times)



(*) Calculated as the median by group of the firm-level ratio of bank debt over the quarterly moving average of sales VAT.
Source: Central Bank of Chile, based on data from the FMC and IRS.

FIGURE II.7 ARREARS RATE (*)
(percent of loans)



(*) Firms in each group correspond to the cohort that took out an installment loan between May and December 2020. Only includes installment loans. Excludes firms with sales over UF 1 million, except in the total.
Source: Central Bank of Chile, based on data from the FMC.

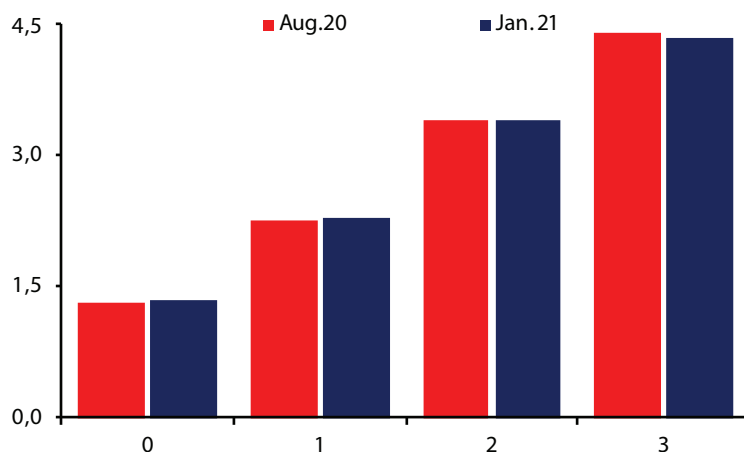


STRESS TESTS FOR FIRMS

The relatively larger firms, in the banks' individually assessed portfolio, used traditional commercial loans to cope with the crisis, and their level of credit risk has stabilized.

The stress test for firms in the individually assessed commercial portfolio indicates that debt-at-risk in this segment is similar to the level reported in the last FSR. Specifically, firms with a lower credit rating, which did not have access to credit facilities, sought traditional bank financing to cope with the pandemic. In the year, this was reflected in an increase in new loans to companies with a risk rating below A4.^{5/} Because of this change in composition, there was a slight increase of 0.13 pp in the individual commercial debt-at-risk of firms in the individually assessed commercial portfolio,^{6/} as of January 2021. In a stress scenario, individual commercial debt-at-risk would reach 3.4% of GDP as of January 2021, if all individually assessed firms increased their default probabilities in line with a downgrade of two risk categories in external agency ratings. This is 2 bp higher than in the exercise reported in the last FSR (figure II.8).

FIGURE II.8 INDIVIDUAL COMMERCIAL DEBT-AT-RISK (*)
(percent of GDP by number of rating downgrades)



(*) The value of commercial loans classified in categories A1–B4, weighted by the equivalent default probability of the different risk ratings.

Source: Central Bank of Chile, based on data from the FMC.

All in all, the favorable evolution of sales has relieved the default pressure on companies, although some pockets of risk are found in groups that remain weak.

The sales recovery since the middle of last year (Monetary Policy Report, March 2021, box V.1) has supported a recovery in firms' payment capacity, reducing the share of companies with a high financial burden relative to their income. However, risks remain among firms that were strongly affected by the pandemic and that had to increase their leverage to a greater extent to face it.

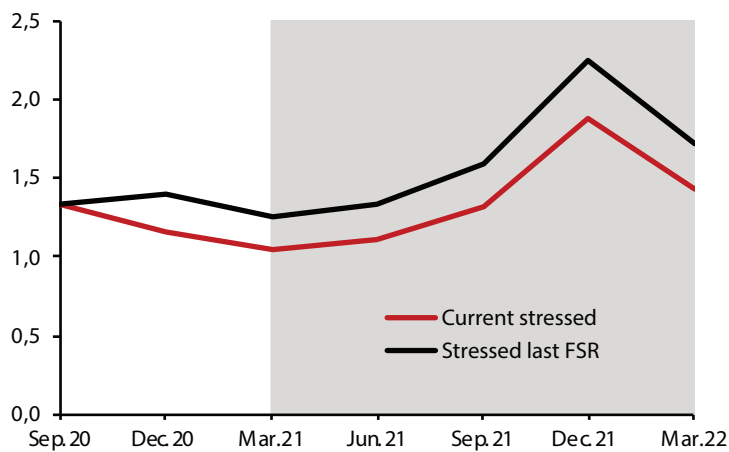
^{5/} In the banks' individual assessed portfolio, companies with a rating of A1 to A4 are considered to have a good risk rating.

^{6/} Including large corporations with assets of over one trillion pesos, which recorded lower profits than in 2019.



In a stress test based on microdata, which incorporates a stress scenario involving a second drop in sales of the same magnitude as in the first half of 2020, the probability of default increases significantly toward the end of this year. This would translate into an increase in commercial debt-at-risk from 1 to 2% of GDP between the first and last quarters of this year. This is lower than the stress test in the last FSR, due to the better starting point as a result of the sales recovery. There is a lot of heterogeneity in the results, however, highlighting the greater relative vulnerability of firms that did not receive FOGAPE-COVID loans and that are in sectors that were hard hit by the pandemic (figure II.9 and box II.1).

FIGURE II.9 COMMERCIAL DEBT-AT-RISK (*)
(percent of GDP)



(*) The amount owed by each firm, weighted by its individual probability of defaulting in the next quarter. Gray area: simulation of stress scenarios.

Source: Central Bank of Chile, based on data from the FMC and IRS.

In sum, firms have shown resilience to a shock that represents the greatest threat to the financial stability of the Chilean economy in recent decades. Their ability to adapt, together with the extensive policy deployment, has made it possible to contain default. However, the crisis has left companies in the hardest-hit sectors more indebted and more vulnerable, which reduces their room to maneuver in the face of new disruptive events. Going forward, as the economic recovery takes hold, firms are expected to continue strengthening their financial position. However, uncertainty remains high regarding the evolution of the pandemic and the pace of economic activity. Difficulties in income generation, together with companies' smaller cushion as a result of their greater leverage and financial burden, constitute the main risk for the sector. In segments that remain weak, company performance should be monitored to prevent what are currently pockets of risk from developing into systemic disruptions.



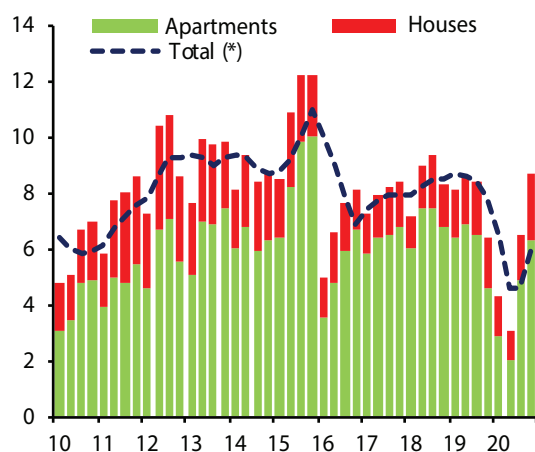
REAL ESTATE SECTOR

Since the last FSR, the residential real estate sector showed a recovery, with higher demand and stable supply.

After contracting between 2019:Q4 and 2020:Q2, the demand for homes began to recover, a trend that has been maintained in 2021. Thus, the sale of new homes in the Metropolitan Region (MR) grew 35% in the fourth quarter of 2020 and around 60% in the first quarter of this year. This recovery was observed in both the house and apartment segments (figure II.10). Sales are currently around the level recorded prior to October 2019.

The availability of supply in the final stages of construction remains limited, mitigating the need for companies in the sector to liquidate their stock. The total supply of new homes in the MR remains above the historical average, stabilizing at over 50,000 units, while the share of homes for immediate delivery remains low from a historical perspective (figure II.11). Additionally, the slower pace of construction, as a result of lockdowns and the shortage of both construction materials and labor, suggests that supply will remain tight in the coming months.

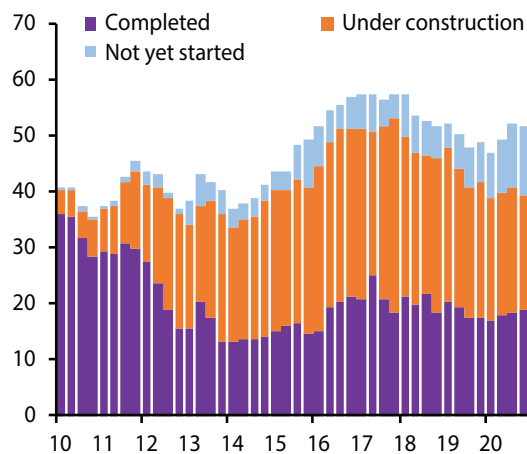
FIGURE II.10 NEW HOME SALES IN SANTIAGO (*)
(thousands of units)



(*) Annual moving average.

Source: Central Bank of Chile, based on data from the CChC.

FIGURE II.11 AVAILABLE SUPPLY OF NEW HOMES IN GREATER SANTIAGO
(thousands of units)



Source: Central Bank of Chile, based on data from the CChC.

In this context, housing prices have maintained their upward trend. As of the fourth quarter of 2020, most of the country's macrozones had growth rates above 4% in real annual terms (figure II.12). In particular, growth rates eased in the Metropolitan Region (RM). However, preliminary listing price data point to a recovery in MR sales prices in the most recent period.



The rental market saw a slight recovery in early 2021, easing the pressure on retail investors.

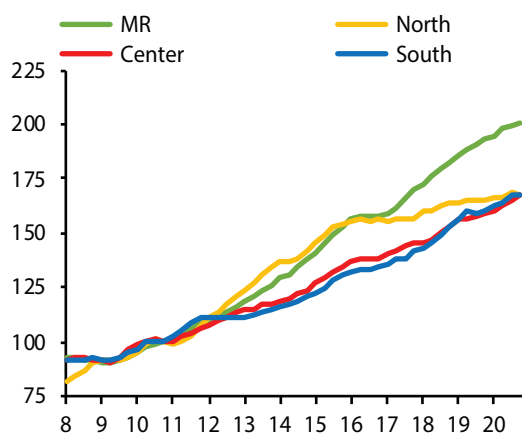
On aggregate, the rental market recovered slightly, in terms of both prices and inventory overhang,^{7/} relative to the last FSR (figure II.13). House rental prices have turned upward, in a context of a slowdown in listing rates across all neighborhoods. This reversal in the trend could be driven by the search for more space as a result of the pandemic. In the apartment rental market, both prices and overhang have stabilized, easing the pressure on leveraged retail investors. The gross profitability of the buy-to-rent strategy remains below 5% in real annual terms, mainly due to the fall in rental prices in the first half of 2020. It has reached the lowest levels since 2012, and the decline in recent years coincides with a period of falling lending rates and a general reduction in the profitability of different asset classes.

The various mitigators implemented, such as the job protection program, the easing of regulations on rescheduling installment loans, and the deferral of payments, have helped contain default and relieve pressure on debtors who rely on rent payments to service their debt. However, the gradual end of some of these policies and a slow recovery in the rental market could reduce the payment capacity of these debtors.

Financing conditions remain favorable, with looser mortgage lending conditions and interest rates approaching September 2019 levels.

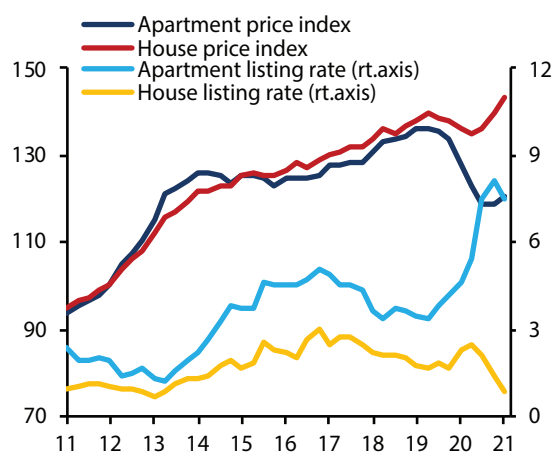
In the first quarter of 2021, the growth rate of mortgage debt continued to slow, with a real annual rate below 6% (figure II.19 and chapter III). This is in line with the lower sales volume in the first half of 2020 and with the lower level of deed registration due to difficulties in delivering homes. Mortgage interest rates continue to decline, approaching mid-2019 levels.

FIGURE II.12 HOME PRICES BY MACRO-ZONE (*)
(index: 2010=100)



(*) Annual moving averages.
Source: Central Bank of Chile.

FIGURE II.13 RENTAL PRICES AND LISTING RATE
(fixed-base index: 2012:Q1=100, percent)



Source: Central Bank of Chile, based on data from the Mercado Libre website (Portal Inmobiliario).

^{7/} Measured by the listing rate, which quantifies the availability of homes for rent based on the number and duration of listings published on the MercadoLibre website.

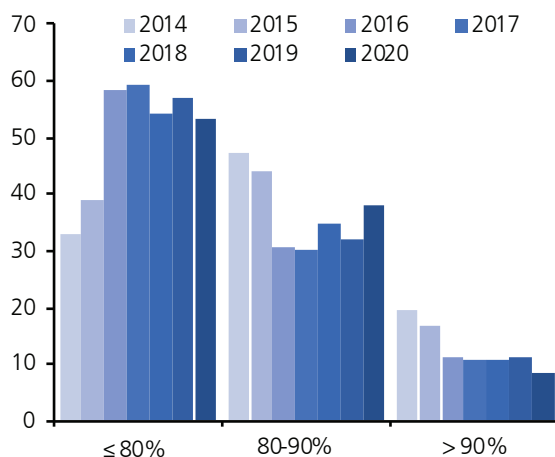


Lending conditions remain favorable. According to data at year-end 2020, there was an increase in the share of mortgages with a loan-to-value (LTV) ratio between 80 and 90%, to the detriment of those under 80% (figure II.14 and statistical appendix). In the Bank Lending Survey (BLS) for the first quarter of 2021, banks reported looser lending conditions than in the previous quarter, while mortgage demand was stable.

The share of debtors with more than one mortgage loan has been stable in recent years, at around 30% of the stock of bank mortgage debt in the first quarter of 2021 (figure II.15). Similarly, debtors with more than one house or apartment in a single region, both financed with a mortgage, continue to represent about 20% of the total stock of mortgage debt at year-end 2020.

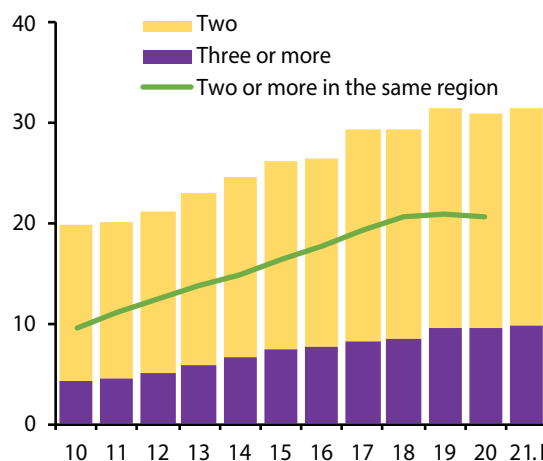
Real estate companies that report to the FMC had increased cash flow and a slight decrease in contract cancellations in the fourth quarter of 2020. Real estate and construction companies that do not report to the FMC, which are mostly financed by the local banking system, had lower levels of default than reported in the last FSR. This has occurred in the context of various business support programs, such as the Job Protection Act and the FOGAPE loans.

FIGURE II.14 LOAN-TO-VALUE RATIO (*)
(percent of mortgage deeds)



(*) Data for December of each year.
Source: Central Bank of Chile, based on data from the IRS.

FIGURE II.15 DEBT BY NUMBER OF LOANS AND MORTGAGE TRANSACTIONS PER DEBTOR (*)
(percent of total)



(*) Bars: data on number of bank mortgage loans weighted by debt (FMC). Lines: data on number of mortgage transactions in a given region weighted by debt (IRS).
Source: Central Bank of Chile, based on data from the FMC and IRS.

The nonresidential real estate sector has reflected the effects of the pandemic with a lag. Going forward, the sector should be monitored to see how it adapts to changes that could be more structural.

The nonresidential real estate sector is composed of diverse segments, which have been affected by the pandemic in different ways. Thus, while the demand for offices has declined, the demand for storage space has intensified (figure II.16). These effects began to surface in late 2020 and will continue to be reflected in the coming quarters, given the lag associated with the duration of leases. Both the magnitude of the deterioration and the subsequent recovery will depend on the structural changes that are adopted once the pandemic has been overcome. Possible changes include increased remote work and the massive use of online shopping and data centers.



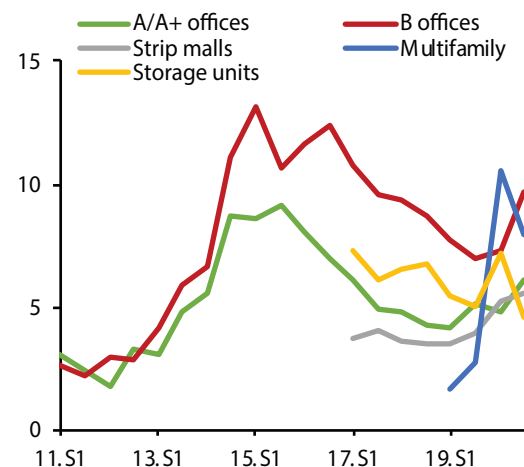
In the office market, the low pre-pandemic vacancy rate, given the scarce addition of new projects in recent years, has mitigated the effects of lower demand on prices. Thus, while vacancy rates increased in all segments at year-end 2020, prices remained stable for class B offices and decreased slightly for class A/A+. The greater inventory overhang is mainly explained by the release of previously rented space, which can be attributed to factors ranging from an increase in remote work to the downsizing of work teams or the closure of companies. This adjustment in the office market could continue this year, as companies continue to adapt to mixed work arrangements and renew their leases.

The main risks to the residential real estate sector are associated with an extension of the labor market deterioration.

The residential real estate sector has become more dynamic since the last FSR, with sales returning to the level prior to the outbreak of the social protests in late 2019. However, developments in the labor market and the gradual end of mortgage payment deferrals could put additional pressure on this market. The recent improvement, particularly in the rental market, alleviates the pressure on leveraged retail investors, who have also benefited from mortgage payment deferrals and rescheduling (figure II.17). However, this continues to be a source of vulnerability, as a further deterioration in the labor market could affect not only those who directly lose their job, but also those who rely on rent payments to meet their mortgage obligations.

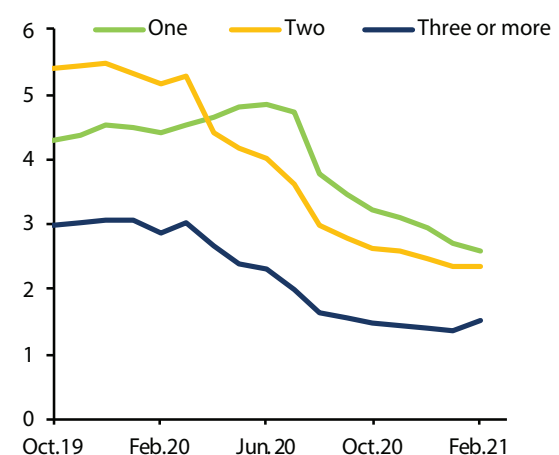
The nonresidential real estate sector, in turn, has begun to reflect the effects of the pandemic and is expected to continue adjusting at least through the end of this year. While structural changes could have a deeper impact on this sector, the cyclical position of the pre-pandemic market, with low vacancies and few projects under construction, could mitigate the effect on prices of lower demand for offices. However, the low liquidity of this market could represent a vulnerability for agents exposed to this asset class.

FIGURE II.16 VACANCY RATE IN REAL ESTATE MARKET
(percent of total)



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

FIGURE II.17 MORTGAGE ARREARS BY NUMBER OF LOANS (*)
(percent of debtors by category)



Source: Central Bank of Chile, based on data from the FMC.



HOUSEHOLDS

Since the last FSR, households have demonstrated improved liquidity and income adequacy as a result of the pension fund withdrawals and the expanded coverage of support programs, although their financial position has deteriorated.

Mobility restrictions implemented in response to the COVID-19 pandemic have limited households' ability to generate income and weakened the labor market. This has led households to adjust their balance sheets to cushion the shock, mainly through the deferral of liabilities and the liquidation of long-term assets. These trends have lowered the demand for credit, due to higher liquidity and lower consumption for precautionary purposes, while the cyclical position of the economy and the uncertainty about the speed of recovery have caused an adjustment in supply. Thus, the slowdown in household debt reported in the last FSR has deepened, falling 2.3% in real annual terms in the first quarter of 2021. This has led to a stabilization of borrowing at around 50% of GDP in the last year (table II.1).

TABLA II.1 DEUDA DE LOS HOGARES
(variación real anual, porcentaje del PIB)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Growth contrib.	Part.
	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	IV	I(*)		
Real annual growth														
Mortgage	6,8	7,3	7,6	8,9	9,9	9,6	6,7	8,1	6,5	8,1	5,0	4,9	2,9	62,6
Bank	9,1	8,2	8,3	9,1	10,5	10,6	6,6	8,3	6,4	8,3	5,3	5,2	2,8	57,3
Nonbank	-7,2	0,9	2,5	6,9	4,7	1,1	7,9	6,4	7,8	5,7	1,9	1,8	0,1	5,3
Non-mortgage (*)	8,7	10,7	6,9	8,4	3,5	5,7	6,8	6,9	7,3	4,5	-11,3	-12,5	-4,7	37,4
Total	7,6	8,8	7,3	8,7	7,1	7,9	6,7	7,6	6,8	6,6	-0,9	-2,3	-1,8	100
Relative to GDP														
Mortgage	20	20	21	22	24	25	26	27	28	30	32	32		
Non-mortgage (*)	16	16	17	18	18	18	19	19	20	21	19	19		
Total	36	37	38	40	42	43	45	46	48	50	51	50		

(*) Includes consumer bank debt; debt owed to retailers, family compensation funds (CCAF), and S&Ls; student loans (government-backed bank and Treasury loans, private bank loans, and CORFO); leasing and insurance companies; car dealerships; and the central government (FONASA, etc.). Starting in 2015.II, data for Cencosud are estimated based on Scotiabank's financial statements. Preliminary data for 2021.I.

Source: Central Bank of Chile, based on data from the FMC, DIPRES, and SUSESO.

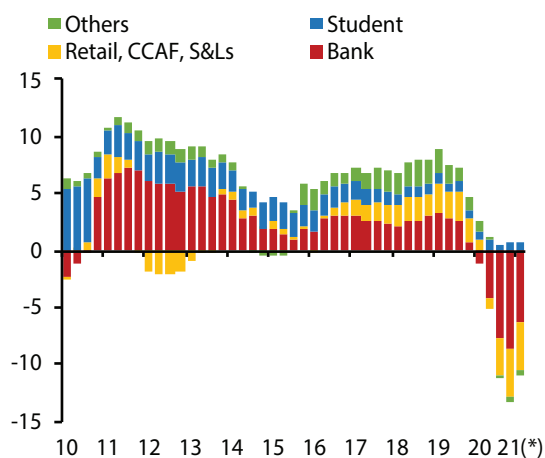
Both the mortgage and non-mortgage components of debt have slowed since the last FSR, with the latter recording the larger contraction.

In line with lower demand for credit, non-mortgage debt declined by more than 12% in real annual terms at the end of the first quarter. The drop was largest in non-mortgage bank debt and debt owed to retailers, family compensation funds (CCAF), and savings and loan associations (figure II.18). Despite the deterioration in people's financial position as a result of job losses, default has not increased (chapter III). This reflects the voluntary loan deferrals, pension fund withdrawals, and other income and employment support policies.



Bank mortgage debt has continued to record positive growth rates, albeit at a slower pace from the pre-pandemic period. This largely reflects lower growth in the average amount of loans (figure II.19), which is consistent with the low growth in housing prices over the past year and the lower LTV at origination (figure II.14). In addition, the smaller contribution of the number of mortgage debtors is related, on the one hand, to tighter lending conditions for mortgage loans on the part of lenders and, on the other, to less willingness on the part of individuals to take on long-term obligations given the current cyclical position of the economy and the ongoing uncertainty deriving from the pandemic (figure I.8). However, there has been an incipient uptick in this credit flow at the margin (chapter III).

FIGURE II.18 NON-MORTGAGE DEBT (1)
(real annual change, percent)

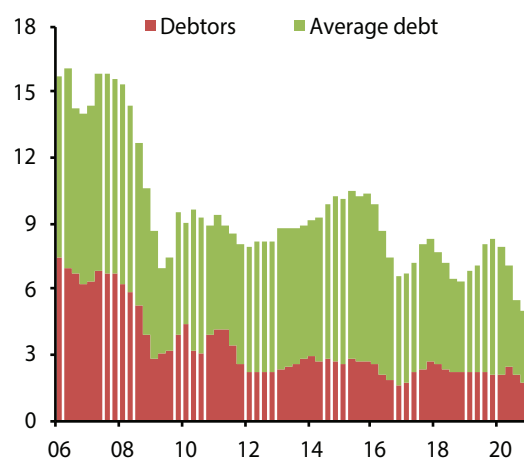


(1) As of the fourth quarter of 2020, the total stock of non-mortgage debt is made up of 17% bank consumer loans, 9% retailers, family compensation funds (CCAF), and S&Ls, 7% student loans, and 5% other.

(2) Other includes leasing and insurance companies, automobile finance companies, and the central government (FONASA, etc.).

Source: Central Bank of Chile, based on data from the FMC, SUSESO, and SP.

FIGURE II.19 BANK MORTGAGE DEBT
(real annual change, percent)



Source: Central Bank of Chile, based on data from the FMC.

