

# FINANCIAL STABILITY REPORT

First Half 2020



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# PREFACE

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As established in its Basic Constitutional Act, the Central Bank of Chile (CBC) must “safeguard the stability of the currency and the normal functioning of internal and external payments.” To carry out these tasks, the Central Bank of Chile is vested with diverse legal powers, such as extending emergency credit and determining regulations in matters affecting the financial system and international foreign exchange operations.

The Central Bank’s focus in the area of financial stability is centered mainly on the well-functioning of the system and the Chilean economy’s access to international financial markets. In this context, financial stability is said to exist when the financial system is able to operate normally or without significant disruptions, even in the face of adverse situations. The Central Bank’s tracking of financial stability is complementary to that undertaken by the specialized supervisory entities; it serves as an independent element of analysis with respect to the supervisors’ powers and functions in relation to the entities subject to their oversight.

The objective of the Financial Stability Report (FSR) is to provide information, on a semi-annual basis, on recent macroeconomic and financial events that could affect the financial stability of the Chilean economy, such as the evolution of the indebtedness of the main credit users, the performance of the capital market, and the ability of the financial system and the international financial position to adapt sufficiently to adverse economic situations. In addition, the Report presents the policies and measures that support the normal operation of the internal and external payment system, with the objective of promoting general knowledge and public debate with regard to the Bank’s performance in fulfilling this function.

## **The Board**



# SUMMARY

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*Since March, the Chilean financial system has faced tensions of unusual magnitude associated with the global health emergency. There has been high volatility in the financial sector, with no events of significant financial disruption, partly thanks to the implementation of exceptional liquidity measures. Thus, since the last Financial Stability Report (FSR) some risks analyzed in previous editions have materialized, and the probability of occurrence of other associated risks has increased. Therefore, this conjuncture puts to test the mitigation mechanisms of external shocks, the margins accumulated throughout the years, the resilience of the institutions and the depth of our financial market. At the same time, it demands special efficacy and coordination among policymakers.*

**Since March, the global economic outlook has drastically deteriorated due to the Covid-19 pandemic.** The global propagation of the virus required the implementation of social distancing measures that led to a sudden stop of activities in several economic sectors. This has reduced households and firms income, generating serious cash flow problems that could affect the compliance of financial obligations, even to agents that are solvent from a medium term perspective. These events are of uncertain duration and have affected financial decisions of agents, who have reduced their risk appetite and abruptly rebalanced their portfolios. Growth expectations for 2020 deteriorated significantly since end 2019, anticipating a profound recession during this year. Nevertheless, provided it was not derived from an economic phenomenon; this shock is expected to be transitory. Thus, economic activity is expected to show signs of recovery by this year-end, responding partly to the exceptional measures that monetary and fiscal authorities around the world have implemented. Among these measures there are: significant cuts in monetary policy rates, increased liquidity provision to the financial system, fiscal packages and incentives to support households and firms through credit, among others. However, it is not possible to rule out a deeper and longer-lasting economic impact than what is being anticipated by the markets. In particular, this shock could have a larger impact on countries with less policy space or amplified among those with previously weakened positions. To all of the above adds the uncertainty regarding the future evolution of the pandemic.





**The lower global risk appetite translated into major asset prices adjustments.** Stock markets have experienced losses and higher volatility since February. The VIX reached over 80 points, its highest level since the global financial crisis. Sovereign interest rates of advanced economies kept falling, while those of emerging markets showed significant upswings in March, accumulating increases of about 50 basis points (bp) since the last Report. Meanwhile, sovereign risk premiums and corporate spreads increased about 130pb and 100pb, respectively, in the same period. Commodities lost value: copper fell 10% while Brent oil lost 60% of its value, driven by the conflict between the main oil producers. These elements, along with high external debt among certain economies, increase the challenges of the actual economic crisis. Fiscal and monetary stimuli in advanced economies in response to the events have been greater than those registered during the Global Financial Crisis, attenuating the deterioration in financial markets at a global level. This has also helped reverting, in the last two weeks, part of the losses registered in March.

**The domestic financial conditions deteriorated since the last FSR, exacerbated by adjustments made by institutional investors, who balanced their portfolios toward more liquid assets.** Just as it was observed in other economies, corporate and bank bond spreads increased significantly in Chile, especially among those with lower credit rating. This was due to a greater need for liquidity of the agents, which implied a drop in the equity of mutual funds type 3 and an increase of mutual funds type 1 that surpassed US\$22 billion. Note that mutual funds type 3 had already seen redemptions in previous months, at the peak of social protests, of which a relevant portion left the mutual fund system. Pension funds made major adjustments to their investment portfolio in response to the changes between multi-funds by the affiliates, which have been more frequent and generalized than in other periods. Non-resident investors reduced their share in sovereign bonds—as opposed to their behavior in October—from 20% of the available stock in December to 18% in February this year.

**The Financial Market Commission (FMC), the Ministry of Finance and the Central Bank of Chile (CBC) implemented an unprecedented set of measures with the objective of mitigating the economic impact of the health emergency.** Given that the local financial markets showed somewhat lower liquidity since October 2019, the CBC implemented—since that month—a series of measures both in pesos and in US dollars, aiming at injecting resources, which were later adjusted to the new scenario. Thus, since March it extended its sales of US dollars, FX swap and REPO, adding a repurchase program of debt instruments issued by the CBC and a temporal suspension of the PDBC issuance program. The new measures that have been incorporated since March aim at helping households and firms to face the crisis, as well as to make it easier for financial institutions to accommodate its impacts. In the regulatory realm, the CBC relaxed its liquidity rules while the FMC adjusted the regulation on provisions by reprogramming outstanding debtors in order to facilitate the postponement of payments of banking fees.

In turn, the Ministry of Finance significantly increased the state guarantees for its FOGAPE and FOGAIN programs, capitalized BancoEstado's and enacted legislation for the implementation of a special credit line ("Covid-19 Line of Credit") for firms to finance working capital. In addition, it postponed the payment of some taxes; a six-month temporary stamp duty exemption for credit operations, and it enacted a law to protect jobs through a temporary freeze of employment relationships. Lastly, the CBC implemented the Facility of Credit Conditional on Lending Increase (FCIC in Spanish), which provides resources to banks so that they continue granting loans to households and firms. At the cutoff date of this Report, US\$13,706 million had been injected into the banking system through this facility, which is equivalent to 9% of the portfolio of consumer and commercial loans of end-February. The authorities have sought to provide coherence and complementarity to the measures they adopted. In this sense, it is worth noting that some of these initiatives are currently being implemented and will require monitoring in order to make sure that banks are fulfilling their expected role and that credit is being provided to the different sectors. This also implies being willing to adjust current policies or to implement others, if it were required.

**The measures adopted have highlighted the strengths of the Chilean financial system.** Despite the magnitude of the events that have affected the local economy, the impact on local markets has been contained. This happened in a context where agents have low levels of dollarization, there is a flexible exchange rate regime, and medium-term inflation expectations are firmly anchored. Under this framework, the policies implemented have been aimed towards normalizing financial markets and mitigating liquidity problems. In this way, the impact of external events has been absorbed by the exchange rate without generating major disruptions among local agents.

**The negative economic scenario will translate into a deterioration of the financial position of firms, limiting their payment capacity.** As of the first quarter of 2020, the total debt of the firms reached 131% of GDP. This represents an increase respect to the previous FSR; this was mostly due to the depreciation of the peso against the US dollar, which in turn revalues external debt. A fraction of large firms that report their balance sheets to the FMC will need additional financing to complement their cash flow. Given their relative size, these firms play a relevant role in job creation, have numerous commercial relations with smaller firms and maintain sizable debt within the portfolio of banks. Since these firms are financed mainly through domestic and external bonds, covering their new funding needs with bank loans alone could constrain financing for medium size firms. At the same time, some companies whose main source of financing has traditionally been the local banking sector had also shown vulnerabilities, incubated since October 2019 —due to the onset of social protests— which increase their liquidity needs. Therefore, in order to provide sources of financing for the corporate sector it is fundamental to move forward in the activation of the bonds market.

**The downturn in economic activity is materializing one of the risks reported in previous FSRs: the deterioration of the labor market.**

Recently, there has been an increase in formal job losses due to firm's needs, expiration of contracts and lower creation of new jobs. In a context where households total indebtedness surpassed 50% of GDP during the first quarter of 2020. Granular data for formal sector workers with bank debt show that consumer and mortgage loans of the representative debtor amount to five times her monthly income, equivalent to a 24% debt service ratio (DSR). The portion of vulnerable debtors, i.e. those with DSR over 40%, remains at 30%. Thus, the economic measures that directly affect disposable income have aided in the mitigation of adverse effects during the health emergency and have also helped avoiding episodes of default. Some measures that stand out in this sense are the moratorium on property taxes and basic utility bills, flexibility for reprogramming and postponing loan installments, direct income transfers and the job protection program. By the end of April over 73,000 firms had requested access to the latter for more than 500,000 workers. These workers will have access to unemployment insurance benefits without breaking their relationship with their employers, which will help alleviate the negative impact on their income.

**Credit allocation is one of the main challenges in the current economic scenario as the banking sector is facing increased credit risk with less capital margin.**

The expected contraction in economic activity presented in the March Inflation Report could produce a deterioration of the financial indicators of banks due to increased loan delinquency. This downturn is similar to the one considered in stressed scenarios usually used to evaluate the resilience of banks. In this scenario, no bank falls below its regulatory limit and those with a CAR greater than 10% represent close to 70% of the total banking sector assets. These results consider that the implementation of the policy measures abovementioned allow the mitigation of the crisis impact, and anticipate an increase in activity during the second half of the year. In turn, in a more severe stressed scenario with a deeper and longer drop in activity, this last indicator would fall to 40%. In this sense, the reduced capital margin and the intensive use of collateral for credit risk mitigation—as highlighted in previous Reports—constrain the ability of the banking sector to face a further deterioration of the current situation.

**This Report includes a special chapter that describes the international and Chilean experiences regarding macroprudential policies.**

The chapter identifies the institutional arrangements and attributions, as well as the macroprudential tools commonly used. The Chilean experience in this matter includes the instauration of the new institutional framework established in the new General Banking Law of 2019 that contemplates the integration of financial supervision and the responsibility of the CBC in managing the countercyclical capital buffer. The advances in macroprudential policy, both at the global and local levels, have contributed to enhance the capability of the institutions to accomplish the objective of preserving financial stability. This is especially relevant in this conjuncture as a great portion of the macroprudential policy framework is being put to test to face the risks related to this pandemic.

**In the current scenario of economic crisis, the stability of the financial system and the role of public policies are central.**

On the one hand, the financial system needs to be able to concentrate on its credit provision role. In order to do so, it must have a regulatory framework that is clear and stable, as it has been the case of the previous decades, it should also incorporate the best good international practices in financial markets. On the other hand, the institutions in charge of the design and implementation of public policies face far superior challenges than usual, in part because the scenario is unusual, and also because of the interactions between different agents. Therefore, besides monitoring and adjusting the measures already in place, there are still areas that require special attention. One of these is to foster mechanisms that contribute to financing other actors, like —for instance— non-bank lenders and large firms. At the same time, it is crucial to avoid disarticulated and contradicting norms that could threaten financial stability. To mitigate this risk, it will be particularly relevant maintaining the coherence between different measures as they are implemented, as well as the collaboration among the institutions that participate in the legislative and regulatory process. In this matter, the CBC along with implementing the measures under its responsibility and contributing with analysis to other institutions, will keep vigilant searching for mechanisms that strengthen the resilience of the economy in scenarios that could be more adverse than the current one. This will generate the policy space needed to adopt new measures and instruments according to the scale of the needs of the country.



# I. FINANCIAL MARKET TRENDS AND EXTERNAL EVENTS

*The global disruptions in economic activity have had a major impact on household and business income, a situation that could compromise these agents' ability to meet their financial obligations. There is still high uncertainty surrounding the severity and duration of the pandemic, as well as its impact on economic activity. The weaker economic outlook has been accompanied by a sharp reversal in risk appetite, which has led to significant adjustments in the majority of asset prices. In response to these events, the governments and central banks of many countries have implemented major economic support measures. Even so, the outlook indicates that the world could enter into a recession this year, although the recovery is expected to be faster than in the case of financial crises. In this climate of output contractions and low global inflation, long-term interest rates have remained at historically low levels in the developed world, but they have increased for emerging countries. Considering the above, a longer-lasting crisis appears to be the main risk at the global level.*

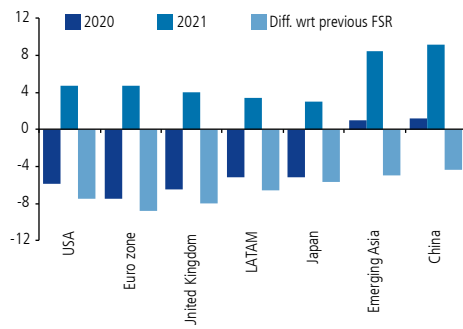
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## INTERNATIONAL FINANCIAL SITUATION

***Since the last FSR, the progressive slowdown in productive activities weakened the growth outlook in the world's main economies. Thus, the baseline scenario for world growth incorporates a recession in 2020, with a recovery in 2021.***

The unexpected and intense public health emergency that has erupted with the outbreak of COVID-19 has abruptly changed the global scenario, triggering a violent drop in world output and a strong reaction in the financial markets. Thus, world growth estimates have been revised downward significantly since the last Financial Stability Report (FSR). Whereas the September 2019 Monetary Policy Report projected world growth of 2.9% in 2020, the March 2020 Monetary Policy Report predicts a contraction in world GDP of 0.2% in the same year. Later forecasts incorporate even larger output drops for all economies, where the depth and duration of the contraction will depend on how the pandemic scenario unfolds, in particular in terms of decisions on loosening confinement orders in countries that are further along in the evolution of the outbreak.

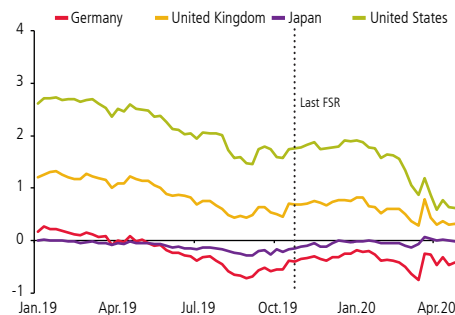
**FIGURE I.1**  
GDP growth rate, main economies  
(percent)



Source: International Monetary Fund.

Given this context, the International Monetary Fund (IMF) projects a world contraction of 3% for 2020 and a recovery close to 5.8% for 2021, stating that this will probably be the biggest global economic recession since the Great Depression (WEO, April 2020). In particular, the IMF forecasts that the United States will contract 5.9%; the Eurozone, 7.5%; the United Kingdom, 6.5%; and Japan, 5.2% (figure I.1). One of the expected consequences of this output shock is a significant increase in unemployment and a drop in household income. In the United States, applications for unemployment benefits have increased steadily, vastly exceeding other historical stress events. Specifically, between the third week of March and the end of April, there were over 30 million unemployment applications. In the Eurozone, some governments have begun to loosen the degree of social distancing, but it is not yet clear when productive activities could resume in countries that have imposed rigid confinement measures. Based on the faster implementation of larger liquidity provision mechanisms by central banks, together with major fiscal stimulus plans, a recovery is expected to materialize in 2021, taking into account the experience of past crises.

**FIGURE I.2**  
10-year sovereign bond interest rates  
(percent)

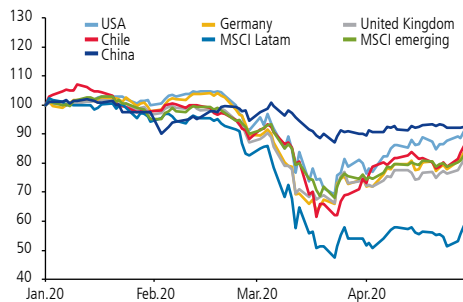


Source: Bloomberg.

**Long-term interest rates fell in advanced economies since the last FSR.**

Interest rates on developed sovereign bonds followed a downward trend since the last FSR, although they have been more volatile in recent weeks. At the same time, in the majority of the emerging economies, sovereign bond rates have risen markedly, as have spreads. Thus, since the cutoff date of the last FSR, developed sovereign bond rates fell 43 basis points (bp), on average. In particular, the ten-year German Treasury bond rate remained negative, at historically low levels (figure I.2). The ten-year U.S. Treasury rate dropped the most in this group of economies, falling 1.2 percentage points (pp) as of the cutoff of this FSR, which likely reflects a flight to safety by investors in the midst of sharp reductions and a high correlation in risky asset prices, as well as the major monetary stimulus measures that have been announced. In contrast, emerging sovereign rates increased substantially since the last FSR (details below).

**FIGURE I.3**  
Stock indexes (\*)  
(index: 01.Jan.2020=100)



(\*) USA: S&P 500; Germany: DAX; United Kingdom: FTSE100; Chile: IPSA; China: Shanghai Composite.

Source: Bloomberg.

**Stock markets have fallen sharply in the year, while measures of financial asset volatility have risen, triggered by a significant reversion in risk appetite.**

Global stock markets have recorded sharp downward adjustments since the end of February, given the shutdown of economies and the uncertainty surrounding their reopening (figure I.3). For example, the S&P 500 fell more than 34% in one month of trading, which is more than half the total loss during the worst of the global financial crisis (WEO, April 2020). Thus, the price-earnings ratio of some stock markets fell sharply. The later stabilization of these markets coincides with efforts by the authorities to contain the effects of the

pandemic, as discussed later in this chapter. Corporate bond spreads, in turn, increased in developed economies, in a context of a higher probability of rating cuts for some of these debt instruments (table I.1). This increase alleviates the recent compression trend, which reduces the risk of an associated adjustment. Nevertheless, the materialization of the cuts could trigger portfolio adjustments by institutional investors, potentially generating repricing impacts.

**TABLE I.1**  
Heat map of vulnerabilities deriving from valuation (1)

	2015		2016		2017		2018		2019		2020			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II(2)
<b>Spreads</b>														
U.S. corporate	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
U.S. high yield	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Eurozone corporate	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
Eurozone high yield	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange

(1) Colors indicate vulnerability level: very low (dark green), low (light green), medium low (yellow), medium high (orange), high (red), and very high (dark red). Low spreads indicate high risk. Risk categories are based on sextiles of the distribution for each variable.  
 (2) Second quarter of 2020 includes data through 29 April.  
 Source: Central Bank of Chile, based on data from Bloomberg.

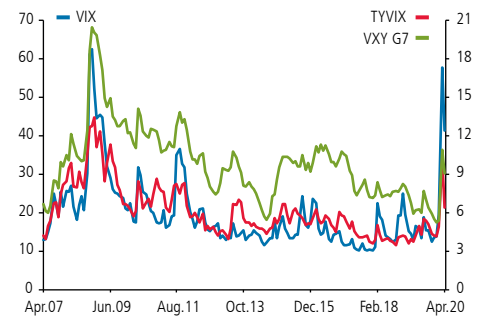
Global volatility in foreign exchange, fixed-income, and stock markets increased significantly as a consequence of the uncertainty surrounding the economic impacts of the pandemic (figure I.4). In particular, most currencies depreciated against the U.S. dollar, while commodity prices fell sharply.

All of these trends have unfolded in a context in which investors have sought safety in higher-quality assets. These changes in risk appetite are particularly unfavorable for highly leveraged firms, especially in the high-yield segment (bonds, leveraged loans, etc.), which makes them more vulnerable in the face of the current shock.

**The deterioration of the macroeconomic situation led the main developed central banks to announce large liquidity injections.**

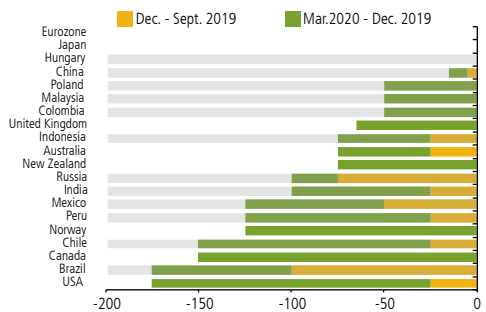
The change in the baseline scenario has resulted in large, across-the-board drops in the different asset prices, due to the reversal in risk appetite. Central banks around the world—including Chile—have implemented a series of stimulus measures, with aggressive increases in the monetary stimulus (quickly reducing their monetary policy interest rates, which were already at historically low levels, to around their lower bound; see figure I.5), asset purchases (figure I.6), and market liquidity provisions, in addition to extending credit lines to

**FIGURE I.4**  
Implied volatility (\*)  
(index)



(\*) VIX: implied volatility of 30-day options on the S&P 500 index. VXY G7: volatility index for G7 currencies. TYVIX: volatility index for 10-year U.S. Treasury bonds.  
 Source: Central Bank of Chile, based on data from Bloomberg.

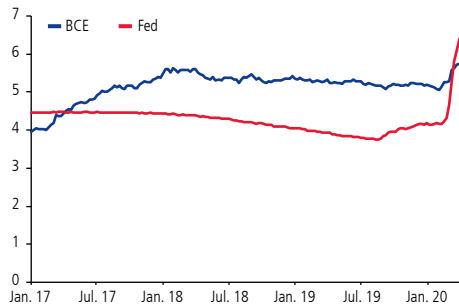
**FIGURE I.5**  
Changes in monetary policy interest rates (\*)  
(basis points)



(\*) Gray bars indicate emerging markets, as classified by MSCI.  
 Source: BIS.

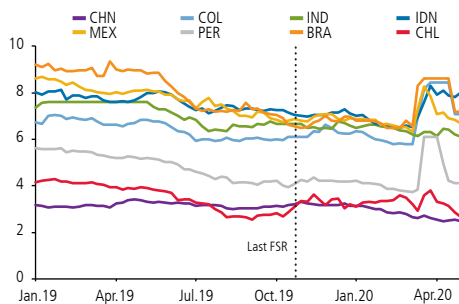


**FIGURE I.6**  
Central banks total assets  
(US\$ trillion)



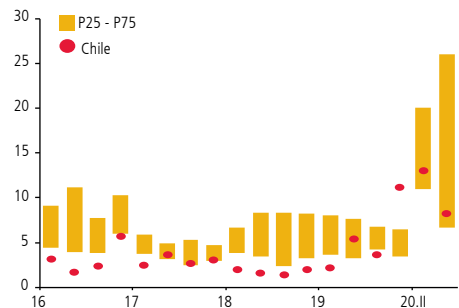
Source: Federal Reserve Economic Data.

**FIGURE I.7**  
10-year sovereign rates  
(percent)



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

**FIGURE I.8**  
Volatility of emerging market 10-year sovereign rates (\*)  
(basis points)



(\*) Calculated as the standard deviation of the daily change in the rates. 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.

financial entities in order to prevent disruptions in the payment chain and alleviate pressures in different financial markets (box III.1). In particular, in special meetings held on 3 and 16 March, the U.S. Federal Reserve (Fed), citing the risks of the pandemic for the real sector, preventively lowered the federal funds rate by 50 and 100 bp, respectively, the largest cut since 2008, bringing the target range to 0.0–0.25%.

Additionally, the Fed announced that it will increase its Treasury bond holdings by at least US\$500 billion and its mortgage-backed bonds by at least US\$200 billion. Finally, it also opened preferential lines through which banks can finance small businesses with a government guarantee, for up to US\$600 billion. The Bank of England, in turn, at its March monetary policy meeting, held its reference rate at 0.1%, in a context of uncertainty regarding the evolution of the real economy and the effects of the pandemic on the labor market. This decision was supported by measures taken to provide liquidity facilities for commercial banks. In Europe, the European Central Bank (ECB) held its deposit rates at –0.5% and announced a new asset purchase program for 750 billion euros in 2020. This program is in addition to the monthly asset purchases already in place, with a wide range of eligible assets.

***In the emerging economies—with the exception of China—sovereign rates increased substantially, while currencies depreciated significantly against the dollar, in a context of greater volatility and falling commodity prices.***

In recent months, the emerging economies have been hit with a variety of shocks. In addition to the direct effects of the pandemic, whose consequences will depend on idiosyncratic factors, there has been a reduction in commodity prices, an increase in risk aversion, and the outlook of a global recession. In this context, the majority of emerging long-term sovereign rates increased significantly since the last FSR, which reported a downward trend for a large share of these countries (figure I.7). These rates have also been more volatile. In Chile, sovereign rates have increased marginally, resulting in a recovery of their lower volatility relative to other emerging economies, which had increased due to the effects of the social protests toward the end of last year (figure I.8). The volatility of the peso-dollar exchange rate was in the high end of the distribution, after increasing much more than comparable countries in late 2019, although it has tended to decline in recent days, landing below the median of a sample of emerging economies. These fluctuations are consistent with the floating exchange rate regime (figure I.9).

With regard to the lower commodity prices, the oil price entered negative territory in mid-April due to excess supply and scarce storage capacity. This was exacerbated by the conflict between OPEC, Russia, and other major producers regarding the reduction in production quotas, which contributed to higher price volatility. In Latin America (LatAm), the EMBI increased markedly

relative to the last FSR, with greater synchrony among these indicators in recent months (figure I.10). This reflects the generalized impact of the shock, as well as increased vulnerabilities in this group of countries. These impacts, which have been limited thus far, could increase in economies that have accumulated significant vulnerabilities over the past few years.

**Since the last FSR emerging economies have recorded sharp capital outflows.**

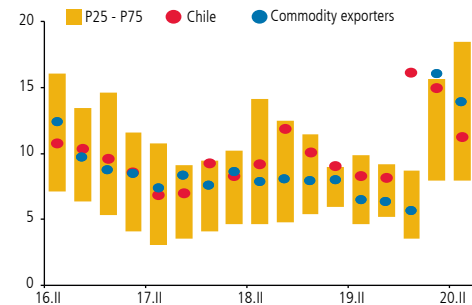
In China, as in the rest of the world, the macroeconomic outlook for 2020 deteriorated significantly, which is reflected in some recent indicators. In particular, in the first quarter of this year China recorded its first contraction since 1976, where industrial production fell 9.4%, on average. For the European emerging economies, growth estimates decreased to around -5.2% for 2020. Altogether, emerging markets and developing economies are expected to contract 1.0% (IMF, DataMapper). This has resulted in foreign capital outflows from these economies of over US\$100 billion since January, which will put pressure on the affected agents in terms of debt service (GFSR, April 2020; figure I.11).