During the pandemic, income declined for 50 to 60% of households, especially in the lower quintiles

The unusual size of the shock has led to a wide range of support policies on three fronts: use of savings, deferral of payments, and direct subsidies or transfers. The diversity of measures reflects the strong heterogeneity in the income adjustment, among other factors. According to the VII Social Protection Survey, in the third quarter of 2020, 54% of households reported having less income than before the pandemic. Based on data from the fourth quarter, the Ministry of Social Development (MSD) finds that more than 55% of households in the first two quintiles saw a reduction in income from the pre-pandemic period, versus 37% in the highest quintile. Since the beginning of the pandemic, support programs have been added and others extended. According to the MSD, by year-end 2020 more than half of Chilean households were receiving some kind of benefit, and 31% stated that they did not have enough income to cover their expenses. Income insufficiency affects 48% of households in the first quintile and 16% in the highest-income quintile. This represents a slight improvement from 49% insufficiency measured in July of last year, though it is still far above the 17% prior to the pandemic (figure II.20 and Monetary Policy Report, March 2021).

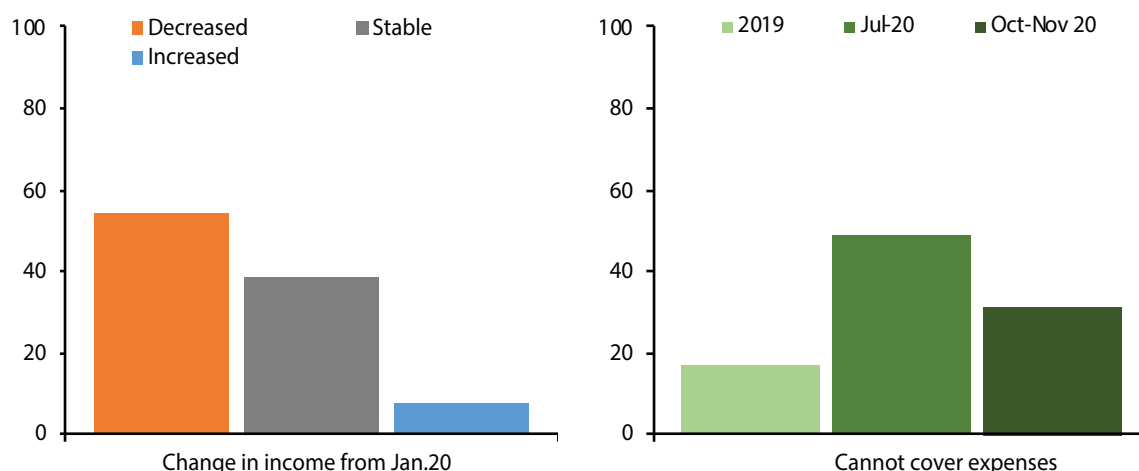
This dynamic coincides with signs of recovery in the labor market. Since August 2020, more than half of the 1.8 million jobs that were destroyed relative to July 2019 have been recovered. In the same period, the workforce contracted by just over 700,000 people. This poses challenges going forward in the recovery phase, as the slack has been reduced and there is thus less space to cope with new shocks or slower-than-expected reactivation.



The scenario faced during the crisis raised the usual indicators of household leverage and debt service, mainly due to the fall in income. In particular, for wage-earner bank debtors, the increased debt-to-income (DTI) ratio was due to a reduction in income and the effect of lower debt amortization among those who rescheduled loans. Thus, for the average bank debtor, the DTI increased from 5.5 to 6.0 times income between January and June of last year, but that increase has reversed since the last FSR, to just below the pre-pandemic level.

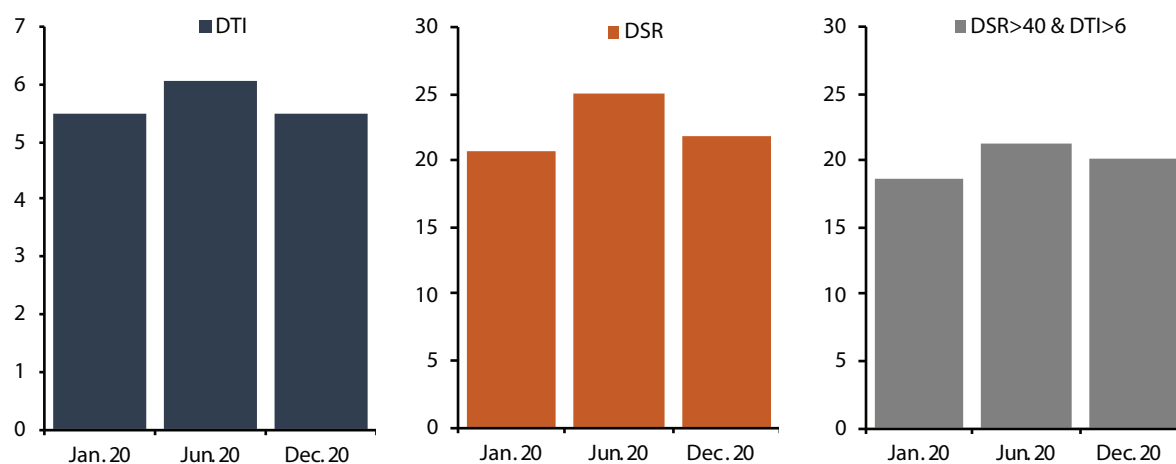
Meanwhile, the deferral of loan payments curbed the increase in the debt service ratio (DSR) in April and May, the months in which debtors most actively deferred payments. The DSR then continued increasing in tandem with lower incomes, peaking at 25% of monthly income in mid-2020. This trend has been reversed since June, as the economy began to recover the jobs that were destroyed, bringing this indicator close to 20% at year-end 2020. Similarly, the increase in the percentage of bank debtors with both a high financial burden and high leverage was reversed, a combination that implies a higher relative risk of future default (figure II.21).

FIGURE II.20 CHANGE IN INCOME AND INCOME INSUFFICIENCY
(before and after the pandemic, percent)



Source: VII Social Protection Survey and COVID Social Survey, Ministry of Social Development.

FIGURE II.21 WAGE EARNERS WITH BANK DEBT
(RDI: times monthly income; DSR: percent monthly income; combination: percent of debtors)



Source: Central Bank of Chile, based on data from the FMC.



The various support programs have been widely used by households and are instrumental in cushioning the negative shock and containing potential default episodes (figure II.22).

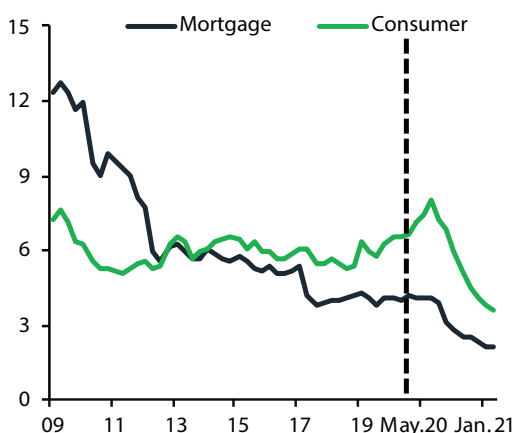
The support policies have not only limited the occurrence of default, but also decreased the default rate to historic lows. Since April of last year, when the banks began rescheduling loans, a decreasing trend has been recorded among mortgage debtors with more than one loan (figure II.17), which was reinforced by the increase in liquidity from pension fund withdrawals. Thus, the joint action of the support policies brought the consumer default rate from 6.6 to 3.6% of debtors between January 2020 and the same month of this year.

In the mortgage portfolio, the delinquency rate fell from 4 to 2% in the same period. The current level of default contrasts with the Global Financial Crisis, when more than 12% of mortgage debtors were in default.

These movements in default have been recorded for both women and men with access to banking services. As in other jurisdictions, women have historically had a lower occurrence of default in Chile, for both consumer and mortgage loans (Goodman et al., 2016). On average, default has been about 1 pp lower among women in both portfolios over the last decade. During the pandemic, the default gap between genders narrowed due to a greater reduction in default among men (figure II.23). On the other hand, by number of debtors, the share of consumer loans held by men versus women is balanced, whereas in the case of mortgages, there are three men for every two women, on average.

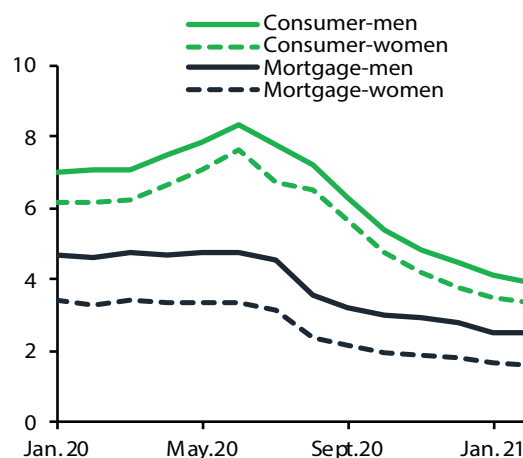
With regard to the loan rescheduling seen mostly in the first half of last year, part of the reduction in delinquency recorded after rescheduling could be reversed in the coming months. In previous cases of loan rescheduling, defaults rebounded after a year to a year and a half. This occurs when deferred installment payments are reactivated yet income has not grown at the same speed (Bergant and Kockerols, 2020; Córdova and Toledo, 2020).

FIGURE II.22 BANK DEFAULT RATE BY PORTFOLIO
(percent of debtors)



Source: Central Bank of Chile, based on data from the FMC.la

FIGURE II.23 BANK DEFAULT RATE BY GROUP
(percent of debtors)



Source: Central Bank of Chile, based on data from the FMC.



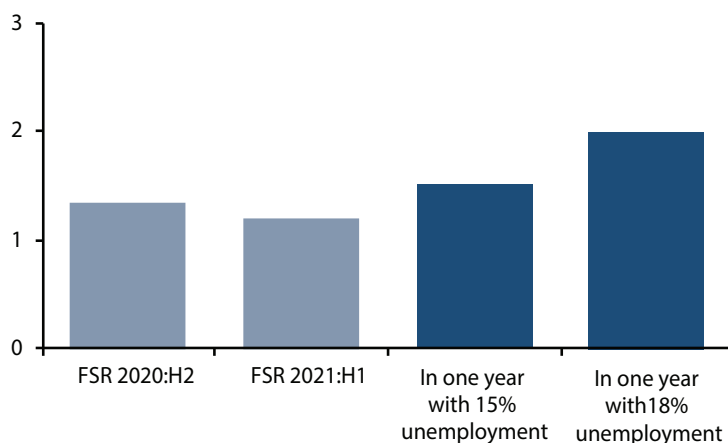
STRESS TESTS ON HOUSEHOLDS

The stress tests for analyzing the financial situation of households use two scenarios.^{8/} In the first, the national unemployment rate rises to 15% in one year; in the second, the unemployment rate rises to 18% in one year. In both tests, job destruction is concentrated in the construction, trade, and other services sectors. These scenarios are not forecasts of the future direction of the labor market, but rather are designed to illustrate the importance of the income-loss channel for household finances and the associated effects on the banking system. The tests consider labor income and also cash transfers from support programs, and they reproduce, starting in the second quarter of 2021, the labor market trend recorded during the Asian crisis, starting in the first quarter of 1998.

In addition to the support measures considered in the last FSR, the tests incorporate the extensions of the Job Protection Act (JPA) and the emergency family income program, as well as the second pension fund withdrawal. Under the scenario of lower net job creation, the mitigators related to the JPA, pension fund withdrawals, and direct transfers have a greater relative impact.

The results show that since the last FSR, there has been a slight decrease in household bank debt-at-risk, from 1.3 to 1.2% of GDP (figure II.24). Given the implementation of new mitigators since then and the creation of employment, the stress scenarios deliver results with lower debt-at-risk than in the last FSR.

FIGURE II.24 HOUSEHOLD BANK DEBT-AT-RISK
(percent of 2019 GDP)



Source: Central Bank of Chile, based on data from the FMC, SP, and SUSESO.

Under the higher unemployment scenario (18%), the share of vulnerable individuals (DSR over 40% of income) would increase substantially. This would translate into an increase in default on bank debt, with debt-at-risk rising from 1.0 to 2.0% of GDP over the course of one year, which is similar to the level recorded during the Global Financial Crisis. Under the lower unemployment scenario (15%), the effects on credit risk would be substantially lower. Specifically, debt-at-risk would reach 1.5% of GDP, half a percentage point lower than in the higher unemployment scenario. The lower job loss is more effective at reducing the credit risk of the mortgage portfolio, while the consumer debt-at-risk increases proportionally more.

^{8/} The underlying model considers two phases. In the first, the individual job destruction probability is correlated with worker characteristics and his/her job. In the second phase, the corresponding default probability is correlated with the job-loss probability, income level, and other controls. For more details, see Córdova and Valencia (2020).



In sum, households—like the rest of the economy—continue to face an uncertain macro-financial scenario due to the pandemic, which has shown some signs of improvement since the last FSR. Given the unusual magnitude and persistence of the loss of income, households have had to adjust their balance sheets, transforming long-term assets into liquidity and rescheduling liabilities. The extensive policy reaction implemented across the board has kept default in check. However, mitigation measures such as loan rescheduling incubate vulnerabilities going forward, while pension fund withdrawals leave households with a weakened financial situation in the long term.

In the current scenario, the main risk for the sector is a prolongation of the pandemic and the resulting delay in the recovery of the economy and the labor market.

Over the course of the crisis, the buffer has shrunk both for households and for those who implement the support policies. Considering that the underlying risks have not disappeared, the vulnerabilities of these agents could materialize in an adverse scenario with respect to the evolution of the pandemic.

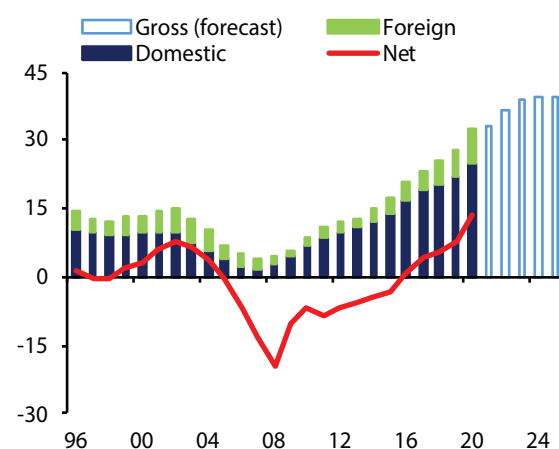
CENTRAL GOVERNMENT

The management of the pandemic has caused a significant increase in sovereign debt, and it will be necessary to rebuild the buffer to be able to face future disruptive events.

The fiscal effort required to implement the pandemic support measures has caused a significant increase in sovereign debt. At year-end 2020, gross sovereign debt was 32.5% of GDP, an increase of 5 pp over the previous year. This increase is explained by both the domestic component (+3 pp) and the foreign component (+2 pp) (figure II.25). Net debt reached 13.4% of GDP, an increase of 5.5 pp over 2019. According to information from the Budget Office, this upward trend in gross debt will continue in the coming years, with levels approaching 40% of GDP by 2025.

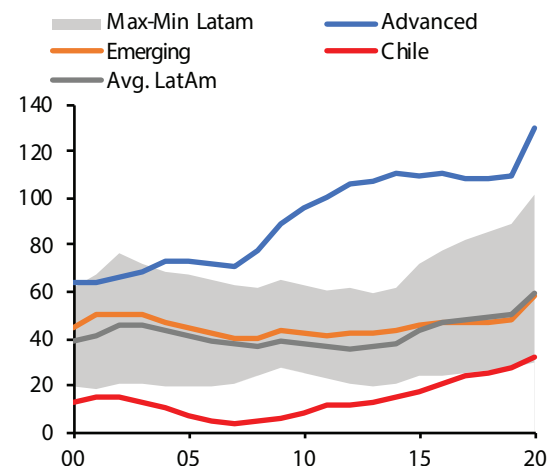
At the international level, the application of various fiscal aid packages to support households and firms during the pandemic implied a generalized increase in sovereign debt in 2020 (figure II.26). This greater sovereign indebtedness represents a vulnerability mainly for economies that were already in a weak fiscal position before the pandemic (chapter I).

FIGURE II. 25 CENTRAL GOVERNMENT DEBT
(percent of GDP)



Source: Central Bank of Chile, based on data from Dipres.

FIGURE II.26 SOVEREIGN DEBT
(percent of GDP)



Source: Banco Central, based on data from Dipres and IIF.



The local sovereign debt level does not represent a vulnerability in the short term. However, the accelerated growth rate in recent years requires a convergence toward sustainable levels.

In this sense, the establishment of a fiscal anchor, in line with the recommendations of the Independent Fiscal Council Report (CFA, March 2021), would reduce uncertainty in the face of events such as the last year. A fiscal anchor should consider contingent liabilities in a broad sense and under more stressed scenarios. Then, should disruptive events arise, the institutional framework should be able to mitigate the effects on investors' risk perception and, therefore, the potential impact on local financing conditions.



Box II.1:

FCIC and the Calibration of the Third Phase

Políticas de crédito en el contexto del Covid

At a global level, the COVID-19 pandemic has led to the implementation of lockdown measures that make it difficult for firms and households to generate income. Given the unusual magnitude and depth of the economic shock, different institutions in various jurisdictions have implemented policies to promote the continuity of credit and thus mitigate the loss of liquidity and income.

In general, uncertainty about the magnitude and length of a crisis period makes the occurrence of credit shortages or rationing more likely. At the same time, credit evaluation becomes more complex due to the difficulty of assessing the viability of firms during the turbulence (Stiglitz and Weiss, 1981). An abrupt reduction in credit exacerbates the magnitude of the initial shock, since it would cause solvent firms with liquidity problems to default or reorganize.

A policy response that emerges in this context is the distribution of risk between banks and the government, through the implementation of state-guarantee programs that cover, for example, commercial loans. Such a mechanism allows the credit evaluation process to be maintained, while avoiding a sudden contraction of credit flows and mitigating the impact of the real shock. As a complement to the above, monetary authorities provide the banks with special liquidity lines, which ensure financing at low rates for a long period of time and allow meeting high financing needs for a short time (Baudino, 2020).

Implementación de la FCIC

Like other economies during the pandemic, Chile has implemented various facilities to support the flow of credit. These measures have been coordinated between the Finance Ministry, the FMC, and the Central Bank (García, 2021; chapters I and V). In the particular case of the CBC, the Conditional Financing Facility for Increased Loans (FCIC), implemented in March 2020, is coordinated with the FOGAPE loan program, including the COVID and Reactiva phases.^{1/}

Unlike the short-term liquidity facility implemented during the Global Financial Crisis (GFC), the FCIC was conceived as a facility that conditions banks' access on the volume of loans they originate, both to access the program and to determine the amount authorized to be drawn. Thus, the FCIC (i) has a term of four years, at a rate equivalent to the minimum MPR in the period;^{2/} (ii) requires the delivery of collateral in an operation similar to a repo, but includes commercial loans to extend the size and type of collateral, given the magnitude of its use; and (iii) establishes rules for access and for the amount authorized by the CBC for each bank, based on how much credit they grant.

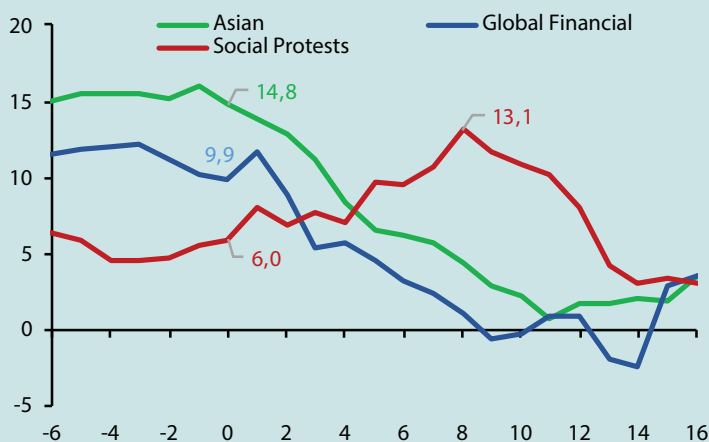
^{1/} The special loan program implemented through the Small Business Guarantee Fund (FOGAPE) considers a capitalization of the guarantee fund together with definitions of the interest rate and deductibles to be used in each phase. The program aims to finance loans for longer terms than traditional commercial bank loans (Solange Berstein, Presentation of the Senate Finance Committee, 6 January 2021).

^{2/} Corresponds to the effective lower bound of 0.5% nominal.



loans was procyclical, unlike what happened with the FCIC and the current policy deployment (figure II.27; Monetary Policy Report, December 2020).

FIGURE II.27 COMPARISON OF COMMERCIAL PORTFOLIO (*)
(real annual change, percent)



(*) Time 0 corresponds to Jul.98 for the Asian Crisis, Sep.09 for the Global Financial Crisis, and Oct.19 for the Social Protests.

Source: Central Bank of Chile, based on data from the FMC.

In the first phase, launched on 30 March 2020, the FCIC aimed to maintain liquidity and credit to firms and individuals.^{3/} This measure, which made US\$ 24 billion available, was widely used by banks, delivering resources equivalent to 10% of GDP. Thus, in the first month, commercial credit grew more than double digits, with a focus on large companies, which accumulated liquidity through this mechanism. In May, parallel to the start of the special FOGAPE-COVID loan program, the eligible collateral for the FCIC was expanded to incorporate better-quality loans in the individually assessed commercial portfolio (categories A1 to A4), in order to promote access to the facility.

The second phase of the FCIC was implemented as of 9 July 2020, with the aim of boosting the credit stock and making adjustments to link the facility more directly to the flow of FOGAPE-COVID loans. An additional rule was incorporated whereby banks were allowed access to the facility only if they met a growth requirement on the balance of loans—called shadow stock—which was calculated as a function of the balance loaned by each eligible lender as of May 2020. For this phase, a total of US\$ 16 billion was made available. Of the total available, 33% had been used by the banking

The third phase of the FCIC was announced in January of this year and began operating in March. This phase is focused on facilitating the refinancing of loans that are up to date, as well as loans that already had a guarantee through programs such as FOGAPE-COVID. It also expands the eligible collateral to lower-rated loans (categories A5 and A6) with a state guarantee (chapters II and III). Some of the elements considered in the design of the third phase are discussed below (diagram II.1).

^{3/} The first phase considered a base amount of 3% of the balance of commercial loans, plus consumer loans. In addition, the variable amounts allocated depend on the annual increase in the balance of the commercial and consumer portfolio, apart from the special emphasis on loans to smaller companies. The second phase also took into account the flow of credit to nonbank lenders, which are an important source of credit to households.



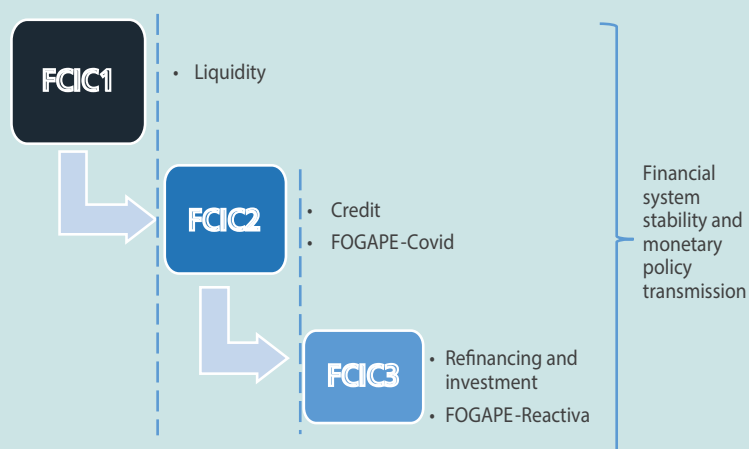
FCIC-3 and the refinancing needs of firms

In contrast to the start of the pandemic, the recent situation reveals new refinancing needs, in addition to the need for working capital that predominated at the beginning of the crisis. Specifically, in this economic recovery stage, solvent companies need to be able to reorganize their balance sheets so they can resume their production and investment activities.

Thus, in the design of the third phase, it was necessary to calibrate the size of the facility with respect to the new combination of needs to be covered. To address this dimension, a stress test was carried out with the aim of exploiting the heterogeneity of the companies that would potentially use the credit. This consisted in relating firms' sales, financial burden, and other individual characteristics with their default probability, in a panel of firms that are financed by the Chilean banking system. The result shows the excess financial burden that must be refinanced to avoid the default of sustainable firms.^{4/}

The results of the exercise suggest that the excess financial burden that would need to be extended to avoid an increase in commercial default—above the historical average—in the next two years is of considerable magnitude, equivalent to 9% of the stock of the commercial portfolio (table II.2). This would be reduced to 3% if only the 75% of firms with lower leverage in each sector were refinanced. Refinancing needs would thus range from US\$ 6.0 to 10.0 billion. The upper limit of this range coincides with the remaining balance of FCIC-2, which was reallocated to the third phase of the credit facility. de la FCIC II, el cual fue reasignado a la tercera etapa de la facilidad de crédito.

DIAGRAM II.1 EVOLUTION OF THE FCIC



Source: Central Bank of Chile

^{4/} The implementation of this three-stage filter requires the estimation of a default probability for each company. The estimate is made using a panel probit model with a sample of 152,000 companies that are financed by local banks (Córdova et al., 2021). It is thus possible to identify all clients eligible for rescheduling and refinancing previous debt. For this group, the excess financial burden is calculated, defined as the monthly disbursement for debt payment that exceeds the companies'



Final considerations

The set of measures to facilitate credit has managed to generate countercyclical lending, thus breaking the historical relationship with economic activity. One of the keys to achieving this objective was to link the FCIC to the state-guarantee program and the growth of credit, which allows it to be adapted to firms' needs.^{5/} In the most recent phase, a detailed evaluation was carried out using financial and sales microdata to gauge its size.

TABLA II.2 MONTOS DE REFINANCIAMIENTO BAJO DISTINTOS ESCENARIOS
(porcentaje del stock de deuda comercial)

	Refinance everything (default at 8%)	Refinance 90% less leveraged	Refinance 75% less leveraged	Refinance 90% less leveraged with positive margin
Accum. 1 year	2.9%	1.5%	1.1%	1.2%
Accum. 2 year	9.1%	4.7%	3.3%	3.8%

Fuente: Banco Central de Chile en base a información de la CMF y SII.