In the case of Chile, fixed-income portfolio liabilities grew significantly in the first quarter of the year (figure I.12). However, additional information establishes that this was due to a substantial increase in overseas corporate bond issues in the months of January and February, followed by a reduction in portfolio flows more recently. In effect, high-frequency data from Emerging Portfolio Fund Research (EPFR) indicate that the recent nonresident outflows of certain funds are the highest on record since data are available: in the three weeks following the detection of the first case of COVID-19 in the country, the outflows were equivalent to the total accumulated outflows during the Taper Tantrum (figure I.13).

The portfolio capital outflows from emerging markets by nonresident investors observed in recent months have become more widespread in the past several weeks. This scenario represents a risk to financial stability in the affected economies, insofar as it becomes more difficult to finance the current account deficit. In this context, Chile’s external financial position and local macroeconomic conditions remain favorable for facing the recent capital flow reversal. These factors, together with a policy framework based on inflation targets and a floating exchange rate, contribute to mitigating the adverse effects of foreign capital reversals (box I.1).

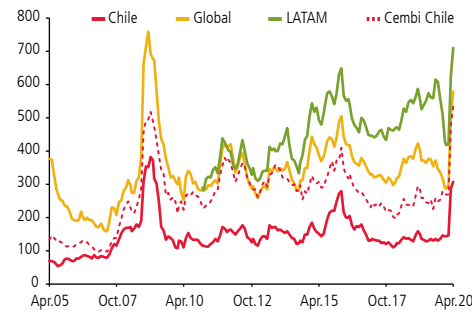
In sum, the public health emergency caused by COVID-19 led to a downward revision in world growth expectations, which in turn resulted in the materialization of one of the main risks highlighted in the last FSR: namely, a global reversal in risk appetite. While this reversal generated an across-

**FIGURE I.9**  
Exchange rate volatility in EMEs (\*)  
(percent)



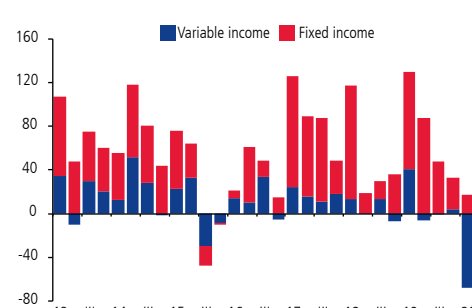
(\*) EMEs include Brazil, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Poland, Russia, and Turkey. Commodity exporters include Australia, Canada, Norway, and New Zealand.  
Source: Central Bank of Chile, based on data from Bloomberg.

**FIGURE I.10**  
EMBI (\*)  
(basis points)



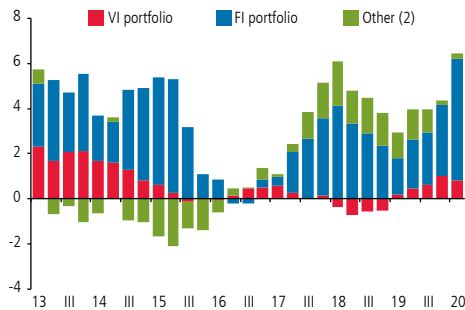
(\*) Monthly data.  
Source: Central Bank of Chile, based on data from Bloomberg.

**FIGURE I.11**  
Portfolio flows to emerging economies (\*)  
(US\$ billion)



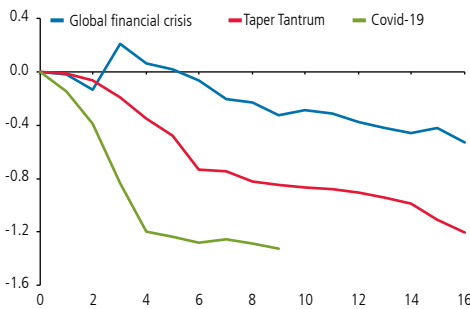
(\*) Quarterly frequency based on monthly data.  
Source: IIF.

**FIGURE I.12**  
Portfolio flows to Chile (1)  
(percent of GDP)



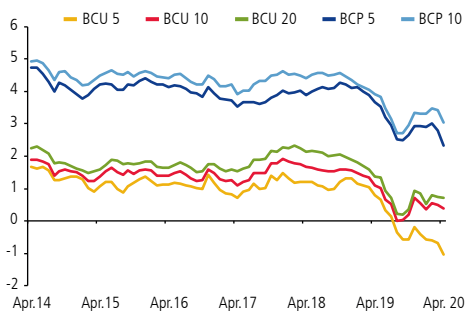
(1) Preliminary data for March 2020 .  
(2) Includes bank loans, trade credits, currencies, deposits, and other liabilities.  
Source: Central Bank of Chile.

**FIGURE I.13**  
Weekly nonresident portfolio flows in Chile  
(percent of the stock of portfolio liabilities at the start of each period, weeks since the start of the shock) (\*)



(\*) The start date of the shocks is defined as follows: global financial crisis: week of 28 August to 3 September 2008; Taper Tantrum: week of 16–22 May 2015; Covid-19: week of 27 February to 4 March 2020  
Source: Central Bank of Chile, based on data from EPFR.

**FIGURE I.14**  
Local sovereign interest rates  
(percent)



Source: Central Bank of Chile.

the-board reduction in asset prices, the intensity of the drop was greater for relatively riskier assets. In this context, the developed central banks made large liquidity injections. Going forward, the evolution of the pandemic and its impact on economic activity remain highly uncertain. Thus, gauging the depth and duration of the crisis and the effectiveness of the policies implemented will be an important challenge in the short term.

## LOCAL FINANCIAL SITUATION

*Since the last FSR, the domestic economic scenario has deteriorated, due to the suspension of economic activities.*

As outlined in the press release from the CBC Monetary Policy Meeting held on 6 May, the drop in the Monthly Economic Activity Index (IMACEC) in March was in line with the scenario described in the March Monetary Policy Report, confirming the start of the economic contraction process triggered by the pandemic. The negative impact brought on by the crisis has been especially visible in trade, education, transportation, restaurants, and hotels. With regard to the labor market, the INE jobs survey, data from administrative records, and the Business Perceptions Report all point to a significant deterioration, cushioned in part by the special measures adopted by the government. Consumer and business expectations have worsened, with drastic cutbacks in the consumption of nonessential consumer goods and a downturn in investment, evident in the slowdown or deferral of projects over the coming years and the strong drop-off of capital imports.

*In this context, local interest rates, in both UF and pesos, increased in late 2019 and early 2020, although they have declined more recently.*

Since the last FSR, and as in other countries, the local economic slump triggered an adjustment in risk appetite, with effects on asset prices. Local interest rates, which rose in late 2019, have decreased this year. In particular, five-year rates in UF have fallen 61 bp since year-end, while ten- and twenty-year rates declined 15 bp, on average. In the same period, peso rates fell, on average, 60 bp at five years and 25 bp at ten years, and they remain near their historical lows (figure I.14).

In the first months of the year, before the pandemic, primary bond issues were more dynamic, especially overseas corporate issues, reflecting a precautionary stance in response to the risk that the political and social turbulence would resume (statistical appendix). Given the climate of increased financial risk, corporate and bank spreads have increased significantly, after adjusting upward somewhat after 18 October (figure I.15). By bank, the reduction in deposit rates

in the secondary market has been generalized. However, the spread against the swap rate in pesos increased strongly in March. This situation was reversed as the reference rate cuts were passed through to other instruments.

**Since the last FSR, institutional investors have made important portfolio adjustments, reflecting a preference for more-liquid, less-risky, shorter-term assets.**

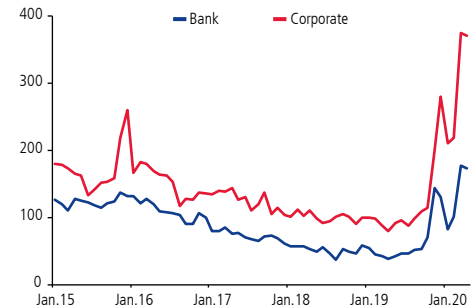
Since the last FSR, mutual fund (MF) portfolios have undergone significant shifts. In particular, type 1 funds (MF1) continued to grow, reaching over UF 660 million, equivalent to a 22% increase (figure I.16). At the same time, type 3 funds (MF3) contracted by UF 144 million, or 37%, in the same period, due to massive withdrawals since October of last year. This can be understood as a liquidation of funds characterized by high rate and credit risk (MF3), in a climate of high volatility and stress in the prices of fixed-income securities. However, the shift toward money market funds (MF1) indicates that agents have needed to increase their liquidity to face the economic downturn.

Between October and December 2019, the MF3s suffered major withdrawals by fund participants, which at the peak of the crisis reached nearly 14% of equity in one month—and 7% in the most critical week alone. These figures are in the first percentile of the historical distribution of withdrawals, and they implied massive sales of securities. In that scenario, the transfer to MF1s was much more limited, with capital leaving the mutual fund system.

By type of asset within the mutual funds, the biggest reduction since late October was in bank bonds, which contracted over UF 140 million, followed by sovereign bonds, at over UF 50 million, and corporate bonds, at UF 36 million. In contrast, the flight to safety implied an increase in time deposits of over UF 150 million in the same period (figure I.17). These movements put additional pressure on the domestic fixed-income market, contributing to the observed increase in bank and corporate bond spreads from October onward (figure I.15).

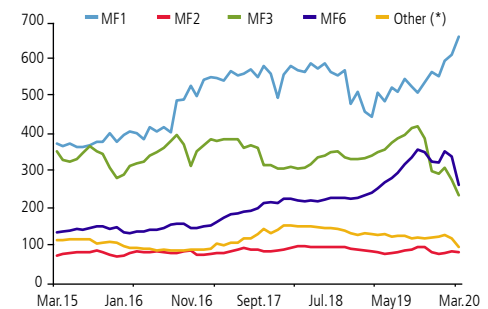
The pension funds, in turn, have also implemented important portfolio changes since October of last year. In November 2019, there were net sales of almost US\$4.0 billion in domestic sovereign bonds, which were partially absorbed by the Central Bank’s purchase window. Foreign assets have also been bought and sold, alternately in different months, ending at around US\$3.0 billion. Most recently, sales of time deposits were around US\$2.5 billion (figure I.18). These adjustments have been influenced by the massive movement of affiliates

**FIGURE I.15**  
Bank and corporate bond spreads  
(basis points)



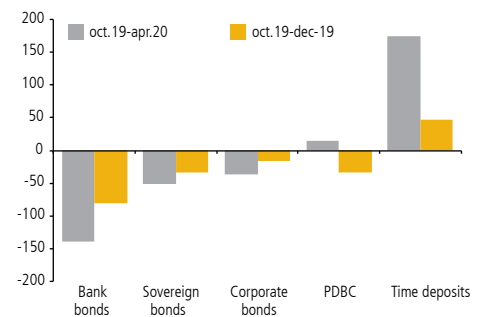
Source: Central Bank of Chile, based on data from the Santiago Stock Exchange.

**FIGURE I.16**  
Mutual fund equity  
(UF million)



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

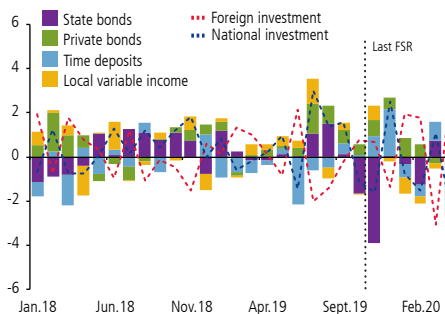
**FIGURE I.17**  
Change in the stock of mutual fund system assets  
(UF million)



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



**FIGURE I.18**  
Pension fund investment flows (\*)  
(US\$ billion)



(\*) 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.

Source: Central Bank of Chile, based on data from the Superintendencia de Pensiones.

within the different multi-funds, due, in part, to recommendations by pension consultants that are outside the regulatory perimeter. These recommendations have increased significantly in recent months, heightening the volatility in some markets, to the extent that they could have an impact on financial stability (box V.1).

Finally, the life insurance companies (LICs) have increased their exposure to private bonds, while their foreign bond position has been relatively stable. In particular, the lower annuity activity in recent months could be increasing the liquidity pressure somewhat in some companies.

***Additional downgrades in private bond ratings to below investment grade could have a significant impact on local institutional investors.***

Thus far in 2020, the volume of bonds with an investment-grade rating that have been downgraded to high yield already exceeds the historical peak, recorded during the global financial crisis. Estimates by private banks suggest that in the coming months, fallen angel bonds<sup>1/</sup> in international markets could increase by a little more than US\$550 billion, which represents 15.7% of total debt securities with a BBB+, BBB, or BBB– rating and 2% of investment-grade bonds.

This could have an impact on the portfolios of local institutional investors. In particular, 3.5%, 3.8%, and 8.1% of the portfolios of investment banks, pension funds, and life insurance companies, respectively, are in foreign fixed-income instruments with a rating between BBB+ and BBB–, resulting in a total exposure to this potential shock of US\$13.85 billion (table I.2).

In general, there are adequate cushions for this type of instrument and flexibility when the established limits are exceeded. However, in the case of the LICs, the current regulatory framework is somewhat more restrictive. Assuming from the previous paragraph that 15.7% of bonds fall below investment grade, a rating downgrade would increase the exposure of these investors to high-yield bonds from 4.5 to 5.8% of their portfolio (US\$3.492 billion), when the investment cap on overseas securities with a rating below BBB is 5% of the LICs' technical reserves and risk capital.

Thus, some LICs with a smaller cushion could have to liquidate some of their positions, in the event they need representative assets to constitute reserves<sup>2/</sup>. Such liquidations could imply losses for the companies, if they have to sell the bonds at higher rates than recorded in their portfolios, while also recognizing losses in the cross-currency swaps associated with the bonds.

<sup>1/</sup> Debt instruments classified as investment-grade, typically BBB, that were downgraded to high yield by at least two of the three credit rating agencies.

<sup>2/</sup> Article 21 of DL 251 (Insurance Law) establishes that the technical reserves and risk-based capital of insurers and reinsurers must be backed by investments in a series of instruments and assets, including external bonds; and Article 23 establishes a 5% investment cap on total non-investment-grade external bonds (below a BBB rating).

**TABLE I.2**  
Investment portfolio composition of local institutional investors (1)  
(percent, US\$ million)

	Banks	Pension funds	Life insurance companies	Mutual funds
National investments	83.0	59.8	68.0	89.2
Variable income	0.0	8.7	9.3	11.4
Fixed income	83.0	51.1	58.7	77.8
Foreign investments	5.7	40.0	16.1	10.4
Variable income	0.0	26.2	2.5	9.7
Fixed income	5.7	13.8	13.6	0.7
A or higher	2.1	1.7	0.9	
BBB+	0.1	0.2	1.2	
BBB	3.5	3.5	2.4	
BBB-	0.0	0.1	4.5	
High yield	0.1	8.3	4.5	
Other investments (2)	11.3	0.2	15.9	0.3
Total (US\$ million)	45.715	193.625	60.408	57.333

(1) Portfolios as of December 2019, with the exception of the pension funds (August 2019).

(2) Other national and foreign investments. In the case of the LICs, includes real estate investments.

Source: Central Bank of Chile, based on data from the FMC, Superintendencia de Pensions, and Bloomberg.

***The Financial Market Commission, the Finance Ministry, and the Central Bank implemented an unprecedented set of measures to mitigate the economic impact of the pandemic.***

The local financial markets reflected somewhat lower liquidity since October 2019. To address the shortfall, the CBC has implemented a series of measures to inject liquidity in both pesos and dollars, starting in October. The main measures include the extension of dollar sales, FX swaps, and repo programs; a purchase program for CBC debt securities; and the temporary suspension of the PDBC issue program.

Additional measures have been added in an effort to help households and businesses get through the crisis and to give financial institutions flexibility for accommodating the impacts (table I.3). The CBC relaxed its liquidity rules, while the FMC adjusted its regulations on provisions for renegotiating current loans, in order to facilitate the payment of bank loan installments by households and businesses. The Finance Ministry significantly increased the state guarantees in its FOGAPE and FOGAIN programs (for small businesses and investments, respectively), implemented a capital increase for the state-owned Banco Estado, and passed legislation to implement a special credit line ("COVID-19 Credit Line") for firms to finance working capital. It also deferred some tax payments, reduced stamp duties on loan operations to zero for a period of six months, and passed a law to protect jobs via furloughing.



**TABLE I.3**  
Main economic measures recently adopted

Objective	Entity	Area	Measure	Potential impact
Facilitate access to credit	CBC	People and small businesses	Facility of Credit Conditional on Lending Increase (FCIC).	Increase credit and decrease the CAR
	Finance Ministry	SMEs	Credit line for working capital with state guarantee (FOGAPE) up to 3 months of sales.	Mitigate credit risk of firms.
			Relaxation of provisioning regulations on rescheduled loans.	Reduce provisions expense for loan rescheduling.
	FMC	People and firms	Use of mortgage collateral to back loans to SMEs.	Mitigate credit risk of firms.
			Adjustments in the treatment of goods received.	Reduce provisions.
			Relaxation of timeline for implementing Basel III.	Postpone capital restrictions.
	BancoEstado	People and small businesses	Capital increase with the increasing lending.	Increase capital and loans. Ambiguous effect on CAR.
	Commercial banks	People and firms	Payment deferral for mortgage and consumer loan installments.	Reduce liquidity and possibly reduce interest margin.
			Inclusion of corporate bonds as collateral.	Increase access to liquidity.
	Liquidity provisions	BCCCh	Commercial banks	Extension of foreign currency sale program.
Longer maturities for peso and dollar liquidity programs.				
Temporary suspension (90 days) of maturity mismatch requirements.				Reduce regulatory requirements.
Relaxation of LCR limit.				
Ministerio de Hacienda		People and firms	Activation of Liquidity Credit Line (LCL).	Reduce the cost of short-term funding.
			Purchase of bank bonds.	Reduce the cost of long-term funding.
			Tax deferral or suspension.	Mitigate credit risk of firms.
			Micro-business protection fund.	
			Labor income protection.	Mitigate credit risk of households.

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

Finally, the CBC implemented the Facility of Credit Conditional on Lending Increase (Facilidad de Crédito Condicional al Incremento de las Colocaciones, or FCIC), which provides resources to the banking sector for lending to households and businesses. As of the cutoff of this Report, this facility had injected US\$13.706 billion into the banking system (box III.1).

In sum, in a context of an economic downturn, greater liquidity needs, and a lower risk appetite, both corporate and bank bond spreads have increased. Investors' demand has centered on liquid, low-risk, short-term assets. Institutional investors have implemented portfolio adjustments, and the pension fund portfolios have been the most volatile, magnified by sudden, mass movements of affiliates within multi-funds. Similarly, the composition of mutual fund portfolios has shifted, which has amplified and put pressure on financial market prices. Additionally, rating downgrades on external bonds could have a significant impact on local institutional investors. In this context, the Financial Market Commission, the Finance Ministry, and then Central bank implemented an unprecedented set of measures to mitigate the economic impact of the pandemic.

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## EXTERNAL THREATS TO FINANCIAL STABILITY

### ***The prolongation and deepening of the economic shock associated with COVID-19 represents the biggest risk for financial stability.***

At this time, there is no clear indication at the global level regarding the duration of the current confinement measures taken to mitigate the spread of COVID-19. Even if the measures are lifted, it is not clear whether they would be reinstated in the future in the event of a new outbreak. As the suspension of economic activities continues, firms with low liquidity and high debt levels will be particularly hit hard, and they will have a hard time securing funds, whether through bank debt or bonds.

In the case of Chile, if the current economic shock lasts a long time, firms that are currently facing liquidity problems could find themselves facing solvency problems, with serious implications for credit flows, production capacity, and jobs (chapter II). Such solvency problems, should they materialize, would generate significant losses for the banks. The banking system is currently in a good solvency position, but the size of the shock is substantially larger than in previous crises (chapter III). Consequently, the economic policies being implemented to mitigate the impacts are extremely important, in order to preserve financial stability (table I.3 and chapter V).





***An intensification of the low risk appetite could exacerbate the capital outflows from emerging economies.***

In this sense, Chile has a favorable external position, based on a set of factors. First, a large share of external liabilities corresponds to foreign direct investment (FDI), while external portfolio liabilities are predominantly fixed-income. The increase in this component in recent years was driven by an increase in nonresidents' appetite for sovereign debt, and their share of this type of asset has grown even while local pension funds continue to account for a large share. As mentioned in past FSRs, these agents act as mitigators against external shocks, keeping the volatility of long-term interest rates relatively low vis-à-vis other emerging countries. Second, the floating exchange rate regime implies that external shocks are absorbed by the exchange rate and do not affect long-term funding costs in local currency. Essentially, the successive depreciations have been absorbed by other agents in the economy, without major repercussions on their balance sheets, in part because local agents have a limited exposure to currency risk. In particular, households do not use foreign currency loans to finance their homes or their consumption needs. The government, in turn, has a foreign currency surplus. Third, there is a deep local debt market where firms can issue long-term bonds domestically and where large institutional investors channel household savings to these firms. An inflation-linked unit of account (UF) makes it possible to issue this debt at a fixed interest rate and relatively long maturities. In this sense, the CBC's commitment to keeping inflation low is crucial for the adequate functioning of the private long-term debt market. Finally, external corporate debt is mainly concentrated in two sources: loans from related firms (FDI) and overseas bonds. As mentioned in past FSRs, loans from related firms are usually recorded as loans from a parent company to a local subsidiary, such that this type of financing represents a strategic decision by the parent company regarding the mix of capital versus debt, with no implications for financial or currency risk exposure. In the case of external bonds, the available information indicates that it is largely hedged against currency risk, either because the firms have business in foreign currency or because they use derivatives to close the position (chapter II).

## BOX I.1

### CAPITAL FLOWS AND EXTERNAL RESILIENCE

This box discusses the recent foreign capital outflows from Chile and the state of the key macroeconomic conditions for facing these capital flows, together with the implications for financial stability.

#### Risks associated with a capital flow reversal

After the global financial crisis, emerging market economies (EMEs) benefited from years of capital inflows deriving from favorable external financial conditions that fostered risk taking and the search for returns. In recent years, however, the sensitivity of portfolio flows to external shocks has increased for a large number of countries (Álvarez et al., 2019). Both factors—large capital flows and greater sensitivity to external factors—have led to larger capital outflows in the response to each shock. When these adjustments are reversed in the short term, due, for example, to the nature of certain types of flows<sup>3/</sup>, the economy will probably not be affected to a significant degree. However, the situation becomes more complex when there are consecutive large outflows. This could lead to difficulties in terms of financing the current account deficit.

These capital flow reversals can be more significant in economies that are more dependent on short-term external financing or when the financial account is concentrated in more volatile capital. In that sense, the economy's macroeconomic conditions are fundamental for preventing or mitigating the effects of external risks when they crystalize. A country's resilience in the face of these risks is also related to its ability to have contained the development of vulnerabilities in the economic sectors that are more exposed to or dependent on this type of financing—for example, through a high level of short-term external debt.

<sup>3/</sup> The literature indicates that FDI flows are generally less volatile than portfolio flows, because FDI is associated with long-term investment decisions, whereas some types of portfolio funds are more oriented toward a search for returns and allow immediate withdrawals or repatriation. When these flows correspond to short-term financing, they cannot be rolled over.

#### Recent capital outflows

High-frequency data on capital outflows are reported by Emerging Portfolio Fund Research (EPFR), which records the portfolio flows of a small group of foreign investors. While this source does not contain all capital flows, it does provide an indication of the portfolio rebalancing associated with changes in global risk aversion. The data for Chile, from this source, show significant capital outflows in the months of March and April, resulting in a total outflow in one year of US\$721 million (figure I.19).

**FIGURE I.19**  
Nonresident portfolio flows to Chile (\*)  
(US\$ billion accumulated in 12 months)



(\*) Last data point calculated using data through 29 April 2020.

Source: EPFR.

To put that figure in context, consider the evolution of Chile's stock of external liabilities. The size of the portfolio component of external liabilities has grown over the last decade, from 14% of GDP in 2009 to 37% in the third quarter of 2019. This trend is also seen in some other countries in the region, while other emerging countries have recorded a stable trend in GDP terms (table I.4).

**TABLE I.4**  
Portfolio liabilities  
(percent of GDP)

	2009	2014	2019	Change 2009-2019
Brazil	27	24	30	2
Chile	14	31	37	23
Colombia	9	20	26	18
Hungary	44	48	34	-11
Mexico	26	41	41	15
Poland	21	33	27	6
Turkey	14	22	19	5

Source: IMF.

In the case of Chile, there are two key factors underlying the increase in these external liabilities. First, in the last decade, local firms have issued debt securities overseas to take advantage of better financial conditions. These issues have been accompanied by a variety of currency hedging strategies. In particular, firms whose functional currency is the peso use derivatives to mitigate currency risk. Recent data show that currency risk is low (chapter II). Second, there has been an increase in the share of nonresidents in the local sovereign bond market, from 5% in 2017 to 20% at year-end 2019. This greater demand for local bonds derives from the greater weight of Chilean sovereign bonds in benchmark portfolios, as well as a regulatory simplification for the purchase of debt securities by nonresidents.

### Resilience of the local economy

Chile is a commodity-exporting emerging economy. Therefore, there are two main groups of countries with which we can make a comparative analysis of the external financial position and macroeconomic conditions.

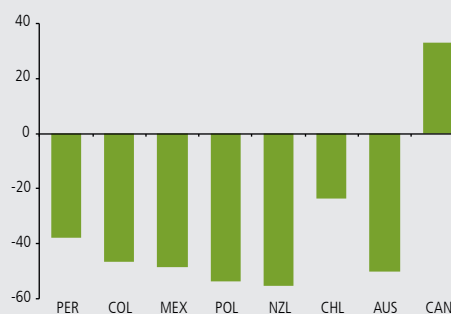
In relation to emerging economies, a previous analysis concluded that these factors are solid in the local economy (FSR, First Half of 2014), which has high levels of external solvency and liquidity<sup>4/</sup> and favorable domestic macroeconomic conditions. These factors, together with a policy framework based on inflation targeting and a floating exchange rate, contribute to mitigating the effects

<sup>4/</sup> External solvency is reflected in the net international investment position in GDP terms. External liquidity is represented by the ratio of available resources and short-term funding needs, where available resources are usually international reserves, and the indicator is reserve adequacy.

of adverse capital flow reversals. These conclusions hold when the earlier comparative analysis is updated. In particular, public debt is moderate and inflation is low relative to this group of countries (statistical appendix).