Finally, if the three phases of the FCIC are fully executed, the Central Bank will have channeled resources to the banking system equivalent to 15% of GDP. This has given lenders the resources to grant credit during a particularly long and intense crisis, thereby contributing not only to meeting the Central Bank's objectives, but also to moderating the economic impact of the pandemic on the most vulnerable sectors.

^{5/} In the third phase of the FCIC, the flow of loans to smaller companies is directly considered, including both state-guaranteed and conventional loans. The most recent program does not include loans to households, which have shown lower demand.



III. LENDERS

Since the last FSR, banking risks have remained limited despite the unusual magnitude of the pandemic shock and the provision of credit has continued to flow, although it has slowed recently. This reflects the prudent allocation and management of credit risk, the improvement in the economic environment, the ongoing availability of facilities, and the continuation of favorable financing conditions. Loan growth has been slower for nonbank lenders (NBLs), while their delinquency indicators have improved in the most recent period. In this context, stress tests suggest significant impacts under deteriorated scenarios; however, the recent increase in solvency points to some improvement since the last round of tests. Going forward, increased risk reduces the ability to rebuild the capital cushion. This would be exacerbated if a scenario of greater economic deterioration materializes. These elements present challenges with respect to future credit dynamics, which is why the presence of extraordinary measures such as those in force is fundamental. Given this situation, the convergence to the Basel III standards, contained in the new General Banking Law, remains a priority, and it should begin to be applied late this year.

BANKING SECTOR

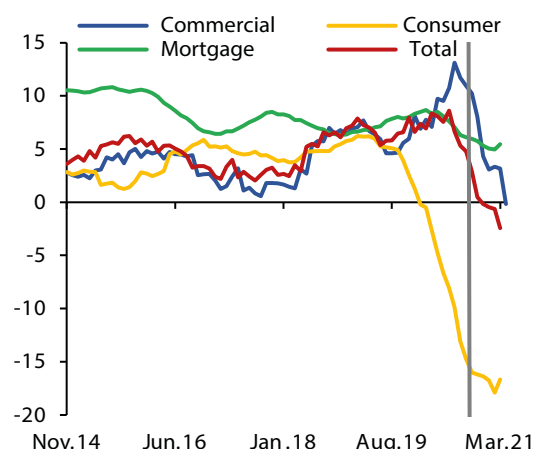
Bank credit has slowed, especially for households. Thus, there was a marked contraction in the consumer portfolio and a slowdown in mortgages. The growth of the commercial portfolio has also slowed, after having increased significantly thanks to support measures (figure III.1).

Since the last FSR, the commercial portfolio recorded a slowdown that stabilized in the first months of this year, converging to its historical relationship with economic activity (statistical appendix). Financing through the FOGAPE-COVID program reached nearly US\$ 14.0 billion, according to data from the Finance Ministry, which allowed commercial loans to continue growing during 2020; however, commercial loans outside this program have continued to contract. This dynamic intensified in March, due to the comparison base effect of the same month in the previous year, when credit to this segment grew exceptionally due to the buildup of liquidity by reporting companies (figure III.2; FSR, Second Half 2020). This lower dynamism is in line with the recent extension of health restrictions. In addition, the lower annual growth in March 2021 reflects the reversal of loans taken out by larger companies, for precautionary reasons, at the beginning of the lockdowns in March of last year.

The dynamics of the commercial portfolio are explained by both supply and demand factors. The Bank Lending Survey (BLS) for the first quarter of this year reports more dynamic demand, due to greater working capital financing needs (figures III.3 and III.4). Supply remains somewhat tight in the large company segment, due to the economic environment. The recent implementation of a second financing program with state guarantees (FOGAPE-Reactiva), which expands the coverage and use of the funds for investment, is one of the factors increasing the supply of loans to smaller companies (figures III.4, Box III.1). As of the data cutoff date of this report, loans totaling US\$ 3.3 billion have been financed through this program.

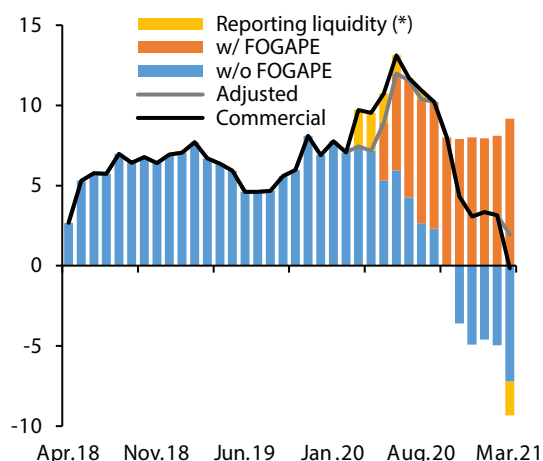


FIGURE III.1 GROWTH OF LOANS (*)
(real annual change, percent)



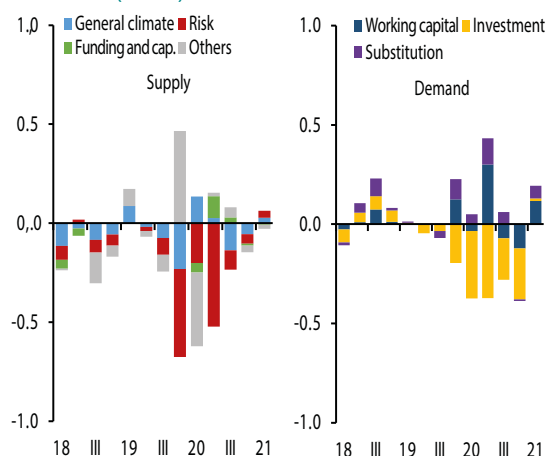
(*) Based on individual financial statements. Vertical line marks the data cutoff of the last FSR. Data for March 2021 are preliminary. Source: Central Bank of Chile, based on data from the FMC.

FIGURE III.2 GROWTH OF COMMERCIAL LOANS
(real annual change, percent)



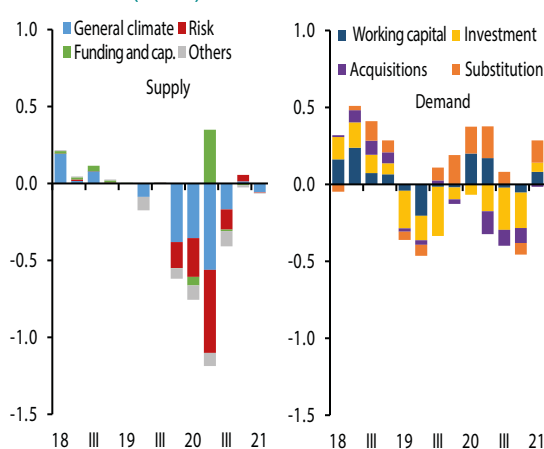
(*) Increase in the stock of loans of firms that report to the FMC that took out loans in March 2020 and are corrected in the "Adjusted" line. Data for March 2021 are preliminary. Source: Central Bank of Chile, based on data from the FMC.

FIGURE III.3 FACTORS AFFECTING LENDING CONDITIONS FOR SMES (*)
(index)



(*) Net percentage of responses, weighted by the bank's share in the commercial portfolio. Source: Central Bank of Chile.

FIGURE III.4 FACTORS AFFECTING LENDING CONDITIONS FOR LARGE FIRMS (*)
(index)

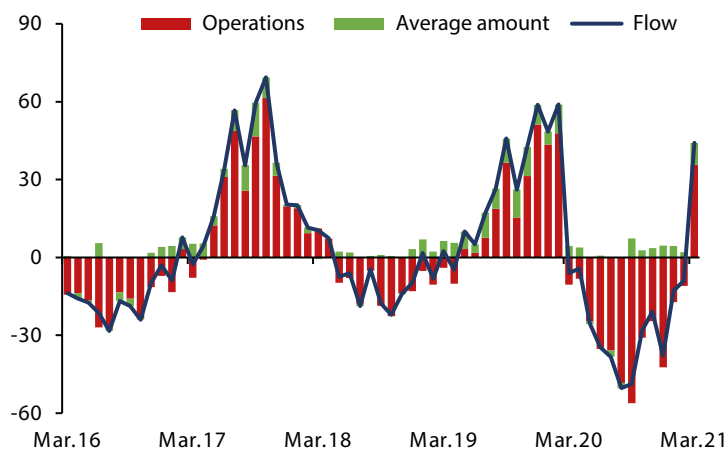


(*) Net percentage of responses, weighted by the bank's share in the commercial portfolio. Source: Central Bank of Chile.

With regard to consumer loans in the banking system, the downward trend has continued to deepen, becoming more pronounced than in past episodes of financial fragility. Thus, the portfolio went from an annual drop of 15% in the third quarter of 2020 to a decrease of 17% in March of this year. This dynamic is consistent with a lower supply and demand for loans, in a context of economic contraction and a weak labor market. However, the results of the BLS for the last quarter show a notable recovery in both components, which would point to a rebound in this segment in the coming months.



FIGURE III.5 GROWTH OF MORTGAGE LOAN FLOW
(real annual change, percent)



Source: Central Bank of Chile, based on data from the FMC.

Since the last FSR, mortgage loans have become less dynamic, with an annual growth rate close to 5.5% in March of this year. This was due to the persistent contraction in the number of operations, although this trend has tended to reverse recently. Together with the recent increase in the average size of loans granted, this suggests a rebound in home loans in the coming months (figure III.5).^{1/}

Despite the largest negative activity shock in recent decades, delinquency in commercial and household portfolios has continued to be contained by support policies.

Although greater default has not materialized, the sustained increase in provisions for these segments points to an increase in risk expectations on the part of the banking system. The delinquency of the commercial portfolio remains low and stable from a historical perspective. However, alternative credit risk indicators that take into account not only payment history, but also a prospective evaluation of firms' payment capacity, show a deterioration. Thus, the share of the substandard and nonperforming individually assessed portfolio has grown, from 7.1% of the commercial portfolio in September 2020 to 8.0% in February 2021. Since the last FSR, migration toward higher-risk loans drove an increase in expected loss and, therefore, in specific provisions, which reached 3.2% as of February of this year (table III.1). In addition, banks increased their stock of additional provisions by more than US\$ 450 million in the same period, as a safeguard against facing an economic environment that is still perceived as uncertain.

In the case of the household portfolio, various support programs have contributed to the reduction of delinquency indicators. In this context, the use of the resources obtained by debtors who requested the partial withdrawal of their pension savings and the rescheduling of loans in 2020 contributed to mitigating the materialization of default (chapter II). In addition, the recent Law 21,299 (corresponding to the FOGAPE-Deferral program), which allows the deferral of up to six mortgage installments and has a state guarantee, should help keep delinquency levels down.

^{1/} This recovery is in line with more dynamic new home sales starting in the third quarter of 2020 (chapter 2).



TABLE III.1 TRADITIONAL CREDIT RISK INDICATORS (1)
(percent of respective loans)

Indicators	2016	2017	2018	2019	2020	Feb.21	AVG.
Arrears							
Comercial	1.5	1.7	1.7	1.9	1.7	1.6	1.7
Consumer	2.0	2.1	1.9	2.3	1.3	1.3	2.0
Mortgage	2.7	2.4	2.4	2.4	1.5	1.4	2.4
Stock of provisions							
Specific							
Comercial	2.6	2.6	2.5	2.7	3.2	3.2	2.7
Consumer	6.3	6.4	6.4	7.1	7.0	6.7	6.5
Additional							
Comercial	0.5	0.5	0.5	0.4	0.7	0.8	0.5
Consumer	0.2	0.2	0.4	0.4	1.3	1.4	0.4
Write-offs (2)							
Comercial	0.5	0.6	0.5	0.6	0.6	0.6	0.6
Consumer	5.3	5.7	5.6	5.7	6.9	6.4	5.8

(1) Individual basis, thus excluding subsidiaries and banking support services corporations. Data as of December of each year; average between February 2015 and February 2021.

(2) Annualized write-off ratio.

Source: Central Bank of Chile, based on data from the FMC.

Bank funding conditions remain favorable due to the ongoing availability of credit facilities and the increase in liquidity among households and firms.

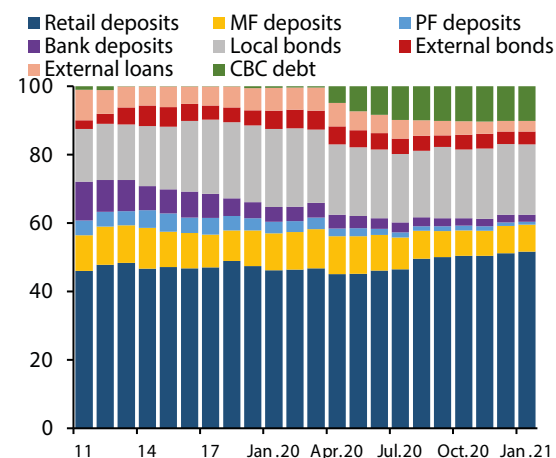
The share of retail deposits by individuals in the liability structure has increased, while the lower dependence on institutional deposits and the increase in the Central Bank's share in bank funding have favored the banking system's liquidity position. Between July 2020 and January of this year, total deposits (term and sight) by natural persons increased as a share of total liabilities, from 19.4% to 24.7%, while the relative share of time deposits held by mutual funds and pension funds decreased (figure III.6). This lower share of the pension funds was due, in part, to the sale of instruments necessary to finance the early withdrawal of pension savings (chapter I). The greater share of retail financing continues to display significant gaps with respect to the associated minimum requirements, in terms of both the liquidity coverage ratio and the residual maturity mismatches at 30 and 90 days (figure III.7 and box I.1).^{2/}

The FCIC support program generated liquidity that helped sustain the provision of credit during the worst of the economic contraction, which increased the Central Bank's share of total bank liabilities. These commitments stabilized at around 10% of bank liabilities in the first months of this year, as a result of a more limited use of the second FCIC line. However, the recent upturn in loans associated with the FOGAPE-Reactiva program has driven an increase in Central Bank funding through the use of the FCIC-3 line. This program considers a maximum of up to US\$ 10 billion and expands the eligible collateral. As of the data cutoff of this report, slightly over 60% had been delivered (chapter I).

^{2/} The temporary easing of minimum requirements for the liquidity coverage ratio and maturity mismatches were renewed this year (chapter V).



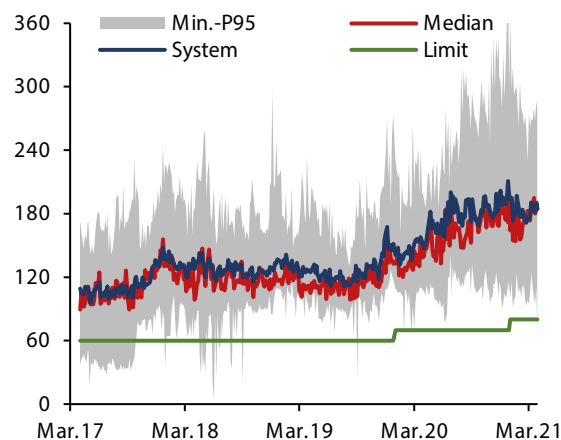
FIGURE III.6 COMPOSITION OF BANKING SYSTEM LIABILITIES (*)
(percent of liabilities)



(*) Excludes subordinated bonds.

Source: Central Bank of Chile, based on data from the FMC and Central Securities Depository.

FIGURE III.7 LIQUIDITY COVERAGE RATIO (*)
(percent of net outflows in 30 days)



(*) Calculated with individual-level data.

Source: Central Bank of Chile, based on data from the FMC.

Bank profitability indicators maintained a downward trend through the end of 2020 and stabilized in the first months of this year.

The annualized profitability of the banking system has fallen more sharply since the last FSR, although it stabilized in the most recent period. As of February of this year, return on equity (ROE) was 6.0%, while return on assets (ROA) was 0.44%. Most recently, the fall in profitability indicators is explained by the constitution of higher credit risk provisions and the decreasing trend in the interest and indexation margin—a measure of the return associated with lending activity—despite the reduction in funding costs.

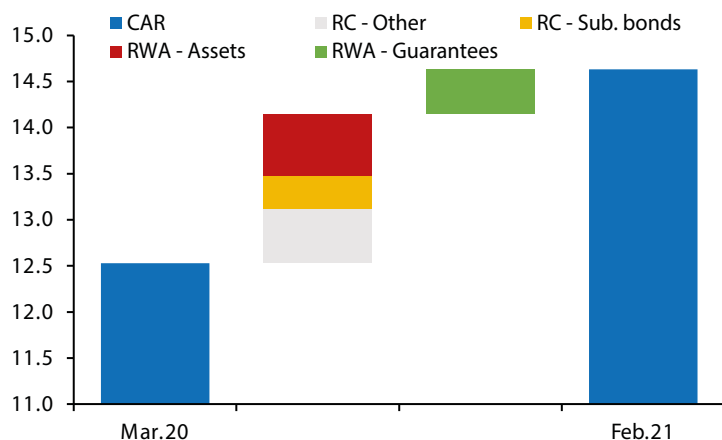
The sufficiency of the additional provisions, in response to the higher risk environment, will largely depend on the evolution of the pandemic and its effect on the normalization of economic activity over the course of this year. In the event of a more favorable economic environment, the possibility of releasing some of these provisions or partially allocating them to specific provisions would contribute to reversing the dynamics of bank profitability.

The banking system's capital cushion has increased, mainly due to a change in the composition of the loan portfolio, the issuance of subordinated bonds, and regulatory changes.

Solvency has increased significantly. The system's capital adequacy ratio (CAR) has maintained its upward trend in recent months, reaching 14.6% in February 2021. A significant part of this increase is explained by the decrease in risk-weighted assets (RWAs) by around 7.9% between March 2020 and February of this year, due to the lower credit activity of the household portfolio, and the regulatory change that reduced the credit risk weighting for the share of the loan portfolio backed by state guarantees (figure III.8). Although the increase in capital buffers contributes to the banks' ability to support growth during the economic recovery phase, the materialization of more severe stress scenarios, where the economy's recovery is much slower than expected, would generate significant impacts on the profitability and capital adequacy of some banks (see Stress Test, below).



FIGURE III.8 CHANGES IN CAR COMPONENTS (*)
(percentage points)



(*) Between March 2020 and February 2021. RC: Regulatory capital; RWA: Risk-weighted assets. Other mainly includes core capital.

Source: Central Bank of Chile, based on data from the FMC.

STRESS TESTS^{3/}

Bank stress tests show that the banking system maintains an adequate solvency position for facing macro-financial stress scenarios.

In the preparation of the current tests, credit risk dynamics are consistent with a scenario in which mobility restrictions continue to limit the payment capacity of agents. In addition, the increase in additional provisions is incorporated—treating them as specific—and the adjustments for state-guaranteed loans are reversed, considering them as a traditional commercial portfolio in terms of their provisions and their impact on RWAs. Relative to the last round of tests, banks have a higher capital buffer for facing a stress scenario, although it is still lower than in the pre-pandemic period.

Stress tests evaluate the impact of credit and market risk under severe but plausible stress scenarios. These tests use macro-financial and accounting data from the banking system for December 2020. Stress tests are an analytical tool that contribute to identifying financial strengths and weaknesses in the system at a given point in time.^{4/} Given their partial nature, they do not necessarily uncover all the effects of the scenarios analyzed, the policy responses to crisis events, or the banks' risk management. Consequently, they should not be interpreted as forecasts.

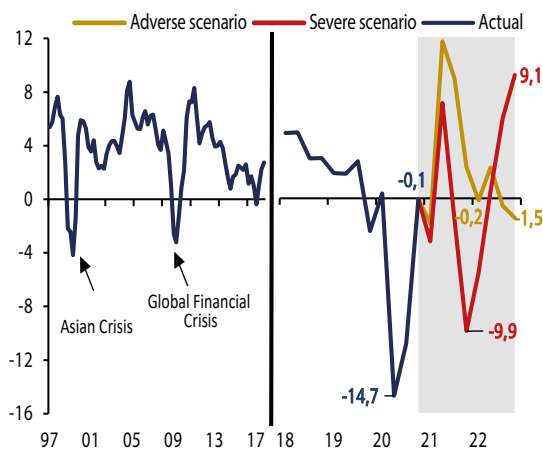
The test considers a stressed scenario consistent with an unfavorable evolution of the pandemic, with a new deterioration in economic activity.

^{3/} Based on the methodology described in the FSR for the second half of 2013 and in Martínez et al. (2017). Both the analysis and the results are regularly reported to the FMC.

^{4/} This tool estimates credit risk with a model that relates loan loss provisions, which reflect the cost of default, with macro-financial factors, such as output and interest rates. Market risk considers two types of exposure: currency and interest rates (disaggregated into valuation and repricing).



GRÁFICO III.9a ANNUAL GDP GROWTH (*)
(quarterly data, percent)



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

FIGURE III.9b REAL GDP (*)
(quarterly data, index 100 = Q3.2019)



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

The design of the stress scenarios has represented a challenge in the last few test rounds, due to the manifestation of unexpected events with extremely negative effects on activity, as well as the potential impact of support measures that mitigate the effect of lower activity on credit and default. Consequently, alternatives to the previous fragility scenarios have been prepared. As such, the previous shocks and results are not necessarily comparable with the scenarios used in this round of tests, which nonetheless provide an appropriate measurement of the solvency of the system in the current context. The severe scenario, like its usual definition, is characterized by a strong contraction in the coming quarters, with the growth rate converging in the next three years (figure III.9a). Thus, output would fall to levels similar to the lowest point observed in 2020 and would have a somewhat slower recovery (figure III.9b). The adverse scenario, in turn, corresponds to the fifth percentile of the forecasts in the March 2021 Monetary Policy Report, featuring a smaller but persistent contraction. Both scenarios incorporate a shift in the spot and forward yield curves, with an increase of 300 bp for the short-term interest rate and 100 bp for the long rate, and a 16% depreciation of the exchange rate in a period of two weeks.^{5/}

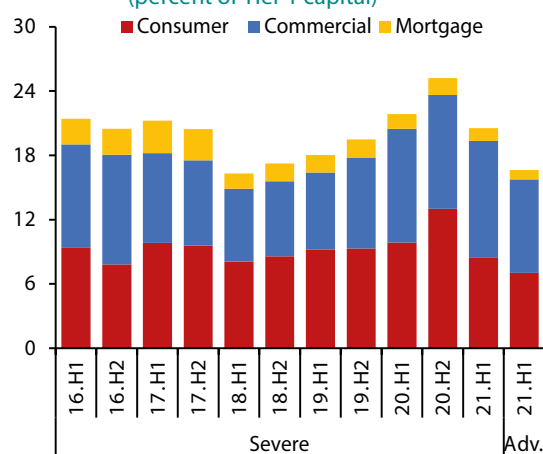
The results show that credit risk decreases relative to the previous year, while market risks increase marginally.

The growing trend of the estimated impact, reported in the last few FSRs, is reversed in this round. Although credit risk remains high in the commercial portfolio, the contraction in consumer credit and the improvement in the quality of the consumer portfolio have reduced the banks' risk in this segment (figure III.10). For the purposes of this exercise, a materialization of the expected risk is considered. Under the severe scenario, the test estimates a potential loss of total loans equivalent to 20.5% of the system's capital, which represents a 4.7 pp decrease from the last test (table III.2). Under the adverse scenario, credit risk represents 16.6% of capital, a rise from 14.7% in the previous test due to the greater persistence of the deterioration in the current scenario. This would indicate a greater vulnerability of the system to a prolongation of low activity levels.

^{5/} A stressed VAR is used with 15-day movements in the exchange rate, at 99% confidence. Although this methodology is not included in tests prior to 2019.I, for comparative purposes it is included in earlier results as part of the total risk.

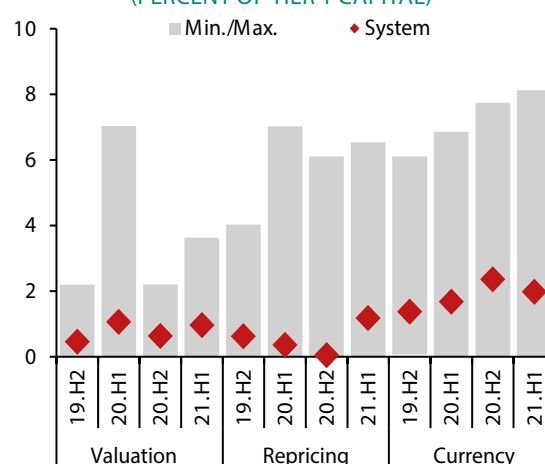


FIGURE III.10 SYSTEM CREDIT RISK
(percent of Tier 1 capital)



Source: Central Bank of Chile, based on data from the FMC.

FIGURE III.11 MARKET RISK
(PERCENT OF TIER 1 CAPITAL)



Source: Central Bank of Chile, based on data from the FMC.

With regard to market risk, currency risk has decreased since the last test due to the smaller foreign currency mismatch.^{6/} However, this risk could have a substantial impact for some institutions (figure III.11). Interest rate risk has increased in both the repricing and valuation components, although banks maintain sufficient resources to meet their higher short-term commitments (figure III.7), thus reducing liquidity risk. Although market risks are of a lesser magnitude than credit risk, as a whole they can represent around 4% of the system's capital and more than 8% in some banks (figure III.11).

The profitability of the banking system falls significantly under the stress scenarios.

The test shows that the system's profitability would decrease especially under the adverse scenario, and losses would be higher under the severe stress scenario. Thus, the system's ROE turns negative, reaching -10.5% of core capital under the adverse scenario and -16% under the severe scenario. Within the system, banks that together represent about 93% of total core capital would exhibit negative returns in the severe stress scenario (91% in the last FSR), versus 91% of core capital in the adverse scenario (figure III.12).