Given the degree of Chile's financial integration with the rest of the world, another possible comparison is with commodity-exporting countries, such as Australia, Canada, and New Zealand. One factor that differentiates this type of economy from other emerging countries is the low share of international reserves in the net international investment position (NIIP). This is because the financial markets in these economies are more mature. Moreover, at the local level, foreign direct investment accounts for a larger share of external liabilities, and FDI tends to be less volatile than other types of debt. Another factor that mitigates the risks of a possible increase in external liabilities is the high level of external assets, which makes the NIIP relatively low (figure I.20).

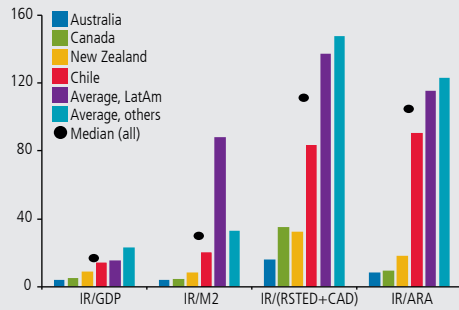
**FIGURE I.20**  
Net international investment position: 2018  
(percent of GDP)



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

Additionally, the comparison of other measures of external liquidity with this group of commodity exporters confirms that Chile's external position remains solid (figure I.21). Thus, Chile has adequate international reserves, which stood at US\$37.095 billion in April of this year (13.1% of GDP in the fourth quarter of 2019), as of the cutoff of this FSR. Chile is classified as a mature market with respect to its reserve level, together with countries like New Zealand, Australia, and Canada (FMI, 2016).

**GRÁFICO I.21**  
Reserve adequacy, various metrics (\*)  
(percent of GDP, times)



(\*) IR: international reserves. RSTED: residual short-term external debt. CAD: current account deficit. ARA: Assessing Reserve Adequacy (IMF, 2016). The CAD is equal to zero when the current account is in surplus. None of the metrics consider access to flexible credit lines given by the IMF to some countries.

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

## Final considerations

Chile's macroeconomic conditions remain solid, putting the country in a favorable position for facing the effects of external factors. The high degree of international financial integration—expressed in higher levels of external assets and liabilities—is complemented by a policy framework that lets the economy adjust quickly to external disruptions.

In this context, it is important to emphasize that the emergency measures taken by numerous countries, including Chile, in response to the COVID-19 crisis could imply less policy space in the future. Therefore, the analysis of the effectiveness of the measures implemented must continue to be complemented with a continuous monitoring of the evolution of the global situation and its implications for Chile.



## II. BORROWERS

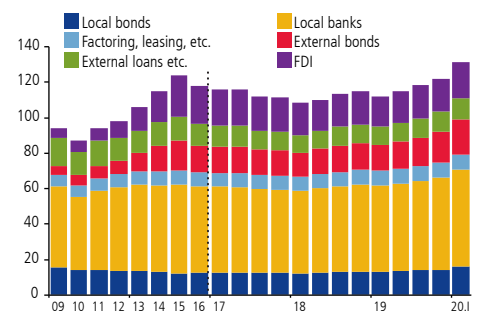
Since the last FSR, the pandemic has been causing an economic downturn, which was identified as the main risk for borrowers in past Reports. In the case of firms, the events of last October, combined with an increasing difficulty to generate income in the current year due to disruptions in productive capacity and in demand, have translated into lower cash flow for honoring financial commitments. In this context of economic deterioration, the real estate sector has also become less dynamic, with slower sales, low startup of new projects, and limited price growth. Households, in turn, are facing a deterioration in the labor market, although default measures have not increased thus far. The mitigation policies that have been implemented have helped prevent a large-scale deterioration in borrowers' financial position. Going forward, the evolution of the pandemic and the effectiveness of the applied measures will determine the degree to which these risks materialize.

### FIRMS

***The effects of the restrictions on activity and the resulting decrease in income will be reflected in a deterioration in the financial position of firms, limiting their payment capacity.***

Corporate debt reached 131% of GDP in March of this year, largely due to the depreciation of the peso (figure II.1). This represents a real annual increase of 16% (table II.1). This trend is mainly driven by an increase in local bank loans, which grew around 11% in real annual terms, and by external debt. The growth of the latter is mainly explained by the exchange rate, which increased 26% in real annual terms in the first quarter of this year (figure II.2).

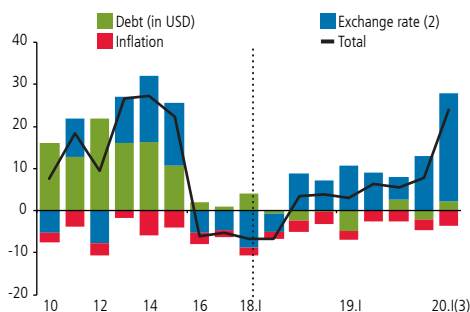
**FIGURE II.1**  
Total corporate debt, by type of debt (\*)  
(percent of GDP)



(\*) Based on firm-level data with the exception of factoring, leasing, etc., securitized bonds, and commercial papers. Year-end data through 2017; quarterly data thereafter. Data for March 2020 are an estimate of funding sources based on the data reported at that time. For more details on the series and methodology, see figure set.

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

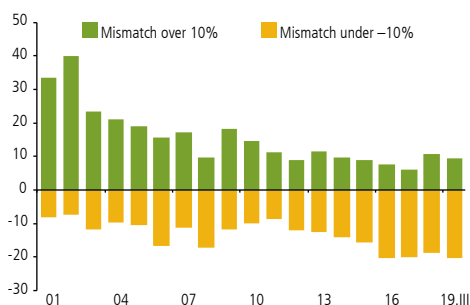
**FIGURE II.2**  
Growth in external debt (1)  
(real annual change, percent)



(1) External debt includes external bonds, external loans, trade credit, and FDI. Year-end data through 2017; quarterly data thereafter.  
(2) Exchange rate is the average of the last month.  
(3) Data for March 2020 are an estimate of funding sources based on the data reported at that time.

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

**FIGURE II.3**  
Mismatch of firms that report to the FMC (\*)  
(percent of total assets)



(\*) Based on a sample of firms that report their individual financial statements in pesos. For more details on the series and methodology, see figure set.

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

**TABLE II.1**  
Sources of financing (1)  
(real annual change, percent)

	2012	2013	2014	2015	2016	2017	2018	2019		2020	Share (3)	Contribution to growth (3)
	IV	IV	IV	IV	IV	IV	IV	I	II	(3)		
<b>Local debt</b>	7.2	6.9	1.8	3.8	1.9	1.4	8.3	7.0	7.1	12.0	60.4	7.5
Bank and other loans	9.4	7.3	2.9	5.4	1.1	0.8	7.9	6.0	6.6	10.0	48.2	5.1
commercial loans (2)	9.5	7.4	2.4	5.8	0.8	-0.2	7.9	6.0	7.1	11.4	41.7	5.0
Factoring, leasing, etc.	8.5	6.9	6.1	3.0	3.1	7.4	7.5	6.1	3.8	1.8	6.5	0.1
Local publicly traded securities	-0.8	5.3	-2.8	-3.3	5.6	4.0	10.2	11.3	9.4	20.7	12.2	2.4
<b>External debt</b>	9.4	26.7	27.3	22.2	-6.0	-5.2	3.8	5.5	7.8	23.4	39.6	8.7
Loans	0.3	2.9	15.2	4.3	-8.1	-19.7	6.9	7.6	10.4			
Trade credit	-19.1	-0.7	-3.7	-1.2	-4.1	7.0	14.1	-5.7	-5.8			
Bonds	13.6	42.3	40.8	21.8	-7.2	-0.1	7.0	9.1	18.0			
FDI-related loans	36.0	48.4	33.1	37.8	-4.4	-4.1	-1.2	3.7	0.9			
<b>Exchange rate</b>	-7.7	11.0	15.8	14.9	-5.3	-4.5	7.1	5.5	13.0	25.7		
<b>Total</b>	<b>7.9</b>	<b>12.9</b>	<b>10.5</b>	<b>11.0</b>	<b>-1.5</b>	<b>-1.3</b>	<b>6.5</b>	<b>6.4</b>	<b>7.4</b>	<b>16.3</b>	<b>100.0</b>	<b>7.4</b>

(1) For more details on the series and methodology, see figure set.

(2) Includes commercial loans to firms and individuals, foreign trade loans, and contingent loans. Excludes personal student loans.

(3) Shaded areas indicate estimated data for March 2020.

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

Local bond debt has been dynamic since late 2018, primarily for refinancing purposes, although the annual growth rate eased in the last quarter relative to the previous. With regard to local bank debt, since late 2019 there has been an increase in the share held by firms that report their financial statements to the Financial Market Commission (FMC) (i.e., reporting firms), particularly in the first quarter of 2020 (statistical appendix).

**The mitigators discussed in past FSRs are still present, such as the share of external debt related to foreign direct investment (FDI) and the limited currency risk of reporting firms.**

Around 45% of the external debt of firms corresponds to loans associated with FDI. This debt is generally less enforceable than loans from a financial institution, due to the ownership relationship between the creditor and the debtor.

With regard to external debt that is not related to FDI, the currency risk is limited. Two-thirds of this debt is found on the balance sheets of firms that use the dollar as their accounting currency; the remainder is held by firms that use the peso as their accounting currency but have appropriate levels of currency hedging. Firms with currency mismatches of over 10% of their assets account for just 10% of the total assets of the corporate sector (figure II.3).

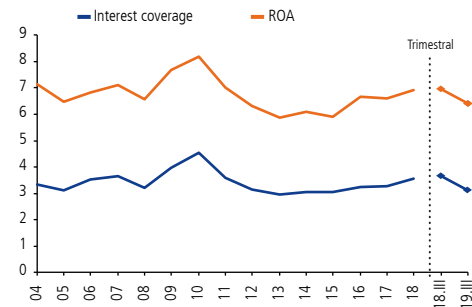
**Preliminary data at year-end 2019 show a deterioration in financial indicators among reporting firms.**

Corporate return on assets was 6.4%, while interest coverage was 3.1 times, down from 7.0% and 3.7 times one year earlier, respectively (figure II.4). This deterioration is explained by three main factors: (i) lower income in some firms relative to previous years; (ii) higher financial expense, due, in part, to an accounting change associated with the recognition of rental contracts<sup>1/</sup>; and (iii) an increase in assets over the previous year due to share purchases and accounting changes. Liquidity indicators generally deteriorated toward the end of 2019. However, for the corporate sector as a whole, the stock of local bonds grew approximately 10% in real terms in the first quarter of 2020 relative to December 2019, which should support the liquidity of the firms.

The pandemic has reduced firms' capacity to generate cash flow. The Bank Lending Survey (BLS) for the first quarter of this year indicates higher demand from large companies, which could be using the funds to satisfy their greater liquidity needs. In this respect, a stress test for cash flow was carried out on a sample of thirty firms that reported their financial statements to the FMC at year-end 2019. The sample included firms in the construction, consumer, food, and several other sectors. Together, the sample represents about 25% of the consolidated assets of the corporate in September 2019 (excluding financial services, mining, and state-owned companies). The test results suggest that under a scenario in which the firms' income was cut in half, the majority could cover their expenses for more than six months. In a more stressed scenario, where income fell to zero, the majority of the companies would have sufficient cash to cover their expenses for at most six months (figure II.5).

At the same time, a stress test was carried out on a wide set of firms using granular sales data, estimated expenses, and a forecast of future income based on the expected output of each sector. The stress scenarios featured four consecutive months of sales reductions, at the end of which the average accumulated drop was around 10%. The results indicate that the number of firms with negative cash flow—that is, expenses exceeding income—would increase between 50 and 60% relative to the second quarter of 2019. In that case, they may need additional financing to cover the lower income (Grupo de Microdatos DPM, 2020).

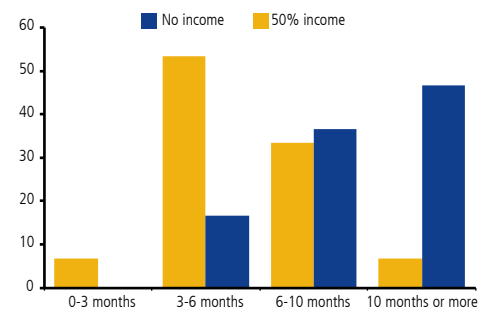
**FIGURE II.4**  
Historical evolution of indicators (\*)  
(percent, times)



(\*) ROA: Earnings accumulated in 12 months before interest and taxes, over total assets. Interest coverage: Earnings before interest and taxes over annual interest expense. Consolidated data. Does not consider state-owned companies or firms in the financial services and mining sectors.

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

**FIGURE II.5**  
Months of cash flow (\*)  
(percent of total firms)



(\*) Based on a subsample of 30 firms in December 2019, analyzed by economic sector: Consumer, Food, Construction, Services, and Other. Liquidity test corresponds to estimating cash and other current assets under certain adjustments, compared with liabilities in the coming months, to thus represent a standard measure of the number of months of available cash flow for a group of firms.

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

<sup>1/</sup> International Financial Reporting Standard (IFRS) N°16. Flow indicators were also affected, and the impact is incorporated in the data for year-end 2019.





In the current context of an economic slump, the continuity of payment chains among firms is highly important, in addition to the credit channel operated by the banking sector. The evidence indicates that buying on credit is widely used as a short-term financing mechanism by firms in Chile, accounting for 8% of total debt, on average. Consequently, when firms do not have sufficient liquidity to make their payments, they expose not only banks, but also other creditor firms (box II.1).

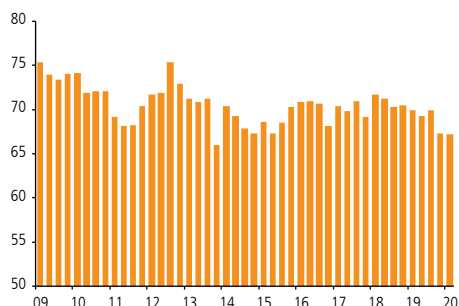
The economic impacts of the pandemic could be larger and more persistent if there are not enough resources to satisfy companies' cash flow needs. Reporting firms, which are mainly financed through local and foreign bonds, may need local bank credit to satisfy these additional needs. If so, there is a risk that they would displace smaller firms in the local market, exacerbating the liquidity shortage for the excluded firms. In that sense, policies that support the activation of the bond market would allow these firms to obtain the necessary funding without causing financial disruptions for other agents.

***The direct exposure of the banking sector to large companies is high, so a deterioration in the latter would have a significant impact on bank portfolios.***

As mentioned in past FSRs, the debt of this group of firms is distributed among several funding sources. The local banking sector accounted for 15% of the total financial debt of the sector in 2019, which represents a significant change in the liability structure since the early 1990s, when the share was 60% (Espinosa and Fernández, 2015). This reflects not only the greater diversification of corporate funding, but also an increase in bank assets. Even so, the banks' exposure to these firms is significant (figure II.6).

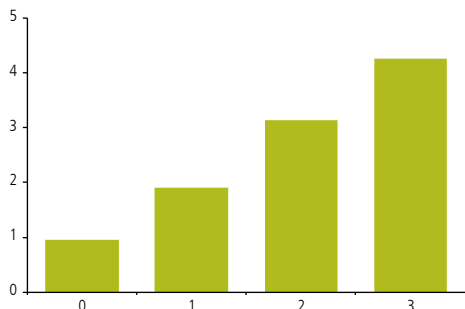
Bank loans to large companies are recorded in the individually assessed commercial portfolio. According to FMC provisioning regulations, banks group these debtors by credit risk into normal, substandard, and impaired portfolios. The normal individually assessed portfolio represents 80% of commercial loans in the banking sector. Within this normal portfolio, the debtors are assigned risk ratings that often map the ratings given by external credit rating agencies. Therefore, Moody's default probability measure can be used to weight the debt of these firms by default risk, to obtain the total debt-at-risk (DaR). The DaR associated with large companies represented 1% of GDP as of January 2020 (figure II.7). While this figure is low, it could increase to 3.1% of GDP if the default probability of all the firms increased in proportion with a rating downgrade of two notches by the external rating agencies. There are several factors mitigating this risk: namely, provisions, collateral, and capital. Past FSRs

**FIGURE II.6**  
Share of reporting firms in the 100 largest debtors  
(percent of commercial debt)



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

**FIGURE II.7**  
Commercial debt-at-risk (\*)  
(percent of GDP)



(\*) The value of commercial loans classified in categories A1–A6 weighted by the equivalent default probability of different credit ratings.

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

have discussed the scope of each of these factors in the face of systemic stress scenarios. Under these scenarios, the increase in credit risk causes a drop in asset prices, thereby reducing the power of less liquid mitigators. It is therefore important to have tools that reduce the financial deterioration of large firms and facilitate their access to different sources of funding.

***The application of mitigation policies has contributed to keeping the sector's indicators from deteriorating more than they have.***

The events of last October, associated with the social protests, affected demand in some firms and thus reduced their payment capacity. In that period, many places were forced to close, and others could only partially open, such that many firms saw a reduction in their income-generation capacity. Consequently, between October and November of last year, there was a significant increase in bank loans in arrears up to 60 days. Arrears then decreased markedly in December (statistical appendix), which would appear to point to debt rescheduling for these borrowers by the banks.

Since mid-March of this year, the effects of the pandemic have been reflected in lower commercial activity. This could lead to an increase in debt default in the coming months, which could be mitigated depending on access to credit. The loosening of the regulations on rescheduling installment loans implemented by the FMC, access to the COVID-19 credit line through the expansion of state guarantees (FOGAPE and FOGAIN), the job protection program, and the Facility of Credit Conditional on Lending Increase (Facilidad de Crédito Condicional al Incremento de las Colocaciones, or FCIC) applied by the CBC are measures that contribute to mitigating the economic impact of the pandemic on the sector.

With regard to the COVID-19 credit line, which finances working capital as a function of a firm's past sales, it is important to consider that there is a lot of heterogeneity in firms' initial indebtedness relative to sales (table II.2). The situation is more complex for firms that are highly leveraged, since they could have difficulty accessing new credit or increase their debt burden to unsustainable levels. In contrast, firms with a healthy debt level and a positive sales outlook could benefit from the COVID-19 credit line.

**TABLE II.2**  
Debt over sales  
(months of sales, number of firms)

	p10	p25	p50	p75	p90
Manufacturing	0.0	0.0	0.3	1.6	3.3
Trade	0.0	0.0	0.2	1.4	3.0
Construction	0.0	0.1	0.5	1.7	4.2

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



In sum, the effects of the activity restrictions and the resulting drop in income will be reflected in a deterioration of firms' financial position, which will limit their payment capacity. In the first quarter of 2020, total corporate debt was, on aggregate, 131% of GDP. This represents an increase since the last FSR and is largely explained by the depreciation of the peso against the dollar, which causes a revaluation of external debt. Among the largest firms, which report their financial statements to the FMC, there is a large fraction that will need additional financing to complement their lower cash flow. While these firms are largely funded through local and overseas bonds, they may need local bank credit to satisfy their cash flow needs. In the case of firms whose main source of financing is the local banking system, some already have vulnerabilities deriving from the lower economic activity since October 2019, due to the social protests. In this context, this group faces the potential risk of being displaced in the local bank market by the larger firms, if the latter cannot acquire funding through bond issues. It is therefore essential to move forward on reactivating this market.

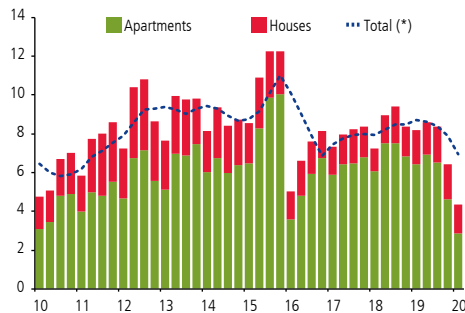
## REAL ESTATE SECTOR

***The real estate sector has become less dynamic since the last FSR, a trend that could intensify in the coming months. This exposes the vulnerabilities highlighted in past Reports, such as the large share of leveraged individual investors.***

Since the last FSR, the residential real estate sector has slowed in comparison with the past few years. This adjustment, which began with the social protests in mid-October 2019, has intensified as a result of the global pandemic. The current scenario has affected construction and real estate companies, which have had to halt projects and have seen a reduction in sales. At the same time, the financial institutions that fund these companies could be affected by the income shocks faced by their borrowers. Finally, leveraged individual investors that use rental income to pay their mortgages could face difficulties deriving from the deterioration in the labor market.

Data from the Chilean Chamber of Construction (CChC) indicate that new home sales in the Metropolitan Region (MR) fell 50% in annual terms in the first quarter of 2020 (figure II.8). This contraction in sales was mainly concentrated in the apartment market. House sales, in turn, also fell, but the trend was partially mitigated by the subsidized segment. By stage of construction, 40% of the units sold were close to delivery (completed or nearly completed) (statistical appendix), while around half were under construction. The new home supply

**FIGURE II.8**  
New home sales in Santiago  
(thousands of units)



(\*) Annual moving average.

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

in the MR decreased to around 46,000 units. Of these, a large percentage is in the initial stages (not started or under construction) (figure II.9), which should mitigate the liquidity needs of companies in the sector. This latter point is important to the extent that cash flow needs could lead companies to lower the selling price on some projects, a trend that could become systemic if it affects other agents' expectations.

In this context, the current pandemic will force companies in the sector, like other firms, to focus on cash flow in the coming months. Thus, the effectiveness of the business support measures announced by the authorities will be crucial for the sector's recovery capacity once the pandemic is under control. Market information suggests that the investment volume will probably be adjusted downward in the coming years.

The different real house price indicators recorded growth rates around 5% at the national level in 2019, a slowdown from previous years. The situation is similar in the MR, with lower growth rates for both houses and apartments (table II.3). Information from letters of intent to purchase and listed prices indicates that this slowdown in home prices continued in the first quarter of 2020.

**TABLE II.3**  
House price index (\*)  
(real annual change, percent)

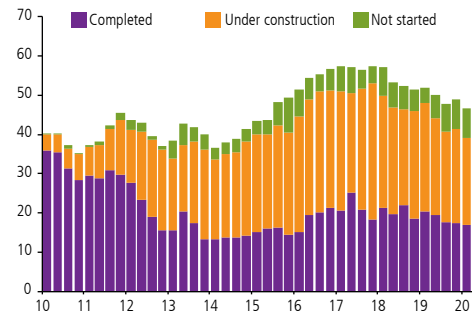
	2013	2014	2015	2016	2017	2018	2019
<b>CBC HPI</b>							
National	7.6	8.0	10.1	2.8	7.2	7.3	5.8
Houses	7.0	7.5	9.3	1.9	7.3	8.6	7.3
Apartments	8.5	8.6	11.0	3.9	7.1	6.0	4.2
Northern region	10.6	5.6	8.6	0.3	2.1	4.2	2.0
Central region	4.8	5.8	8.9	4.1	6.8	5.5	5.0
Southern region	3.7	5.9	8.6	2.9	6.5	10.0	7.3
MR	8.9	9.6	11.0	2.7	8.1	7.5	6.1
<b>CChC RHPI</b>							
Houses	5.9	10.7	7.1	2.3	2.9	5.0	6.8
Apartments	6.3	9.8	5.1	6.3	1.0	6.7	7.6
<b>Clapes-UC/Real Data</b>							
Houses	7.6	7.8	10.7	4.0	4.0	7.9	6.0
Apartments	13.0	9.7	12.7	4.4	2.5	6.8	5.2

(\*) The CBC HPI reports prices based on sales deeds; the CChC index reports prices based on letters of intent to purchase (new homes) in Greater Santiago; and Clapes-UC/Real Data index reports used home prices in the MR based on sales deeds. Preliminary HPI data for 2018 and 2019; 2019 through the 3rd quarter.

Source: Central Bank of Chile, CChC, and Clapes UC/Real Data.

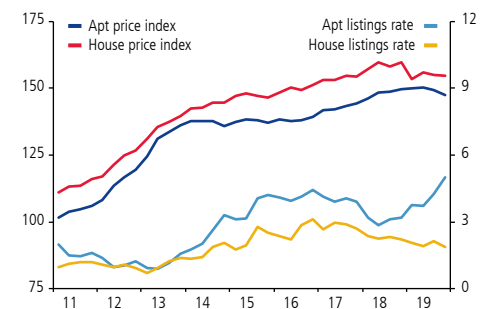
With regard to the rental market, listed prices declined in late 2019, due to the political and social turbulence. This slowdown was mostly concentrated in the apartment market, but it varied by neighborhood. At the same time, there was slack in this segment in the fourth quarter of 2019, measured through an increase in the units available for rent (figure II.10). Preliminary data indicate that this situation continued in the first quarter of 2020.

**FIGURE II.9**  
Available supply of new homes in Santiago  
(thousands of units)



Source: CChC.

**FIGURE II.10**  
Rental prices and listings rate  
(fixed-base index: 2007Q1 = 100, percent)



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



The deterioration in the labor market is likely to increase the slack, which could stress the payment capacity of mortgage debtors that depend on rental income to pay their loans (leveraged individual investors). This is one of the main vulnerabilities described in past Reports. Thus, the possibility that the labor market deterioration will be worse than expected or last for a longer period of time is the main risk for these agents, and it could trigger asset sales and put additional downward pressure on prices due to the increase in the supply of available units. In this sense, the mitigating actions taken—the job protection program, the relaxation of regulations on rescheduling installment loans, and payment deferrals—will help alleviate these pressures.

**Since the last FSR, financing conditions have become tighter, while interest rates have adjusted upward, although they are still low.**

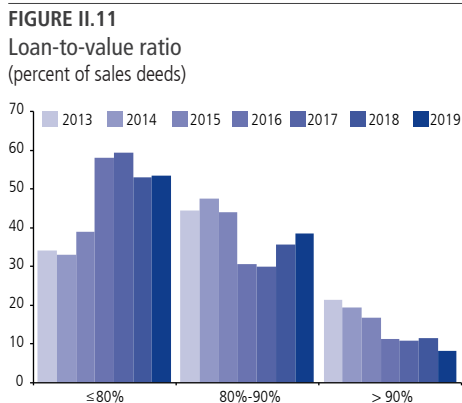
In the first quarter of 2020, mortgage loans continued to grow at around 8% in real annual terms, in a context in which interest rates remain low. Although mortgage lending rates have increased since October of last year, they are still low from a historical perspective (chapter III).

Toward the end of 2019, the share of loans with a loan-to-value ratio in the 80–90% range increased slightly, while the share over 90% shrank (figure II.11).