TABLA III.2 IMPACT OF STRESS TESTS ON PROFITABILITY (*)
(percent of Tier 1 capital)

	17.H1	17.H2	18.H1	18.H2	19.H1	19.H2	20.S1	20.H2	21.H1	21.H1
Initial ROE	11.3	14.1	12.2	13.8	11.7	13.4	11.9	10.0	9.1	9.1
Market risk	-0.8	-2.6	-3.0	-2.8	-2.5	-2.5	-3.1	-3.1	-4.1	-4.1
Credit risk	-21.2	-20.5	-16.3	-17.2	-18.0	-19.5	-21.9	-25.2	-20.5	-16.6
Margin	2.1	2.3	2.8	3.9	3.3	2.5	1.8	0.0	-0.4	1.2
Final ROE	-8.7	-6.7	-4.3	-2.4	-5.6	-6.0	-11.3	-18.2	-16.0	-10.5

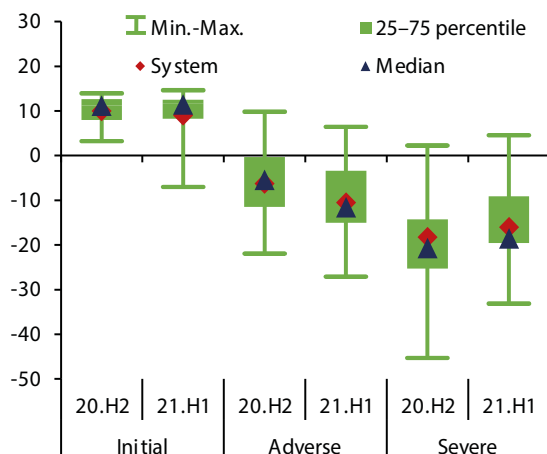
(*) Due to the effects of the Covid-19 pandemic, severe stress scenarios are not comparable since the tests reported in the FSR for the first half of 2020.

Source: Central Bank of Chile, based on data from the FMC.

^{6/} An asset currency mismatch on the balance sheet is exposed to an exchange rate appreciation, while a liability mismatch is exposed to a depreciation.

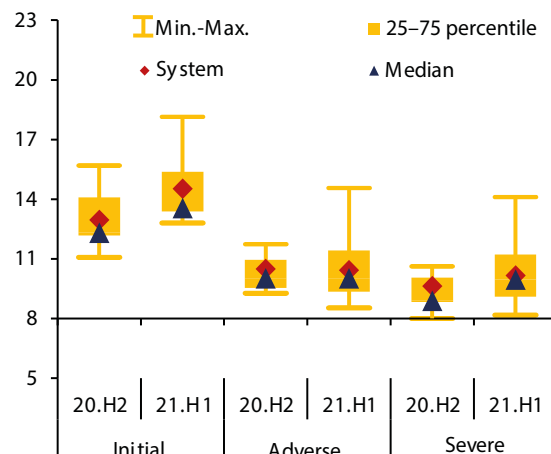


FIGURE III.12 IMPACT ON ROE (*)
(earnings over Tier 1 capital, percent)



(*) Data weighted by the Tier 1 capital of each institution. Calculations do not include treasury, foreign trade, or retail banks that have left the system. Source: Central Bank of Chile, based on data from the FMC.

FIGURE III.13 IMPACT ON CAPITAL ADEQUACY RATIO (*)
(regulatory capital over risk-weighted assets, percent)



(*) Data weighted by the Tier 1 capital of each institution. Calculations do not include treasury, foreign trade, or retail banks that have left the system. Source: Central Bank of Chile, based on data from the FMC.

The initial solvency of the banks is higher than in the last test, which reduces the system's vulnerability in the stress scenarios.

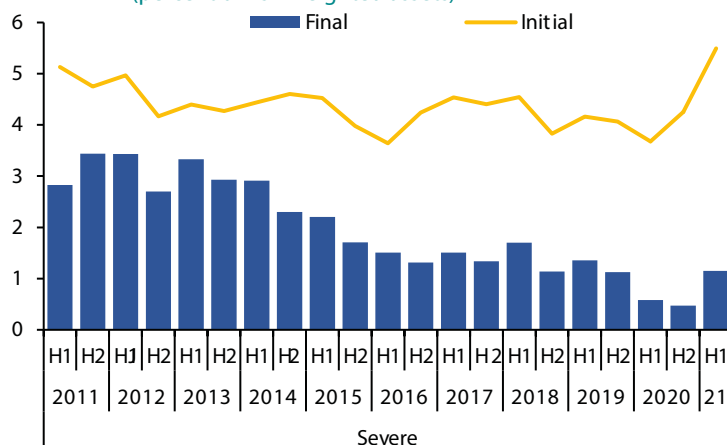
As mentioned above, the CAR increases compared to the last test, due to a decrease in risk-weighted assets (figure III.8). However, some adjustments are made to maintain the severity of the exercise. First, state-guaranteed commercial loans are treated the same as regular commercial loans, which means reversing the associated deduction from risk-weighted assets. Additionally, the underlying credit risks are assumed to materialize, which is reflected in the additional provisions becoming specific.^{7/} Together, the two effects would decrease the CAR by around 60 bp.

In this context, solvency under the severe scenario increases compared to the last test, and the dispersion in relation to the initial distribution is higher (figure III.13). However, the impact of the severe scenario on capital increases to 4.4 pp, up from 3.3 pp in the last test; this reflects a lower generation of margins, given the less dynamic loans. Likewise, the distribution of the CAR under the adverse scenario is lower than the initial distribution, although it is slightly higher than under the severe scenario. Furthermore, no bank presents capital levels below 8% in the stress scenarios. Meanwhile, the set of banks that maintain a CAR over 10% in the severe scenario represents about 26% of system assets, similar to the result in the last test. Although capital buffers recover to around pre-pandemic levels, they remain low compared to tests in previous years (figure III.14).

^{7/} Although the conversion of additional provisions to specific provisions does not have a net effect on expenses, they are deducted from the banks' regulatory capital.



FIGURE III.14 CAPITAL BUFFER UNDER THE SEVERE STRESS SCENARIO (*)
(percent of risk-weighted assets)



(*) Excess regulatory capital over the regulatory minimum. Based on the specific limits of each bank.

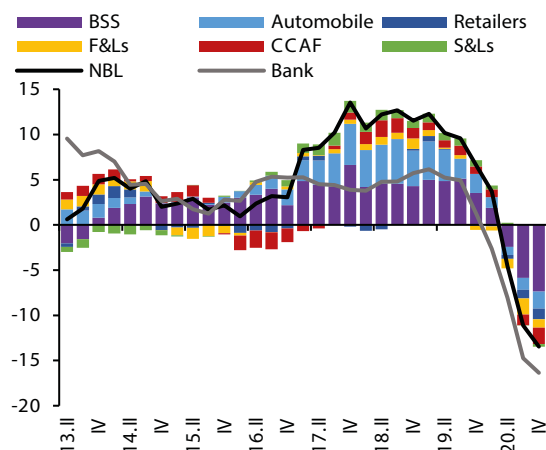
Source: Central Bank of Chile, based on data from the FMC.

NONBANK LENDERS^{9/}

The NBLs have continued to reduce their loans in the consumer segment, although to a lesser extent than bank loans.

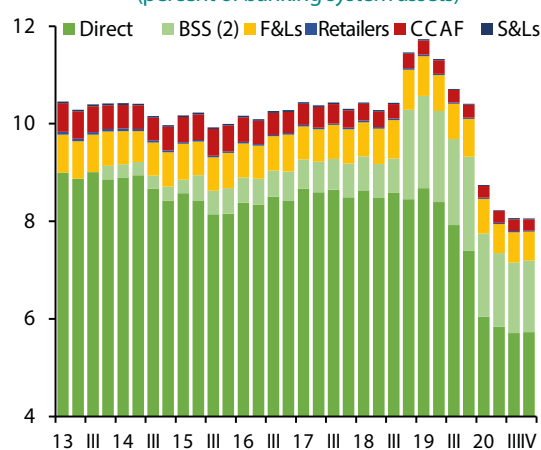
The slowdown in consumer loans from nonbank lenders (NBLs) has deepened, recording the lowest growth rate in the decade. Thus, NBL loans had negative growth in the fourth quarter of last year, falling from -4.6% in June to -13.5% in December. This trend was strongly influenced by the performance of banking support services corporations (BSS) and automobile finance companies. The former registered a real annual drop of 19.1% in the fourth quarter of 2020; the latter, a real annual contraction of 8.7% in the same period (figure III.15).^{9/}

FIGURE III.15 CONTRIBUTION TO NBL LOAN GROWTH
(real annual change, percent)



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

FIGURE III.16 BANKING SYSTEM EXPOSURE
TO THE CONSUMER SEGMENT (1)(2)
(percent of banking system assets)



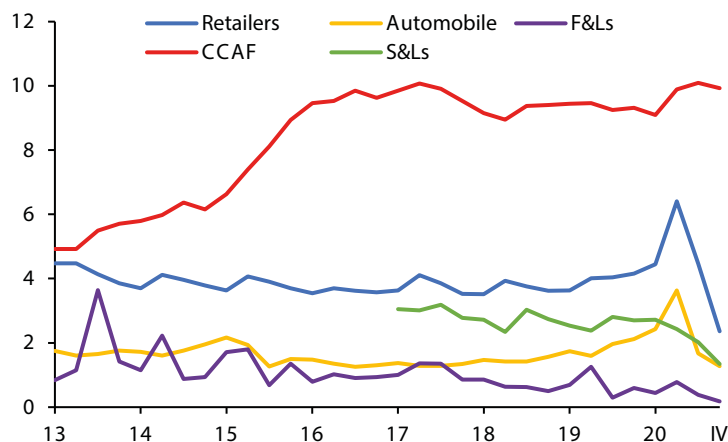
(1) Direct exposure includes household consumer loans by the parent bank. Indirect exposure comprises commercial loans by the banking sector to retailers, F&Ls, CCAFs, and S&Ls, where F&Ls include the automobile segment.

(2) In December 2018, CMR was constituted as a BSS of Banco Falabella and Walmart Servicios Financieros as a BSS of BCI.

Source: Central Bank of Chile, based on data from the FMC.



FIGURE III.17 NONPERFORMING LOAN RATE (*)
(percent of loans)



(*) Arrears of 90 to 180 days, except for the CCAFs. Retailers include the BSSs. For the BSSs, arrears were obtained using the consolidated and individual financial statements of the respective parent companies.

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

The banking system's lower exposure to consumer loans is due to both the contraction of this segment in the banks themselves and their lower indirect exposure through commercial loans to NBLs. In particular, the latter component has declined in recent years, reaching around 0.9% of bank assets in late 2020 (figure III.16).

The latest delinquency records for the portfolio show a significant drop, especially for loans from retailers.

As in the bank consumer portfolio, default has fallen significantly, in particular on loans from retailers and automobile finance companies. This is due, in large part, to the use of the resources obtained through the different aid programs and the pension fund withdrawal (figure III.17).

On the other hand, the profitability and leverage levels of the NBLs have not changed significantly in the year, except for some continued deterioration in the profitability of retailers not linked to the bank BSSs (table III.3).

^{8/} Nonbank lenders (NBLs) grant loans to households and firms. NBLs include banking support services corporations (BSS), retailers, family compensation funds (CCAF), savings and loan associations (S&Ls), factoring and leasing companies (F&Ls), and automobile finance companies.

^{9/} NBL loans are significant, representing over 60% of the consumer credit market of the bank parent companies. As of December 2020, credit card administrators constituted as BSSs represented 22.7%; automobile finance companies, 14.4%; CCAF, 13.5%; S&Ls, 8.1%; and F&Ls 2.3% (statistical appendix).



TABLA III.3 PROFITABILITY AND LEVERAGE INDICATORS (1)
(percent)

Indicators	2016	2017	2018	2019	Jun.20	Dec.20
ROA						
BSS	5.4	5.4	4.8	4.4	3.0	4.6
Retailers	2.8	2.3	0.7	-5.2	-1.4	-1.7
F&Ls (2)	3.2	2.6	2.6	2.2	0.9	1.6
CCAF	0.9	1.6	2.2	2.5	1.3	0.8
S&Ls	2.7	3.8	3.8	3.6	2.7	2.6
Leverage						
BSS	29.0	27.6	18.3	18.8	17.8	21.2
Retailers	44.6	43.5	40.6	24.3	24.9	30.6
F&Ls (2)	20.5	17.2	16.5	17.1	18.2	17.7
CCAF	36.9	37.7	36.9	36.3	36.5	38.6
S&Ls	29.1	28.2	27.2	26.3	25.0	23.7

(1) ROA is calculated as earnings over assets; leverage, as capital over assets.

(2) F&Ls include automobile financing.

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

RISK FACTORS

The quality of the banks' loan portfolio could deteriorate significantly if the economic recovery were interrupted.

A scenario in which the economic recovery is slower than expected would affect firms that are more indebted or that still have a high financial burden, which could increase their default risk (chapter II). Thus, the prolongation of health restrictions would reduce the income of businesses in sectors that are more affected by the lockdowns and would extend the difficulties of firms that have partially restarted their commercial activities.

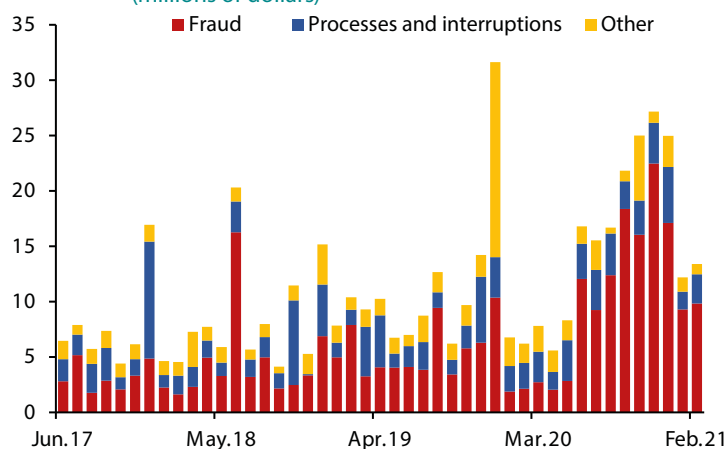
The possibility of using financing through the FOGAPE-Reactiva program would partially mitigate the financial difficulties of some of these businesses. However, greater use of the program, combined with less favorable macroeconomic scenarios where income generation is difficult, would expose banks to more leveraged debtor companies that have a lower capacity to cover their financial expenses, which could deteriorate the quality of the portfolio. Thus, the constitution of additional provisions, while mitigating this risk factor, may not be sufficient for a higher risk scenario.

A scenario of greater deterioration in employment or income would increase default in the household portfolio. The labor market shows signs of a weak recovery, which should continue to affect the banking system both directly through the bank consumer portfolio, especially for banks with a less diversified portfolio, and indirectly through bank financing to NBLs. For these banks, the recent Law 21,314, which modified Law 18,010 and eliminated anatocism,^{10/} could have a significant effect on income, especially from revolving loans. Moreover, a slower-than-expected recovery in formal employment could increase default in the mortgage portfolio, especially for more leveraged borrowers with two or more mortgage loans (chapter II, Households section).

^{10/} Anatocism is the collection of interest on interest in arrears on a loan.



FIGURE III.18 MONTHLY LOSSES FROM OPERATIONAL RISK EVENTS
(millions of dollars)



Source: Central Bank of Chile, based on data from the FMC.

The worsening of bank funding conditions, together with the increase in credit risk, could affect net interest margins and the ability to rebuild capital buffers.

Sudden increases in interest rates or spreads could put even more pressure on bank profitability. In this sense, abrupt policy adjustments in developed economies or reversals in investors' risk perception could raise rates and put more pressure on funding costs than expected for the development of the economy. Likewise, other local stress events could operate in the same direction, increasing sovereign and bank spreads (chapter I).

In this context, net interest margins could continue to decline if the banks are unable to pass on the higher funding costs to their debtors. Additionally, the materialization of the underlying risk of the loan portfolios, in the event of deterioration scenarios, would lower the banks' margins. In this way, both effects would point to additional pressure on bank margins and a decrease in their ability to organically increase the capital base, which is necessary to ensure the continuity of credit provision and is thus crucial to support the recovery of the national economy (Box III.1).

Going forward, as mentioned in previous FSRs, it will be important to strengthen profit capitalization policies—which have not changed significantly over time—in line with the objective of recovering bank capital buffers to deal with future disruptive events.

Additionally, operational risk could potentially increase, due to the greater intensity of remote work.

Remote work and the greater number of remote transactions have, to a certain extent, increased cybersecurity risks. Losses from operational risk events increased through the end of last year, mainly due to reimbursement for payment card fraud, which banks are acquired to assume under certain conditions as of June 2020 (figure III.18). Although this trend decreased in the first months of this year, it is important for the banks to properly implement internal control mechanisms, in order to mitigate operational discontinuity events.



Box III.1:

Commercial Lending: Recent Dynamics and Outlook

Introduction

In 2020, economic activity recorded one of the largest contractions in recent decades. In line with historical patterns, the banking system's consumer portfolio contracted, and the growth rate of mortgage loans decreased. In contrast, bank commercial loans maintained steady growth throughout much of 2020. An important part of this dynamism derived from the fact that the banks had a solid financial position, combined with the liquidity provided through the implementation of various measures such as the FOGAPE-COVID program, the Conditional Financing Facility for Increased Loans (FCIC), the suspension of liquidity requirements (term mismatch), and the facilitation of loan rescheduling through the relaxation of provisions regulations. However, the commercial portfolio has slowed in recent months, picking up a bit after the launch of the FOGAPE-Reactiva loans, which coincides with the third phase of the FCIC.

This box discusses the factors that help explain what happened from the beginning of the pandemic to the present, as well as the elements that can determine the future dynamics of bank credit to firms.

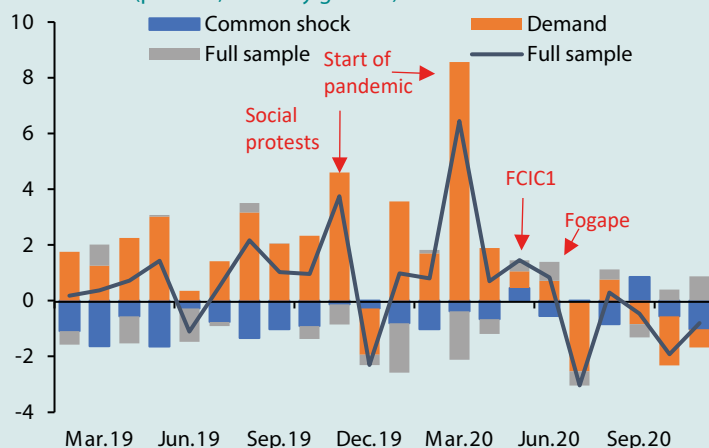
Recent trends in commercial loans

Before the pandemic, economic activity was affected by the sudden closing of some businesses in the last quarter of 2019 due to the social protests, with a consequent drop in sales (Monetary Policy Report, March 2021). Disruptions to the production chain also required the provision of credit. Both this period and the pandemic are associated with atypical dynamics in commercial credit over the past several quarters, which breaks the relationship with the economic cycle. This motivates a detailed analysis of the factors that determine this behavior. Using the methodology of Amiti and Weinstein (2018), the growth of these loans is decomposed into three types of shock: (i) a demand shock from firms; (ii) an idiosyncratic supply shock from banks; and (iii) a shared component associated with macro factors.^{1/} The results of this exercise show how credit support measures strengthened supply in a context of high demand for liquidity during the pandemic.

^{1/} Cristi and Toro (2021) explain the details of the Amiti and Weinstein (2018) methodology and how it is applied to local administrative records. The analysis uses data on the stock of credit to firms, including commercial loans, factoring, leasing, and general-purpose mortgage loans. The sample includes all firms with more than one banking relationship, which account for over 70% of the total credit to firms, on average.



FIGURE III.19 GROWTH DECOMPOSITION FOR THE STOCK COMMERCIAL LOANS
(percent, monthly growth)



Source: Central Bank of Chile, based on data from the FMC and IRS.

First, the social protests in the last quarter of 2019 and the start of the pandemic in March 2020 were characterized by a strong increase in the demand for credit (figure III.19). According to the Bank Lending Survey (BLS), this higher demand was explained by working capital needs.

Subsequently, the supply of credit by banks increased significantly in May and June 2020. This would be associated with the implementation of the FCIC and the FOGAPE-COVID program.^{2/}

The decomposition of credit supply and demand factors by company size reveals a heterogeneous reaction during the pandemic. In small and medium-sized firms, the stock of credit increased by more than 9% between March and June 2020, versus almost 0% among large and mega companies.^{3/} This differentiation is largely attributable to the entry into force of the credit support measures described earlier, which were particularly important in sustaining credit to SMEs.

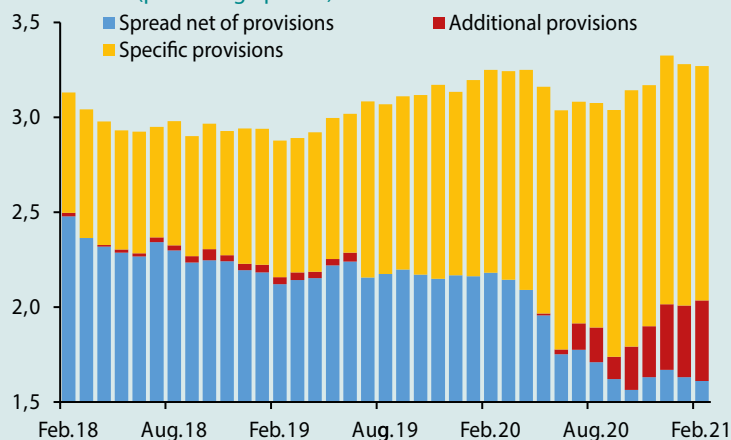
Commercial credit began to slow in the third quarter of 2020, mainly due to a drop in demand. This lower demand is seen across firms of all sizes, but it is especially notable among larger corporations, which explain a significant share of the slowdown in commercial credit at the aggregate level. These results are consistent with the BLS, which attributes this change in demand to the negative impact that economic uncertainty had on investment decisions.

^{2/} Another measure that contributed to the provision of credit was debt rescheduling, whereby over 210,000 firms were able to adjust their payment profile so as to face the economic contraction recorded in 2020 (FSR, Second Half 2020).

^{3/} The decomposition analysis and graphs by company size can be found in Cristi and Toro (2021).



FIGURE III.20 COMMERCIAL LOAN SPREAD
(percentage points)



Source: Central Bank of Chile, based on data from the FMC.

Outlook for commercial credit

Going forward, the recovery of economic activity is expected to be accompanied by an increase in the demand for credit, particularly when investment picks up. This section reviews the banks' financial position for facing these demands in the future.

A first dimension for analysis is the banks' capital and liquidity cushion for accommodating an increase in their balance sheets. The available information indicates that the banking system has a sufficient buffer to be able to finance an increase in loans. In particular, the capital adequacy ratio (CAR) increased by about 2 pp between March and November 2020. This increase is explained by two factors: (i) the fall in consumer loans; and (ii) the reduction of the risk weight of loans backed by state guarantees. If the greater capital buffer were destined exclusively to originating new commercial loans, these could increase between 10 and 20% in real terms.^{4/} The banks' current liquidity position should allow them to manage these growth rates without affecting their ability to meet their short-term commitments.

On the other hand, credit risk has increased, as in other economies. In the local system, this has materialized through higher provisions (both specific and additional). With relatively constant credit spreads, higher provisions expense has reduced the net profits of the banks (figure III.20).

^{4/} This exercise assumes zero growth of consumer loans, 6% growth of mortgage loans, and the maintenance of sufficient capital levels for banks to face a severe stress scenario (chapter III).



Although the banks' portfolios have not recorded a significant increase in nonperforming loans, this could occur in the event of disruptions in the recovery phase. This could limit the banks' ability to increase capital organically (IMF, 2020). Furthermore, increased credit risk could lead to a tightening of lending standards (Fishman et al., 2020; Bundesbank, 2018).

In this context, the continuity of support measures, such as the FOGAPE-Reactiva program and the FCIC, allows banks to mitigate the credit risk of the portfolio and obtain funding under favorable conditions, respectively. Additionally, the FMC recently announced the relaxation of its regulations on provisions for renegotiated loans. These elements contribute to maintaining the necessary financing and refinancing of firms (chapter III).

Final remarks

The demand for commercial credit increased significantly during the social protests of 2019 and intensified during the first months of the pandemic, due to the disruption of business operations. In the most recent period, commercial credit grew notably thanks to a solvent banking system and the joint action of extraordinary public policies on guarantees, regulatory flexibility, and liquidity provision.

Recent data show that the banks' financial position remains solid, despite the increase in risks during the pandemic. At the same time, increased risk reduces the ability to rebuild capital buffers going forward. This could intensify if a scenario of further economic deterioration materializes. These elements present challenges with respect to future credit dynamics, which is why the implementation of extraordinary measures such as those in force is fundamental.



IV. NONBANK FINANCIAL INTERMEDIARIES

Nonbank financial intermediaries (NBFIs) play an important role in the financial system, providing services to households and firms through savings, investment, credit, and risk coverage alternatives. They can also represent a source of vulnerability, however, as they face similar risks to banks and are interconnected with the rest of the system.

In Chile, the NBFI segment comprises, first, pension funds, insurance companies, and mutual funds, which are subject to specific regulatory frameworks. Second, there is a diverse set of nonbank lenders (NBLs), which are subject to heterogeneous levels of regulation and supervision. The risks related to NBFIs in Chile are limited, given that the main nonbank agents are subject to robust regulation and supervision. However, there is room for improvement, as discussed in this chapter.

INTRODUCTION

Nonbank financial intermediaries (NBFIs) carry out a wide spectrum of activities, especially in more developed markets. These entities provide various financial services to households and firms through savings, investment, and credit alternatives; at the same time, they allow channeling resources through a broader set of investment vehicles and taking advantage of diversification opportunities.

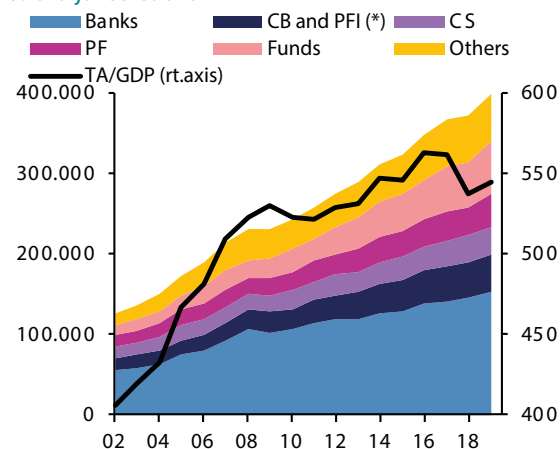
This range of activities is subject to heterogeneous regulatory standards, which can be a source of substantial risk to financial stability. In some cases, NBFIs carry out financial intermediation activities that are not subject to globally accepted regulatory standards, such as the guidelines of the Basel Committee on Banking Supervision (currently, Basel III) or the European Union directive on insurance company solvency (currently, Solvency II). A weaker regulatory environment means that some risks are not properly contained, and they are amplified in line with the degree to which NBFIs are interconnected with each other and with the banking system. In fact, prior to the 2008 Global Financial Crisis (GFC), NBFIs grew significantly in relation to more regulated industries such as banking, particularly in advanced economies, which considered to be one of the factors behind the GFC. This led the main international financial authorities to increase their interest in strengthening, standardizing, and implementing regulatory frameworks for NBFIs.

In Chile, these activities entail limited risk because the main NBFIs are traditional institutional investors, with a smaller role for NBLs. As explained in the first section of this chapter, the NBFI sector in Chile corresponds essentially to pension funds (PFs), insurance companies (ICs), and mutual funds (MFs). These sectors are within the perimeter of financial regulation and supervision, a structural characteristic that, in principle, tends to mitigate risk. Nonbank lenders, in turn, account for a small share in terms of assets, but are a significant participant in the consumer credit segment.



FIGURE IV.1 TOTAL FINANCIAL ASSETS BY TYPE OF INTERMEDIARY
(USD trillion, percent)

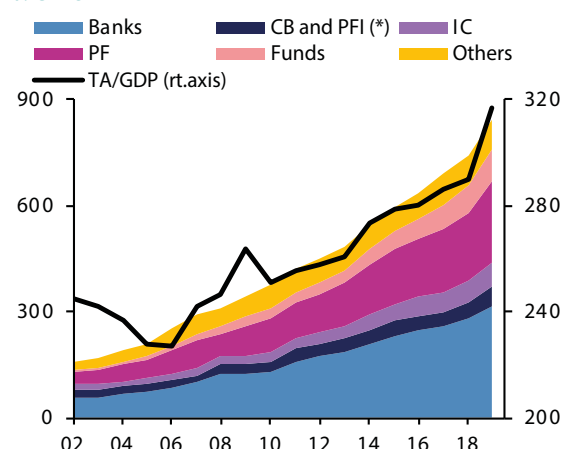
a. G29 jurisdictions



(*) CB and PFI: Central banks and public financial institutions. Funds: Includes mutual funds, investment funds, and others funds. Others: Includes securitizers, brokers, nonbank lenders, etc.

Source: Central Bank of Chile, based on data from FSB (2020).

b. Chile



(*) CB and PFI: Central banks and public financial institutions. Funds: Includes mutual funds, investment funds, and others funds. Others: Includes securitizers, brokers, nonbank lenders, etc.

Source: Central Bank of Chile, based on data from FSB (2020).

However, the high relative share of NBFIs in Chile compared to the international average and their level of interconnection suggest that the risks underlying their management could spread to the rest of the financial system. The next section analyses these particular characteristics of NBFIs in Chile and the amplifying effects of their interconnections, in order to define the main risks and vulnerabilities associated with this segment of the financial system.

Finally, although the applicable regulatory framework is robust and helps mitigate the risks associated with NBFIs, there is room for improvement, which needs to be addressed. The final section of this chapter analyzes the main policy considerations relevant to the development of NBFIs; and discusses the strengths of the local regulatory and supervisory framework, which mitigate some of the identified risks, and the policy developments necessary to strengthen it. In particular, risk-based supervision of insurance companies, consolidated supervision of financial conglomerates, and the development of an integrated credit information system are important issues in Chile.

CHARACTERIZATION OF THE MAIN NBFIS

This section describes the NBFI sector in Chile, in comparison with the participating jurisdictions of the global NBFI monitoring exercise carried out by the Financial Stability Board (FSB), in which Chile has participated since 2012. The analysis draws on information published by the FSB for part of the exercise. In the case of Chile, the information is mainly from the National Accounts by Institutional Sector (NAIS).

NBFIs in Chile are large in international comparison, especially considering the large relative size of institutional investors.

According to information available from the latest FSB NBFI monitoring exercise, the total financial assets of the 29 participating jurisdictions have continued to increase. In particular, total financial assets tripled in the 2002–19 period, reaching US\$ 400 trillion in December 2019.^{1/} At the global level, the banking sector accounted for

^{1/} The 29 participating jurisdictions are Argentina, Australia, Belgium, Brazil, Canada, Cayman Islands, Chile, China, France, Germany, Hong Kong, India, Indonesia, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, Russia, Saudi Arabia, Singapore, South Africa, South Korea, Spain, Switzerland, Turkey, United Kingdom, and United States.



38% of assets at year-end 2019, while the NBFIs sector had a 50% share (figures IV.1a and IV.2). As a share of GDP, NBFIs assets grew markedly prior to the GFC, with more uneven growth thereafter.

In Chile, total financial assets increased five times in the same period, which is to be expected in a developing system, such as the domestic one. In terms of structure, the Chilean banking sector represents a significant share of the financial system, at 37%, while the NBFIs sector accounts for 56% of total financial assets (figures IV.1b and IV.2).

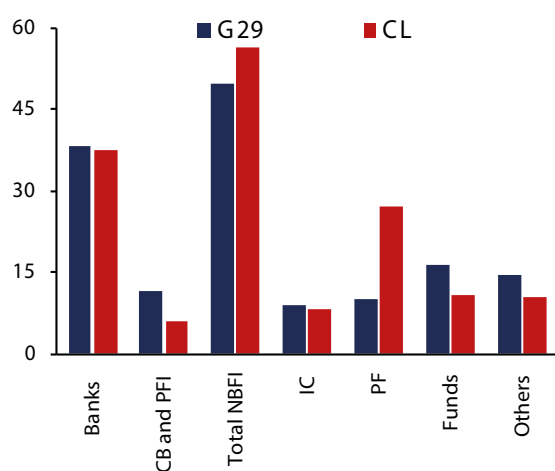
Within the NBFIs sector in Chile, the institutional investors are especially relevant. In 2019, they accounted for 46% of financial system assets, with PFs predominating (figure IV.2). In contrast to the international trend, NBFIs assets over GDP grew steadily in Chile after the GFC, which could be interpreted as converging with the levels of financial development in advanced economies.

In turn, a narrower spectrum of activities of domestic NBFIs compared to the rest of the world is reflected in the lower participation of investment funds. (for example, there are no hedge funds, as in other jurisdictions) and other entities.

NBFIs have played a key role in the development of the financial market in Chile, facilitating local agents' access to long-term debt markets.

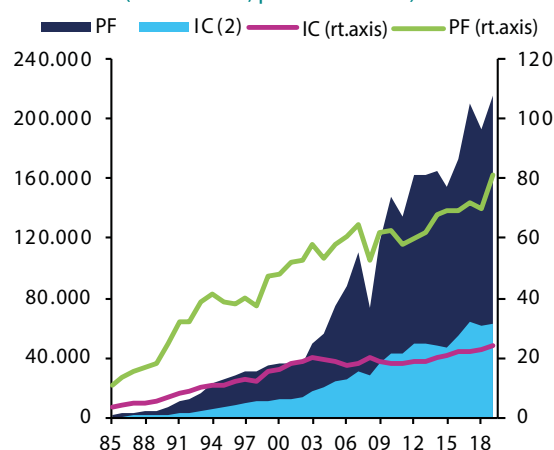
The size of the main institutional investors (figure IV.3), together with the current regulatory framework, has facilitated the development of the domestic financial market. In a study carried out by ECLAC in 1994 (Arrau, 1994), there was already a correlation between the growth of the amounts traded in fixed income and financial intermediation and the increase in the volumes managed by institutional investors, especially the pension funds.

FIGURE IV.2 SHARE BY TYPE OF NBFIs
(percent of total assets)



Source: Central Bank of Chile, based on data from FSB (2020).

FIGURE IV.3 PENSION FUND AND INSURANCE COMPANY ASSETS (1)
(USD million, percent of GDP)



(1) Data for December of each year.

(2) Insurance company (IC) assets are investments.

Source: Central Bank of Chile, based on data from FMC.



Along the same lines, several later studies find a relation between the increase in savings generated by pension funds and their high demand for financial assets, on the one hand, and the growth in the volume of transactions and the deepening of the Chilean capital market, on the other. The growth of pension funds is also related to the increase in the value, liquidity, and profitability of the national stock market (Walker and Lefort, 2000; Corbo and Schmidt-Hebbel, 2003; Santillán-Salgado et al., 2010).

Thus, by creating a source of domestic savings with a strong bias toward medium- and long-term investments, the institutional investors play a role that has favored the development of a relatively deep local debt and capital market, which has made it possible to finance long-term investments at low interest rates. This, in turn, has expanded access to financing opportunities for government, businesses, and households, reducing dependence on external savings.

Historically, institutional investors have acted as a stabilizing factor in the national long-term debt market.

A structural characteristic of institutional investors, particularly the PFs, is that they have a long-term investment horizon and have historically implemented a buy-and-hold strategy in the management of their investments, especially in the fixed-income market, such that their portfolio composition is relatively stable.

Based on a sample of 14 emerging economies, Álvarez et al. (2019) finds that these characteristics of institutional investors contribute to a reduction in the volatility of sovereign interest rates when they represent a more significant share of the local debt market. In the case of Chile, the low volatility of the ten-year Central Bank rate is consistent with a high share of institutional investors in the sovereign debt market.

Additionally, the ICs and PFs maintain a bias toward the local market in their liabilities, a structural characteristic that induces countercyclical behavior in the face of shocks and a greater perception of external risks. On the asset side, although the PFs have expanded their overseas investments, the ICs maintain a bias in local currency and inflation indexation. However, they can behave procyclically in the face of adverse shocks with a local origin, as discussed below.

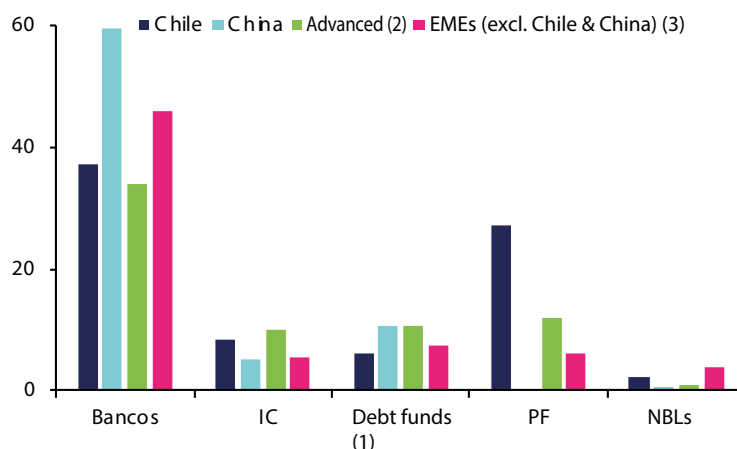
However, more recent developments have tended to dilute the stabilizing role of institutional investors.

Developments in the last decade have affected the stabilizing role traditionally attributed to some institutional investors. These include the more frequent movement between types of pension funds and, more recently, the approval of successive bills allowing the early withdrawal of pension fund savings. These factors have caused changes in the historical behavior of PFs with respect to their reaction to adverse shocks originating locally.

In recent years, pension funds have faced massive shifts in affiliates between funds with different risk profiles. In 2014, only 8.1% of the individual capitalization accounts for mandatory pension savings presented fund transfers; by 2019, that figure was 25.6%, which implied abruptly rebalancing approximately US\$ 62.8 billion between portfolios in the year. More recently, in the context of the pandemic, the legislation allowing the early withdrawal of a portion of pension fund savings has forced the liquidation of more than US\$ 36.0 billion in different financial assets in short periods of time. The magnitude of these events has caused tension in the financial system, and the deeper effects, both in the capital market and in the economy in general, are still a matter of study.



FIGURE IV.4 FINANCIAL INTERMEDIARIES AS A PERCENT OF TOTAL FINANCIAL ASSETS, 2019
(percent)



(1) Debt funds: mutual funds and investment funds focused on the intermediation of debt securities. Includes money market funds, mutual funds, and investment funds with a high share of debt instruments in their portfolios, in line with the FSB definition of "economic function 1" (FSB, 2020). Considers funds focused on investment in debt securities.

(2) Advanced economies: BEL, FRA, DEU, IRL, ITA, LUX, NLD, ESP, AUS, CAN, CYM, HKG, JPN, KOR, SGP, CHE, GBR, and USA.

(3) Emerging market economies (EMEs): ARG, BRA, CHL, CHN, IND, IDN, MEX, RUS, SAU, ZAF, and TUR.

Source: Central Bank of Chile, based on data from the FSB (2020).

The insurance companies, in turn, have faced decreasing long-term interest rates for years, which has hindered their development and growth in relation to the rest of the financial system, especially in the case of annuity providers. This is reflected in the stabilization of the share of assets over GDP held by the ICs in the last decade (figure IV.3).

The nonbank lending (NBL) sector is small in terms of assets, but it plays significant role in the consumer loan segment.

The NBL segment in Chile is made up of savings and loan associations (S&Ls); factoring, leasing, and automobile finance companies; family compensation funds (CCAF); and nonbank credit card issuers. Together, they represent 2% of total financial assets (figure IV.4).

However, NBLs are significant in the consumer credit segment, with a 23% share (chapter III). Among them, factoring companies have grown strongly in recent years, as reported in several FSRs, while the main retail credit card issuers transferred their credit portfolios to the banking sector, in the form of banking services support companies, as discussed below.

NBFI INTERCONNECTION IN THE FINANCIAL SYSTEM

Interconnections in the financial system are a natural consequence of the diversification and specialization of NBFI investments, but they can facilitate the spread of risks in stress scenarios.

Interconnection between financial entities, specifically through contracts or financial instruments that generate crossed payment obligations between different segments of the system, is an inherent characteristic of an open and integrated financial system. These interconnections favor the diversification and transfer of risks through the different segments of the financial system, and they create space for specialization in different financial intermediation activities, such as lending, the offer of investment instruments, or risk coverage. However, they



can also facilitate the spread of risk during periods of stress, since problems in one sector or agent can have an impact on its counterparties.

In general, financial institutions are considered to be highly qualified and sophisticated investors, with the ability to process a large amount of information to make their investment and portfolio-structuring decisions. In particular, they can be more sensitive to market conditions and the characteristics of each counterparty, including banks, which facilitates a quick investment reaction to new information available. Thus, in the face of market signals that indicate, for example, a significant deterioration in a given bank's financial situation or changes in the configuration of financial risks at a more general level, NBFIs entities such as PFs, MFs, and ICs can abruptly reduce, restrict, or not renew their provision of bank funding as a way to adjust their investment portfolios and risk exposure.

This may have a significant impact on banks and, indirectly, on the rest of the system, depending on the degree of funding provided and its term (deposits or bonds). In the case of short-term funding sources, such as deposits, the materialization of rollover risk has a more direct effect, both on the flow of funds in the primary market and on the cost of financing, which would be reflected in higher volatility of discount rates in the secondary market. In the case of investors that represent a source of financing via bonds, the effect is more indirect and occurs through the secondary market, with sudden drops in asset prices, heightened volatility, and larger spreads for banks that may experience financial problems. In both cases, the market signals that are generated could, for example, amplify the problems of the issuing bank.

Consequently, the interconnection between financial institutions is internationally monitored, especially the provision of funds to banks by NBFIs.

In Chile, the banking system's access to funding from NBFIs is greater than in other jurisdictions, especially in the case of PFs and MFs.

According to the FSB (2020), bank funding provided by financial intermediaries globally is relatively limited. The provision of funds by ICs and PFs decreased from 3.6% of bank assets in 2013 to 2.8% in 2019. Bank funding from other NBFIs has been stable at around 5.7% of assets since 2016.

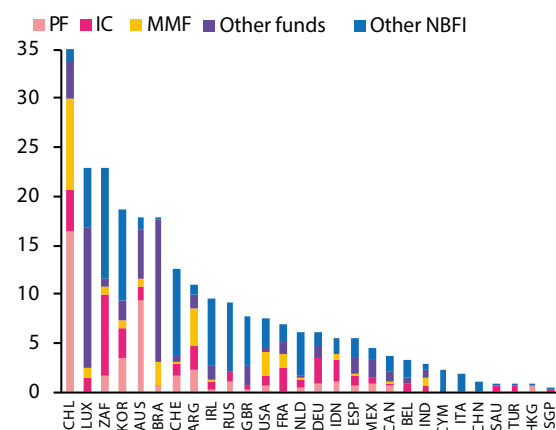
In Chile, NBFIs are comparatively more important in financing banks (35% of assets). This is largely related to the greater development of PFs and money market funds (MMFs), relative to other economies. Luxembourg and SouthAfrica are more similar to Chile, with levels of bank funding from NBFIs of over 20% of banks' assets.

Specifically, PFs and MFs in Chile finance 16% and 9% of bank assets, respectively. In the case of the former, funding is mainly through bonds. In other words, they are a source of long-term financing and, therefore, represent a lower risk from the perspective of the issuing bank. Meanwhile, the funding provided by MFs is mainly short and medium term, through investment in certificates of deposit (figure IV.5.a).

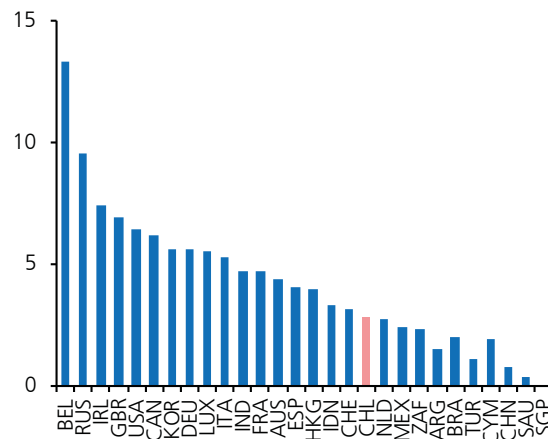


FIGURE IV.5A TOTAL FINANCIAL ASSETS BY TYPE OF NBFI: BANK FUNDING BY NBFI
(percent of bank assets)

a. Total financial assets by type of NBFI



b. NBFI credit risk



Source: Central Bank of Chile, based on data from FSB (2020).

On the other hand, the banking sector's role in providing funding to NBFIs is limited in relation to the size of the banks' balance sheets.

According to the FSB (2020), only one of the participating jurisdictions (Belgium) shows a banking exposure to NBFIs of more than 10% of the assets. In Chile, the share is only 2.8% of bank assets as of December 2019, ranking among the countries in the sample with the lowest relative exposure (figure IV.5.b). At the same time, although this exposure represents a lesser weight in banking assets, it is equivalent to 22% of the banking system's regulatory capital, and it may be a relevant source of financing for a particular NBFI.

In sum, the NBFI sector in Chile is strongly dominated by traditional institutional investors such as PFs, ICs, and MFs, in terms of both relative size and interconnections with the banking system, while NBLs account for a smaller share.

This section has described the main interconnections between the different parts of the Chilean financial system. Box IV.1 of this chapter presents an alternative analysis of the interconnections to provide a better understanding of the different channels of interconnection, visualizing the financial system and its participants as a whole. The analysis is based on a network methodology that uses information on investments between NBFIs and banks through market assets. The box confirms the central role of banks in the domestic financial system, especially due to the significance of their issues on the balance sheets of other financial intermediaries.

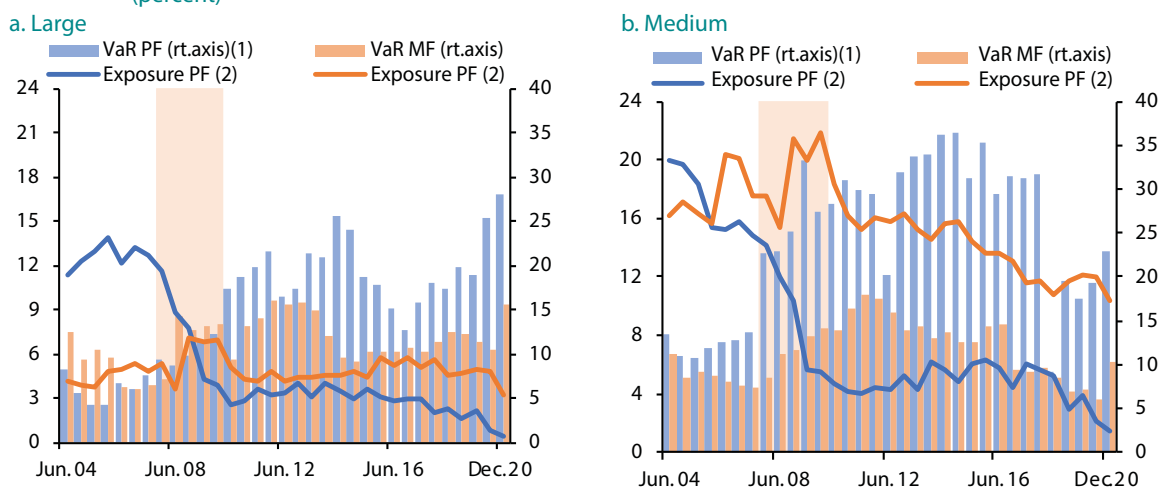
MAIN FINANCIAL SYSTEM VULNERABILITIES AND RISKS ASSOCIATED WITH NBFI

The NBFIs have been important for the stability and development of the financial system. However, the combination of a relatively larger NBFI sector in Chile and a high degree of interconnectedness constitutes a vulnerability that needs to be controlled.

The high degree of bank funding provided by institutional investors acts as a stabilizing factor in the market in normal times. However, as discussed in the previous section, it can become a vulnerability due to the possibility of a sudden reduction or nonrenewal of the provided bank funding in some stress scenarios. In the recent past, MFs and, to a certain extent, PFs have proven to be sensitive to market signals, which has been reflected in the funding conditions of some banks.



FIGURE IV.6 BANKING SYSTEM FUNDING RISK
(percent)



(1) Orange areas: period of fragility, as defined by Martínez, Matus, and Oda (2018).

(2) Monthly VaR at 99% calculated in a 36-month rolling window.

Source: Central Bank of Chile, based on data from the SBIF and the methodology described in FSR, First Half 2015, box IV.1.

An approximate measure of the funding risk of local banks can be obtained through a VaR analysis of each of the funding sources (for more information, see FSR, First Half 2015, box IV.1). This risk measure indicates that institutional funding—specifically from MFs and PFs—represents a higher funding risk for smaller banks, which are still highly dependent on funding from MFs, although this has decreased in recent years (figure IV.6). On the other hand, large or small banks that take on reputational risk, or that the market perceives as more vulnerable due to potential excessive risk-taking, could face increases in their funding costs, which would represent a risk for financial stability and is an important justification for the additional capital charges contemplated by the new Banking Law.

However, as explained in the final section of this chapter, the CBC regulation on bank liquidity management constitutes an important mitigator for this funding risk.

While institutional investors have been a stabilizing factor in the financial system, there is a risk of intensive asset liquidation during times of market stress.

Under normal conditions, institutional investors can be a stabilizing or buffering agent for shocks in the financial system by facilitating risk diversification and dispersion among a group of investors with different risk appetites. In times of stress, however, these investors may be forced to liquidate assets quickly if they face high levels of withdrawals in the short term.

This was the case for some money market funds in advanced economies in the early days of the GFC, which, despite not having been involved in the origin of the crisis, demonstrated the potential to amplify or propagate its effects. One of the factors that makes investment in money market funds attractive is the stability of their amortized cost valuation, but this also encourages investors to redeem their funds from this type of vehicle during times of stress, as it generates an advantage for the first investors to activate their redemptions.



Although this risk has not materialized in Chile, there have been events in which the revaluation of money market fund shares could have introduced volatility in the market and in the cost of short-term funds. Until 2010, share revaluation was carried out at the discretion of the fund manager, with the aim of aligning prices with the market value of the assets. The regulation in force since 2011, which is detailed in the final section, was implemented to reduce this discretion and lower the deviation between the share value and the market price, mitigating the effects of volatility.

The pension funds, in turn, are subject to a similar risk due to the nature of the multi-fund system. In this scheme, as a way to reconcile the risk-return profile of the fund vis-à-vis the affiliate, affiliates can freely change their type of fund according to their preferences. However, massive movements between funds force fund managers to abruptly rebalance their portfolios, causing distortions and adverse effects in the local market. The recent approval of the Market Agents Law helps to limit this phenomenon (chapter V).

ICs face a significant challenge to meet their obligations to their policyholders in a low interest rate scenario.

Insurance companies have faced an extended period of low interest rates. This has been a challenge especially for ICs with a larger share of annuity sales, which have become less attractive relative to the planned withdrawals offered by the pension fund managers (PFMs). The situation has reduced a source of liquidity for that IC segment, which has put pressure on their financial position through a reduction in profitability, with a possible impact on solvency. Most recently, in the context of measures to face the effects of the pandemic, Law 21,330 also introduced the possibility for pensioners or annuity holders to partially advance the payment of their annuities, which would create an additional liquidity challenge for ICs.

In this context, as explained in the final section of this chapter, the absence of an appropriate legal framework to establish risk-based capital requirements for these companies is an important and necessary issue.

The complex structure of financial conglomerates can incubate vulnerabilities for the stability of the financial system.

The Chilean financial system has evolved in terms of depth, complexity, interconnectedness, and internationalization. National and foreign corporate groups participate in the market, with a presence in two or more regulated financial industries, such as banks, insurance companies, securities, and PFMs.^{2/} The presence of conglomerates in the financial industry is an international reality, and their existence is generally explained by the presence of economies of scale and synergies. Likewise, the possibility of diversifying the group's sources of risk and return by creating a broad portfolio of products and services has encouraged the formation of financial conglomerates.