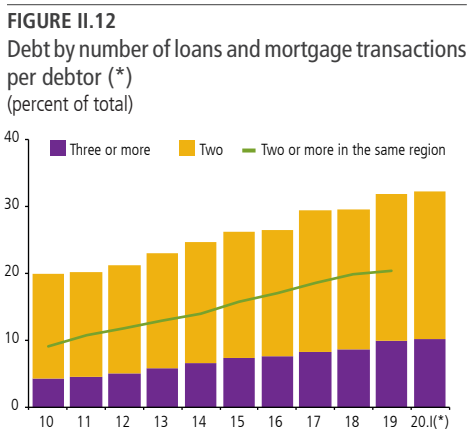
According to the Bank Lending Survey (BLS) for the first quarter of this year, demand appears to have ceased its expansion, while mortgage lending conditions tightened following the start of the social protests. The decline in both demand and supply intensified in the first quarter of 2020.

The share of debtors with more than one loan continued to increase through March of this year, reaching 30% of the stock of bank mortgage debt (figure II.12). This has coincided with a larger volume of credit allocated to increasing the number of mortgages since the first half of 2019, a trend that has eased this year (figure II.14). Thus, at year-end 2019, the share of people who had used mortgage financing to purchase more than one property stabilized at around 20%. This stabilization is in line with the reduction in sales in the cheaper apartment segment, where there is a concentration of leveraged individual investors.

For companies that report to the FMC, the purchase contract cancellation rate increased slightly in late 2019, with greater dispersion among firms (statistical appendix). For real estate companies that do not report to the FMC, most of which are financed through the local banking system, there was an increase in default indicators in the fourth quarter.



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



(\*) December of each year. 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). Preliminary data for 2019; estimate for March 2020.

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

***In the nonresidential real estate market, office rental prices were relatively stable, and vacancy rates adjusted downward.***

In the first quarter of this year, the A/A+ office market in the MR recorded stable rental prices and a drop in the vacancy rate, to 4.4%. The latter is mainly associated with the scarce entry of new supply. In the B segment, rental prices increased 1%, while the vacancy rate continued to fall, reaching 6.5% (statistical appendix). The outlook for the office market is favorable, as few projects are expected to enter the market this year. Thus, the effects of a possible weakening in the demand for offices could be mitigated by the phase of the supply cycle. Going forward, technological changes emerging in response to the pandemic could trigger adjustments in sectoral equilibrium variables.

In sum, the residential real estate sector weakened after the local events of October, a trend that was primarily reflected in the apartment segment. Rental prices for this type of home recorded lower growth, in a context of greater market slack. As of the cutoff date of this Report, aggregate sales prices continued to grow at the national level, at a real annual rate of 5%. Going forward, the effects of the pandemic are expected to deepen the demand slump, which would tend to slow the growth rate of prices. On the supply side, the industry has shown signs of adjusting, which could trigger higher unemployment in the sector.

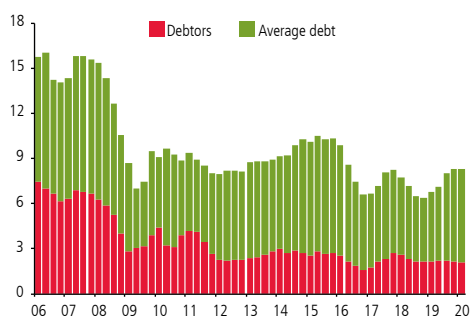
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## HOUSEHOLDS

***In the current scenario, households are facing a significant deterioration in the labor market, which is the main risk identified in past FSRs. A series of measures have been implemented to mitigate the effects on the sector.***

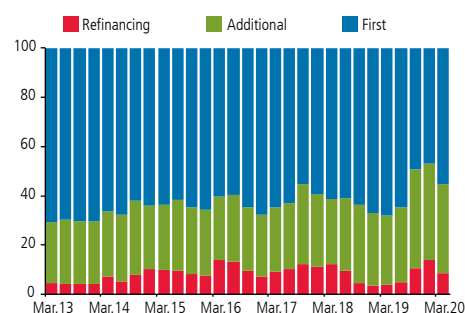
Since the last FSR, the real annual growth rate of household debt slowed to 5.7%, mainly due to a strong reduction in the bank nonmortgage component (table II.4). This reduction coincided with the implementation of confinement measures, which have reduced family's income-generation capacity and consumption. Another factor was the increase in precautionary savings, which usually occurs during periods of heightened uncertainty. At the same time, the greater risk associated with the current scenario raised the cost of credit. The relative stability of consumer interest rates indicates that the lower demand associated with the first two factors has dominated over the supply factor.

**FIGURE II.13**  
Bank mortgage debt  
(real annual change, percent)



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

**FIGURE II.14**  
Flow of bank mortgage loans by type of operation  
(percent of mortgage loans)



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

In terms of financial risks, the new scenario associated with the pandemic has triggered a reduction in economic activity, which has translated into a deterioration of the labor market. The effects of this lower activity have thus far been concentrated in specific sectors that require onsite work, such as trade, transport, and construction. In response to these developments, a range of policy actions have been implemented to mitigate the effects of the adverse shock.

**TABLE II.4**  
Household debt  
(real annual change, percent of GDP)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019			2020	Cont. to Share growth		
	IV	IV	IV	IV	IV	IV	IV	IV	IV	I	II	III	IV			
<b>Real annual growth</b>																
<b>Mortgage</b>	6.8	7.3	7.6	8.9	9.9	9.6	6.7	8.1	6.5	6.9	7.2	8.0	8.1	8.0	4.4	59
Bank	9.1	8.2	8.3	9.1	10.5	10.6	6.6	8.3	6.4	6.8	7.1	8.0	8.3	8.3	4.4	54
Nonbank	-7.2	0.9	2.5	6.9	4.7	1.1	7.9	6.4	7.8	8.4	7.4	7.9	5.7	4.9	0.3	5
<b>Non-mortgage</b>	8.7	10.7	6.9	8.4	3.5	5.7	6.8	6.9	7.3	8.2	6.8	6.7	4.6	2.5	1.1	41
Total	7.6	8.8	7.3	8.7	7.1	7.9	6.7	7.6	6.8	7.5	7.0	7.5	6.6	5.7	5.7	100
<b>Relative to GDP</b>																
Mortgage	20	20	21	22	24	25	26	27	28	28	28	29	30	30		
Non-mortgage (*)	16	16	17	18	18	18	19	19	20	20	21	21	21	21		
<b>Total</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>40</b>	<b>42</b>	<b>43</b>	<b>45</b>	<b>46</b>	<b>48</b>	<b>48</b>	<b>49</b>	<b>49</b>	<b>50</b>	<b>52</b>		

(\*) Includes consumer bank debt; debt with 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. Forecast data for 2020.I.

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

After rising steadily throughout 2019, the real annual growth rate of bank mortgage debt stabilized at around 8% in the first quarter of 2020. This occurred in a context of low growth in house prices, which is in line with the recent evolution of average loan amounts (figure II.13). These developments could be affected by the rebalancing of macrofinancial conditions in the local scenario, including the deterioration in the labor market, higher mortgage interest rates (chapter III), lower sales volume in the residential real estate sector (figure II.8), and lower house price growth (table II.2).

The above factors have modified the risk and relative cost of contracting and holding financial debt, to varying degrees depending on the characteristics of the debtor. Thus, the FMC, the Finance Ministry, and the CBC have implemented a series of measures to mitigate credit risk (table I.3 and chapter V). In particular, in early April, the FMC relaxed the provisioning regulations on rescheduling installment loans, such that the banks, credit unions, savings and loan associations (S&Ls), and mutual societies are not required to compute higher provisions when payments are missed due to the rescheduling of their customers' loans. As of the cutoff date of this Report, more than 800,000 loans

had been rescheduled, for amounts equivalent to over 20% of the total bank portfolio. Around 90% of these operations are consumer and mortgage loans, with the remainder in the commercial portfolio. This contributes to reducing the financial burden of households that reschedule their debts.

Mortgage refinancing, which allows families to reduce their financial burden, increased substantially in December but fell thereafter, as did the contracting of new and additional loans. This coincided with the implementation of confinement measures, which have hindered the processing of this type of contract (figure II.14). Going forward, the composition of household debt should shift, since people suffering a loss of income will be less able to obtain new loans, and there will be more incentives for households with tight finances to refinance their existing debt so as to reduce their financial burden (Chen et al., 2013).

Nonmortgage debt, in turn, has been less dynamic since the last FSR, with a real annual growth rate of 2.5%. As mentioned, this is largely explained by the bank component, although the growth of nonbank debt also slowed in the period, mainly for retailers, the family compensation funds (CCAF), and S&Ls (figure II.15). This trend unfolded in a context of heightened uncertainty and the implementation of confinement measures, which have resulted in lower consumption. Taken together, total household debt was 52% of GDP in the first quarter of this year (table II.4).

**Granular data show that both bank debt and debt service have been stable as a share of income in the past year.**

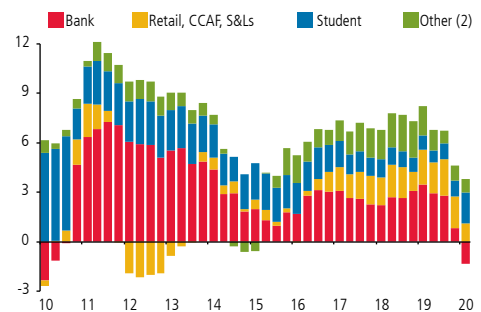
A sample of administrative data on wage earners with bank debt<sup>2/</sup> can be used to construct indicators of bank debt over income (DTI) and the debt service to income (DSR). Using data through February of this year, the median DTI—including consumer and mortgage debt—was around five times the individual monthly income, confirming the aggregate leveraging trend (figure II.16). The debt service ratio increased slightly since the last FSR, to 24% of monthly income for the representative debtor.

**Several indicators suggest that the vulnerability of bank debtors has been limited in the last year.**

As mentioned in past FSRs, the household sector does not display significant vulnerabilities, with the exception of some more leveraged segments with a high debt service ratio. In some cases, debt service has declined among mortgage debtors who refinanced their loans to take advantage of historically low interest

<sup>2/</sup> An unbalanced panel with around five million monthly observations for wage earners, from the SuSeSo.

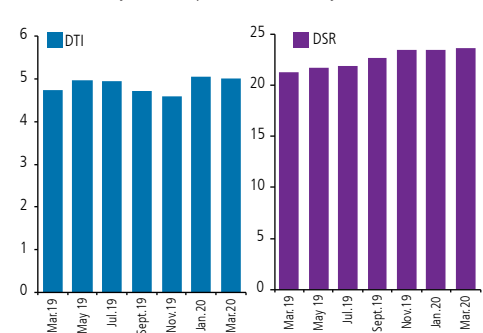
**FIGURE II.15**  
Non-mortgage debt (1)  
(real annual change, percent)



(1) As of the fourth quarter of 2019, the total stock of non-mortgage debt is made up of 20% bank consumer loans, 9% retailers, family compensation funds (CCAF), and S&Ls, 7% student loans, and 6% other. (2) Other includes leasing and insurance companies, car dealerships, and the central government (FONASA, etc.).

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

**FIGURE II.16**  
Wage earners with bank debt (\*)  
(times monthly income; percent of monthly income)

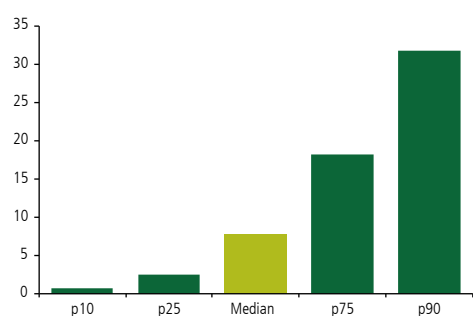


(\*) Based on bank debt and income reported for an unbalanced panel of public employees. Data through March of each year.

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

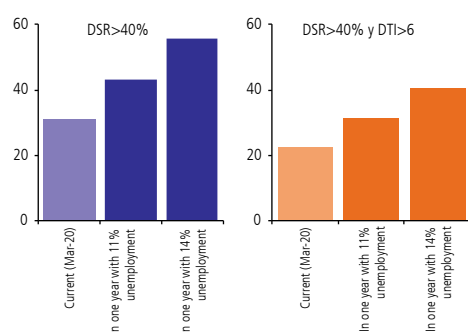


**FIGURE II.17**  
Bank payments covered by available credit cards and lines  
(percentiles, months)



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

**FIGURE II.18**  
Distribution of debt and debt service to income  
(percent of debtors)



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

rates. The available data as of March indicate that default indicators remain low and stable, with an increase in the case of bank consumer loans since October of last year. In the case of mortgages, default indicators have not changed much over the last three years (chapter III).

Going forward, the evolution the household financial situation will depend on the depth and persistence of the output shock and its interaction with the mitigators that have been implemented. Thus, it will be important to monitor agents with high debt levels and/or a high debt service to income, who have a higher default probability (Gerardi et al., 2018). In the case of Chile, according to data from the 2017 Household Financial Survey (HFS), households with an average family income and a DSR over 40% have about a 40% probability of default on consumer debt, while those with a DSR over 80% have over a 50% probability of default on that debt (Córdova and Cruces, 2019).

For a sample of wage earners with bank debt, the representative individual (median) could make their payments for around eight months exclusively using credit cards and credit lines, whereas a quarter of the debtors in the sample could finance at most three months of bank payments with these products (figure II.17). Furthermore, the share of households with a DSR of over 40% of their income increased slightly in the past year, from 27 to 31%. Finally, the highest-risk group (high debt and debt service relative to their income) was stable as of March of this year, at around 20% of the total debtors in the sample (figure II.18).

Stress tests were carried out on the household financial situation using two scenarios. In the first, the national unemployment rate increases to 14% in one year. In the second, the unemployment rate rises to 11% in one year. In both scenarios, the job destruction is concentrated in the construction, trade, and other services sectors. It is important to emphasize that these scenarios do not constitute forecasts for the future of the labor market, but rather illustrate the impact of the income-loss channel on household finances and on the banking sector.

The underlying model considers two phases. In the first, the probability of individual job destruction is correlated with worker characteristics and the type of relationship with the employer. In the second, the corresponding default probability is correlated with the job-loss probability, the income level, and other controls.

This framework is used to carry out a simulation using administrative data on bank debt and employee-employer relationships through the first quarter of 2020 (Córdova and Valencia, 2020). Under the higher unemployment scenario described above, there is a substantial increase in the share of vulnerable individuals, from the current 20% of debtors to 40% in one year (figure II.18). This would translate into higher default on bank debt, with debt-at-risk

increasing from 1.1 to 3.4% of GDP over the course of one year, which is 1 pp higher than during the global financial crisis (figure II.19). Under the lower unemployment scenario, the effects on credit risk would be substantially lower. Specifically, the most vulnerable debtors would increase to just 31%—instead of 40%—and debt-at-risk would reach 2.3% of GDP, a full percentage point lower than under the higher unemployment scenario. The lower job loss is more effective at reducing the credit risk in the mortgage portfolio, while consumer debt-at-risk increases proportionally more. An analogous exercise, in which the same stress test is applied to household-level data from the 2017 Household Financial Survey (Madeira, 2020), generates similar results. These analyses do not incorporate the mitigation policies implemented, like the loan rescheduling and payment deferrals that various financial institutions have granted. Nor do they incorporate tax deferrals, direct income transfers, and utility payment deferrals. These tests show the importance of measures aimed at mitigating the deterioration in the labor market.

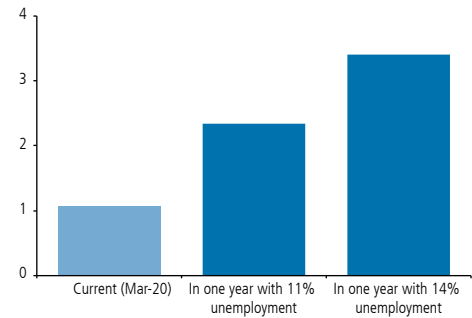
In sum, households—like the rest of the economy—are facing an adverse macrofinancial climate due to the global pandemic, but thus far their vulnerabilities have not increased significantly. However, the current scenario presents significant risks that are already materializing in the form of higher unemployment and lower job creation, which will affect households' ability to generate income and will increase the possibility that they will not be able to honor their financial commitments. In this scenario, various measures have been announced to mitigate the adverse effects of the pandemic. These mitigators have alleviated the household financial situation and will continue to be crucial for the evolution of the sector.

## CENTRAL GOVERNMENT

### *The net debt of the central government reached 7.9% of GDP in 2019, while the gross debt reached 27.9% of GDP.*

In December 2019, the net debt of the central government continued to increase, reaching 7.9% of GDP (figure II.20). The gross debt, in turn, increased 2.3 pp, to 27.9% of GDP. This growth is explained by higher levels of both internal and external debt: internal debt increased to 22% in 2019, up from 20.3% the year before, while external debt grew from 5.3 in 2018 to 5.9% at year-end 2019. In particular, 80% of the debt stock is denominated in local currency (41.4% in UF and 38.0% in pesos). Of the foreign-currency-denominated debt, 97% is split between U.S. dollars (55.7%) and euros (41.1%), equivalent to 11.8 and 8.7% of the total stock, respectively. Finally, 51.4% of the debt stock has a maturity of over 10 years.

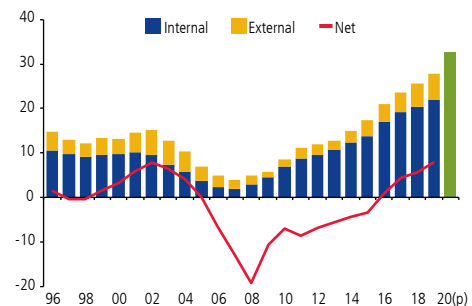
**FIGURE II.19**  
Household debt-at-risk (\*)  
(percent of GDP)



(\*) Household bank debt (consumer and mortgage) was equivalent to 37% of GDP and 40% of total bank loans at year-end 2019.

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

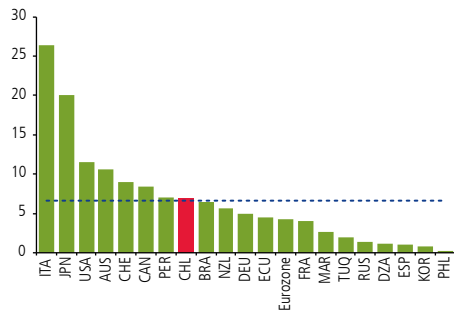
**FIGURE II.20**  
Central government debt  
(percent of GDP)



(\*) Green bar is the forecast for 2020 made by DIPRES.

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

**FIGURE II.21**  
**COVID-19 fiscal packages (\*)**  
 (percent of GDP of each country)

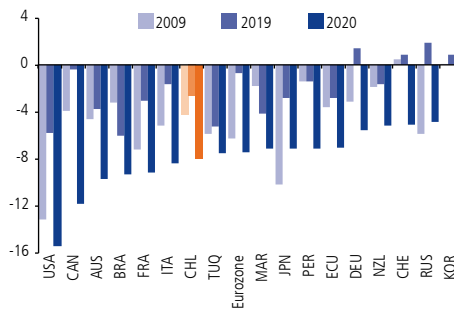


(\*) Cutoff is April 10th, as published by the IMF. Horizontal line shows the average of the sample of countries.  
 Sources: Ministry of Finance and IMF.

At the global level, the recent fiscal packages, aimed at mitigating the effects of the pandemic, have implied a major additional effort worldwide. In the case of Chile, according to Finance Ministry forecasts, the size of the fiscal package being implemented could reach 7% of GDP, which is around the average of a sample of countries (figure II.21). These economies will face a significant deterioration in their balance sheets relative to last year, exceeding that of the global financial crisis in the majority of cases.

With regard to Chile, the Finance Ministry's projections indicate that this year's fiscal deficit will be almost double that of 2009 (figure II.22). This fiscal plan considers mobilizing resources totaling over US\$17 billion. Of that total, the measures to be financed this year equal US\$12 billion, which will be financed through US\$2.5 billion in reallocations, US\$4.0 billion in higher debt, and the rest with Treasury assets, including the repatriation of sovereign funds.

**FIGURE II.22**  
**Effective fiscal balance (\*)**  
 (percent of GDP)



(\*) 2020 estimate for Chile is based on projections by the Finance Ministry.  
 Source: Ministry of Finance and IMF.

## BOX II.1

# TRADE CREDIT AS A SOURCE OF SHORT-TERM FINANCING FOR FIRMS: THE RECENT EVOLUTION IN CHILE

Trade credit constitute a form of short-term credit, and as such, they play an important role in the liquidity management of firms. When a supplier and a customer agree to defer the payment of an invoice, they generate a credit relationship that transforms the former into a lender and the latter into a debtor. Thus, a business's accounts receivable and accounts payable represent loans and debt with other firms. This form of lending, known as trade credit, is widely used worldwide and provides an important form of short-term financing, especially for small and medium-sized enterprises (SMEs) (Cuñat and García, 2012).

This box examines the importance of this kind of financing for firms in Chile and the role of buying on credit in the last quarter of 2019. The analysis uses data on the universe of inter-firm transactions in Chile between 2018 and 2020, from electronic invoices issued through the Chilean Internal Revenue System (IRS)<sup>1/</sup>.

### The use of trade credit in Chile

In 2019, sales between firms, with the issue of electronic invoices, represented 49.5% of total sales, according to IRS tax declarations (form 29). Based on the due date included on each invoice, we can estimate the amount of outstanding accounts receivable between resident firms in Chile<sup>2/</sup>. On 31 December 2019, the stock of accounts receivable was equivalent to 10.8% of that year's GDP, versus 9.6% of 2019 GDP on 31 March 2020<sup>3/</sup>. Sales on credit between firms

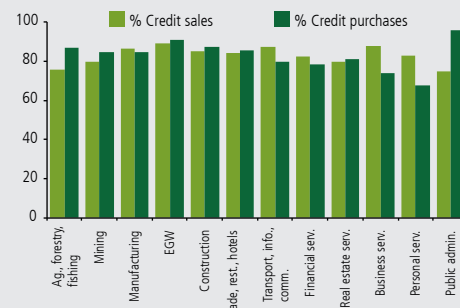
accounted for 78.9% of total inter-firm sales in 2019. These numbers highlight the importance of trade credit as a source of short-term financing in Chile, and they are comparable to the rates reported by a number of OECD countries<sup>4/</sup>.

The use of trade credit as a form of financing occurs across all economic sectors (figure II.23). Moreover, in terms of access to this type of funding, the share of firms that buy and sell on credit exceeds 70% in most economic sectors (figure II.24).

FIGURE II.23

#### Credit transactions by sector (\*)

(percent of total sales and purchases in each sector in 2019)



(\*) Credit sales and purchases, defined as transactions that are invoiced with a future payment due date.

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

<sup>1/</sup> The data do not include credit transactions in international trade. Details on the available data and how the different measures were calculated are provided in a companion note to this Report.

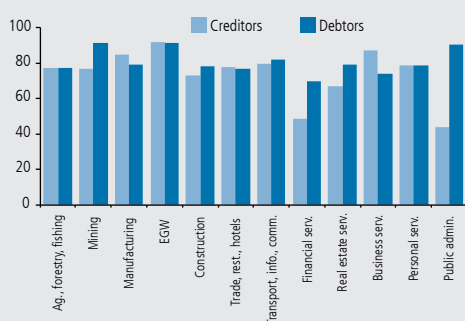
<sup>2/</sup> This calculation was based on the due date specified when the invoice was issued, not on the date the invoice was actually paid, which is not observed.

<sup>3/</sup> As detailed in the companion note, approximately 23% of invoices do not specify either payment terms or a due date. For this estimate, these invoices were assumed to have a due date of 30 days after the date of issue, in accordance with Law 19,982. If this assumption is correct and the actual invoice payment date was later than the due date, then this estimate represents a lower bound on the stock of accounts receivable in the economy.

<sup>4/</sup> In the United States, according to the Fed, the stock of accounts receivable for firms in the nonfinancial sector in 2019 represented 11.9% of GDP. The ECB reports that between 1993 and 2009, sales on credit accounted for 27, 28, 29, and 34% of total sales between firms in Italy, Portugal, Spain, and Greece, respectively (ECB, 2011, box 2).

Similarly, the use of credit transactions for sales and purchases between firms is a common practice among businesses of all sizes. As a percentage of total transactions, purchases on credit increase with the size of the firm, from an average of almost 50% for microbusinesses to approximately 84% for large firms. On the supply side, credit sales follow a similar pattern, albeit less pronounced (table II.5).

**FIGURE I.24**  
Firms that use trade credit, by sector (\*)  
(percent of firms in each sector that bought and sold on credit in 2019)



(\*) Credit sales and purchases, defined as transactions that are invoiced with a future payment due date. A firm is considered to have bought or sold on credit in 2019 if any of the invoices received or issued in the year had a future payment due date.

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

**TABLE II.5**  
Credit transactions between firms, by size of firm (\*)  
(percent of total amount of transactions between categories in 2019)

Size	Micro	Small	Medium	Large	Average (sales)	% of total sales
Micro	49.52	55.32	63.03	74.32	66.42	2.02
Small	49.41	58.12	68.74	82.81	75.21	9.10
Medium	50.13	60.15	66.46	84.22	78.63	9.32
Large	50.12	62.68	74.08	84.84	82.64	79.56
Average (purchases)	49.95	61.06	71.56	84.51		

(\*) Firm size is based on total sales in 2019 reported to the IRS (Form 29), as follows: Micro: 0.01 to 2,400 UF. Small: 2,400.01 to 25,000 UF. Medium: 25,000.01 to 100,000 UF. Large: >100,000 UF. Credit sales and purchases are defined as transactions in which the invoice specifies a future payment due date. Average purchases and sales are the weighted average of the transaction % of total sales is the fraction of total sales between firms in each category.

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

The intensive use of trade credit by SMEs, which usually have greater restrictions in terms of access to credit, makes these businesses sensitive to changes in the payment terms associated with this type of financing. On the one hand, the access restrictions increase the importance of credit purchases as a source of short-term financing for SMEs. On the other, an increase in the effective payment period for their credit sales can become a relevant source of financial stress for these businesses.

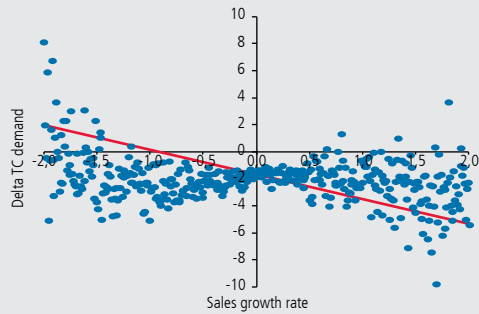
Finally, large firms play a critical role in the payment chain. Given that they represent nearly 80% of total inter-firm sales and that approximately 85% of their purchases from other firms are on credit, large firms are the main debtors in the trade credit network, and a large share of their creditors are SMEs. At the aggregate level, the majority of credit transactions are between large firms (table II.5).

### The evolution of credit transactions in the last quarter of 2019

As is the case with other forms of credit, trade credit can act as a channel for both mitigation and propagation of adverse shocks affecting firms and thus can have an impact on financial stability. On the one hand, credit sales help to efficiently allocate liquidity from firms with fewer financial restrictions to firms that are less able to access other funding sources (Petersen and Rajan, 1997). On the other hand, credit sales expose suppliers to the default risk of their customers, which can facilitate the propagation of financial stress from customers to suppliers in the production chain and generate disruptions in the payment chain (Jacobson and von Schedvin, 2015). At the aggregate level, this mechanism can contribute to the transmission of sectoral shocks (Raddatz, 2010) and the amplification of the economic cycle (Altinoglu, 2020).

In this sense, it is interesting to analyze how the financing conditions associated with trade credit changed for firms in the last quarter of 2019 as a function of their sales growth rate. A firm-level comparison reveals a slight negative correlation between these two variables (figure II.25). Thus, on average, firms that saw a larger drop in sales received relatively more credit from their suppliers, albeit with shorter payment terms (figure II.26).

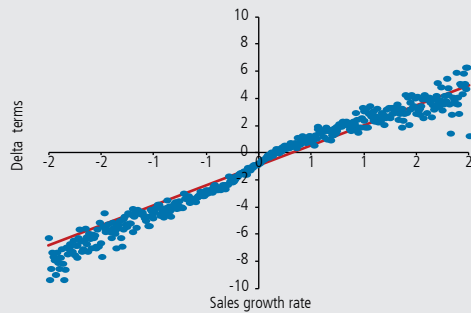
**FIGURE II.25**  
Change in credit purchases and growth of sales (\*)  
(percentage points, 2019:IV vs 2018:IV)



- (1) Change in trade credit is equal to the difference in the % of credit purchases between Q4 2019 and Q4 2018. Growth rate of sales is calculated as the midpoint of the difference between sales reported on Form 29 in Q4-19 and Q4-18.  
(2) Each point represents the average of the variable on the y axis for a range of values of the variable on the x axis. The regression uses granular data.  
(3) Change in terms is equal to the difference in the firm's average terms in Q4 2019 and Q4 2018.

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

**FIGURE II.26**  
Change in average terms of credit purchases vs. sales growth rate (\*)  
(days, 2019:IV vs 2018:IV)



- (\*) Change in trade credit is equal to the difference in the average terms (weighted by amount of the transaction) at the firm level between Q4 2019 and Q4 2018. Sales growth rate is calculated as the midpoint of the difference between sales reported on Form 29 in Q4-19 and Q4-18. Each point represents the average of the variable on the y axis for a range of values of the variable on the x axis. The regression uses granular data.

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

## Conclusion

Buying on credit is widely used as a source of short-term financing by firms in Chile. From the perspective of financial stability, these transactions can act as a channel for both mitigating and propagating adverse shocks. The evidence indicates that in the last quarter of 2019, credit purchases were used as a financing tool by firms that recorded a drop in sales.



### III. LENDERS

*In the banking sector, commercial and mortgage loans have been more dynamic since the last FSR, whereas the consumer portfolio contracted in the last quarter. The commercial and consumer portfolios recorded an increase in arrears, provisions, and write-offs. Stress tests show that although the banking system maintains an adequate capital level to absorb the effects of a severe scenario, capital buffers have decreased and are low for facing a deepening and prolongation of the current pandemic scenario. Finally, loans from nonbank lenders (NBLs) slowed in late 2019.*

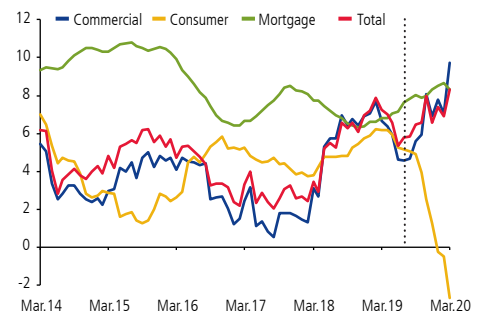
#### BANKING SECTOR

***Commercial and mortgage loans have been more dynamic since the last FSR, whereas the consumer portfolio contracted the first quarter of 2020 (figure III.1).***

The commercial portfolio, relative to economic activity, has stayed around the historical trend, rising above it in the most recent period (figure III.2). When the valuation effects of the foreign currency commercial portfolio are excluded, the observed growth rates should be somewhat lower (figure III.3). Nevertheless, commercial loans have behaved countercyclically since late 2019, so the gap could be growing to the extent that economic activity is weakening while lending remains stable, driven by demand and special measures. This growth is consistent with the results of the Bank Lending Survey (BLS) for the first quarter of this year, which reveals higher demand by large firms, which could be using their existing credit lines to satisfy their liquidity needs, despite the fact that the credit supply has tightened somewhat (figure III.4). The results point to an increase in credit applications for working capital and the substitution of other sources of financing, while the tighter lending conditions are mainly due to increased customer risk (figure III.5). Supply has also tightened for smaller firms, but their demand is weaker (statistical appendix).

In the current context, while credit thus far continues to be extended, lending could slow as the supply adjusts to the riskier climate and the less dynamic economy (figure III.4). However, the measures that are being implemented—

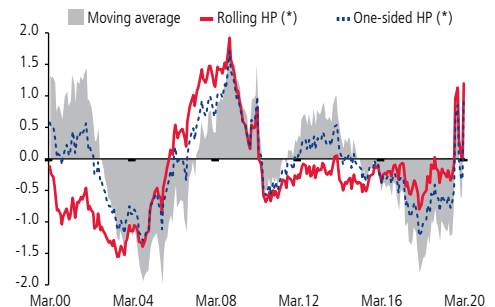
**FIGURE III.1**  
Growth of loans (\*)  
(real annual change, percent)



(\*) Based on individual financial statements. Vertical dotted line marks the date of the last FSR.

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

**FIGURE III.2**  
Gap between commercial loans and the IMACEC(\*)  
(number of standard deviations)

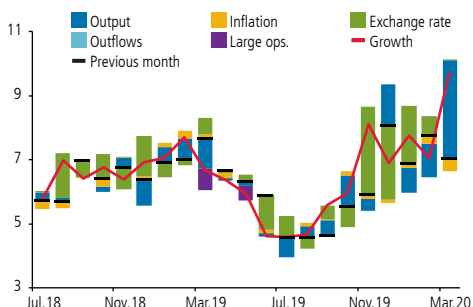


(\*) Gap between the ratio of commercial loans to the IMACEC and its own trend, obtained using a Hodrick-Prescott filter with a lambda of 33 million in cumulative windows (one-sided) and 10-year moving windows (rolling) since January 1989.

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

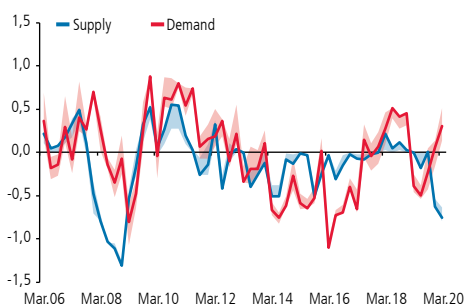


**FIGURE III.3**  
Growth of commercial loans  
(real annual change, percent)



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

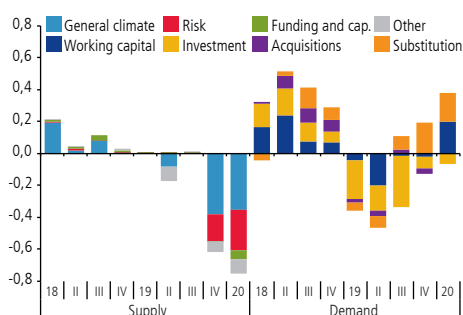
**FIGURE III.4**  
Lending conditions for large firms (\*)  
(index)



(\*) Net percentage of responses, weighted by the bank's share in the segment. Positive values indicate looser supply and stronger demand; negative values indicate tighter supply and weaker demand. Jackknife confidence intervals.

Source: Central Bank of Chile.

**FIGURE III.5**  
Factors affecting lending conditions for large firms  
(percent)



Source: Central Bank of Chile.

such as the provision of additional state guarantees, the Facility of Credit Conditional on Lending Increase (Facilidad de Crédito Condicional al Incremento de las Colocaciones, or FCIC), and the loosening of some specific regulations—should contribute to offsetting the weakening supply of funds (table I.3 and box III.1).

The banking system's consumer loans<sup>1/</sup> have slowed, from an annual growth rate of 1.3% in the fourth quarter of 2019 to a contraction of 2.6% in real annual terms in the first quarter of 2020, consistent with the downturn in local economic activity. This trend is similar to other periods of financial fragility, such as the global financial crisis. It is also in line with the results of the BLS for the first quarter of this year and the special survey in late 2019, which suggest a reluctance on the part of households to take on additional debt, combined with tighter supply.

Mortgage loans have become slightly more dynamic since the last FSR, growing around 8% in real annual terms. This is mainly due to a larger average loan size (figure II.13). Notably, a significant volume of operations was put on hold in October and then reactivated toward the end of the year. More recently, and in line with the increase in interest rates and the implementation of confinement measures, the share of mortgage refinancing in the composition of credit flows has fallen (figure II.14 and III.6). Finally, the results of the BLS for the first quarter of the year show a diminished demand for mortgage loans and tighter lending conditions.

The economic contraction projected for this year, the deterioration in loan portfolio quality, the smaller capital buffer, and less favorable funding conditions will create a challenging scenario for the banking sector. In this sense, the application of mitigation policies by the CBC, the Finance Ministry, and the FMC contributes to a more efficient intermediation process (table I.3 and chapter V).

***Credit risk indicators have increased in the banking sector since the last FSR, mainly in the consumer portfolio.***

The banking system's commercial loan portfolio has seen a slight uptick in arrears since October 2019, in line with the reduction in economic activity and the worsening of firms' payment capacity (table III.1). At the sectoral level, there is no sign of an increase in arrears deriving from lower income generation (figure III.7). The system's nonperforming loan (NPL) ratio—which represents a more forward-looking assessment of the portfolio—has increased slightly since the third quarter of last year, from 2.6% in September 2019 to 2.8% in March 2020.

Consumer loans in the system have deteriorated significantly more. Since October of last year, arrears of 90 days or more increased to 2.3% of the portfolio in March. Additionally, the system's provisions (specific and additional) have grown by over 60 bp, and there has been a larger volume of write-offs in this portfolio (table III.1).

<sup>1/</sup> Individual basis, excluding banking support services corporations.

**TABLE III.1**  
Credit risk indicators (1)  
(percent of respective loans)

Indicator	2015	2016	2017	2018	2019	mar.20	Prom.
<b>Arrears</b>							
Commercial	1.5	1.5	1.7	1.7	1.9	1.9	1.7
Consumer	2.1	2.0	2.1	1.9	2.3	2.3	2.1
Mortgage	2.7	2.7	2.4	2.4	2.4	2.4	2.5
<b>Provisions stock</b>							
Commercial	2.6	2.6	2.6	2.5	2.7	2.8	2.6
Consumer	6.0	6.3	6.4	6.4	7.1	7.1	6.4
<b>Write-offs (2)</b>							
Commercial	0.7	0.5	0.6	0.5	0.6	0.6	0.6
Consumer	5.4	5.3	5.7	5.6	5.7	6.2	5.5

(1) Individual basis, thus excluding subsidiaries and banking support services companies. Data for December of each year; average from March 2015 to March 2020.

(2) Annualized write-off ratio.

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

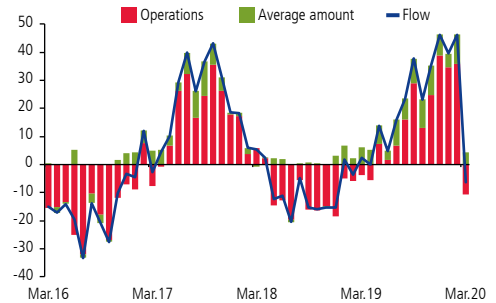
Going forward, this portfolio deterioration is likely to increase due to the lower economic growth, but the measures aimed at containing the drop in household income, rescheduling household and business loans, and extending state guarantee programs should mitigate the impact (table I.3 and chapter II).

***There was an increase in the share of mutual fund deposits in the banking system's liability structure, as well as an increase in bond issues, especially in the local market.***

Within the banking system's liability structure, the relative share of time deposits held by the mutual funds (MF) increased, especially in smaller banks (figure III.8). At the same time, favorable financing conditions fostered the issue of a larger volume of debt securities in 2019, particularly in the local market. The larger share of bonds in the funding structure has facilitated the banking system's liquidity management due to the reduction in maturity gaps. However, the increase in and volatility of the trading spreads on these instruments, since late 2019, could change this trend (chapter I). The fact that the CBC has provided additional liquidity in key markets, for example, through the purchase of bank bonds or the repurchase of its own securities, should contribute to holding down the cost of funding (table I.3).

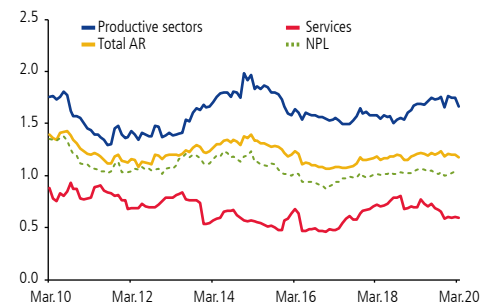
The system's liquidity position continues to provide a buffer relative to regulatory limits, despite the stress episodes in October of last year and March of this year. The measures adopted by the CBC starting in November, to mitigate the effects of heightened volatility in the financial markets, have contributed to reducing liquidity restrictions in both pesos and dollars. Thus, the different banks display a relatively comfortable liquidity coverage ratio (LCR) and appropriate residual

**FIGURE III.6**  
Growth of mortgage loan flow  
(real annual change, percent)



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

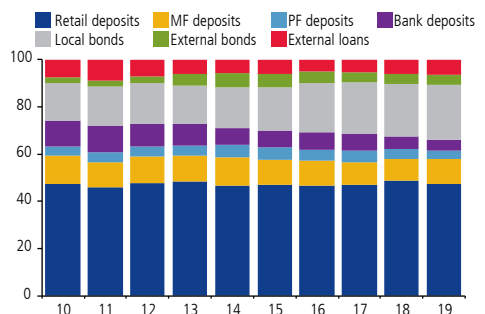
**FIGURE III.7**  
Arrears rate by economic sector (\*)  
(percent)



(\*) The AR includes payments that are past due by 90 days to 3 years.

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

**FIGURE III.8**  
Composition of banking system liabilities (\*)  
(percent of liabilities)

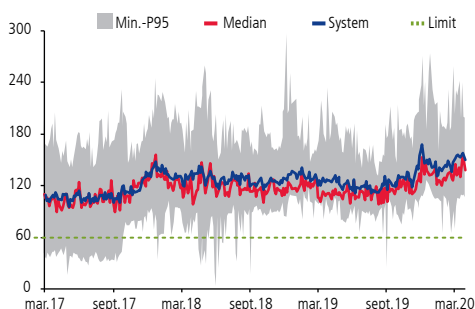


(\*) Excluding subordinated bonds. Data through December 2019.

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

**FIGURE III.9**

Liquidity coverage ratio (\*)  
(percent of net outflows in 30 days)



(\*) Calculated using individual bank data.

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

maturity mismatches at 30 and 90 days as of the cutoff of this Report (figure III.9). Nonetheless, the increase in arrears and default, together with payment rescheduling on installment loans, will reduce the banking system's income in the short term, thereby reducing its liquidity. In late March, the regulatory limits on the LCR and maturity mismatches were loosened (table I.3).

***The banking system's profitability and solvency indicators have declined.***

The decline in the annualized profitability of the banking system has intensified since the last FSR. Thus, in March of this year, return on equity (ROE) was 11.7%, while return on assets (ROA) was 0.8%. This reduction in profitability, recorded since September of last year, is explained in part by increased loan loss provisions, together with the persistent downward trend in the interest margin. The latter has been partially offset by an increase in the indexation margin, due to comparatively higher inflation.

The capital adequacy index (CAR) has fallen at the system level since the last Report, dropping below 13% in January of this year. This trend reflects factors such as exchange rate fluctuations—given the valuation of the banks' foreign currency assets—and capital levels. Consequently, there is a limited capital buffer for facing stress scenarios. In this context, some banks have modified their dividend payout policies or announced extraordinary capital increases.

**RISK FACTORS**

***The quality of the banks' credit portfolio could deteriorate significantly if the economic slowdown lasts longer than expected.***

A deeper or longer-lasting deterioration of the macroeconomic scenario than expected could significantly reduce firms' sales, increasing the arrears that are already building in some specific sectors. At the same time, a greater deterioration of the labor market would have both a direct impact on the banks' mortgage and consumer portfolios and an indirect impact through bank funding of nonbank lenders (NBLs).

The results of a special business perceptions survey, carried out in the third week of March, reveal a significant downturn in the business outlook. The vast majority of the people surveyed believe that the performance of their businesses will worsen in the coming months, mainly due to cash flow problems and difficulty collecting on outstanding invoices (Monetary Policy Report, March 2020, box III.1).

The loan rescheduling that has occurred since April, following the loosening of the associated regulations by the FMC, and the supply of bank loans with a state guarantee—which also generate changes in the conditions of a given debtor's other loans—are helping to contain the loan portfolio deterioration.

***The worsening of the economic scenario could cause a deterioration in the banking system's funding conditions.***

The stress in the financial markets affected corporate and bank bond spreads, which increased over 75 bp in March and 40 bp in the year. Although spreads could compress, given the bond purchase program, the higher long-term funding cost for banks could limit the flow of credit operations at those maturities, such as home financing loans. With regard to short-term funding, the deposit-swap rate spread has increased recently, which suggests that the liquidity conditions of bank deposits have decreased. However, the increase was reversed by a reduction in the reference rate.

***The occurrence of operational risk events in the banking industry has increased in recent months.***

Losses deriving from operational risk events are an order of magnitude smaller than losses from credit risk, but they are still potentially significant for the banking system, especially in the case of fraud, process management risk, and, most recently, damage to physical assets totaling US\$16.5 million (figure III.10). These losses increased in the fourth quarter of last year. It is therefore important for the banking sector to adequately manage this type of risk, in order to maintain process continuity and mitigate the impact of operational disruptions.

## STRESS TESTS<sup>2/</sup>

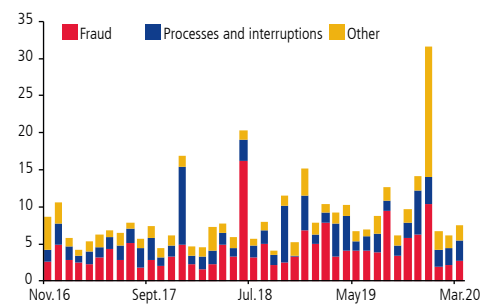
***Although the banking system maintains sufficient solvency to absorb the effects of the materialization of the stress scenarios, its capital buffers have shrunk.***

Stress tests evaluate the impact of credit and market risk under severe but plausible stress scenarios. The stress tests use macrofinancial and accounting data from the banking system for December 2019. The severe stress scenario considers a sharp contraction of GDP, with a recovery in line with previous periods of financial fragility.

Stress tests are an analytical tool that contribute to identifying financial strengths and weaknesses in the system at a given point in time. Given their partial nature, they do not necessarily uncover all the effects of the scenarios analyzed. Consequently, they should not be interpreted as forecasts. In

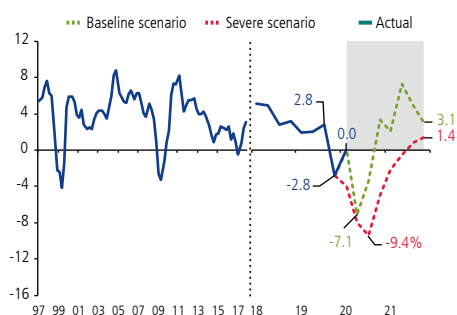
<sup>2/</sup> Based on the methodology described in the FSR for the second half of 2013 and in Martínez et al. (2017). Both the analysis and the results are regularly reported to the FMC.

**FIGURE III.10**  
Monthly losses due to operational risk events  
(US\$ million)



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

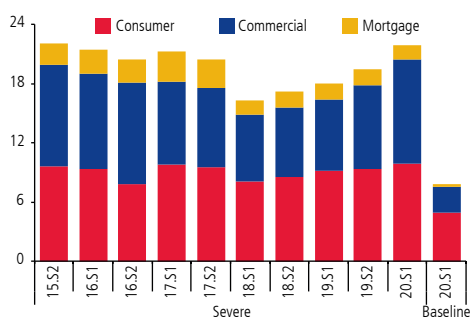
**FIGURE III.11**  
Annual GDP growth (\*)  
(quarterly, percent)



(\*) Seasonally adjusted data. The shaded area indicates the test window.

Source: Central Bank of Chile.

**FIGURE III.12**  
Banking system credit risk  
(percent of Tier 1 capital)



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

this framework, credit risk is estimated with a model that relates loan loss provisions, which reflect the cost of default in the banks' loan portfolios, with macrofinancial factors, such as output and interest rates. Market risk considers two types of exposure: currency and interest rates (disaggregated into valuation and repricing).

Under a severe stress scenario, the annual GDP growth rate would reach  $-9.4\%$  in the most critical quarter, to then converge in the medium term to a rate of  $1.4\%$  in 2022, thus exceeding past episodes of significant financial fragility (figure III.11). The scenario also considers an exchange rate depreciation and a shift in the spot and forward yield curves, with an increase of 300 bp in the short-term interest rate and 100 bp in the long rate. Additionally, currency risk considers exchange rate volatility equivalent to a 16% variation<sup>3/</sup>.

Given the current climate, the central GDP forecast scenario presented in the March Monetary Policy Report involves a significant contraction, down to  $-7.1\%$ , which is approaching the severe stress scenarios used in past stress tests (figure III.11). Consequently, in this version of the test, the system's resilience is analyzed for this path (baseline scenario).

**The results indicate that credit and market risk increase significantly in the stress scenarios.**

Estimated credit risk has demonstrated an upward trend in the last few Reports, due mainly to the economic slowdown (figure III.12). At the same time, loan portfolio quality indicators have deteriorated in all segments, especially in the case of provisions. The stress test thus estimates a potential total loan loss under a severe scenario of around 21.9% of system capital, versus 19.5% in the last test<sup>4/</sup> (table III.2). In the baseline scenario, credit risk would be 7.8% of capital. Notably, the risk level is seen to be more moderate in a comparison of the severe scenarios of the current and earlier tests, due to the assumption of a faster recovery.

**TABLE III.2**  
Impact of stress tests on profitability  
(percent of Tier 1 capital)

	16.H1	16.H2	17.H1	17.H2	18.H1	18.H2	19.H1	19.H2	20.H1	Baseline 20.H1
<b>Initial ROE</b>	14.5	12.5	11.3	14.1	12.2	13.8	11.7	13.4	11.9	11.2
Market risk	-1.3	-1.2	-0.8	-2.6	-3.0	-2.8	-2.5	-2.5	-3.1	-1.8
Credit risk	-21.4	-20.5	-21.2	-20.5	-16.3	-17.2	-18.0	-19.5	-21.9	-7.8
Margin	3.6	2.9	2.1	2.3	2.8	3.9	3.3	2.5	1.8	3.2
<b>Final ROE</b>	<b>-4.6</b>	<b>-6.3</b>	<b>-8.7</b>	<b>-6.7</b>	<b>-4.3</b>	<b>-2.4</b>	<b>-5.6</b>	<b>-6.0</b>	<b>-11.3</b>	<b>4.9</b>

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

<sup>3/</sup> A stressed VAR is used with 15-day movements in the exchange rate, at 99% confidence.

<sup>4/</sup> Does not consider the effect of additional provisions.

With regard to market risk, the repricing component is lower, but the valuation component has increased significantly. Currency risk increases due to the larger foreign currency mismatch<sup>5/</sup>. While market risk is low relative to credit risk, it could exceed 8% of capital for some banks (figure III.13).

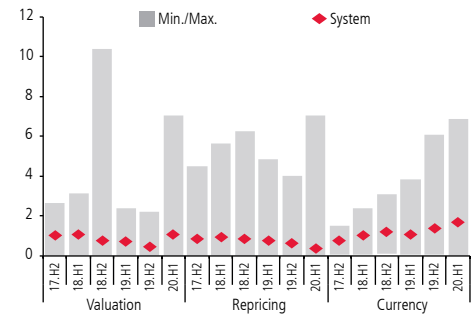
**The lower profitability and capital levels at year-end 2019, combined with the greater risk, have reduced the system’s buffer.**

In comparison with the results of the last test (June 2019), this version reveals a reduction in initial profitability, margins, and capital levels, with a drop in ROE of 1.5 pp (11.9 versus 13.4%) and the CAR by 0.4 pp (12.7 versus 13.1%). The test thus shows that the system will see a reduction in profitability under the baseline scenario and larger losses under the severe stress scenario. System-level ROE declines to 4.9% under the baseline scenario and turns negative under the severe scenario, reaching -11.3% of Tier 1 capital. Within the system, the set of banks that would have negative earnings under the severe stress scenario represent nearly 89% of the system’s Tier 1 capital (73% in the last FSR), versus 24% under the baseline scenario (figure III.14).

Thus, solvency under the stress scenario is lower than in the last test, and there is an increase in dispersion vis-à-vis the initial distribution, with a bias toward lower capital levels (figure III.15). This reflects the lower initial capital levels of banks that are more exposed to the risks in the stress scenario. The results show that the CAR falls significantly below initial levels under the baseline scenario, although they are higher than under the severe scenario. The set of banks that maintain a CAR over 10% represent 71% of system assets under the baseline scenario, which is similar to the severe scenario in past tests (figure III.16). Under the severe scenario, this falls to 37% of system assets, only slightly lower than the 38% of the last test. As a result, the system’s capital buffer continues to follow a downward trend, which reduces the banks’ capacity to face a deeper, longer-lasting stress scenario (figure III.17). Under the baseline scenario, the buffer is larger than under the severe scenario. This result assumes a GDP path in which the implementation of policy measures mitigates the impact of the crisis on output, through dynamic lending that helps firms and households overcome their liquidity restrictions, without generating a drastic increase in credit risk (table I.3).