However, the presence of conglomerates creates space for vulnerabilities and risks with a potential systemic effect. These include possible transparency problems, the risk of contagion between the group's components, possible conflicts of interest for the board of directors or senior management, space for regulatory arbitrage, and moral hazard. All these vulnerabilities represent a risk to financial stability, especially when they can affect banks ^{3/}. One of the main difficulties in addressing these risks is that the entities that are "upstream" in the corporate structure are usually outside the regulatory perimeter.

^{2/} At the international level, a financial conglomerate is defined as any group of companies under common control or dominant influence, including any financial holding company, that maintains material financial activity in at least two of the regulated financial sectors (banking, insurance, or securities). In the case of Chile, PFMs are included in the spectrum of regulated activities that may fall within the scope of a financial conglomerate.

^{3/} For a more detailed discussion of the vulnerabilities and risks for financial system stability related to financial conglomerates, see FSR, Second Half 2013, box VI.



TABLA IV.1 MAIN FINANCIAL CONGLOMERATES IN CHILE IN 2019

Conglomerates	Sectors	Banks	PFM (1)	Insurance	Other fin.	Total (MM USD) (2)
I	B, S, FP	6	78	12	4	76
II	FP, S	0	83	15	1	64
III	FP, S	0	88	12	0	43
IV	FP, S	0	97	3	0	42
V	B, S	62	0	33	5	20
VI	B, S	44	0	56	0	19
VII	B, S	69	0	22	9	17
VIII	B, S	80	0	20	0	3

(1) PFM share based on managed assets.

(2) Includes portfolios managed by the PFMs.

Source: Central Bank of Chile, based on data from annual reports and other public information.

Currently, there are financial conglomerates in Chile that are major participants in the three main regulated sectors of the financial system: namely, banking, insurance, and PFMs. One of these conglomerates participates in all three segments, while four are concentrated in banking and insurance and another four in insurance and pension funds (table IV.1). Thus, financial conglomerates have a significant presence in the country and could potentially affect the stability of the system. It should be noted that PF regulation strictly prohibits transactions with related companies, which contributes to mitigating the aforementioned risks.

NBLs, in turn, involve some limited risks as borrowers in the banking system.

NBLs (such as card issuers, automobile finance companies, S&Ls, and CCAFs) use financing from banks to provide consumer loans to their customers. In this sense, the commercial banking portfolio indirectly contains additional elements of household credit risk, which is an aspect that requires attention from the perspective of monitoring risks in the banking system. However, these bank loans to NBLs are classified as part of the creditor bank's commercial portfolio and are subject to the corresponding capital requirements and provisions.

The risk assessment of the NBLs, carried out under the criteria of the commercial portfolio, considers their underlying risks to ensure that the banks' portfolio is adequately provisioned according to the provisioning guidelines in the FMC regulations. This is important given the lower diversification of the NBL portfolio, which is generally higher risk than that of bank consumer loans.

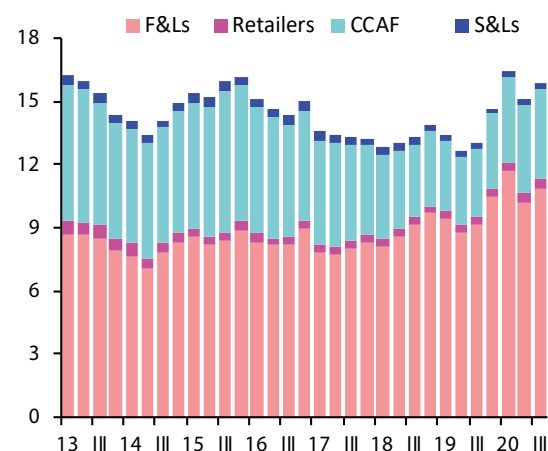
Like consumer loans, commercial loans to NBLs have recently contracted, thus reducing the total exposure (direct and indirect) of banks to the consumer segment (figure III.16). As of the first quarter of 2020, commercial loans to NBLs represent approximately 15% of the bank consumer portfolio (figure IV.7).

The retail sector has tended to be absorbed by the banking system in recent years.

Nonbank credit card issuers associated with large retail chains were a very significant segment of the NBL sector in the late 2000s. In recent years, however, the industry has undergone a reconfiguration process, with issuers being absorbed by the banking sector and becoming subsidiaries of commercial banks (figure IV.8 and FSR, First Semester 2019, box III.1). This has consolidated risk management in the banking sector, while also bringing these issuers into the perimeter of banking regulation and supervision.

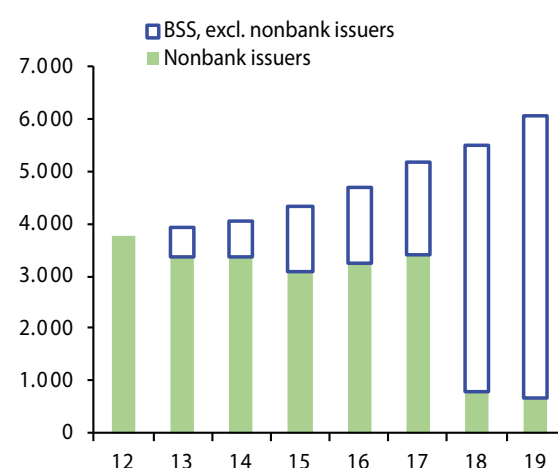


FIGURE IV.7 BANK CREDIT TO NBLs
(percent of bank consumer portfolio)



Source: Central Bank of Chile, based on data from the FMC.

FIGURE IV.8 LOANS: NONBANK CREDIT CARD ISSUERS (*)
(USD million, up-to-date portfolio)



(*) In December 2013, Banco Ripley acquired a majority ownership share of CAR S.A. In May 2015, Scotiabank acquired 51% of CAT Administradora de Tarjetas S.A., associated with Cencosud. In December 2018, Promotora CMR and Presto S.A. were converted into banking support services corporations of Banco Falabella and Banco BCI, respectively.

Source: Central Bank of Chile, based on data from the FMC and financial statements.

POLICY CONSIDERATIONS

This section analyzes the strengths of the regulatory and supervisory framework in Chile that act as mitigators of the risks described in this Chapter. It also describes some pending policy challenges, which should be a priority going forward.

Strengths of the regulatory and supervisory framework in Chile

The main NBFIs in Chile are PFs, MFs, and ICs, which are subject to a robust regulatory and supervisory framework.

In the case of PFs, risk is mitigated by the legal framework of DL 3,500 and the supervision of the Superintendence of Pensions (SP). The investment of PF resources is regulated in detail, with investment caps per instrument and issuer that limit the funds' exposure to individual entities. MFs, in turn, are under the supervision of the Financial Market Commission (FMC) and subject to regulation by the Single Funds Act (Law 20,712), which corresponds to a legal framework that harmonized and unified the rules governing mutual and investment funds and established various safeguards on their investments (see FSR, Second Half 2014, chapter V).

In the case of ICs, mitigators are mainly related to the solvency and risk management requirements established in Statutory Decree DFL 251, which were recently strengthened, and supervision by the FMC. Additionally, the gradual implementation of IFRS-17, promoted by the FMC, will better reflect the real economic situation of the sector, favoring better risk management.



Furthermore, the Central Bank's regulations on bank liquidity risk management constitutes an important mitigator for funding risk.

Historically, the Central Bank's regulations on liquidity risk have established 30- and 90-day maturity mismatch limits, which were enhanced in 2015. On that occasion, the standards for banks' liquidity risk management policies were also raised; the quantity and quality of information available to the supervisor was increased; and Basel III short- and long-term quantitative measures were incorporated (LCR and NSFR, respectively). Thus, the regulatory framework on liquidity risk management in the industry was strengthened. In particular, regulatory limits were established for the LCR, whereby a high level of liquid assets is required to adequately face stress scenarios, including the modeling of a possible sudden withdrawal of funding by institutional investors, as described in this chapter.

Chile follows international regulatory practice to stabilize the valuation of money market funds, aimed at mitigating the risks of intensive asset liquidation.

At the global level, constant or low-variability net asset value (NAV) funds, which use amortized cost valuation, are the predominant type of money market fund. According to the FSB (2020), they account for approximately 80% of global money market funds, with the remainder using mark-to-market prices. A possible reason for not adopting mark-to-market pricing of money market funds may be related to the fact that the stability provided by amortized cost valuation is an attractive feature for investors.

In Chile, since 2010 the FMC regulations on the valuation of type 1 mutual funds (MF1) maintains amortized cost valuation of shares as a fundamental characteristic of money market funds and includes mechanisms to reduce their deviation from market value (see FSR, Second Half 2010, box III.2).

Pending financial policy developments

Implementation of a legal framework that allows the application of a risk-based supervision (RBS) model for ICs.

Since 2012, the FMC has moved toward an RBS model for insurers. This consists, fundamentally, in a regulatory and supervisory framework oriented toward the evaluation, measurement, and management of risks in the insurance industry, similar to the bases of the Basel Accords for banking supervision.

With this model, the FMC assesses solvency and risk management individually for each insurer, which promotes active supervision and allows the FMC to focus its supervisory efforts on entities that demonstrate greater risk.

However, the incorporation of risk-based regulatory capital requirements, similar to the mechanism used for the banking system, would require a change in the applicable legal framework (DFL 251). To this end, a bill was presented in Congress in 2011. In 2013, the Chilean Financial Stability Board issued an opinion on the bill, highlighting the high priority of making progress in this area from a systemic point of view and taking into account the size of the insurance industry, the interconnection between ICs and the local and international financial system, their significant position in financial conglomerates, and the fiscal liability associated with annuities and disability and survival insurance ⁴.

⁴ / The FMC published the first version of the methodology for determining the risk-based capital requirement in 2013 and then worked with the industry to refine the methodology and adapt it to the local reality. Five exercises have been carried out, which have allowed the supervisor to refine the model and given the insurance companies experience in applying the methodology.



Moving toward a supervisory framework for financial conglomerates would allow the consolidation of requirements and limits applicable to financial intermediaries, in accordance with cross-exposures and ownership links.

In 2019, the SBIF and SVS were merged into the current FMC, consolidating the bulk of financial activity within the perimeter of the new supervisor. Having the different companies of a financial conglomerate under the authority of a single supervisory body—in comparison with the sectoral supervision model that was historically implemented in Chile—should facilitate their monitoring and risk assessment and promote coordinated decisionmaking with regard to the different parts of the conglomerate.

However, the establishment of an integrated supervisor is not synonymous with consolidated supervision. For this, the legal framework must, at the very least, include a formal definition of a financial conglomerate, specify the powers of the supervisor, and establish minimum requirements that must be considered at the group level, in terms of capital, liquidity, corporate governance, and corporate organization requirements, in order to facilitate effective regulation and supervision.

In this context, one of the strategic objectives established by the FMC is to advance on a methodology for monitoring conglomerates and, over the course of this year, to work on a legal proposal on consolidated supervision that grants it the necessary powers for the effective supervision of financial conglomerates.

A consolidated debt registry would facilitate the measurement of direct and indirect risks implicit in consumer portfolios and the management of credit risk in general.

In Chile, the FMC maintains a credit registry for the banking system, whose function is one of supervision. This registry contains both positive information on bank debt, such as debt amounts, and negative information, such as default situations. However, it does not include information on credit activity outside the banking system. Instead, private credit bureaus access credit information from the nonbank sector, but they only compile and process negative information.

The incorporation of retail credit cards in the bank credit registry in recent years has contributed to consolidating credit information ^{5/}. However, significant gaps remain with respect to the consolidation of information and the incorporation of credit provided by other NBLs, such as nonbank consumer loans, automobile loans, factoring, and leasing, which have recorded high growth rates.

Consequently, as the Central Bank has argued previously, the development of a consolidated debt registry, without compromising the current capacity to collect high-quality information on bank debt, would reduce distortions and mitigate the corresponding risks to financial stability. In this sense, the public consultation opened by the FMC to improve debtor information should complement the development of a consolidated debt registry (see chapter V).

Achieve greater convergence of the regulatory and supervisory framework applicable to NBLs.

The regulatory frameworks for these entities remain fragmented, which implies additional complexities in relation to the propagation of risks to the banking industry described in this chapter. In particular, the S&Ls have a dual supervision scheme (the FMC and the Ministry of the Economy). The family compensation funds (CCAF) are

^{5/} Additionally, the FMC regulations on accounting and financial information requirements for consolidated loan portfolios (Circular 1 of 2017, updated in 2018 and 2020) has raised the quality of publicly available information.



supervised by SUSESO, under a legal framework that primarily aims to protect the integrity of social security benefits. Finally, factoring companies are not subject to different supervision schemes based on whether they are operated as bank subsidiaries or other corporate models.

CONCLUSIONS

This chapter has reviewed the distinctive characteristics of the NBL segment in the Chilean financial system, including the historically stabilizing role of institutional investors, which has favored market development. At the same time, the institutional investors have a large relative market share and operate through a wide network of interconnections, which can entail systemic risks.

One important mitigator of these risks is the availability of a robust regulatory framework that is applied to the majority of these entities. However, there are important areas for improvement that must be addressed, such as the implementation of a legal framework allowing the full application of a risk-based supervision model for ICs, which would facilitate better risk management in the industry, and the development of a framework for the consolidated supervision of financial conglomerates, which would make it possible to establish appropriate requirements and limits reflecting cross-exposures and ownership links.

Finally, although the NBL segment has a lower relative weight, it accounts for a significant share of the consumer credit segment. Thus, the establishment of a consolidated debt registry, accompanied by greater convergence of the applicable regulatory and supervisory framework, would facilitate credit risk management and the monitoring of the sector in general.



Box IV.1:

Interconnectedness of NBFIs and Banks through Market Assets

Financial market development allows a better allocation of resources among agents and, at the same time, generates different types of interactions between the financial institutions that comprise it. In this context, the shape and size of these interrelations are relevant for the transmission of shocks.

This box analyzes the existing relationships between nonbank financial intermediaries (NBFIs) and banks through their cross-investments in market assets (Cobas, 2021). The resulting network of interconnections is significant because changes within the network not only determine the institutions' balance sheet position, but also affect market prices and, therefore, the portfolio valuation of all market participants. Note that there are other possible interconnections that are not covered in this analysis, for example, through bank loans (chapter IV).

This network expanded significantly in the last decade, providing an important alternative funding source for banks. This, however, increases the banks' exposure to refinancing risk, which could arise from both mutual funds, due to the short-term nature of their investments, and pension funds, due to the size of the flows that they channel through the system. At the same time, since the banks are central players in this network, they represent potential risks for entities that maintain a high concentration of bank securities in their portfolios.

Methodology

The analysis uses network statistics to characterize the direction, nature, and volume of investment flows in market assets issued by NBFIs and banks. The identification of the interconnection map allows, on the one hand, the classification of institutions according to the role they play in the network and, on the other, the determination of the speed and direction in which idiosyncratic or aggregate shocks are diffused in the market prices of the securities issued. By observing the evolution over time, it is possible to assess whether a network became more or less risky in terms of the ease of propagating or absorbing idiosyncratic and aggregate shocks.

The analysis considered 641 portfolios belonging to banks and local NBFIs, including pension funds (PFs), mutual funds (MFs), insurance companies (ICs), and others (securitizers, family compensation funds, and factoring companies), accounting for investments in market instruments issued by those same institutions.^{1/}

In this context, a connection is determined at the investor/issuer level when one institution owns assets issued by another. The degree of "centrality" of an institution or group in the network refers to the number of connections it maintains with other institutions in the system, either by the number of investors who buy its assets or by the number of issuers included in its portfolio. This measure provides an indication of the relative importance of an institution within the network in terms of its share of total flows.

^{1/}The disaggregated data for MFs, PFs, and ICs are for December 2020 and come from the Financial Market Commission and the Superintendence of Pensions, while the aggregated

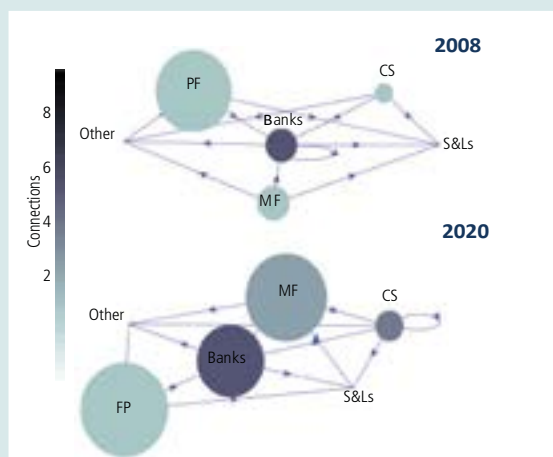


Aggregate institutions

the aggregate level, considering groups of institutions, network volume and connectivity have grown significantly since 2008, with the volume reaching US\$ 102 billion in 2020 (diagram IV.1). In particular, the portfolios (in network market assets) of MFs, banks, and ICs increased 151%, 118%, and 57%, respectively, during the analysis period. This trend reflects the growth of total assets under management in these institutions (chapter IV). The PFs, in turn, did not record major changes in terms of connectivity, and their growth in investments within the system (16%) is lower in this period.

Next, the weighted maturity of bank securities in the portfolios is used as a measure of the refinancing risk of the most connected institutions in the system (table IV.2). In 2020, ICs and MFs were at the extremes of longer and shorter maturities, respectively. Shorter-term assets are concentrated in MF investments, which have an average maturity of 1.1 years and which, in turn, account for almost 10% of total bank liabilities. By contrast, IC investments have the longest average maturity, at 13.9 years, albeit with relatively lower weight in bank liabilities. The PFs account for the largest weight in liabilities (10.3%), and their investments mature in just under six years.

DIAGRAM IV.1 BANKS AND NBFIS: FLOWS AND CONNECTIVITY, IN AMOUNTS AND MATURITIES (*)



(*) The colors and position represent the institution's degree of connectivity. The arrows indicate the investment flow (from fund origin to destination). The size of the circle represents the amount of funds invested in assets in the subsystem.

TABLE IV.2 INVESTMENT MATURITIES IN BANK ASSETS (*)
(years, percent)

Instrument	Banks	PF	MF	IC
Bank bonds	5.8	5.6	2.9	10.0
Mortgage bonds	8.0	9.3	7.7	7.7
Subordinated bonds	18.2	15.5	8.5	17.0
PF deposits	0.5	0.6	0.3	11.0
Mortgage-backed securities	9.9	6.8	7.2	11.0
Weighted average	5.7	5.9	1.1	13.9
% Bank liabilities	6.5	10.3	9.9	0.2

(*) Weighted average in years and relative weight in bank liabilities, in percent.

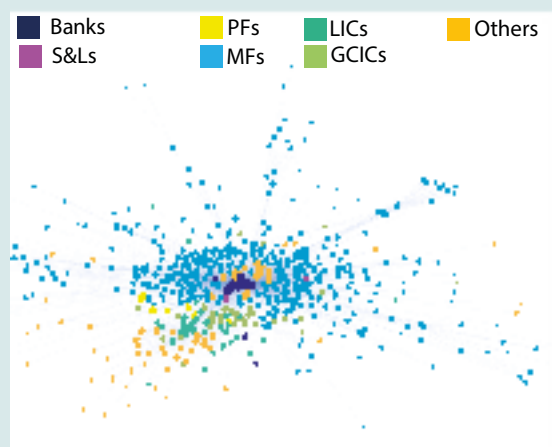
Source: Banco Central, based on data from the DCV.

Institutions at the individual level

At the individual level, the network is found to have a star-shaped pattern, in which a large portion of the banks are located in the center (diagram IV.2). This formation is extremely important because it implies that a shock to one of these central entities spreads directly to a large part of the system. Banks act as the main issuers of the subsystem, and their securities are spread across 145 portfolios, on average (figure IV.10). In the case of more connected institutions, they reach up to 280 portfolios in the system (figure IV.11).

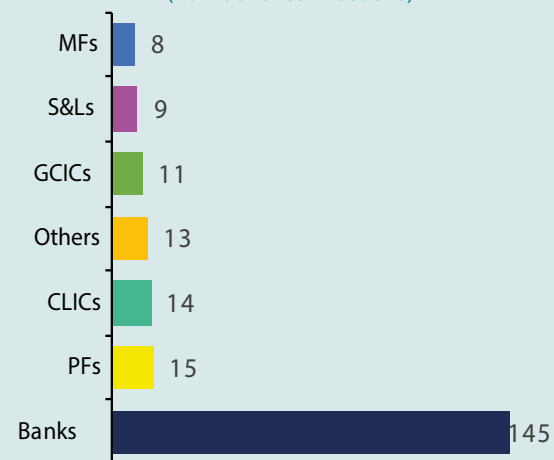


DIAGRAM IV.2 INSTITUTIONS AND INTERCONNECTIVITY (*)



(*) The size and position of the nodes reflects the degree of centrality in the network (number of interconnections). Other includes securitizers, CCAFs, and factoring companies.
Source: Central Bank of Chile, based on data from the SP and FMC.

FIGURE IV.9 AVERAGE CONNECTIONS PER FIRM (*)
(number of connections)

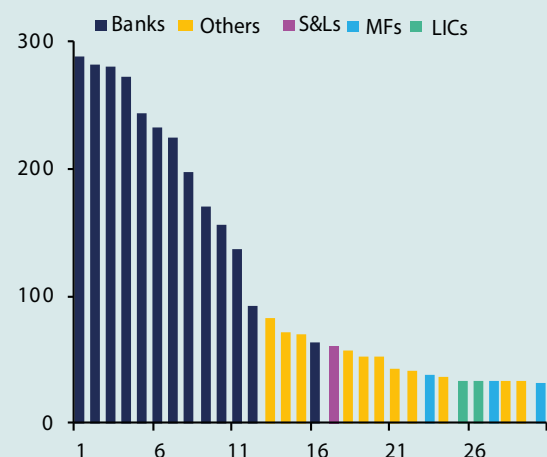


(*) Other includes securitizers, CCAFs, and factoring companies.
Source: Central Bank of Chile, based on data from the SP and FMC.

Several institutions in the MF and Other groups also have a high degree of centrality, acting as recipients of investments. However, the large number of MFs and their heterogeneity in terms of the number of connections to the system (between 0 and 38) result in a low value when calculating the group average (figure IV.9).

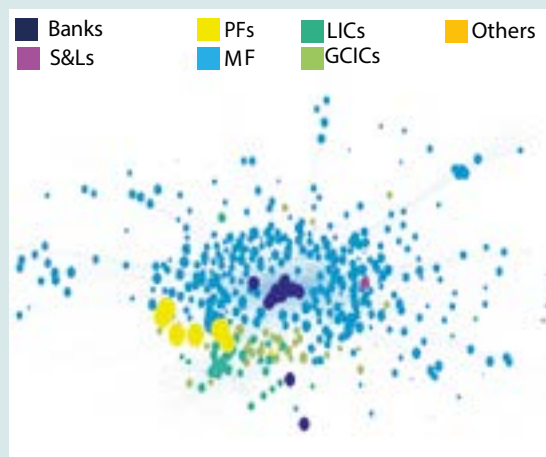
Taking into account only the degree of connectivity, the PFs have an intermediate significance in the system, averaging fewer than 30 connections, and none of the PFs are among the most connected institutions (figure IV.10). However, they do show a relevant concentration in bank assets, as each PF connects with ten banks, on average.

FIGURE IV.10 30 MOST CONNECTED INSTITUTIONS (*)
(number of connections)



(*) Other includes securitizers, CCAFs, and factoring companies.
Source: Central Bank of Chile, based on data from the SP and FMC.

DIAGRAM IV.3 INSTITUTIONS, INTERCONNECTIVITY, AND VOLUME OF INVESTMENTS (*)



(*) Other includes securitizers, CCAFs, and factoring companies.
Source: Central Bank of Chile, based on data from the SP and FMC.



The group of ICs, including life insurance and credit and general insurance companies, are concentrated in the lower part of the map. This reflects the relatively similar investment portfolios of the two insurance subgroups, which generate similar connectivity and, therefore, less distance between ICs and greater distance with respect to other institutions in the subsystem.

In terms of size, PFs are critical participants, contributing 32% of the total volume invested within the subsystem (diagram IV.3). Some MFs also account for relevant amounts, comparable to the life insurance companies (LICs) and general and credit insurance companies (GCICs).^{2/}

Finally, the ranking of the 30 most connected institutions identifies 11 banks—including eight “super-connected” banks that have up to 283 connections—11 Other institutions, one S&L, and several MFs, LICs, and GCICs with nearly 50 connections.

Final Remarks

The growth of the network of financial assets issued by NBFIs and banks confirms its importance to these institutions as a means of diversifying both investment portfolios and funding sources. In that regard, first, the network would benefit from a greater number of issuers to mitigate potential idiosyncratic risks arising, for example, from changes in risk perception or the need to liquidate bank assets. These shocks could put pressure on these asset prices, trigger asset liquidations, and thus affect banking system funding, stressing liquidity levels and thus spreading through the system as a whole. This risk is exacerbated in the case of banks that have the most connections, whose assets are in portfolios involving half the network. Second, because these institutions are professional investors, they adjust their portfolios faster than private investors in response to new information, and they are able to contract or reverse their positions more abruptly in times of market tension. Pension funds are the main investors, contributing a third of the funds to the network, and they have a high concentration of bank assets. Consequently, massive fund withdrawals or key movements between portfolios can introduce significant stress to the system through asset liquidation, with the resulting market price adjustments. From another perspective, in terms of their relationship with the banks, PF investments within the network are concentrated in bank assets, but the securities have an average maturity of six years. This factor, combined with the buy-and-hold strategy of these institutions (chapter IV), helps contain refinancing risk.

This box provides a complementary vision to the analysis in chapter IV, which examines the interconnections between NBFIs and banks from a funding perspective. By focusing on market assets, it was found that the predominant role of PFs, in terms of the volume invested, has recently given way to the combined share of MFs and banks. In contrast, when looking at connectivity, banks stand out among the rest of the institutions for their high degree of centrality in the system and their immediate connections with most of the institutions that make it up.

^{2/} Consideration of investment volumes reduces the relative importance of Other institutions, due to the lack of more detailed information on the investment portfolios of these institutions.



V. FINANCIAL POLICY DEVELOPMENTS

Since the last FSR, many of the regulatory measures to address the economic and financial consequences of the pandemic have remained in force, having been renewed or adapted to the new needs arising from the COVID-19 crisis. For its part, the Central Bank of Chile (CBC) continues to make progress on the implementation of its financial policy agenda—especially with respect to the modernization of foreign exchange regulations and the strengthening of financial infrastructures—as well as other more structural regulatory initiatives, including the recent approval of the law strengthening the conduct and responsibilities of market participants, and the implementation of Basel III standards, contained in the new General Law on Banks.

MEASURES TO ADDRESS THE EFFECTS OF THE PANDEMIC

A significant share of the regulatory easing measures taken last year to mitigate the economic and financial effects of the health crisis either remain in force or have been renewed, at least through the first months of this year.

Main measures taken in Chile^{1/}

As in other economies around the world, the measures taken in Chile have combined fiscal effort with central bank liquidity measures and regulatory adjustments. This has required changes in legislation or in sectoral regulations, which in most cases are temporary.

Among the fiscal efforts to support businesses, the FOGAPE program has played an important role, and it was recently extended through a new legal reform.

Law 21,307 was published on 3 February, amending the FOGAPE program to enhance the reactivation and recovery of the economy. The so-called FOGAPE-Reactiva loans are intended for investment, refinancing of certain current loans, and working capital.

Unlike the earlier FOGAPE-COVID loans, which can be granted through 30 April, FOGAPE-Reactiva loans can be originated through 31 December. In addition, the nominal rate is defined as the MPR plus 0.6% per month, equivalent to 7.7% per year based on the current MPR, which may allow access for riskier or smaller businesses.

The FOGAPE-Reactiva program also provides greater state guarantees for sectors that have been hard hit by the crisis and for loans that finance investment in fixed assets. The total amount of FOGAPE guarantees has not changed with the entry into force of this law, with the FOGAPE program standing at US\$ 3.0 billion. However, the program aims to increase access for micro and small businesses and boost the use of guarantees that are still available.

^{1/} The analysis does not include the exceptional liquidity provision measures adopted by the CBC, which are described on the Central Bank's website.



Household support measures have included the deferral of mortgage payments and the creation of an associated state guarantee.

Law 21,299, published on 4 January, allows mortgage lenders to grant loan deferrals, which can be guaranteed by the corresponding mortgage and also by a state guarantee from FOGAPE.

The law stipulates that loan deferrals may only be used to pay full and consecutive installments, and that the interest rate cannot be higher than the original loan. It further establishes that the state guarantee shall be valid for 60 months; that it may only cover to a maximum of six installments; and that the commercial appraisal of the property cannot exceed 10,000 UF.

Since the last FSR, two new pension fund withdrawals were also approved.

The second pension fund withdrawal (Law 21,295) was enacted on 4 December of last year, and Congress approved a third withdrawal in April of this year. These new withdrawals stipulate the same terms as the first: 10% of pension savings, with a floor of 35 UF and a ceiling of 150 UF.

However, the withdrawals differ in their status as constitutional reforms, in the tax treatment of the withdrawn funds, and in the time limits contemplated for the delivery thereof. Thus, while the first and third withdrawals correspond to constitutional reforms and the withdrawn funds do not constitute income or remuneration for any legal effect, the funds from the second withdrawal do constitute income for persons with a taxable income of over 30 UTA. In terms of delivery, for the first withdrawal, 50% of the funds had to be delivered within 10 business days from the date the application was submitted, and the remaining 50% within 30 days of the previous disbursement. In the second withdrawal, the latter period was reduced to 10 days. In the third withdrawal, the delivery of the total authorized amount must be made within a maximum period of 15 business days.

In this context, to contain the potential increase in market volatility as a result of significant shifts in pension fund portfolios associated with the second pension fund withdrawal, the CBC reopened the special spot purchase and forward sale (CC-VP) program and the time deposit purchase program, and extended the repo window for banks, in force since November 2019 and originally through May 2021. In this line, the CBC recently renewed these measures to mitigate the disruptive effects of the third withdrawal ^{2/}. Thus, the first two programs are maintained, and the bank instruments accepted by the window have been extended to include time deposits, and the third measure has been extended through August 2021. Finally, both PFMs and LICs have market mechanisms at their disposal that are open and available to provide liquidity and facilitate an orderly adjustment of their portfolios.

In the regulatory field, there was an extension of the measure loosening the liquidity requirement applicable to banks (Compendium of Financial Regulations, chapter III.B.1.1), as well as other regulatory easing measures that contribute to keeping the credit channel active.

As indicated in the FSR for the first half of 2020, in March of last year, the CBC decided, on an exceptional and temporary basis, to suspend compliance with the 30- and 90-day mismatch requirements for a period of 90 days, a measure that was extended on successive occasions due to the persistence of the circumstances that gave rise to the decision. This measure was extended from 6 April 2020 to December of this year.

^{2/} See [Banco Central dispone medidas ante nuevo retiro de fondos previsionales](#)



Measures taken last year by the Chilean Financial Market Commission (FMC) remain in force, including the easing of the deadlines for implementing Basel III, the special treatment of provisions associated with COVID-19 loans, and the treatment of state guarantees in the calculation of risk-weighted assets.

In addition, on 23 April, the FMC stipulated that the provisions held by banks and savings and loan associations in relation to loans in the commercial portfolio that have been rescheduled, through support mechanisms granted by these financial institutions, will be frozen through 31 July. To qualify for this treatment, the loans must meet the following conditions: they must be up to date or have arrears of under 30 days at the time of rescheduling; grace periods or loan deferrals may not add up to more than six consecutive months; and banks should focus on debtors who have taken up previous deferrals and who show good payment behavior between deferrals.

To facilitate physical operation during the pandemic, regulations were eased for the Domestic and Foreign Currency Check Clearing House (CFER, chapter III.H.1).

As indicated in the last FSR, the Central Bank implemented, in August of last year, an exceptional and temporary three-month suspension of the application of the individual limit of CLP 50 million for the submission of checks and other bank documents, issued by banks in domestic currency, for payment, clearing, and settlement in this Clearing House.

Due to the persistence of the circumstances or contingencies that led to the adoption of the measure, the application was again extended in April until the end of the Constitutional Exemption for Disaster due to the COVID-19 pandemic is decreed.

At the international level, the maintenance of measures adopted to face the pandemic has varied.

In the first half of last year, many jurisdictions adopted measures to avoid a credit crunch. For example, jurisdictions such as the United Kingdom, the United States, and the European Union reduced capital buffers or encouraged their use. Other measures that were adopted include the relaxation of regulatory requirements on liquidity, default classification, and lending policies (table V.1).

TABLE V.1 PRUDENTIAL MEASURES USED DURING THE PANDEMIC AND THEIR DURATION
(selected jurisdictions)

Authority/measure	2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
United Kingdom (Bank of England)								
Reduction of capital buffer								
Change in Pillar 2 requirements								
Europe								
Relaxation of prudential requirements (ECB)								
Relaxation of NPL treatment								
Deferral of IFRS and leverage								
United States (FED, OCC, FDIC)								
Reduction of reserve requirements and capital buffers								
Rescheduling does not count as troubled assets								
Deferral of leverage requirements; longer transition for provisions standard								

(*) The normalization of requirements has not been reported.

Sources: U.S. Federal Reserve, Bank of England, and European Commission.



However, at present these measures have not been uniformly maintained. Thus, in the United Kingdom, the reduction of the CCyB and other liquidity and capital buffers will continue at least until the end of this year, whereas other jurisdictions, such as the United States and the European Union, have begun to reverse some of the measures.

LONG-TERM FINANCIAL POLICY DEVELOPMENTS IN CHILE AND THE REST OF THE WORLD

In Chile, financial authorities have continued to move forward on their long-term agenda, which responds to more structural issues in the functioning of the financial system and is not directly related to the pandemic response. This section discusses the financial policy agenda of the Central Bank for 2021, as well as the main recent developments of other financial regulators and laws recently approved by Congress.

The financial policy agenda of the Central Bank of Chile contributes to containing financial stability risks.

The Bank has continued the development of various regulatory measures, many of which are long-term, and some important milestones are expected to be met this year. These initiatives range from increasing financial integration to strengthening the operation of the large-value and retail payment system infrastructures. The main measures contemplated for this year, and their contribution to risk containment, are outlined in table V.2 and explained below.

The Bank is analyzing new modifications to the liquidity regulation.

The regulation on bank liquidity management was issued in 2015 (Compendium of Financial Regulations, chapter III.B.2.1). It incorporated, among other elements, the quantitative liquidity indicators suggested by Basel III. A quantitative limit was gradually established for the short-term liquidity coverage ratio (LCR), while the net stable financing ratio (NSFR) was established only as a reporting requirement.

Currently, as greater international consensus has been reached regarding the application of the NSFR, the CBC is considering the gradual incorporation of a regulatory limit for the NSFR. It is also considering a review of the maturity mismatch limits that have historically been applied, among other elements. A proposal is expected to be published for public consultation in the coming months.

The process of modernizing foreign exchange regulations continues as planned.

In March of this year, the authorization for certain cross-border operations to be carried out in Chilean pesos entered into force. The remaining operations may be carried out with the local currency as of September.

The above constitutes a very important basis for moving forward on the process of internationalizing the Chilean peso and increasing competition in the local exchange market. As noted in the previous FSR, there are factors outside the scope of the Central Bank that would help strengthen this measure, such as clarifying the tax treatment of some activities that could be developed and possibly adjusting some aspects of financial regulation, which should be evaluated on the merit and scope by the corresponding authority. For example, the FMC recently published a Circular to allow the opening of checkless bank accounts, which contributes in that



direction. Going forward, it is necessary to carefully monitor any developments arising from these initiatives and any difficulties that prevent progress on the peso internationalization process.

As reported in the FSR for the second half of 2019, the foreign exchange regulation modernization process also includes a review of the requirements for entities that operate in the Formal Exchange Market and the publication of a new and conceptually reorganized Compendium of Foreign Exchange Regulations. The first of these initiatives is expected to be published for consultation during the first half of this year; the second, toward year-end.

TABLE V.2 CBC FINANCIAL POLICY AGENDA 2021

Initiativa	Content	Contribution to risk containment
Liquidity regulation reform	Greater convergence to international standards in this area.	Promote better and more efficient liquidity management and increase comparability with other jurisdictions.
Modernization of foreign exchange regulations	Phase 2 in force, after public consultation. Phases 3 and 4 will be addressed during the year.	Greater international integration and improved monitoring capacity for the foreign exchange capacity.
Incorporation of Chilean peso into CLS	Progress toward implementation: completion of engagement y due diligence processes (2020), and confirmation of participation of two banks	Limit counterparty risks, reduce OTC market, and improve the capacity for monitoring cross-border exchange transactions.
CCyB implementation	Document explaining the objectives of the Board's CCyB policy objectives and implementation strategy.	Complete the implementation of Basel III, increase bank resilience, and increase transparency.
Retail payments agenda	Adjustment of Chapter III.J.2 prudential regulations in force, and publication for consultation of the rules for Retail Payments Clearing Houses.	Promote competition and market development; move toward clear and certain instant payments.
Development of large-value payment systems and infrastructures	Start of settlement in the USD-RTGS System of net dollar balances from the Check Clearing House and publication of the regulatory framework for Large-Value Clearing Houses in Foreign Currency.	Promote better settlement and foreign exchange risk management, reduction of OTC markets, and greater monitoring capacity.

Source: Central Bank of Chile.



Progress also continues on the incorporation of the Chilean Peso in the CLS System.

This initiative promoted by the Central Bank (see Financial Stability Report, Second Half 2019, Box VI.1,) has continued to move forward during this half. In particular, the engagement and due diligence processes were completed, two very important milestones for the project, and two local banks formally announced their participation in the Continuous Linked Settlement (CLS) System, one as a nostro agent (a correspondent bank in CLS) and the other as a nostro agent and settlement member. In the coming months, intense coordination work will be necessary between CLS, the CBC, and the banks that have announced their participation in CLS. The results of this process will determine whether the implementation phase can be launched, which is the final phase before the Chilean peso is eligible for CLS settlement. Note that the Chilean peso internationalization process is independent from the development of the CLS project and therefore follows its own course.

Guiding principles and key elements for implementing the countercyclical capital buffer (CCyB) will be issued soon.

As indicated in past reports, the 2020–21 period has been devoted to the development and internal preparation of principles, methodologies, and protocols for the implementation of this tool and its communication to the market. The implementation principles are expected to be published soon, once some final elements are concluded with the FMC, given the need for institutional coordination for the proper use of the CCyB.

The Bank made adjustments to its rules for payment card operators and opened a consultation on a new regulatory framework for the clearing of retail payments.

The Bank modified the prudential requirements for payment card operators to incorporate a greater degree of proportionality in the capital and liquidity requirements for these entities.

In addition, a new regulatory framework for the creation and operation of retail clearing houses (RCH) was published for public consultation on 8 March. This regulation seeks to adapt to and provide flexibility for new developments and innovations that allow the expansion and diversification of the means of payment available in the financial system, allowing the clearing of transactions originating in different platforms and, at the same time, establishing minimum prudential safeguards. More details on this initiative are provided in box V.1

Dollar settlement began in the National and Foreign Currency Check Clearing House.

As reported in the last FSR, interbank settlement in U.S. dollars has been operational in the CBC RTGS System (RTGS-USD System) since March 2020, channeling interbank payments with an average daily value of US\$ 23 million in March 2021. This implementation enables the development of clearing houses in which the final phase is dollar settlement in the RTGS System.

In particular, the regulations applicable to the Clearing House for Checks and Other Bank Drafts in Domestic and Foreign Currency were published in August 2020, establishing that the net dollar balances resulting from that clearing house were to be settled in the RTGS-USD System. This initiative required a period of adjustment and operational implementation that culminated this year.



On 1 March 2021, the RTGS-USD subsystem began to process the settlement of net debit and credit balances in dollars from the Domestic and Foreign Currency Check Clearing House (Compendium of Financial Regulations, chapter III.H.1). Therefore, as of that date, the CBC rescinded the exceptional and temporary authorization for debtor banks participating in that clearing house to pay their net debit balances in dollars through interbank SWIFT transfers, using current accounts in dollars that they maintain with their correspondent banks in New York.

The new regulatory framework for the establishment of a Large-Value Clearing House in Foreign Currency will be published shortly.

Following a public consultation process initiated in January 2021, the final version of the regulatory framework applicable to large-value clearing houses will be published in the coming weeks.

Under this new regulation, one or more private entities could implement a Foreign Currency Large-Value Clearing House (LVCH-FX) to offset payments originating in international exchange transactions on the spot market for the purchase and sale of U.S. dollars against national currency.

Entities interested in implementing a LVCH-FX that meet the requirements set out in this new regulatory framework must submit the respective Operating Regulations with details on the clearing house operations, which must be approved by the CBC. Subsequently, they must carry out the necessary operational tests for settling their operations in the RTGS System, in both domestic currency and dollars.

This new regulation also strengthens the prudential requirements applicable to the current Domestic Currency Large-Value Clearing House. Details on this initiative were presented in box VI.1 of the last FSR.

The Bank recognized the Chilean receivables exchange as part of the National Formal Secondary Market.

The CBC granted recognition to the Chilean receivables exchange incorporated under Law 19,220, and brokers that are members thereof, as a national formal secondary market, for the purposes of Article 48 of DL 3,500 of 1980.

The legal framework stipulates that transactions involving pension fund resources must be carried out in a formal secondary market; and empowers the CBC to determine which entities constitute that market. The CBC has exercised this authority in chapter III.F.3 of the Compendium of Financial Regulations (CFR), defining the national formal secondary market as comprising stock exchanges incorporated under Title VII of the Securities Market Law, as well as their member brokers; the CBC itself, as an issuer of securities under the conditions established in the regulation; and, since 14 April 2021, the receivables exchange, duly incorporated under Law 19,220, and its member brokers.

In parallel, the CBC granted its prior favorable assessment report, requested by the Superintendence of Pensions, to incorporate invoice-backed securities—issued by receivables exchanges constituted under Law 19,220 and held in custody by securities deposit companies regulated by Law 18,876—into the set of instruments that are eligible for investment with pension fund resources.



OTHER LOCAL INITIATIVES

Basel III implementation

In November of last year, the FMC issued regulations for the identification of systemically important banks and the determination of additional requirements for these institutions. To this end, a systemic importance index is built on the basis of four factors: the institution's size, interconnectedness, substitutability, and complexity.^{3/} This index, to be calculated annually based on information reported by banks, will determine a range of additional capital requirements.

In March of this year, banks that meet the definition of systemically important institutions in Chile were reported for the first time, with the prior agreement of the CBC. They are as follows: Banco de Chile, Banco de Crédito y Inversiones, Banco del Estado de Chile, Banco Santander-Chile, Itaú Corpbanca, and Scotiabank Chile.

With regard to the additional requirements, the FMC decided in April of last year to postpone the implementation of this Basel III standard as a result of the pandemic. Thus, the higher capital requirements may be gradually constituted from December 2022 to December 2025.

Easing of requirements on opening current accounts

On April 28, the FMC issued an amendment to Chapter 2-2 of the banking regulations (Recopilación Actualizada de Normas) to allow banks to offer checkless checking accounts. The objective is to help banks offer lower-cost products that better suit their customers' needs, considering that the use of checks as a means of payment has declined steadily in recent years.

This measure will also enable nonresident individuals who are not domiciled in Chile to open and maintain bank accounts in pesos, without the need to establish their domicile in the country. This will enhance the measures taken by the CBC to allow the use of the local currency in cross-border transactions, explained earlier in this chapter.

Implementation of IFRS 17 in the Chilean insurance market

In January, the FMC published for consultation its guidelines for the implementation of IFRS 17 in the Chilean insurance market. This regulatory framework aims to modernize technical reserve regulations, so as to align them with international best practices, including the economic recovery of these liabilities, and promote better risk management. The adoption of this standard is based on a number of expected benefits, such as greater consistency with the conceptual framework for risk-based supervision (RBS), greater transparency, and access to necessary information for better risk management, among other aspects.

Since 2012, the supervisor has made progress in implementing an RBS model, which assesses solvency and risk management individually for each insurer. This has fostered active oversight and allowed control efforts to be focused on entities identified as having greater risk. However, the implementation of risk-based capital requirements and changes to the investment regime, necessary for the global implementation of RBS, require the approval of legal amendments that were introduced in Congress in 2011.

^{3/} For further details, see "Informe Normativo, Factores y metodología para calificar un banco o grupo de bancos como de importancia sistémica, conforme al artículo 66 quáter de la LGB, y modificación de las disposiciones del Capítulo 12-14 de la RAN, sobre aplicación del artículo 35 de la misma Ley" (FMC, November 2020).



The implementation of IFRS 17 poses a challenge for the industry, and it will involve significant costs in terms of IT system development, information generation, and actuarial training. This short-term effect will be mitigated through a gradual and flexible implementation by the FMC. From a structural perspective, this is a positive development for the financial system, as it will reflect the real economic and financial situation of insurance companies.

Increased reporting of debtor information to the FMC

Banks, credit placement support services corporations, and savings and loan associations supervised by the FMC regularly submit information on their debtors to the Commission, which is available to debtors and financial institutions that are legally entitled to receive it.

In this context, to improve debtor information in the financial system, the FMC published two regulations for public consultation. One seeks to increase the reporting frequency (from monthly to weekly) and reduce the time frame in which financial institutions must submit debt files associated with the debtor list to the FMC (from seven business days to one). The other establishes the information to be provided by nonbank credit card issuers, as well as control measures for the preparation and management of the debtor list, which they are entitled to receive following an amendment to the General Banking Law.

These FMC measures will certainly contribute to improving the available debtor information, but they are not substitutes for a consolidated debt registry.

Legal initiatives

The recently published Law 21,314, which reinforces the conduct and responsibilities of market agents, aims to strengthen confidence in the markets and promote their proper functioning. To this end, it amends a number of statutes, in order to enable the sanctioning of abusive conduct, provide greater protection to minority shareholders and investors, clarify the responsibilities of external auditors, and strengthen the role of the FMC, among other measures.

Some of the measures included in the law are an increase in the sanctions that the FMC can apply and the incorporation into the Securities Market Law of a new section on anonymous whistleblowers. In addition, DL 3,5000 creates the category of "Pension Financial Advisers," which must be registered in a Registry maintained by the SP, meet requirements such as knowledge accreditation and conflict of interest prevention, and post a guarantee to cover to any harm they may cause to pension affiliates.

A bill to regulate interchange rates for payment cards is in the final phases of processing in Congress. As explained in past Reports, card issuers receive an interchange fee from acquirers when one of their payment cards is used with a merchant in the acquirer's network, and it corresponds to a fraction of the discount fee on each transaction that merchants pay the acquirer. That fraction is the interchange rate.

To set interchange rates in the country, the initiative being discussed by Congress calls for the creation of a Committee to Establish Limits on Interchange Rates, which will consist of four people appointed by the Minister of Finance, the CBC Board, the FMC, and the National Economic Prosecutor's Office. The appointees must be officials of these institutions.

The bill considers disqualifications and incompatibilities for committee members and regulates the operation and procedural aspects of the interchange rate regulation process.



INTERNATIONAL COORDINATION

Financial Sector Assessment Program (FSAP)

This year, the World Bank and the International Monetary Fund will conduct an assessment of Chile's financial sector, under the FSAP. This evaluation aims to identify financial sector strengths and weaknesses in the countries analyzed.^{4/}

The FSAP was jointly requested by the Ministry of Finance and the Central Bank of Chile to be carried out in 2020, but it was postponed due to the pandemic.

The first part of this process took place in March and April. The second part is scheduled for July, and the final report will be published toward the end of this year.

Central Banks and Supervisors Network for Greening the Financial System (NGFS)

On 12 February, the Central Bank of Chile was admitted as a new member of the NGFS. This body was established in December 2017 on the initiative of eight central banks and supervisors, with the aim of contributing to the analysis and management of climate and environmental risks in the financial sector. Objectives include strengthening the global response needed to comply with the Paris Agreement, improving the role of the financial system in risk management, and mobilizing capital toward low-carbon investments. The institution promotes best practices beyond its members and conducts analyses on green finance and financial risks arising from climate change, among other topics. The NGFS now has 87 members between central banks and supervisors.

In its first report, the NGFS concluded that climate-related risks are sources of financial risk and therefore fall within the supervision and financial stability mandate of central banks and financial supervisors. To date, the NGFS has produced more than 20 reports on economic and financial issues related to climate change. This forum currently has five workstreams: microprudential/supervision; macro-financial; scaling up of green finance; bridging the data gaps; and research. The Central Bank of Chile expects its participation in NGFS to be an important source of input to improve its internal work on climate change, as well as its contribution to other local authorities, such as the Green Finance Committee.

OTHER INTERNATIONAL DEVELOPMENTS

LIBOR cessation and risk-free rate development

Historically, the LIBOR was the most internationally important interbank benchmark rate, mainly for the syndicated loan and derivatives markets. By the end of 2013, however, regulators globally determined the need to migrate the LIBOR to other benchmark rates, due to a loss of credibility after it became known in 2012 that some banks had manipulated the LIBOR. Thus, the obligation for banks to submit LIBOR estimates will end this year (except for USD). New benchmark rates have been developed in the meantime, but the transition is not without risk, as discussed in box V.2.

^{4/} The last FSAP in Chile was in 2011.



Central Bank Digital Currencies

Several countries continue to advance on the analysis of the motivations, risks, and possible implications of a legal central bank digital currency (CBDC). In some cases this analysis has resulted in more concrete developments, such as concept testing or more advanced phases of implementation in jurisdictions such as China, Bahamas, Thailand, Hong Kong, and Singapore.

The motivations for a central bank to issue a CBDC include financial inclusion, monetary policy implementation, and efficiency in both domestic and cross-border payments. These motivations are relatively similar for advanced and emerging countries, with the exception of financial inclusion, which is more relevant for the latter group (BIS, 2020).

In this scenario, the CBC carefully analyzing CBDC-related developments.

TABLE V.3 MAIN REGULATIONS PASSED DURING THE FSR 2021.1 PERIOD

Publication date	Organization	Document	Content
01.Dec.2020	FMC	Circular N° 2281	Incorporates into the banking regulations (RAN) a new Chapter 21-6 on the standardized methodology for calculating credit-risk-weighted assets and the limits, requirements, and other conditions for the use and implementation of internal methodologies.
01.Dec.2020	FMC	Circular N° 2282	Incorporates into the RAN a new Chapter 21-7 on the determination of risk-weighted assets.
01.Dec.2020	FMC	Circular N° 2283	Incorporates into the RAN a new Chapter 21-20 on the promotion of market discipline and transparency through information disclosure requirements for banks (Pillar 3).
24. Dec.2020	CBC	Resolution 2363-04-201224	Provides for the additional renewal of exceptional and temporary measures on the measurement and management banks' liquidity position.
29. Dec.2020	CBC	Resolution 2363-05-201224	Amends the Compendium of Foreign Exchange Regulations for the purpose of authorizing new transactions that can be carried out in national currency.
31.Dec.2020	FMC	Circular N° 2284	Creates R11 files related to measuring the systemically important index.
25. Jan.2021	FMC	NCG N° 451	Establishes the characteristics or conditions to be met, for the purpose of registering debt securities under the automatic registration mechanism.
22.Feb.2021	FMC	NCG N° 452	Exempts certain public offerings of securities from the registration obligation and amends NCG N° 336 of 2012.
26.Feb.2021	FMC	Circular N° 2286	Provides information on loans guaranteed by the FOGAPE program under Laws No. 21,299 and N° 21,307.
06.Apr.2021	CBC	Resolution 2383-02-210401	Renewal of the exceptional and temporary measure that relaxes the application of the regulations governing the Check Clearing House in National Currency and Dollars.
13.Mar.2021	CBC	Resolution 2383-02-210401	Amends Chapter III.J.2 on Payment Card Operation.
01. Apr.2021	CBC	Resolution 2383-01-210401	Provides for the additional renewal of exceptional and temporary measures on the measurement and management banks' liquidity position.
28.Apr.2021	FMC	Circular 2289	Allows nonresident individuals who are not domiciled in the country to open bank accounts with an agreement to waive the provision of checkbooks to the account holder.