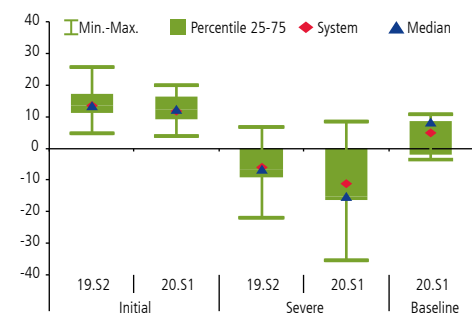
<sup>5/</sup> An asset currency mismatch is exposed to an appreciation of the exchange rate, while a liability mismatch is exposed to a depreciation.

**FIGURE III.13**  
Market risk  
(percent of Tier 1 capital)



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

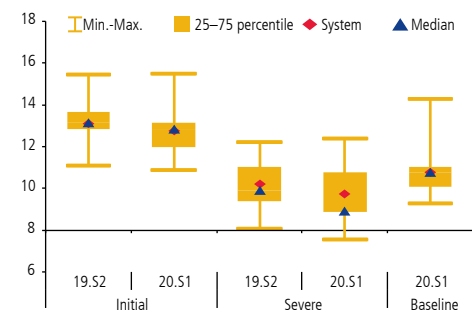
**FIGURE III.14**  
Impact of different scenarios on ROE (\*)  
(earnings over Tier 1 capital, percent)



(\*) Data weighted by the Tier 1 capital of each institution. Calculations do not include treasury, foreign trade, or consumer banks that have left the system. Minimums are the 1st percentile.

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

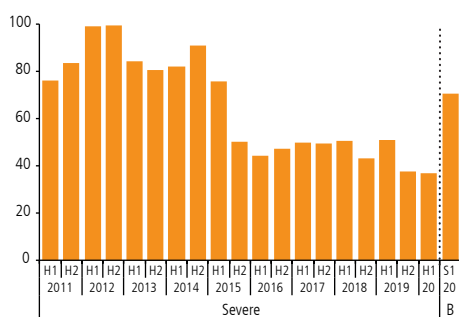
**FIGURE III.15**  
Impact of different scenarios on the CAR (\*)  
(regulatory capital over risk-weighted assets)



(\*) Data weighted by the Tier 1 capital of each institution. Calculations do not include treasury, foreign trade, or consumer banks that have left the system.

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

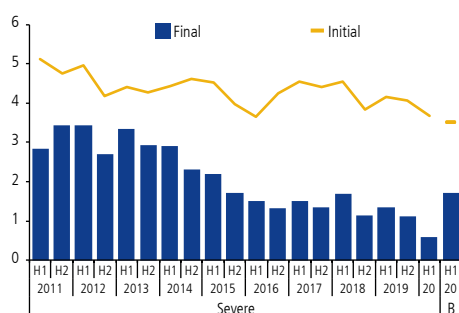
**FIGURE III.16**  
Banks with a CAR of 10% or higher under the severe stress scenario (\*)  
(percent of system assets)



(\*) Stress test results presented in past FSRs. B indicates baseline scenario.

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

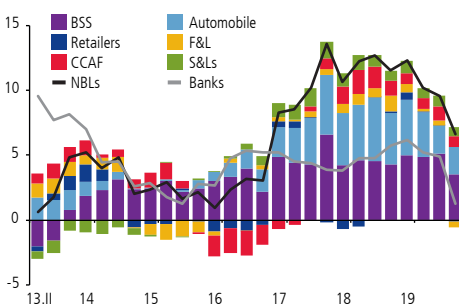
**FIGURE III.17**  
Capital buffer under severe stress scenario (\*)  
(percent of risk-weighted assets)



(\*) Excess regulatory capital over the regulatory minimum, based on the specific requirements for each bank. B indicates the baseline scenario.

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

**FIGURE III.18**  
Contribution to NBL loan growth  
(real annual change, percent)



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

## NONBANK LENDERS

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.

**Growth rates fell in the consumer segment, although they are still higher than in the banking system.**

NBLs have been less dynamic since the second half of last year, growing 6.6% in real annual terms in the fourth quarter of 2019 (12.3% in the first). However, the majority of the NBLs reduced their contribution to the growth of debt in 2019, especially the automobile finance companies and BSS corporations (figure III.18). Loans by NBLs as a whole represent more than 60% of the bank consumer loan market. In December 2019, retail credit card managers constituted as BSS corporations represented 23.5%; automobile finance companies, 13.2%; CCAFs, 12.4%; retailers, 6.9%; and F&Ls, 2.5% (statistical appendix).

Impairment in the consumer credit portfolio has not changed significantly since the last FSR, with the exception of an increase among automobile finance companies (figure III.19). The profitability of NBL assets was mixed. Leverage levels were mostly stable over the last year, although retailers recorded a relative reduction in capital relative to assets (table III.3).

**TABLE III.3**  
ROA and leverage ratio (1)  
(percent)

Indicator	2015	2016	2017	2018	2019
<b>ROA</b>					
BSS	5.4	5.4	5.4	4.8	4.4
Retailers	2.3	2.8	2.3	0.7	-5.2
F&L (2)	3.3	3.2	2.6	2.6	2.1
CCAF	-0.1	0.9	1.6	2.2	2.5
S&Ls	2.2	2.7	3.8	3.8	7.2
<b>Leverage ratio</b>					
BSS	30.1	29.0	27.6	18.3	18.8
Retailers	45.6	44.6	43.5	40.6	24.3
F&L (2)	21.1	20.5	17.2	16.5	16.7
CCAF	34.5	36.9	37.7	36.9	36.3
S&Ls	32.1	29.1	28.2	27.2	26.3

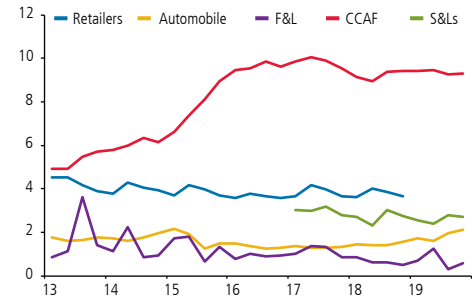
(1) ROA is calculated as earnings over assets; leverage as equity over assets.

(2) F&L includes automobile financing

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

In sum, since the last FSR, the share of NBLs in household debt has increased in a context of an absence of consolidated information, despite the integration of financial retail services into the banking sector. Since late 2015, the indirect exposure of the banking system to households, through commercial loans to NBLs, has been stable at around 2% of banking system assets (figure III.20), equivalent to 21% of bank equity in December 2019. In the current climate, it is especially important to provide funding mechanisms for some of these lenders, so that they can extend credit to their debtors.

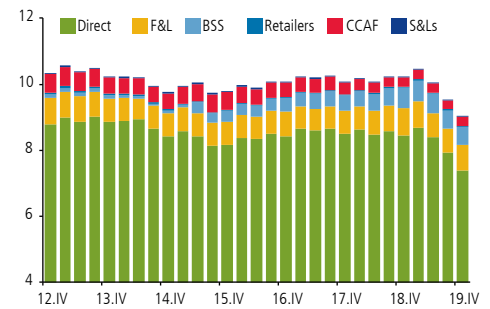
**FIGURE III.19**  
Arrears of 90–180 days (\*)  
(percent of loans)



(\*) Arrears of 90 to 180 days, except for the CCAFs.

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

**FIGURE III.20**  
Banking system exposure to the consumer segment (\*)  
(percent of system assets)



(\*) Direct exposure includes consumer loans to households. Indirect exposure comprises commercial loans by the banking sector to retailers, F&L companies, CCAFs, and S&Ls, where F&L includes the automobile segment.

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





## BOX III.1

# FACILITY OF CREDIT CONDITIONAL ON LENDING INCREASE

### Introduction

In the framework of the measures that the CBC has made available to face the impact of the shocks affecting the Chilean economy, on 16 March, following an extraordinary Monetary Policy Meeting, the Board announced the Facility of Credit Conditional on Lending Increase (Facilidad de Crédito Condicional al Incremento de las Colocaciones, or FCIC), a special open funding line for banks to promote the continuation of lending to households and firms. The effectiveness of the FCIC will depend on its interaction with other measures, such as the increase in resources for state guarantees (FOGAPE and FOGAIN), temporary exemptions of liquidity limits, and the loosening of provisioning regulations, implemented by the Finance Ministry, the CBC, and the FMC, respectively.

This facility can be accessed through an operation similar to a four-year repo, that is, it requires the provision of eligible collateral. These include CBC, government, and private (bank and corporate) bonds and, more recently, commercial loans from the individually assessed portfolio that are classified as high-quality loans. Resources allocated to the FCIC can also be accessed through the Liquidity Credit Line (LCL), where a given bank's credit limit is equal to its national currency reserves.

For each bank, the size of the FCIC is determined as a function of a baseline portfolio, defined as the sum of its commercial and consumer loans at the end of February 2020. This is used to calculate an initial and additional line for each institution. The initial line equals 3% of the baseline portfolio, equivalent to US\$4.8 billion in total, and it became available for all participating banks in late March. The additional line can reach up to 12% of the baseline portfolio, equivalent to US\$19.2 billion, where availability depends on two factors: the growth of the baseline portfolio and the channeling of credit to smaller firms. These are

measured, respectively, as the percentage change in the stock of the baseline portfolio since 16 March (INC) and the percentage flow of loans to firms with annual sales of less than UF 100,000 (ENF). Each bank can access, with a charge to the additional line, an amount equivalent to  $(INC + 1\%)*(ENF + 20\%)$  of the baseline portfolio, provided that total withdrawals do not exceed the maximum established for this line (12%).

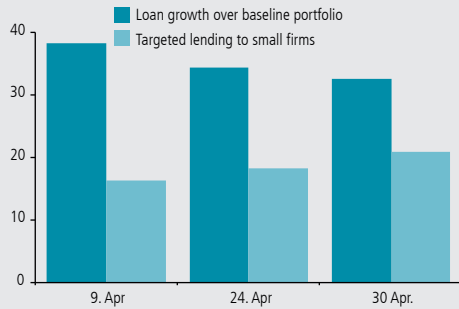
### Results

As of 11 May, thirteen banks had accessed the facility, withdrawing a total of US\$13.896 billion. This amount has largely been channeled through the LCL. In the case of collateral-backed withdrawals, the main instruments used have been CBC securities and corporate bonds.

Loans in the baseline portfolio have increased significantly since the announcement of the FCIC. On 9 April, the banks reported loan growth of 38.2%, in nominal annual terms. While growth eased somewhat thereafter, the rate is still relatively high, reaching 32.5% at the end of April (figure III.21). The growth of loans in the baseline portfolio comes exclusively from commercial loans, in particular an expansion of credit lines. With regard to targeting, between 15 March and 9 April, the banks reported that 16% of loan flows were granted to the targeted small firms, rising to over 20% in the most recent period.

As a result of the lending trends described above, the majority of the banks have accessed almost all of their allocated funds in the additional line.

**FIGURE III.21**  
**Loan growth and targeted lending**  
 (annualized variation, percent)



Source: Central Bank of Chile, based on data from Form F05.

### Final comments

The special facility recently implemented by the CBC has been widely used by the banking sector. This dynamic is expected to continue, given that other authorities have recently implemented additional policies to promote lending. These measures, together with the FCIC, will contribute to the provision of credit during the pandemic, in an effort to help households and firms overcome a temporary liquidity problem without incurring permanent disruptions.



## IV. MACROPRUDENTIAL POLICY: INTERNATIONAL EXPERIENCE AND DEVELOPMENTS IN CHILE

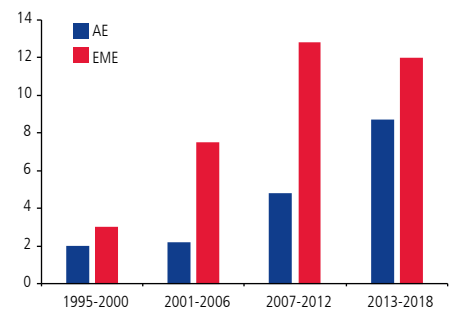
*This thematic chapter reviews the international experience on macroprudential policy frameworks, from the conceptual origin through developments since the global financial crisis of 2008–09, and identifies the different institutional arrangements and powers and the most commonly used macroprudential tools. Advances in this area have contributed to improving institutional capacity to meet the objective of preserving financial stability. This is particularly important in the current context, in which the macroprudential policy framework is being put to the test to face the risks associated with the COVID-19 pandemic. Chile’s experience in this area includes the new institutional structure established under the reform of the General Banking Law in 2019, which instituted a unified financial supervisory framework and gave the CBC the responsibility of managing countercyclical capital requirements for the banking system.*

### INTRODUCTION

Since the global financial crisis (GFC) of 2008–09, the development and implementation of macroprudential tools has become increasingly important for regulators and supervisors in different jurisdictions (figure IV.1), constituting the main response to the need to strengthen the financial system. In that context, macroprudential policy seeks to prevent and mitigate the risk of a generalized failure of the financial system and its effects on the economy, in terms of both vulnerabilities that develop over time and weaknesses deriving from the structure of the financial system and the interconnections therein (BIS, 2018; IMF-FSB-BIS, 2016). These policies also incorporate the traditional regulatory tools that govern individual financial institutions (microprudential tools), applied from a financial stability perspective.

Macroprudential policies are often the responsibility of the central bank and are thus incorporated in the respective financial policy framework (CBC, 2020). However, given the scope of the related objectives and the complexity of the efficient application of the tools, macroprudential policy requires coordination

**FIGURE IV.1**  
Use of macroprudential tools in advanced (AE) and emerging (EME) economies (\*)



(\*) Average number of measures adopted per year, in a sample of 10 countries per type of economy.

Source: BIS (2018)



with other supervisory authorities and agencies. Consequently, a variety of institutional arrangements have been applied in different countries, defining the actions and powers of the different institutions responsible for financial regulation and/or supervision so as to adequately harmonize the objectives of financial stability and market development.

After establishing the theoretical framework for macroprudential policy (section 2), this chapter describes the international experience in terms of institutional arrangements, authority, and the available macroprudential tools, as well as the objectives and implementation (section 3). It then assesses how this internationally agreed conceptual framework for the implementation of macroprudential policy can be applied to the Chilean reality (section 4), reviewing both the prudential regulation tools historically available in Chile, which can be used within a macroprudential approach, and the instruments that have emerged since the passing of the new General Banking Law (GBL).

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## **MACROPRUDENCE: CONCEPTUAL FOUNDATION AND RELATION TO MICROPRUDENCE**

Modern economies implement different types of policy to safeguard against potential risks or to mitigate the effects when the risks materialize. For example, monetary policy is implemented with the objective of preserving price stability, while financial policy is tied to the objective of safeguarding the country's financial stability<sup>1/</sup>.

A country's financial policy encompasses both macro- and microprudential policy. Both contribute to preserving financial stability, but from different perspectives. They each have a specific matrix that defines their objectives, the risks and vulnerabilities addressed, the type of monitoring needed, the institutions responsible, and the tools or instruments used for their implementation (table IV.1). At the same time, macro- and microprudential policy share a wide variety of tools, differing primarily in the timing and structure of their application.

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<sup>1/</sup>In practice, monetary policy and financial policy are interconnected, in the sense that the implementation of one requires taking into consideration the potential effects on the other, including the achievement of related objectives (CBC, 2020). Note that financial policy objectives are broad. The CBC's mandate is primarily associated with financial stability, but other institutions, mainly in the Executive Branch, are charged with supporting the development of the financial system to optimize its contribution to the country.

**TABLE IV.1**  
Differences between microprudential and macroprudential policies

	Microprudencia	Macroprudencia
Objective	<b>Resilience of individual financial entities</b>	<b>Stability of the financial system</b>
	<b>Idiosyncratic:</b>	<b>Systemic:</b>
Risks absorbed	Credit risk Liquidity risk Operational risk Inappropriate or excessively lax credit policies	Propagation and amplification of idiosyncratic risk through institutions (contagion risk) External shocks or events outside the system Excessive credit growth through the financial cycle
Vulnerabilities addressed	Excessive maturity or currency mismatch Related loans and investments Management problems in financial market infrastructures (FMI)	Aggregate liquidity or currency mismatches Interconnections Weaknesses in the infrastructure network (LVPS, CCAV, CCPs, SSS, CSD, etc.)
	<b>Bottom-Up:</b>	<b>Top-down:</b>
Monitoring	Specific indicators of each institution Individual stress tests	Macro indicators Macro-level stress tests
Prudential instruments	Review and assessment by the supervisor Specific requirements for each financial entity	Central bank analysis and perspective Additional requirements for systemic or relevant groups
Governance	Specialized supervisor	Coordination among authorities with macroprudential responsibility (mainly central banks and supervisors)

Source: ESRB (2019).

Microprudential policy seeks to contain the financial risks of individual entities. Some of the usual tools, for example, are capital and liquidity requirements. In the case of macroprudential policy, the main objective is to curb vulnerabilities and reduce systemic risk. This is defined as the risk that financial instability will spread throughout the entire financial system, to the point of significantly affecting economic growth and social well-being (CBC, 2020). Solvency and security standards are therefore defined for the financial system as a whole, taking into account the risks of interconnection and procyclicality (the structural and temporal dimensions, respectively), rather than focusing solely on the individual strength of each one of the entities that make up the system. From that perspective, it is easy to understand why macroprudential policy has emerged as a response to financial crises, since it allows countries to address the main vulnerabilities that can accumulate across the financial system, even when the institutions within the system are solid on an individual basis (BIS, 2018)<sup>2/</sup>.

<sup>2/</sup> In particular, the risks of interconnection and procyclicality (the temporal and structural dimensions) can trigger crises with systemic effects, despite the individual solvency of financial institutions. For more details, see Borio et al. (2001).



Systemic risk can arise due to shocks produced by adverse events that occur outside the system or, alternatively, to vulnerabilities that build within the system, which makes it very difficult to delineate the risks that could potentially have a systemic impact (CBC, 2020). Consequently, the concept of macroprudence cannot be confined to a strict definition; rather, it requires flexibility for addressing a wide range of situations. Notably, Borio (2011) argues that the use of the term “macroprudential” will probably evolve in line with the development of the institutions responsible for overseeing the stability of the financial system, in terms of their powers and authority and the tools at their disposal.

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## INTERNATIONAL EXPERIENCE

The development of new institutional frameworks with a greater capacity to address systemic risks, motivated by the global financial crisis (GFC), has offset some of the limitations of the traditional (or microprudential) approach to regulation and supervision, which focused mainly on individual financial institutions. The successive reforms of the Basel Committee on Banking Supervision (BCBS) have contributed significantly to this process, leading up to the Basel III standards.

Following this logic, different jurisdictions have developed macroprudential policy frameworks over the last decade, based on at least four fundamental pillars: (i) identification and measurement of financial stability risks; (ii) evaluation and analysis of the collected information; (iii) institutional design for managing vulnerabilities; and (iv) establishment of an institutional structure and policies for taking charge of the identified risks and their potential consequences (Saito, 2014).

The adequate implementation of macroprudential policy requires that the regulatory agencies responsible for its application maintain the right balance between two elements: the regulatory burden imposed to contain systemic risks and the necessary development of the financial market to sustain the functioning of the real economy. The institutional arrangements involved in the development of the macroprudential policy framework seek to contribute to that balance.

### 1. INSTITUTIONAL ARRANGEMENTS AND POWERS

Institutional arrangements are formal organizational models that define the powers and scope of action of the entities involved in policy work. In the case of financial policy and, in particular, macroprudential policy, that role definition has evolved with the adoption of specific elements that can be grouped into two main areas: first, the effectiveness of supervisors dedicated to specific industries (banking, securities) versus unified supervisors; and second, the distribution of microprudential and macroprudential supervisory authority and the boundaries of the regulatory and supervisory perimeter.

Based on a sample of 141 countries, the IMF classifies the diverse institutional arrangements into four broad types (IMF 2018 and figure IV.2):

1. Institutional schemes in which a single institution leads and is primarily responsible for the entire macroprudential policy framework (35% of the sample). In these schemes, the central bank tends to be the responsible institution and to also be in charge of microprudential bank supervision.

2. Institutional schemes in which the bank supervisor (outside the central bank) directly assumes the responsibility for conducting macroprudential policy. This is the least common arrangement, accounting for just 4% of the cases analyzed.

3. Institutional schemes in which the macroprudential function is carried out by specialized committees, with the participation of various institutions and generally led by the central bank (an internal or external central bank committee or council) (approximately 33% of the total).

4. Institutional schemes in which macroprudential powers are distributed among multiple authorities, with no clear reporting structure or specific coordinating body such as a committee.

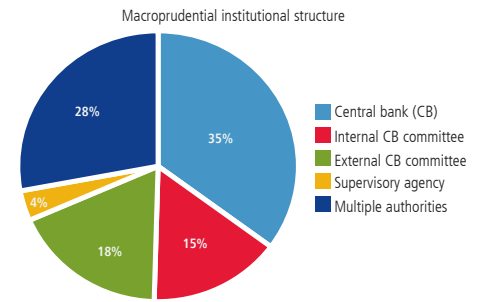
Independently of the characteristics of the different institutional models analyzed, the central bank generally plays a predominant role in the development and implementation of macroprudential policies (nearly 80 countries) (IMF, 2018). This trend derives from the fundamental characteristics of central banks: their independence, their emphasis on macroeconomic analysis, and, in many cases, their financial stability mandate (IMF-FSB-BIS, 2016; ECB, 2019).

## 2. MACROPRUDENTIAL TOOLS

Macroprudential authorities have varying degrees of power for enforcing policy compliance (IMF-FSB-BIS, 2016; figure IV.3). In the strictest case, the authority has the power to directly apply and implement macroprudential instruments in a particular jurisdiction (hard powers). In other cases, the authority can suggest the application of tools to other agencies, which are not bound to follow the suggestion but which must issue a report on the decision that was ultimately adopted. This “comply or explain” mechanism is the most common example of the indirect application of power (semi-hard powers)<sup>3/</sup>. Finally, some macroprudential authorities can only suggest the application of macroprudential instruments, with no binding commitment (soft powers). In the majority of cases, semi-hard and soft powers are used in the coordination of inter-institutional actions.

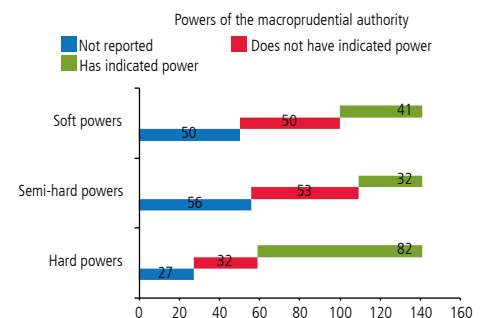
<sup>3/</sup> One example of an institution with these powers is the Bank of England’s Financial Stability Committee, which makes formal recommendations to the United Kingdom’s Financial Conduct Authority (FCA) on the use of macroprudential tools, under a comply-or-explain scheme (BoE, 1998).

**FIGURE IV.2**  
Most common macroprudential institutional arrangements



Source: IMF (2018).

**FIGURE IV.3**  
Distribution of macroprudential powers



Source: IMF (2018).



**TABLE IV.2**  
Main macroprudential tools (\*)

(i) Broad-based tools	(ii) Sectoral tools	(iii) Liquidity and foreign exchange tools	(iv) Structural risk tools
Dynamic provisions	Sectoral capital requirements	Reserve requirements	Capital charges for D/G-SIFIs
CCyB	LTV	LCR	Loss absorption requirements
Dynamic leverage limit	DSTI DTI	NSFR	Risk weights

(\*) CCyB: countercyclical capital buffer. LTV: loan-to-value; DSTI: debt service-to-income; DTI: debt-to-income; LCR: liquidity coverage ratio; NSFR: net stable funding ratio; D/G-SIFIs: domestic/global systemically important financial institution.

Source: Central Bank of Chile, based on data from the IMF (2018).

More specifically, macroprudential tools mostly take the form of solvency, liquidity, foreign exchange, and other structural requirements. They can be classified according to range of criteria generally based on how they are used and the targeted sector. The IMF (2018) identifies four main categories, as follows (table IV.2).

(i) Broad-based tools: These instruments have a broad scope of action. One example is the countercyclical capital buffer (CCyB)<sup>4/</sup>;

(ii) Sectoral tools: Tools in this category have a more specialized scope of action and are designed to contain the normal underlying risks of excessive indebtedness among both the household and corporate sectors. Examples include, for the former, loan-to-value (LTV), debt service-to-income (DSTI), and debt-to-income (DTI) ratios; and, for the latter, higher capital requirements for loans.

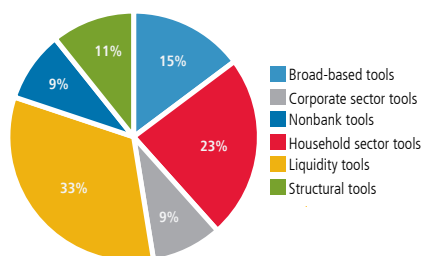
(iii) Liquidity and foreign exchange tools: The former are aimed at establishing liquidity requirements (liquid assets) and limiting term mismatches—for example, through the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR) established for banks. In the case of tools for managing foreign exchange risk, examples include limits on currency mismatches established for given financial entities or the requirement of specific provisions for foreign currency loans<sup>5/</sup>. The latter group may also include sectoral tools (such as DTI or LTV ratios) with specific requirements by currency.

(iv) Structural tools: These instruments are aimed at containing systemic risks from a structural perspective, which can translate, for example, into additional capital charges for systemically important financial institutions (SIFIs).

In 2018, 33% of the available macroprudential tools reported in the IMF survey were liquidity and foreign exchange instruments. These were followed by household sector and broad-based tools, representing 23 and 15% of the total, respectively (figure IV.4 and table IV.3).

According to the BIS (2018), the effective application of macroprudential tools requires the following actions: (a) clearly defining the intermediate objectives of macroprudential policy, which facilitates coordination among authorities; (b) adequately taking into account the interrelation of macroprudential tools with other policy objectives; (c) considering the difficulties involved in adequately identifying the vulnerabilities in the system; and (d) taking into account the bias toward inaction that generally characterizes supervisors, which can result in late action by the macroprudential authority. Several studies analyze the

**FIGURE IV.4**  
Classification of macroprudential tools



Source: IMF (2018).

**TABLE IV.3**  
Use of macroprudential tools

Category	Countries with measures	Total countries	%
(i) Broad-based tools	104	141	74%
(ii) Sectorial tools:	108	141	77%
(iii) Liquidity and foreign exchange tools	75	141	53%
(iv) Structural tools	134	141	95%
	87	141	62%

Source: Central Bank of Chile, based on data from the IMF (2018).

<sup>4/</sup> This tool was developed and presented in December 2010 by the BIS in its Basel III regulatory framework (BCBS, 2010), and it is effectively conceived as a macroprudential tool.

<sup>5/</sup> In the case of banking system, the main currency mismatch limits underlie the determination of market-risk-weighted assets, necessary for defining capital requirements.

effectiveness of these tools, confirming that the effectiveness of the instruments varies by their objective and the context in which they are applied<sup>6/</sup>. The literature further highlights the importance of closely monitoring the passthrough of risk to other sectors within the financial system, due to the effects of regulatory arbitrage generated by the application of macroprudential policy, which can reduce the efficacy of the containment of systemic risk in general.

### 3. MACROPRUDENTIAL POLICY APPLICATIONS

Over the last decade, macroprudential policies have been applied in numerous jurisdictions and a wide variety of cases, which has allowed the assessment of the action and utility of different tools in concrete situations involving potential system risk. In general, many jurisdictions have adopted macroprudential tools with the objective of addressing diverse situations of system risk. An important advantage of these tools is their flexibility and capacity to address specific risks with fewer undesired effects on other sectors, which reduces the cost of intervention (Lim et al., 2011).

In particular, several jurisdictions have applied macroprudential tools in the real estate sector, mainly the LTV, in order to contain bank funding risk, at both the structural and temporal levels. In this regard, Hong Kong SAR and Singapore have adopted tools like the LTV and DSTI ratios to limit risks originating in the real estate sector, mainly in response to the experience of the GFC (Darbar and Wu, 2015).

Another tool that has been applied in practice is the countercyclical capital buffer, which was included in Basel III with the goal of ensuring that the banking sector's capital requirements take into account the macrofinancial environment in which the banks operate. In September 2019, the BIS recorded eight jurisdictions that had activated the CCyB (that is, they had in force a rate above zero) or had announced plans to activate it in the short term (table IV.4).

Structural tools, which are considered more flexible, address noncyclical systemic risks of a structural nature that are not covered by the action of one of the other types of macroprudential tool. One of the most common is the capital charge for systemically important financial institutions (SIFIs), after the experience of the GFC revealed the low level of capitalization of systemically important entities (ESRB, 2017). In fact, the declaration of insolvency of Lehman Brothers in the United States in September 2008 is considered to have been one of the major amplifiers of the GFC, given the company's size and interconnection, and it was an iconic event in the management of institutions that are too big to fail (TBTF).

**TABLE IV.4**  
Activation of CCyB in sample of jurisdictions

Jurisdiction	CCyB level (%RWA)	
	Effective	Announced
Germany	0.25	
Belgium	0	0.5
France	0.25	
Hong Kong	2.5	
Luxembourg	0	0.25
Norway	2	
United Kingdom	1	
Sweden	2.5	

Source: Central Bank of Chile, based on data from the BIS (September 2019).

<sup>6/</sup> For more details, see Gambacorta and Murcia (2019) and Cantu et al. (2020).



## MACROPRUDENTIAL POLICY IN CHILE<sup>7/</sup>

### 1. INSTITUTIONAL STRUCTURE AND COORDINATION

Through 2017, the institutional scheme for financial regulation and supervision in Chile was based on a design of sectoral supervision for the banking industry, the securities and insurance markets, and the pension system, under the oversight of the Superintendence of Banks and Financial Institutions (SBIF), the Superintendence of Securities and Insurance (SVS), and the Superintendence of Pensions (SP), respectively.

This institutional structure changed significantly with the creation of the Financial Market Commission (FMC) in December 2017 (Law 21.000), which replaced the SVS and later merged with the SBIF following the latest reform of the GBL, published in 2019. Thus, the FMC became the new unified supervisor, vested with regulatory powers that were previously housed in the SBIF and SVS and the explicit responsibility for the “development and stability of the financial market.” This set of powers and responsibilities gives the Chilean institutional structure a greater capacity for macroprudential management.

It is possible to distinguish between institutional models in which central banks perform supervisory functions (for example, the United Kingdom and New Zealand) and models in which the central banks coexist with independent supervisory systems (such as Australia, France, and Mexico). In the former group, the central banks directly formulate and implement macroprudential policy, while in the second group, the macroprudential role is coordinated through ad hoc committees (table IV.5).

**TABLE IV.5**  
Central banks and macroprudential role by jurisdiction

Central banks with direct macroprudential role		MPM role in external or shared committee
CB, bank supervisors	CB, no bank supervisors	
Ireland	Estonia	Australia
Israel (3)	Latvia (2)	Austria
New Zealand	Lebanon (2)	Denmark
Portugal	Malta	Finland
Czech Republic		France
Russia		Iceland
Singapore (3)		Mexico
South Africa (3)		Sweden
United Kingdom (3)		Switzerland (1)
Uruguay (4)		

(1) Has both authorities (CB and SA) as MP authority.

(2) The CB is the MP authority for the banking industry, with a different SA for other industries.

(3) MP action is conducted by an internal committee or council.

(4) MP action is conducted by both internal and external committees.

Source: Central Bank of Chile, based on data from the IMF (2018).

<sup>7/</sup> The analysis of macroprudential policy in Chile is based on the report “Financial Policy of the Central Bank of Chile,” published in March of this year (CBC, 2020). For a summary, see box IV.1.

This second institutional model, in which more than one authority share the duties of safeguarding financial stability and implementing the macroprudential policy framework, is strengthened through the development of increasingly unified and specialized supervisory systems, with a macroprudential perspective that complements the monetary policy conduct of the central banks.

Following this international trend, the new supervisory framework in Chile complements the CBC's constitutional objective of preserving financial stability, from the perspective of its historical responsibility for the continuity of the payment system, its specific powers for regulating the financial system, and its role as lender of last resort for the banking system.

The preservation of financial stability requires coordination among the institutions that share in that responsibility. One of the existing mechanisms for coordination between the CBC and the FMC is the system of prior assessment reports, which is historically embedded in the Chilean legislation and was extended in the GBL for the implementation of Basel III. Another critical coordination mechanism is the Chilean Financial Stability Board (FSB), created in 2014 (Law 20,789), which includes the participation of the FMC, the SP, the Finance Ministry, and the CBC. Both mechanisms are explained in detail in CBC (2020). The accumulated experience, including the long history of using prior assessment reports for the development of financial regulation or for specific policy decisions, combined with the relatively more recent institutional arrangements of the FSB, shows that the two mechanisms have promoted effective institutional coordination without interfering with the necessary independence and autonomy of the different agencies.

The FSB serves as the main mechanism for channeling and coordinating the decisions, actions, and recommendations of the main institutions and authorities with macroprudential responsibilities. Other countries with similar macroprudential committees include Germany, Canada, Colombia, Mexico, and Norway (IMF, 2018). In contrast, the Bank of England opted to employ an alternative to this type of committee, using memoranda of understanding (MoU) to coordinate policy with other supervisory authorities that play a macroprudential role and to strengthen communication and joint action to address systemic risk.

In the international terminology, the CBC has hard and soft powers. The former are manifested in the direct implementation of tools that affect the management of financial institutions. The latter come into play when the CBC issues recommendations or warnings regarding the use of tools or measures to promote financial stability. The following are examples of the Bank's use of soft powers:

- Financial Stability Report (FSR): These reports provide broad general recommendations regarding the stability of the financial system.

- CBC participation on the Chilean FSB: In its role as a permanent advisor, the Bank’s participation is limited to making specific recommendations on the use of certain tools given the existing climate.

## 2. MACROPRUDENTIAL TOOLS

One way to visualize how the institutional framework for macroprudential policy implementation in Chile works is to analyze the existing powers and coordination mechanisms for the application of the available policy tools (table IV.6).

**TABLE IV.6**  
Authority and coordination of macroprudential tools between the CBC and FMC

Tool	Authority	Coordination
Capital structure (i) Broad-based tool	FMC	CBC gives prior assessment to FMC
Countercyclical capital buffer (i) Broad-based tool	CBC	CBC receives prior assessment from FMC
Provisions (LTV, etc.) (ii) Sectoral tool	FMC	
Liquidity risk management (iii) Liquidity tool	CBC	CBC receives prior assessment from FMC
Deposit reserves (iii) Liquidity tool	CBC	
Additional requirements for systemic banks (iv) Structural tool	FMC	CBC gives prior assessment to FMC

Source: Central Bank of Chile.

### 1. Capital requirements for the banking system

#### 1.a Capital structure

The GBL incorporates a broad spectrum of regulatory options for implementing and structuring Basel III in Chile. The key components of this structure for determining regulatory capital and credit, market, and operational risk-weighted assets are embedded in the institutional coordination framework of prior assessment reports, which the FMC solicits from the CBC.

The objective of this coordination is to achieve a unified, comprehensive macroprudential vision through the convergence of the FMC’s and the CBC’s perspectives. All aspects of specific regulation, implementation, and oversight are under the exclusive purview of the FMC.

### 1.b Countercyclical capital buffer:

The countercyclical capital buffer (CCyB) is the main macroprudential tool implemented by the CBC, with the prior favorable assessment of the FMC. This tool, incorporated in the GBL reform in 2019, is the first in Chile with an exclusively macroprudential objective. The CBC's authority to activate or deactivate the buffer strengthens its capacity to safeguard the normal functioning of the payment systems. The activation of this instrument requires coordination with the FMC, which must issue a prior assessment report, and with the Finance Minister.

The decisionmaking process for the application of this tool must take into account a range of financial policy elements, including market conditions, bank balance sheet indicators, and analytical models. The process of assessing these elements will support the establishment of a level for the countercyclical capital buffer, which will have a direct impact on the banking system's capital base. Consequently, one of the CBC Board's key objectives in the implementation of this macroprudential tool is to give the market greater clarity on how the instrument will be applied from a strategic or structural perspective. This will allow the market to anticipate the Board's decisionmaking process, with some degree of certainty, and to form reasonable expectations on the resulting level and path of the buffer, so that they can adjust their capital and dividend policies accordingly.

### 1.c Additional capital requirement for systemically important banks:

In addition to introducing the countercyclical capital buffer, the current legal framework establishes a specific mechanism for classifying one or more banks as systemically important and allows the possibility of imposing an additional capital requirement, in line with the Basel standards. The possible requirement of additional capital constitutes a macroprudential tool that is grounded in a structural perspective of the banking system, which complements the role of the countercyclical capital buffer and its effect on the capital base of the system as a whole over time.

The FMC is in charge of defining the methodology and factors used to determine which banks are systemically important, which requires a prior assessment report from the CBC. Once the banks have been assigned to this category, the FMC, again with a prior assessment by the CBC, can impose one or more of the following requirements: additional Tier 1 capital of 1.0 to 3.5% of risk-weighted assets; additional Tier 1 capital of up to 2% of total assets; a higher technical reserve requirement, up to all deposits in excess of 1.5 times regulatory capital; and a limit on interbank loans of up to 20% of regulatory capital.

## 2. Liquidity and foreign exchange risk management

The CBC has been active in using its authority in this area of financial system management, pioneering the incorporation of quantitative liquidity



requirements in 1999. Since April of that year, the regulations have established limits on maturity mismatches at 30 and 90 days, as well limits on the maturity mismatch in foreign currency at the same terms. In October 2003, banks were explicitly required to maintain a Liquidity Management Policy (LMP); the use of internal models was authorized; and criteria were established for the disclosure of information to the supervisor and the public, among other issues.

The next step in improving liquidity regulations was the gradual incorporation of the Basel III qualitative and quantitative requirements (since 2015). Subsequently, a minimum requirement was established for short-term liquidity coverage (LCR), implementing a gradual schedule that started with a limit of 60% in 2019 and moved toward 100% in 2023. Additionally, the CBC's regulation on the banking system's measurement and control of market risk, also in place since 2003, incorporates limits on exposure to interest rate and currency risk<sup>8/</sup>.

More recently, as part of the measures for facing the risks associated with the COVID-19 pandemic, the Board decided to temporarily loosen and adapt the CBC's liquidity regulations in order to allow the controlled use of the buffers, as promoted by the regulation itself and in a context of prudential safeguards, while maintaining the regulatory reporting and disclosure requirements.

### 3. Loan loss provisioning requirements

Loan loss provisioning requirements are a classic example of a traditional microprudential instrument that can be applied within a macroprudential approach. The implementation of this tool is under the exclusive purview of the FMC.

An interesting example of this type of tool is the FMC regulation tying the provisions associated with a residential mortgage loan to its loan-to-value (LTV) ratio. The incorporation, in 2015, of a regulatory standard for computing the minimum provisions for this portfolio, which explicitly considers loan arrears and LTV ratios, is related to the Chilean FSB's analysis of the risks in the real estate market, which were highlighted by the CBC in its FSRs.

### 4. Deposit reserves

One of the oldest, most traditional macroprudential measures is bank reserves, which consist in the obligation that deposit institutions hold liquid assets, generally cash or central bank money, in proportion to the size of their short-term contingent liabilities. The financial authority thus protects against the liquidity risk inherent in the banking activity of holding demand deposits or short-term time deposits.

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<sup>8/</sup> Many of these regulations will be replaced by the regulatory framework that is to be issued by the FMC for determining market-risk-weighted assets necessary for implementing bank capital requirements, in accordance with Basel III (see numeral 1.a).

The GBL establishes that the CBC must regulate bank reserves. To this end, the CBC Compendium of Monetary and Financial Regulations (CMFR) establishes that banks and S&Ls are subject to a reserve requirement based on their demand deposits, time deposits, savings accounts, and liabilities to other banks and the CBC, principally, denominated in local and foreign currency. Reserve rates are defined by type of instrument and denomination currency. The FMC's compendium of regulations establishes guidelines that complement the CBC's regulations.

To date, the CBC has prioritized keeping reserve rates stable over time, managing the regulatory loosening by allowing the banks to use the resources constituted as reserves through the Liquidity Credit Line (LCL).

### 3. OTHER TOOLS NECESSARY FOR PRESERVING FINANCIAL STABILITY

In addition to the tools described above, the CBC uses a number of other important instruments to achieve its objective of preserving financial stability, but these are not necessarily identified as macroprudential tools at the international level (table IV.7). These include the CBC's regulation of the large-value and retail payment systems and its participation in coordination mechanisms related to the operating permits granted by the FMC to other financial market infrastructures.

Another area where the CBC has historically had significant authority is in the regulation of cross-border capital flows (foreign exchange authority, established in the BCA), which has been used far less since the implementation of a floating exchange rate regime in 2001. This set of tools is significantly different, in terms of purpose and scope, from the prudential requirements for managing currency risk discussed in section 2, above.

Additionally, the CBC is directly involved in the management of troubled banks, through its participation in the coordination of the FMC's decision to name a provisional administrator and in cases of bank liquidation. Moreover, the CBC can extend emergency credit to banks with severe liquidity problems that are still solvent. In that sense, the CBC's independence confirms, for economic agents, the technical basis of decisions oriented toward fulfilling the CBC's mandate and their freedom from the influence of political cycles or interests outside financial stability (CBC, 2020).

In sum, all the prudential powers of the CBC described above are developed and implemented with the objective of fulfilling its mandate to preserve the stability of the financial system. This involves the application of internationally recognized macroprudential tools—that is, focused on strengthening the resilience of financial institutions and containing systemic risk—as well as

**TABLE IV.7**  
Coordination of other tools between the CBC and FMC

Tool	Authority	Coordination
Capital flows (forex)	CBC	
LVSP and RPS	CBC	CBC receives prior assessment from FMC
Emergency credit	CBC	CBC receives prior assessment from FMC
Provisional administrator	FMC	CBC gives prior assessment to FMC
Liquidation	FMC	CBC gives prior assessment to FMC

Source: Central Bank of Chile.





other complementary tools for analyzing risks, alerting the financial institutions and markets to those risks, maintaining the continuity of the payment system, and managing situations of financial stress.

## FINAL COMMENTS

One of the consequences of the global financial crisis has been the greater role of macroprudential policy. This development includes the use of traditional (or microprudential) financial regulation tools that have been around for a long time, but that are now called macroprudential because they are applied in that context: from the perspective of systemic risk and in an institutional framework that acts, as a whole, to achieve financial stability objectives. Additionally, the development of a clearer understanding of financial cycles and systemic risk has fostered the creation of new tools that are entirely macroprudential in origin, such as the CCyB.

Macroprudential policy consists in the timely detection, analysis, evaluation, and containment of systemic risks. Its adequate and efficient implementation requires an appropriate financial regulation and supervision architecture. That institutional structure must be able to adapt and respond flexibly to constantly changing risk scenarios; for that, the mechanisms for coordination and communication among agencies is critical.

In the particular case of the implementation of the CCyB in Chile, incorporated with the GBL reform to adopt Basel III, an important challenge for the CBC will be the development of a procedural framework for making decisions related to this new macroprudential tool, similar to the framework for monetary policy decisionmaking.

The current global financial disruption deriving from the COVID-19 pandemic raises challenges for macroprudential policy. In this context, multiple authorities and institutions have used diverse macroprudential tools, as described in this chapter, developed and implemented in the years after the GFC. Specifically, capital and liquidity buffers are among the most commonly used macroprudential tools at this time; for example, several jurisdictions that had activated the countercyclical capital buffer have recently reduced it to zero (table IV.8).

In Chile, an important share of the available macroprudential tools have recently been applied, mainly those associated with liquidity management (loosening requirements and offering the LCL backed by bank reserves) and bank capital (adapting the Basel III implementation plan), thereby helping preserve key channels for the transmission of monetary policy and the smooth functioning of the payment system. A detailed review and analysis of the different measures applied in the context of COVID-19 in Chile and the world are provided in chapter V.

**TABLE IV.8**  
Last CCyB decision in selected jurisdictions that have recently activated the CCyB

Jurisdiction	CCyB level (% RWA)
Belgium, Denmark, Iceland, Ireland, Lithuania, Sweden, United Kingdom	0
Germany	0,25
France, Luxembourg	0,5
Hong Kong, Norway	1

Source: Central Bank of Chile, based on data from other central banks, BIS, and ESRB.

## BOX IV.1

# FRAMEWORK FOR THE DEVELOPMENT AND EXECUTION OF FINANCIAL POLICY BY THE CENTRAL BANK OF CHILE

In March, the CBC published Financial Policy of the Central Bank of Chile, in the context of commemorating its 30 years of independence. The report describes in detail the factors that the CBC takes into account to carry out its financial policy within the perimeter of its legal authority, so as to contribute to safeguarding financial stability in the country. Specifically, the report outlines the conceptual, institutional, and analytical frameworks necessary for this work, as well as the mechanisms for the formulation and implementation of financial policy. Prior to the publication of this report, there was no record on the CBC's role in this area. This box summarizes the main sections and contents of the report.

### Conceptual framework

The main function of a financial system is to allocate resources efficiently, channeling capital from savers to those in need of financing. Thus, the financial system can reduce transaction and information costs, appropriately distribute risk among economic agents, supply payment services, and facilitate the liquidity and maturity transformation process.

The normal articulation of these functions is crucial for the economic development of the country and the correct transmission of monetary policy, and it fundamentally requires the existence of financial stability<sup>1/</sup>. From the perspective of the CBC, financial stability is understood as the financial system's capacity carry out its functions normally, or without significant disruptions, even in the face of temporary adverse situations. This definition is part of the conceptual foundation underlying the CBC's performance of its role of safeguarding financial stability.

### Institutional framework

The preservation of financial stability is highly complex, in-depth, and extensive in scope. It thus requires a robust institutional

architecture. In Chile, the institutions that share the responsibility of safeguarding financial stability—from the perspective of their respective legal authority and duties—are the Finance Ministry, the Financial Market Commission (FMC), the Superintendence of Pensions, and the CBC. To avoid blind spots, overregulation, or regulatory arbitrage, these entities utilize coordination and cooperation mechanisms, most notably the Chilean Financial Stability Board (FSB) and prior assessment reports<sup>2/</sup>.

In the case of the CBC, financial policy is circumscribed by the legal powers contained in the Basic Constitutional Act (BCA), especially in relation to fulfilling its mandate to safeguard the normal functioning of internal and external payments (Article 3). To comply with this responsibility, the CBC is also vested with powers in other areas, conferred through sectoral legislation<sup>3/</sup>.

Specifically, the central powers of the CBC are the regulation of the financial system and the capital market (BCA, Art. 35), the regulation and direct operation of interbank payment systems (BCA, Art. 35.8); the exclusive authority to issue banknotes and coins (BCA, Art. 28 to 33); and the regulation of foreign exchange operations (BCA, Title III, eighth paragraph). The CBC can also implement specific tools to safeguard the stability of the financial system through the performance of its role of lender of last resort (BCA, Article 36).

Examples of sectoral legislation that confers specific responsibilities on the CBC include the following:

- The General Banking Law (GBL) authorizes the CBC to active or deactivate a requirement of additional countercyclical Tier 1 capital, applicable to banks (Article 66 ter), and to establish capital requirements, among other powers. The application of

<sup>1/</sup> The definition of financial stability has been addressed by different central banks and researchers from a variety of perspectives, with the inclusion of many different characteristics. For an in-depth discussion of this issue, see "Financial Policy of the Central Bank of Chile," appendix A.1, "Definition Financial Stability."

<sup>2/</sup> Prior assessment reports work as follows: in the specific cases identified in the law, the entity that is empowered to issue a regulation is required to first solicit the prior opinion of another entity. For more information, see "Financial Policy of the Central Bank of Chile," section 3.2.3, "Issue of Prior assessment Reports."

<sup>3/</sup> See "Financial Policy of the Central Bank of Chile," table 2.

these powers requires institutional coordination through prior assessment reports, which must be solicited reciprocally between the CBC and the FMC, depending on the case.

- DL 3,500 gives the CBC the responsibility to set foreign investment caps for the pension fund managers, to establish a formal exchange market definition for pension fund investment, and to issue prior assessment reports for the Superintendence of Pensions, for example on issues such as establishing the criteria for currency hedging. The exercise of the powers conferred on the Central Bank of Chile under this legislation requires a prior assessment report from the SP in each case.
- The General Law on Cooperatives (DFL N°5 of 2003) and Article 7 of Decree Law (DL) 1638 empower the CBC to establish various aspects of prudential regulation on S&Ls and credit unions, including, for example, capital requirements and financial intermediation regulations.
- Additionally, the CBC generates statistics and has the analytical capacity and communication tools to alert other authorities and the markets about potential vulnerabilities<sup>4/</sup> and risks that are present in the financial system. These tools are essential to the Bank's advisory role to the Executive Branch and the Chilean FSB and for the analysis involved in the preparation and publication of the FSRs.

### Analytical framework

The proper exercise of the powers assigned to the CBC to comply with its mandate requires ongoing advanced technical research. To this end, the CBC has developed an analytical framework for financial policy that monitors and evaluates the risks to which the different components of the financial system are exposed, especially the banking sector, payment systems, financial market infrastructures, nonbank lenders, and institutional investors. Through this analytical framework, the CBC also identifies, based on a systemic and forward-looking approach, potential risk events, vulnerabilities, and mitigators in the financial system<sup>5/</sup> and evaluates the possible impacts of these factors.

<sup>4/</sup> Vulnerabilities are conditions in the financial system, or in the agents that participate therein, that weaken the system's capacity to face a shock or have the potential to amplify its impact. For example, a high degree of leveraging (debt to finance operations or investment) within firms can represent a vulnerability in terms of the sector's ability to face an economic downturn.

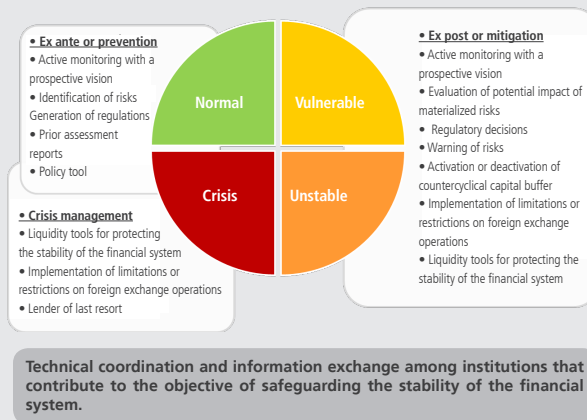
<sup>5/</sup> Mitigators are elements in the financial system, or in the agents that participate therein, that tend to contain the impacts of a shock. Examples include a regulatory framework and market practices that ensure that the banking system has healthy capital ratios, adequate provisions, appropriate liquidity ratios, and currency and term mismatch levels that reduce the potential exposure to currency or rate risk.

This analytical framework allows the CBC to diagnose the state of the financial system. Under the normal state, the identified vulnerabilities are limited and mitigating factors are present, contributing to a limited risk scenario. The vulnerable and unstable states, in turn, are characterized by the presence of fragilities that have the potential to amplify the impact of a disruptive event. In an extreme case, the financial system could be in the midst of a crisis scenario, understood as the materialization of systemic risk. The materialization of such a scenario could impede the normal functioning of the system's components.

### Financial policy conduct and implementation

The diagnosis of the state of the financial system provides the basis for formulating financial policy and, therefore, for implementing the different actions permitted under the CBC's legally vested authority (diagram IV.1). Under a normal scenario, the CBC undertakes preventative actions (for example, continuous prospective monitoring), exercises its regulatory powers to contribute to keeping the financial system stable, alerts other institutions and the markets to potential vulnerabilities and risks, and manages its macroprudential policy tools<sup>6/</sup>.

**DIAGRAM IV.1**  
Policy actions and scenarios



Source: Central Bank of Chile.

<sup>6/</sup> Chapter IV of this FSR provides a detailed analysis of the international experience with this set of policies and developments in Chile.

In the case of more vulnerable scenarios, financial policy will seek to increase the system's resilience and mitigate the possible impacts. Under these circumstances, in addition to the policy actions employed in normal scenarios, the CBC can draw on additional tools, such as the activation or deactivation of the countercyclical capital buffer, the provision of liquidity facilities, or restrictions on foreign exchange operations.

Most of the CBC's financial policy analysis, diagnosis, conduct, and implementation is regularly and transparently communicated to the whole community. The main dissemination channels are the FSR, research papers and explanatory notes, the publication and issue of regulations, regulatory compendiums, and internal and external presentations by Board Members and senior executives to various stakeholder groups. Additionally, the CBC complies fully with legal provisions on public access to information, probity in public administration, and the management of special interests.

Finally, the report Financial Policy of the Central Bank of Chile is, itself, an exercise in transparency that aims to explain to the whole community about the CBC's work and its contributions to the financial stability of Chile.

### **Final considerations in the context of the pandemic**

At this time, the financial system is facing a scenario of instability, deriving from the social protests that erupted in October of last year and the current global COVID-19 pandemic. The CBC and the other financial regulators have implemented a set of financial policy measures to address this scenario (table I.3 and chapter V), oriented toward preventing the materialization of systemic risk and guiding the financial system toward a more normal scenario. In the event that a systemic risk scenario materializes, the objective of financial policy will be to help manage the crisis using all the legal powers available to the Bank.



## V. FINANCIAL POLICY DEVELOPMENTS

*This chapter reviews the main international and local developments in financial policy, with a focus on the measures adopted to face the economic and financial consequences of the COVID-19 pandemic. It also reviews the Financial Policy Implementation Agenda of the Central Bank of Chile and other financial regulation initiatives.*

### COVID-19 MEASURES

In recent months, the financial authorities in Chile and around the world have adopted numerous measures to face the economic and financial consequences of the global COVID-19 pandemic. Thus, various countries have carried out a set of fiscal, monetary, and financial policy actions.

### MAIN MEASURES ADOPTED INTERNATIONALLY

The policy response in many jurisdictions includes a wide range of fiscal policy actions, as well as drastic conventional monetary policy measures (reduction in the reference interest rate) and unconventional measures, mainly the provision of liquidity to the market using mechanisms other than the central banks' regular channels. In a sample of 54 countries, the liquidity facilities or measures described in the majority of jurisdictions include an increase in the amounts available, frequency, operations, and maturity (table V.1). Fewer jurisdictions have expanded the definition of eligible collateral for accessing central bank liquidity, and some countries have also implemented foreign currency liquidity measures. Several central banks are also buying assets on the secondary market in order to produce not just an immediate impact on liquidity, but also longer-term effects.

Among the decisions that are directly related specifically to financial policy measures, the Basel Committee agreed to postpone the implementation of the final part of Basel III, in order to increase the operational capacity of banks and supervisors to respond to COVID-19. Additionally, several countries have utilized the different macroprudential tools that they have available<sup>1/</sup>, making regulatory adjustments to loosen the capital and liquidity requirements of

<sup>1/</sup> The macroprudential tools that are available in Chile are discussed in chapter IV.

**TABLE V.1**  
Number of countries with extraordinary liquidity measures, by dimension of loosening

Dimension	N° countries (*)
Larger amount	29
Higher frequency	27
Longer maturity	25
More collateral accepted	14
In FX	14
More participants	6
Asset purchase	21
Cross-border swaps	14

(\*) Excludes measures taken by the ECB.

Source: Central Bank of Chile, based on FSB, OECD, IMF, and Yale University.

**TABLE V.2**  
Measures loosening capital and liquidity rules for banks in response to the Covid-19 pandemic, number of jurisdictions (\*)

	Individual country measures
Reduction/loosening of liquidity requirements	18
Reduction in reserves	16
Reduction of CCyB	14
Reduction of capital conservation or other buffer	17
Deferral of capital increases	7
Loosening of lending policies and/or arrears classification	25

(\*) Excludes measures taken by the ECB.

Source: Central Bank of Chile, based on FSB, OECD, IMF, and Yale Tracker.



banks in order to facilitate and promote the flow of credit in the economy (table V.2). For example, countries that had previously required their banking systems to constitute countercyclical capital buffers (CCyB) have eliminated the requirement in recent weeks. Others have reduced different cushions or capital requirements specific to their jurisdictions<sup>2/</sup>.

Several jurisdictions have relaxed their requirement for the liquidity coverage ratio (LCR). In some cases, this has been done explicitly, by reducing the required limit, while in others it has been implicit, with the acknowledgement that banks can fall below the required minimum without incurring the consequences they would normally face. Most of these measures were originally conceived as an accumulation in normal (or boom) times, to be released in recessionary periods.

### **Main measures adopted in Chile**

In Chile, the Financial Market Commission (FMC), the Central Bank (CBC), and the Executive have acted in coordination to implement a range of measures, in the exercise of their respective responsibilities and powers (table I.3)

These measures are based on the strengths displayed by the financial system. The existing regulatory and supervisory frameworks have fostered good management and solvency in financial institutions, especially banks, over the past decades. At the same time, it is necessary to bear in mind that these are exceptional measures aimed at maintaining the provision of credit to households and businesses during the current crisis. It is crucial that they be accompanied by appropriate safeguards for preserving the medium-term prudential liquidity and solvency standards to which financial institutions are subject.

#### **i. Measures implemented by the FMC**

The FMC, in coordination with the Central Bank, pushed back the schedule for implementing Basel III, within the limits permitted under Chilean Law. Thus, the application of certain elements of the new framework of capital requirements was postponed, and the requirements for 2021 and 2022 were reduced (equivalent to approximately US\$1.8 billion, according to the FMC) and redistributed over the 2023–25 period. In practice, the full implementation of Basel III was pushed back one year, from 2024 to 2025 (table V.3).

In this line, the FMC postponed the new reporting and disclosure requirements in the Basel III implementation program (Pillar 3), until after 1 December 2022. In this case, the objective is to reduce the burden of the implementation of the new standards for the banking system, in terms of operating systems, compliance, and so forth.

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<sup>2/</sup> For example, systemic capital buffer, “capital expectations” in accordance with pillar 2, or capital increases above the minimum proposed by Basel III.

**TABLE V.3**  
Calendar of Basel III implementation pre and post Covid-19 measures

Regulatory capital component	2020	2021		2022		2023		2024	
		Pre-Covid19*	Relaxed BIII implementation	Pre-Covid19*	Relaxed BIII implementation	Pre-Covid19*	Relaxed BIII implementation	Pre-Covid19*	Relaxed BIII implementation
Tier 1 capital/RWA	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Implementation of BIII capital deductions (1)		25%	0	50%	25%	75%	50%	100%	75%
Regulatory capital/RWA (2)	8%	8%	8%	8%	8%	8%	8%	8%	8%
Conservation buffer/RWA		0.625%	0.625%	1.25%	1.25%	1.88%	1.875	2.50%	2.50%
Systemic charge/RWA		0-0.625%	0%	1.25% (3)		2.375% (3)		3.5% (3)	
Composition of RWA									
Credit RWA	100%	100%	100% (4)	100%	100%	100%	100%	100%	100%
Operational RWA		100%	0%	100%	100%	100%	100%	100%	100%
Market RWA		100%	0%	100%	100%	100%	100%	100%	100%

(1) Components of equity that are deducted for the purposes of regulatory limits. Under Basel III, these components represent a larger share of capital.

(2) The minimum has not changed, but the composition will be different due to changes in the deduction implementation calendar.

(3) The pre-Covid-19 implementation plan was a 25% annual increase in the corresponding requirements for each systemic bank. The table shows the increase in the legal maximum.

(4) The calculation of this CRWA is based on the current methodology, that is, with the weights in place before the GBL reform.

Source: Central Bank of Chile.

In line with the exceptional measures taken in other jurisdictions, the FMC ruled that operations involving the lengthening of maturity or the postponement of installment payments on mortgages and small business loans are temporarily exempt from the additional provision charges that are traditionally applied to renegotiated loans (table V.4). Both measures reduce loan-generation costs and in that sense should enable banks to more easily offer rescheduling plans to households and businesses.

Finally, the FMC made an extraordinary ruling to adjust the accounting of voluntary provisions that make up banks' regulatory capital. With this ruling, a percentage of the collateral pledged to the Treasury of Chile, CORFO, and FOGAPE<sup>3/</sup>, which guarantee bank loans, can be included in voluntary provisions.

#### ii. Measures implemented by the CBC

The CBC temporarily eased its deposit reserve and liquidity requirements for banks, while implementing a very large, unprecedented increase in liquidity provisions. These measures, in addition to those adopted in November of last year in response to the social protests, are intended to facilitate management of

**TABLE V.4**  
Loosening of provision rules, by type of entity and portfolio (months)

	Banks	Life insurance companies	S&Ls	Nonbank lenders
Consumer	3	3	3	3
Mortgage	6	6	6	
Commercial	6		6	

Source: Own elaboration, based on data from the FMC.

<sup>3/</sup> The FOGAPE is a state fund that guarantees a stipulated percentage of loans, leasing operations, and other financing mechanisms granted to eligible firms by both public and private financial institutions.





the current situation, primarily through the extension of exceptional credit lines, which include conditions for bank access to promote the generation of credit.

With regard to bank liquidity management, compliance with the maturity mismatch requirements stipulated in the Compendium of Financial Regulations has been suspended for 90 days, subject to renewal, including the requirements at both 30 days (which cannot exceed Tier 1 capital) and 90 days (not to exceed two times Tier 1 capital). The CBC, in coordination with the FMC, decided to maintain the current regulatory limit of 70% for the liquidity coverage ratio (LCR), stating that the FMC will evaluate any temporary deviations from this requirement on a case-by-case basis, based on the supervisor's judgement.

The CBC also modified its requirements on the constitution of reserves. Here, it authorized banks and S&Ls to constitute their cash reserves in foreign currency not only in U.S. dollars, but also in euros, Japanese yen, and national currency, through September of this year.

These measures complement an expansion in the magnitude and scope of the CBC liquidity provision systems. Starting in November of last year, the Bank has implemented a Special Operations Program to facilitate the financial system's liquidity management, after the start of social protests. This program initially included currency swap and repo auctions, as well as a CBC debt security repurchase program. The duration of this program was extended from May of this year to January of next. A foreign currency sales program was also implemented in November, through both the spot and derivatives markets. The duration of this program was extended through January 2021.

As mentioned, the Bank has recently increased its liquidity provision, not only in terms of amounts, but also through the incorporation of new modalities, maturities, instruments, and eligible entities.

First, a Conditional Financing Facility for Increased Loans (Facilidad de Crédito Condicional al Incremento de las Colocaciones, or FCIC) was opened for banks. The FCIC, which will be available for six months, will provide funding at the monetary policy rate (0.5%) with a maturity of up to four years (box III.1).

Second, a bank bond purchase program was launched in March, for an amount (in UFs) equivalent to US\$8.0 billion. This program is open to SOMA participants, so unlike the above programs, it is not limited solely to banks, but rather can be used by other market agents such as the pension fund managers, mutual funds, and life insurance companies. As with the other programs, the goal is to provide financial institutions with a mechanism for converting instruments into liquidity when needed.

The measures taken by the CBC are exceptional, and several are unprecedented in the history of the institution. However, a number of other central banks implemented asset purchase programs and expanded eligible collateral after the global financial crisis, as well as in response to the current situation<sup>4/</sup>. In that sense, while the measures are exceptional, they make up part of the toolkit available to central banks, especially when the monetary policy rate has reached or is approaching its effective lower bound (chapter IV).

### iii. Measures implemented by the Executive

The Executive has taken a series of economic measures to address the financial crisis, some of which required legal initiatives that were approved very quickly in the month of April. The measures that have an impact on financial policy are as follows: (i) Law N° 21,225 (published on 2 April), which, in addition to establishing a family income support benefit, mandates a US\$500 million capitalization of BancoEstado and a reduction of the stamp tax to 0%, for a period of six months; (ii) Law N° 21,227 (published on 6 April), which establishes job protection measures to offset the economic effects of the COVID-19 pandemic, by allowing the temporary suspension of labor contracts wherein the contractual relationship and labor rights are maintained, while the worker's income is paid by the unemployment insurance fund; and (iii) Law 21,229 (published on 21 April), which authorizes a US\$3.0 billion capitalization of FOGAPE.

This latter measure is especially important because it provides backing for new loans totaling up to US\$24.0 billion, for firms that need liquidity. The Finance Ministry estimates that this initiative could benefit over 1.3 million micro, small, and medium-sized businesses, with annual sales of up to a million UFs. The maximum rate on these loans is 3.5%, and the state guarantee is decreasing, from 85 to 60%, as a function of the annual sales volume of the firms.

### iv. Additional measures for operational continuity

Finally, it is important to highlight the role of operational continuity in a scenario like the current one. In this area, the regulators have acted in accordance with their responsibilities. In the CBC, the contingency systems for the functioning of the RTGS system are operational and available, and the system has the capacity to function normally with a limited onsite staff and remote work. The FMC announced measures for the use of remote mechanisms for shareholder and bondholder meetings and investor assemblies. The FMC and the Superintendence of Pensions (SP) jointly issued a temporary regulation allowing pension-related procedures to be processed online. At the same time, the SP instructed the pension fund managers and the unemployment fund manager to guarantee access to critical services and procedures, with electronic access for system users.

<sup>4/</sup> The provision of liquidity against pledged collateral, through either the purchase of securities or repos, introduces credit risk onto the central banks' balance sheet. Therefore, eligibility criteria are established for access to liquidity facilities, and discounts (or "haircuts") are applied to the value of the instruments received as collateral.



As a result of the directives of the health authority, some of the operations of financial service providers are having to be carried out remotely (telework), while many of their service centers are closed. At the same time, there has been an increase in the use of bank transfers and electronic payment means, especially remote transactions and “contactless” point-of-sales operations. In the long run, preferences for cash could decline.

All of the above reinforces the importance of having adequate mechanisms for safeguarding the functioning of the payment means and financial market infrastructures, including cybersecurity measures.

### **FINANCIAL POLICY AGENDA OF THE CENTRAL BANK OF CHILE**

This section presents the main elements of the agenda for implementing the CBC’s financial policy in 2020. Several of the developments discussed below are a continuation of, and in some cases a complement to, initiatives that the Bank has been working on for some time, in particular the strengthening of financial market infrastructures and the modernization of its foreign exchange regulation. The schedules established for this year could be changed if priorities or resources are redirected as a result of the COVID-19 pandemic.

#### ***Publication of the CBC’s financial policy framework***

The report “Financial Policy of the Central Bank of Chile” was published on 12 March, presenting the conceptual framework and institutional structure in which financial policy is conducted, together with the analytical methodology for its formulation and implementation. The preparation of this report was part of the 2018–2022 Strategic Plan, and it incorporates recommendations from the Independent Assessment Panel that the CBC Board invited to evaluate the Bank’s performance in achieving its principle mandates. The main elements of the report are described in box IV.2.

#### ***Countercyclical capital buffer (CCyB)***

Although the FMC, in coordination with the CBC, has decided to push back the schedule for implementing Basel III, there are a number of regulations that must be issued no later than 1 December of this year. With regard to the CBC, the GBL establishes that the Board must submit a prior assessment report on the regulations governing the identification of systemically important banks, the methodology used to calculate risk-weighted assets (by operational, credit, and market risk), and the treatment of hybrid instruments in regulatory capital. In addition to submitting prior assessment reports, the CBC must regulate the CCyB requirement.

To implement the CCyB, the new GBL gives the CBC the responsibility of activating or deactivating the buffer. The CBC is currently developing internally

the documentation and protocols that will inform the market on the elements that the Board considers in making this decision. In this process, the experience of jurisdictions that have been more active in using this tool is being analyzed, and adaptation mechanisms that take into account the supervisory structure in Chile are being developed.

This tool will be incorporated gradually, in line with the rescheduling of the implementation of Basel III determined in coordination with the FMC. Thus, in the 2020–21 period, work in this area will be almost entirely oriented toward preparing for the active use of this tool starting in 2022, in the event that the appropriate conditions arise.

The implementation of the CCyB represents a key contribution toward developing the toolkit available in Chile as part of the design of the macroprudential policy framework (chapter IV).

### ***Financial market infrastructures***

Over the past few years, important steps have been taken to make the local financial market infrastructures more robust. Among the various measures, in 2018 the CBC published the new Chapter III.H of its Compendium of Financial Regulations (CFR), incorporating international Principles for Financial Market Infrastructures (PFMI); in 2019 it published CFR Chapter III.D.3 to establish a derivatives trade repository (the Integrated Derivatives Information System, or IDIS), which will begin operating in November 2020; and in December 2019 it issued regulations for expanding the RTGS system to include interbank payments in U.S. dollars, a function that is currently available and operational for participants (new Chapters III.H.4, III.H.4.1, and III.H.4.2 and the respective Operating Rules).

For this year, plans include issuing the necessary regulations for the operation of a large-value clearing house in U.S. dollars, for settling payments in peso-dollar spot operations, which can then be cleared through the RTGS system in U.S. dollars as discussed above. Additionally, as part of the process of structuring a network of infrastructures to facilitate the international integration of the Chilean financial system and mitigate the risks of foreign exchange settlements, work continues on the incorporation of the Chilean peso in the Continuous Linked Settlement (CLS) system, although this is a medium-term process (see FSR, Second Half of 2019). This latter initiative requires the issue of regulations to recognize international payment systems for clearing and settling payments locally, as authorized by the BCA.

### ***New phases in the modernization of foreign exchange regulations***

Following a public consultation process, the new Chapter I of the Compendium of Foreign Exchange Regulations (CFER) entered into effect on 1 January,



representing the first stage in the foreign exchange modernization process. The principal changes include the incorporation of the CBC's foreign exchange policy framework and its relation to the application of these regulations, the expansion of the eligible currencies for trading foreign securities in the local market, and the repeal of some CFER Chapters and Appendixes for which there are reliable alternative information sources.

This year, progress will continue on the next phases of the process: namely, the expansion of international exchange operations in Chilean pesos, a revision of the regulations associated with Formal Exchange Market entry and operations, and a deep reorganization of the CFER Chapters, Appendixes, and Manual.

#### Retail payments

The functioning of the retail payment systems is a permanent concern of the CBC. Their use has been growing over time, and the current crisis is likely to accelerate that process (BIS, 2020). In parallel, there have been several important events related to payment services in recent months. In particular, several nonbank entities have obtained, or are in the process of obtaining, their initial license to issue prepaid debit cards from the FMC; and Transbank has begun the process of implementing the four-party model.

At the same time, the Bank regularly evaluates its regulations to ensure that they do not raise unnecessary obstacles to innovation, while maintaining high prudential standards.

The Bank will develop a new regulatory framework to allow retail payment operations other than checks and automated teller machines (ATMs) to be cleared via clearing houses.

Currently, the only retail payment transactions that are processed through a clearing house (and subsequently settled in the RTGS system) are checks and ATM transactions, and these clearing houses are regulated by the CBC. The clearing of payment card transactions, electronic transfers, and other payment means that could evolve through sectoral innovation is not covered by a specific regulatory framework.

The CBC plans to initiate a process this year to strengthen the clearing and settlement of retail payments in the medium term. Under a basic regulatory framework, private sector agents will be invited to manage one or more clearing houses to process this type of transaction, for a specified period of time and with limitations on the transaction amount. At the end of the established period, which the CBC will use to better understand the associated processes, a more complete, definitive regulatory framework will be issued. The objective is both to strengthen the retail payment clearing and settlement processes and

to contribute to the incorporation of new forms of retail transactions, such as the so-called instant payments that are already being used in jurisdictions like Australia and Mexico, where payments are made via QR codes and are settled between the parties' accounts in real time.

### **Incorporation of new participants in the CBC's liquidity facilities**

In Chile, the CBC currently limits the broad provision of its financial services to commercial banks and, for settlement and deposit accounts in the RTGS system, the management corporations that operate the Securities Clearing and Settlement System (Law N° 20,345).

The CBC requested technical assistance from the International Monetary Fund (IMF) to analyze the possibility of expanding these services, drawing on that organization's extensive international experience in order to achieve greater objectivity in the analysis and avoid any sort of discrimination. This international assessment included a rigorous review of different types of institutions in light of requirements for accessing the financial services of central banks.

The conclusions of the IMF assessment are reflected in the legal reform bill being prepared by the Executive, announced on 8 April. Once approved by Congress, the bill will allow the CBC to extend its financial services to nonbank financial entities, such as savings and loan associations (S&Ls), and to financial market infrastructures (FMIs), such as central counterparties (CCP), securities clearing houses (SCH), and large-value payment systems (LVPS); provided they meet the high standards of regulation and supervision that are applicable in each case.

According to the aforementioned technical assessment, the vast majority of central banks, like the CBC, aim to safeguard the continuous and efficient functioning of the payment systems and the flow of money. Thus, central banks traditionally offer their financial services to banks and other deposit-taking institutions. These services generally include the following: (i) current accounts and settlement accounts in large-value payment systems, such as RTGS systems, to ensure the smooth and secure processing of financial system payments using funds held at the central banks; (ii) intraday and standing liquidity facilities backed by high-quality collateral, for the purposes of monetary policy implementation; and (iii) standing deposit facilities available to banks to hold pledged collateral or regulatory deposit and technical reserves.

At the global level, financial systems have become increasingly complex over the last couple of decades, with the emergence of new financial entities that provide payment systems or that allow the clearing, settlement, and registry of financial transactions. Today, the traditional payment systems coexist with a network of sophisticated FMIs that underpin the functioning of the financial markets.

Therefore, in economies in which these FMIs have a longer development history than in Chile and have achieved considerable market coverage, and given the



degree of interconnection and interdependence within the system, central banks have tended to progressively expand the provision of their financial services to this type of entity (usually the opening of current, settlement, and deposit accounts, but not liquidity facilities), in order to achieve institutional objectives such as preserving price stability and contributing to financial stability. In this sense, the specific objective of inclusion remains the same: the safe and efficient provision of payment services in the economy through the banks and financial infrastructure networks that support the functioning of the different markets (fixed and variable income, derivatives, etc.).

At the same time, there are financial entities with operating characteristics that are similar to banks, in that they take in deposits from the general public, grant personal loans, perform financial intermediation, and provide means of payment.

According to the IMF analysis, the main possibility for extending CBC services, maintaining the greatest convergence possible with the reviewed international experience, is to include the only nonbank deposit-taking lending institutions that exist in Chile, namely, the savings and loan associations (S&Ls). With regard to the FMI, it was considered appropriate to extend services to those that have a significant degree of development in the country and that are currently eligible to receive services, in particular by offering settlement accounts to those that do not yet have them and offering deposit accounts to those that already have settlement accounts (CCP). In line with the international assessment, eligible entities would have to meet appropriate high standards of prudential regulation and supervision, before being granted access to the indicated services.

The rest of the financial entities will continue to access payment systems and liquidity through the deposit-taking institutions, as clients thereof, under objective and non-discriminatory criteria, subject to the applicable regulation and supervision.

### **Increase in investment caps on alternative assets for the pension funds**

To promote portfolio diversification among the pension funds (PFs) and allow them to achieve better risk-return combinations, the CBC increased the structural limits on investment in alternative assets for type A, B, C, and D pension funds, relative to the limits established in October 2017. In the case of type E funds, it was decided to keep the existing cap. With regard to the Unemployment Solidarity Fund (Fondo de Cesantía Solidario, FCS), the current cap is already at the maximum allowed by law (table V.5).

Under the current legal framework, for the purposes of pension fund investment, alternative assets are defined as instruments, operations, and contracts that represent real estate assets, private capital, private debt, infrastructure, and other types of assets specified in the applicable Investment Regimes, including local and foreign assets and direct or indirect investment schemes.

**TABLE V.5**  
Investment caps on alternative assets for the PFs and FCS (% of fund)

CBC decision	New limit	2017 limit
Fund A	13%	10%
Fund B	11%	8%
Fund C	9%	6%
Fund D	6%	5%
Fund E	5%	5%
FCS	5%	5%

Source: Central Bank of Chile.

Pension fund investment in these instruments was authorized in 2016, through a legal modification that gave the CBC the responsibility for establishing the investment caps, within a legally established range (5 to 15%). When setting these caps for the first time, the Bank adopted a gradual approach, which has been maintained with the current adjustment, to ensure that any resulting changes in the PF investment portfolios will not affect the normal functioning of the financial system.

## OTHER NATIONAL REGULATORY DEVELOPMENTS

### *Basel III implementation*

In the first half, the FMC opened public consultations on the following regulations: regulatory capital and the implementation of countercyclical capital buffers. Additionally, joint work was conducted, at the staff level, on regulations requiring the prior favorable assessment of the Central Bank before the publication of the final regulation: namely, the treatment of hybrid instruments in regulatory capital; the determination of credit-risk-weighted assets in the banking system; and the determination of market-risk-weighted assets in the banking system.

**TABLE V.6**  
Regulations for implementing Basel III

Regulation	Public consultation	Prior assessment report from CBC
Identification of systemically important banks	12-Aug-2019 – 26-Sep-2019 Closed	Yes
New standardized methodology for determining ORWA in the banking system	23-Nov-2019 – 18-Oct-2019 Closed	Yes
Methodology for computing regulatory capital	19-Nov-2019 – 17-Jan-2020 Closed	No
Regulatory consultation on additional Tier 1 capital requirements for the banking system	27-Jan-2020 – 31-Mar-2020 Closed	No
Methodologies for determining credit-risk-weighted assets in the banking system	27-Jan-2020 – 29-May-2020	Yes
Calculation of the ratio of Tier 1 capital to total assets	03-Apr-2020 – 29-May-2020	No
Hybrid instruments for the constitution of regulatory capital	03-Apr-2020 – 29-May-2020	Yes

Thus far, the regulatory implementation proposed by the FMC comprises the main elements of Basel III, with adaptations in areas where the Commission deems that higher requirements are necessary, since the standards underestimate the risks relative to the local reality (table V.6).



**TABLE V.7**  
Risks and opportunities associated with climate change

Physical	Risks	
	Transition	Opportunities
Acute	Legal / Political	Resource efficiency
Chronic	Technological	Energy sources
	Market	Products and services
	Reputational	New markets
		Operational resilience

Source: Central Bank of Chile, based on Ministry of Finance (2019).

### Climate change actions by local financial authorities

In December 2019, the Finance Ministry, the FMC, the Superintendence of Pensions (SP), and the CBC formally declared, in the framework of their individual mandates, their interest in and commitment to promoting an adequate management of the risks and opportunities associated with climate change (table V.7). Given that the adverse effects of climate change can affect the financial system, the authorities have made a commitment to studying, identifying, and taking action, within the scope of their powers, to contribute to transitioning toward a carbon-neutral economy and achieving national commitments on climate action.

**TABLE V.8**  
Guiding principles for financial sector entities and authorities

Area	Financial sector	Authorities
Governance	Board of directors studies and incorporates the guidelines	Address the allocation of resources within compliance with legal mandates
Strategies and opportunities	These are incorporated in the strategy, to strengthen capacities and evaluate how to identify opportunities	Promote discussion and initiate a process for defining and evaluating risks within the scope of legal powers
Risk management	Define how to integrate the identification, assessment, and management of climate risks	Establish standards and recommendations for guiding financial entities, as well as coordination channels
Objectives and metrics	Evaluate how to set and measure objectives for the business strategy	Identify information gaps and move toward closing them

Source: Central Bank of Chile, based on data from the Ministry of Finance (2019).

In conjunction with private sector actors, the local authorities have signed a