Source: Websites of each institution



TABLE V.4 MAIN REGULATIONS PUBLISHED FOR PUBLIC CONSULTATION IN THE FSR 2021.1 PERIOD

Date	Organization	Regulation	Issue and objectives
21.Dec.2020	FMC	Operational risk management and cybersecurity.	General standard that provides instructions on operational risk management and cybersecurity, as well as the periodic realization of self-assessments on both issues in insurers and reinsurers.
12.Dec.2021	FMC	Implementation of IFRS 17 in the Chilean insurance market.	Modernize insurance company technical reserve regulations, aligning them with international best practices in the area.
15.Jan.2021	CBC	Regulates the establishment of a Large-Value Clearing House in Foreign Currency.	Strengthens the regulation applicable to financial market infrastructures, with regard to the clearing and settlement of interbank payments in foreign currency.
18. Jan.2021	FMC	Changes the frequency of the submission of debtor files.	Improves the timeline for debt reporting and the credit risk management of supervised entities, which currently control important risk factors on a monthly basis.
18. Mar. 2021	FMC	Establishes requirements for compliance with Article 14 of the GBL for nonbank credit card issuers.	Provides general rules for credit card issuing companies on the treatment of the debtor list, given its sensitive nature, and instructions on the file to be submitted to the FMC.
22.Mar.2021	FMC	Incorporates sustainability and corporate governance issues into the Annual Report.	Modernizes and refines the environmental, social, and governance (ESG) information that issuers of publicly offered securities registered in the Securities Registry must include in their Annual Report
08. Mar.2021	CBC	Authorizes the creation and regulation of Retail Payment Clearing Houses.	Adapts to and provides flexibility for new developments and innovations that allow the expansion and diversification of the means of payment available in the financial system, allowing the settlement of transactions originating on different platforms, while also establishing minimum prudential safeguards.

Source: Websites of each institution.



Box V.2:

Benchmark Rate Transition: The End of the LIBOR and the Development of Risk-Free Rates

The London Interbank Offered Rate (LIBOR) is a benchmark index that reflects the interest rate at which banks can access financing in the unsecured interbank market. In late 2013, global regulators, coordinated by the Financial Stability Board (FSB), established the need to migrate from the LIBOR to other reference rates, due to a loss of credibility following allegations of manipulation.^{1/}

This box briefly discusses the main risks and challenges that this process could imply for financial stability, both globally and locally.

End of LIBOR

Since its creation in the late 1960s, the LIBOR has been the main benchmark for the syndicated loan and derivatives markets. The index is calculated daily for a set of currencies and maturities, ranging from one day to 12 months, based on information submitted by a panel of selected banks.^{2/} The most widely used index in terms of volumes traded is the U.S. dollar (USD) LIBOR, followed by pounds sterling (GBP), euros (EUR), Swiss francs (CHF), and Japanese yen (JPY). In terms of maturity, the three- and six-month indexes are the most commonly used.

The LIBOR credibility problems, coupled with relatively higher capital requirements for unsecured funding operations as a result of the international implementation of Basel III, have tended to reduce the liquidity of the funding markets from which the LIBOR is derived.

This situation prompted the U.K. Financial Conduct Authority (FCA) to announce in July 2017^{3/} that it would no longer require the banks on the LIBOR panel to submit information after 3 December 2021 (June 2023 for the USD LIBOR),^{4/} noting that after that date the issuance of the index would not be guaranteed and would no longer be available to the market.

International response to the cessation of the LIBOR

The International Organization of Securities Commissions (IOSCO) prepared a report entitled “Principles for Financial Benchmarks,” published in July 2013, which establishes general principles for the development and improvement of benchmarks, highlighting as one of their main characteristics that they be based on sufficiently liquid market transactions (IOSCO, 2013). Likewise, FSB (2014), mandated by the G20, published a report in July 2014 to guide the process of developing new benchmarks, namely, “Reforming Major Interest Rate Benchmarks.”

^{1/} In May 2008, the manipulation of the LIBOR was denounced by a group of banks that participated in its elaboration, for a period spanning at least eight years between 2003 and 2011.

^{2/} For more details, see [ICE Benchmark Administration's LIBOR](#).

^{3/} For more details, see [The future of LIBOR](#).

^{4/} The overnight and one-, three, six-, and twelve-month USD LIBOR rates will cease to be guaranteed at the end of June 2023. For more details, see [Comunicado FCA](#).



Subsequently, on the basis of these principles and theoretical foundations, the authorities and the private sector undertook the development of risk-free rates (RFRs) for the five main currencies. In all cases, they opted for 100% transaction-based rates, the majority of which are not derived from the interbank (wholesale) market, but rather are mainly linked to the money and repo markets (table V.6). The RFRs of Japan, the European Union, and the United Kingdom are unsecured rates, while the United States and Switzerland established secured RFRs, as they are the deepest markets in each jurisdiction.

TABLE V.6 MAIN CHARACTERISTICS OF RISK-FREE RATES FOR THE FIVE MAIN CURRENCIES

Jurisdiction	Associated LIBOR	Administrator	RFR	RFR administrator	Transaction-based	Overnight	"Wholesale" market	Secured	Associated LIBOR end date
Japan	JPY LIBOR	ICE Benchmark Administration (IBA)	TONA	Bank of Japan	YES	YES	YES	Unsecured	Dec-21
European Union	EONIA/EURIBOR	European Money Market Inst.	ESTR / Reformed EURIBOR	European Central Bank (ECB)	YES	YES (ESTR)	YES	Unsecured	Dec-21
United Kingdom	GBP LIBOR	ICE Benchmark Administration (IBA)	SONIA	Bank of England	YES	YES	YES	Unsecured	Dec-21
United States	USD LIBOR	ICE Benchmark Administration (IBA)	SOFR	Federal Reserve Bank of NY	YES	YES	YES	Unsecured	Jun-23 *
Switzerland	CHF LIBOR	ICE Benchmark Administration (IBA)	SARON	SIX Swiss Exchange	YES	YES	NO	Unsecured	Dec-21

(*) Overnight and 1, 3, 6, and 12 months.

Source: ECB; Bank of Japan; Bank of England; Federal Reserve Bank of New York; Financial Stability Board; Bank of America Merrill Lynch; and International Swaps and Derivatives Association.

Main risks and challenges of the transition

The impact of the transition from the LIBOR to RFR benchmarks has been evaluated unevenly by different jurisdictions, with those linked to the main LIBOR rates (USD, GBP, YEN, CHF, and EUR) estimating the greatest negative potential.

In 2020, almost US\$ 400 trillion in contracts reference the LIBOR, which will have to be migrated to new rates through the introduction of measures and clauses that ensure contract continuity. Additionally, regulators and institutions must resolve issues such as operational complexities, transparency, development of protocols, etc.^{5/}

The main financial stability risks posed by the transition (table V.7) include the legal risk deriving from the adaptation of contracts and instruments linked to LIBOR, and the liquidity risk associated with the need for a maturity structure based on RFRs.

Exposure and effects in Chile

In Chile, the risks are mainly associated with products and entities that use the LIBOR as a benchmark. In the case of the banking industry, the balance sheets of these institutions use local benchmark rates, while the products and contracts that reference the LIBOR correspond mainly to foreign currency derivatives and foreign loans. As of February 2021, according to foreign exchange information managed by the Central Bank, the stock of overseas bank loans that use the LIBOR was US\$ 7.7 billion, equivalent to 1.8% of bank liabilities. On the other hand, gross LIBOR derivative positions with nonresidents reached a national value of US\$ 133 billion for the banking sector as of the same date, equivalent to 47.9% of the industry's total stock of derivatives with the foreign market. These contracts will probably have to adopt transition strategies, as they largely have terms that exceed the LIBOR cessation dates (with US\$ 95.4 billion in USD LIBOR derivatives expiring after June 2023).

^{5/} See [ISDA 2020 IBOR Fallbacks Protocol](#).



In particular, the main risks from local exposure are linked to risk management using derivatives. Legacy risk should be taken into account, although it seems limited relative to the size of the market, as there are contracts that expire after the cessation of the LIBOR.

TABLE V.7 MAIN RISKS ASSOCIATED WITH THE LIBOR TTRANSITION

Main risks	Description
Infrastrurcture	Infrastructure entities must accept and include procedures and products that reference RFRs and facilitate their use and the transition.
Legal	Adaptation of contracts to new rates and the preparation of documents adjusted to RFR-based products can generate risks (legacy risk) and significant operational costs.
Liquidity	Having liquid markets, benchmarked to the RFRs, is crucial for the potential use of these rates in different maturity structures (1M, 3M, etc.).
Valoration and risk management	Change in the use of rates may affect the valuation of instruments and hedges, requiring adjustments to incorporate the differences between rates.
Regulatory and governance	Both institutions and supervisors must evaluate adjusting their regulatory schemes, taking into account the characteristics of the RFRs.

Source: Central Bank of Chile, based on data from the FSB, BIS, and IOSCO.

Reflections and future course of action

At the international level, strategies for transitioning to the new RFRs in contracts and instruments are under ongoing development, with a focus on minimizing the risk to financial stability that may underlie the replacement of the LIBOR.

Even considering the degree of openness of the Chilean economy to international markets and the importance of the derivatives market, the risk of the rate transition is estimated to be limited. However, given the degree of uncertainty surrounding the process, it is appropriate to maintain a constant assessment of the local exposure to the LIBOR index and the respective RFRs, as well as the development of transition strategies at the international level.



Box V.1:

New Regulatory Developments in Retail Payment Methods

One of the objectives of the CBC 2018–22 Strategic Plan is to advance understanding and impact analysis of disruptive technologies, including the identification of regulatory development possibilities to promote more efficient, inclusive, and reliable financial services.

As part of this objectives, the CBC published for public consultation a new regulatory framework for Retail Clearing Houses (RCH).^{1/} This new regulation was developed following a flexible format, so as to be adaptable to diverse retail payment systems in order to allow their recognition under the regulatory framework of the Central Bank.

RCH management must establish basic rules by which their respective participants present their transactions for clearing and subsequently settlement (payment). This box describes the main expected benefits of this regulation

Enable the development of robust financial infrastructures for retail payments

The use of non-cash retail payments has increased considerably in recent years. For example, the volume and number of transactions currently carried out with payment cards or initiated online have tripled since 2013 (figure V.1). Additionally, the market structure has changed in the most recent period, and there are numerous new entrants that tend to challenge the available regulatory frameworks.

Payment processing generally requires that the financial institutions involved assume debit or credit positions with each other, in relation to the payments made by their customers. These debit or credit positions are resolved through clearing and subsequent settlement mechanisms.

These processes entail risks to financial stability that need to be mitigated, such as credit and operational risk. This is because these risks can affect the continuity, security, and efficiency of payments, especially if they are massive. It is therefore important to contain the risks in order to preserve the essential contribution of the payment systems to the functioning of the economic system and the well-being of people in society.

In this sense, the financial infrastructures that process payments are fundamental, which in most cases—including Chile—are widely developed for large-value or wholesale payments, but are usually more fragmented and less developed in the case of retail payments.

In Chile, only check payments and cash withdrawals from ATMs are cleared through mechanisms that are regulated by the Central Bank.^{2/} The remaining retail payments do not have a regulatory framework through which they can be channeled. In these cases, payments are made through privately defined settlement mechanisms, which should ideally be subject to standards of prudential regulation.

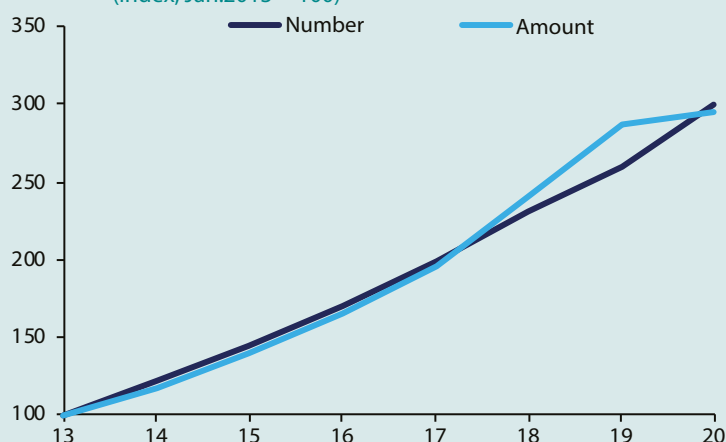
^{1/} For details, see in [Banco Central de Chile desarrolla nuevo marco de regulación flexible y adaptable a innovaciones en los sistemas de pagos de bajo valor](#)

^{2/} Chapters III.H.1 and III.H.3 of the Compendium of Financial Regulations, respectively.



FIGURE V.1 AMOUNT AND NUMBER OF CARD TRANSACTIONS AND INTERNET TRANSFERS AND PAYMENTS (*)

(index, Jan.2013 = 100)



(*) Fund transfers and payments initiated on the Internet only include transfers made by natural persons between accounts with different ID numbers. They also exclude loan payments and bank product subscriptions. Card transactions exclude cash withdrawals and product subscriptions.

Source: Central Bank of Chile, based on data from the FMC.

Notable cases of the latter situation include interbank electronic fund transfers (EFTs) and the clearing of payment card operations.^{3/} In both cases, the creation of the proposed regulation would provide advantages such as giving these operations a robust management framework capable of ensuring the fundamental principle of clear and certain final settlement, in accordance with internationally accepted standards.^{4/}

Promote innovation in the development of retail payment systems

This new regulation will allow entities that fulfill the role of “Clearing House Management” to implement differentiated models of operation with different participants. To achieve this objective, the proposed regulation takes a different strategy than usual, which is adaptive or progressive in the incorporation of prudential requirements, operating rules and standards, and other definitions. This implies that light prudential requirements are stipulated initially and then modified in the future according to how the different clearing houses operate and the type of payments they channel.

To encourage the entry of new RCHs—which in turn introduce new ways of making payments—the regulatory framework allows the hosting of experimental projects, whereby clearing houses that process limited volumes are exempt from some of the applicable prudential requirements.

Finally, to promote competition, it is essential to facilitate and promote the interoperability of the institutions that offer payment services, ensuring public, objective, and non-discriminatory access conditions to clearing

^{3/} The Central Bank’s payment card regulation establishes requirements for issuers and operators, but they are not applicable to clearing and settlement processes.

^{4/} The CBC Basic Constitutional Act establishes that payments made in accordance with the rules of payment systems regulated by the Central Bank will be considered final for all legal purposes.



house participants. This specific aspect is especially important because financial institutions that offer a given payment service to their customers must necessarily have access to the clearing house where these payments are settled.^{5/}

In particular, in advanced financial systems, it is relatively common for supervised nonbank participants to have some type of access to clearing houses that process electronic fund transfers,^{6/} so that they can offer new services to their customers.

Promote the development of instant payment systems (fast payments)

In recent years, several jurisdictions have created infrastructures that allow instant payments. These consist, in general terms, in direct payments between individuals or companies in real time, with clear and certain final settlement.^{7/}

One of the main advantages that makes instant payments attractive to consumers is that they can be used in transactions in which the deadline for receiving payment is critical, such as in the purchase of retail goods and services.^{8/} These infrastructures thus enrich the payment ecosystem, because they provide the basis for banks and other payment service providers to offer alternatives to the existing means of payment, allowing people and companies to choose in accordance with their particular needs and interests.

Instant payment infrastructures in other jurisdictions vary significantly. For example, at one extreme, the infrastructure in the United Kingdom functions as a clearing house operated by the private sector, with deferred settlement. At the other extreme, the infrastructure in Mexico is fully operated by the Central Bank and settled in real time, thereby functioning as an RTGS system for retail payments (table V.5). The new regulation will contribute to the implementation of instant payments in Chile, since it will allow the establishment of clearing houses that process instant payments with clear and certain final settlement.^{9/}

Expand the benefits of possible new legislation on the development of Open Banking

Simultaneously with the development of instant payments, different foreign authorities have advanced in creating Open Banking frameworks in their respective jurisdictions. These solutions seek to improve the services provided directly to the end customer of payment service providers, among other objectives.

Open Banking frameworks typically include provisions on the operation of “payment initiators,” which can initiate transfers on behalf of the customers who own the accounts, with their prior consent, and which are independent from the institutions that provide the payment accounts.

^{5/} Strictly speaking, this principle is not met when payments are made between accounts provided by the same financial institution, in what are known as “on-us” transactions or closed payment systems.

^{6/} According to the World Bank’s 2019 Global Payment Survey, of the surveyed clearinghouses that process direct transfers, 23% allow direct access to supervised nonbank financial institutions, and 33% allow indirect access.

^{7/} BIS (2016) defines instant payments as payments in which the transmission of the payment message and the clear and certain final settlement of the payment for the recipient are made in real time, or near real time, with 24/7 availability.

^{8/} For businesses, it is critical to mitigate the risk of nonpayment when delivering goods and services. In the case of cash payments, this risk is mitigated because the merchant receives the payment in real time. In the case of card payments, the funds are typically received in deferred time, but the regulations and the internal standards and procedures of the card brands eliminate or mitigate the risk of nonpayment.

^{9/} In this regard, although today there are interbank EFTs that are instantaneous from the point of view of bank customers, they do not meet the standard of instant payments because the clearing and settlement procedures are not carried out through infrastructures regulated by the Central Bank and, therefore, are not clear and final.



TABLA V.5 IMPLEMENTATION OF INSTANT PAYMENTS IN SELECTED JURISDICTIONS

Jurisdiction and year of implementation	Name of infrastructure	Type of clearing	Maximum per transfer (*)
United Kingdom (2008)	Faster Payment Service	Deferred (3 times each business day)	US\$ 344,050
China (2010)	IBPS	Deferred	US\$ 7,631
India (2010)	Immediate Payment Service	Deferred (4 times a day)	US\$ 2,733
Sweden (2012)	BiR/Swish	Real time	US\$ 17,183
Singapur (2014)	FAST	Deferred (2 times a day)	US\$ 7,435
Mexico (2015)	SPEI	Real time	None
India (2016)	Unified Payment Interface	Deferred (4 times a day)	US\$ 1,366
Australia (2018)	New Payment Platform	Real time	None
Brazil (2020)	PIX	Real time	None

(*) The maximum limits per transfer are at the exchange rate of 31 March 2021.

Source: Central Bank of Chile.

In this way, payment initiators seek to provide alternatives so that consumers can make payments to people or businesses through direct transfers. These payments could potentially be initiated through a variety mechanisms, such as the Internet, QR codes, near field communication (NFC) technologies, biometric devices, etc.^{10/}

Regardless of how fund transfers are ultimately initiated, once the RCH regulation is implemented, most of these transfers should be cleared through a regulated RCH.

Therefore, the regulations that have been published for consultation, by allowing the creation of robust and interoperable payment infrastructures, should favor the emergence of dedicated payment initiation companies in the country.

Following this logic, the new regulatory framework for retail clearing houses that is currently open for consultation is complemented by the agenda announced by the Finance Ministry, which intends to propose bills that allow the development of Open Banking initiatives in Chile.

Final considerations

The regulation in consultation aims to provide a cornerstone for sustaining the operation of the local payment system, in terms of both its structure and its resilience. Likewise, this initiative represents a change in the way in which the Central Bank has traditionally defined its regulation.

The development of efficient and secure retail payment systems is directly related to the Central Bank's objectives, so this initiative is a priority and is included in its Agenda for the Development of Retail Payment Systems in Chile.

^{10/} Nothing prevents these forms of payment initiation from also being adopted by EFTs initiated by the account providers themselves or by card payments.



REFERENCES

FINANCIAL STABILITY REPORT FIRST HALF 2021

- Álvarez, N., A. Fernandois, and A. Sagner. 2019. "Rol de inversionistas institucionales domésticos sobre la volatilidad de las tasas soberanas de economías emergentes." *Revista Economía Chilena* 22(1): 82–101.
- Amiti, M., and D. Weinstein. 2018. "How Much Do Idiosyncratic Bank Shocks Affect Investment? Evidence from Matched Bank-Firm Loan Data." *Journal of Political Economy* 126(2): 525–87.
- Arrau, P. 1994. "Fondos de pensiones y desarrollos del mercado de capitales en Chile: 1980–1993." *Financiamiento para el Desarrollo Series 19*. ECLAC.
- Auer, R., G. Cornelli, and J. Frost. 2020. "Rise of the Central Bank Digital Currencies: Drivers, Approaches, and Technologies." BIS Working Paper 880. August.
- Baker, S. R., N. Bloom, and S. J. Davis. 2016. "Measuring Economic Policy Uncertainty." *Quarterly Journal of Economics* 131(4): 1593–636.
- Bank for International Settlements. 2016. "Fast Payments: Enhancing the Speed and Availability of Retail Payments."
- Bank for International Settlements. 2020. "Central Bank Digital Currencies: Foundational Principles and Core Features." Joint report by Bank of Canada, European Central Bank, Bank of Japan, Sveriges Riskbank, Swiss National Bank, Bank of England, Board of Governors of the Federal Reserve System, and Bank for International Settlements.
- Bank for International Settlements. 2021. "The News Sensitivity of High Equity Prices when Long Term are Low." BIS Quarterly Review. March.
- Baudino, P. 2020. "Public Guarantees for Bank Lending in Response to the COVID-19 Pandemic." FSI Brief 5. Bank for International Settlements.
- Becerra, J. S., and A. Sagner. 2020. "Twitter-Based Economic Policy Uncertainty Index for Chile." Working Paper 883. Central Bank of Chile.
- Bergant, K., and T. Kockerols. 2020. "Forbearance Patterns in the Post-Crisis Period." Working Paper 20/140. International Monetary Fund.
- Central Bank of Chile. 2021. Monetary Policy Report. March.
- Céspedes, L.F., and J. de Gregorio. 2021. "Central Banking and Credit Provision in Emerging Market Economies



during the COVID-19 Crisis.” Mimeo. Universidad de Chile.

Céspedes, L., J. García-Cicco, and D. Saravia. 2013. “Monetary Policy at the Zero Lower Bound: The Chilean Experience.” *Revista Economía Chilena* 16(2): 92–121.

FMC (Financial Market Commission). 2020. “Factores y metodología para calificar un banco o grupo de bancos como de importancia sistémica, conforme al artículo 66 quáter de la LGB, y modificación de las disposiciones del Capítulo 12-14 de la RAN, sobre aplicación del artículo 35 bis de la misma ley.” Legislative report. November.

Cobas, A. 2021. “Un análisis de red para las interconexiones entre instituciones financieras no bancarias y bancos.” Mimeo. Central Bank of Chile.

CFA (Consejo Fiscal Autónomo). 2021. “Informe del Consejo Fiscal Autónomo para el Fortalecimiento de la Regla Fiscal: Ancla de deuda, Cláusulas de escape y Mecanismos de corrección.” March.

Corbo, V., and Schmidt-Hebbel, K. 2003. “Efectos macroeconómicos de la reforma de pensiones en Chile.”

Córdova, F., and C. Toledo. 2020. “Reprogramaciones de créditos y sus implicancias sobre estabilidad financiera.” Mimeo. Central Bank of Chile.

Córdova, F., and M. Valencia. 2020. “Impago y destrucción de empleo: una investigación empírica en base a relaciones laborales.” Mimeo. Central Bank of Chile.

Córdova, F., C. Toledo, and F. Vasquez. 2021. “Necesidades de financiamiento de las empresas en Chile, un ejercicio basado en microdatos.” Mimeo. Central Bank of Chile.

Deutsche Bundesbank. 2018. “The Importance of Bank Profitability and Bank Capital for Monetary Policy.” Monthly Report. January.

Financial Stability Board. 2014. “Reforming Major Interest Rate Benchmarks.” July.

Financial Stability Board. 2020. Global Monitoring Report on Non-Bank Financial Intermediation.

Fishman, M., J. Parker, and L. Straub. 2020. “A Dynamic Theory of Lending Standards.” Working Paper 27610. NBER.

García, P. 2021. “The Monetary and Financial Policy Response to the CV19 Crisis: The Case of Chile.” Economic Policy Working Paper 69. Central Bank of Chile.

Goodman, L., J. Zhu, and B. Bai. 2016. “Women Are Better Than Men at Paying Their Mortgages.” Urban Institute Research Report.

Hollo, D., M. Kremer, and M. Lo Luca. 2012. “CISS: A Composite Indicator of Systemic Stress in the Financial System.” Working Paper 1426. European Central Bank.

IMF (International Monetary Fund). 2020. “Pandemic Persistence Clouds the Recovery.” Regional Economic Outlook: Western Hemisphere. October.

IOSCO. 2013. “Principles for Financial Benchmarks.” July.

Koepke, R. 2019. “What Drives Capital Flows to Emerging Markets? A Survey of Empirical Literature.” *Journal of Economic Surveys* 33(2): 516–40.



Martínez, J. F., R. Cifuentes, and J. S. Becerra. 2017. "Pruebas de tensión bancaria del Central Bank of Chile: Actualización." Working Paper 801. Central Bank of Chile.

Martínez, J., J. Matus, and D. Oda. 2018. "Taxonomy of Chilean Financial Fragility Periods from 1975 to 2017." Working Paper 822. Central Bank of Chile.

Saavedra, C., and A. Sagner. 2021. "Long-Term Sovereign Interest Rate Pass-through in Emerging Markets." Mimeo. Central Bank of Chile.

Santillán-Salgado, R., Lopez, D., and Montenegro, J. 2010. "Las administradoras de fondos de pensiones y el desarrollo del mercado de capitales en Chile." *Ensayos Revista de Economía* 29(2): 53–76.

Stiglitz, J., and A. Weiss. 1981. "Credit Rationing in Markets with Imperfect Information." *American Economic Review* 71(3): 393–410.

Walker, E., and F. Lefort. 2000. "Pension Reform and Capital Markets: Are There Any (Hard) Links?" *Abante* 5(2): 77–149.

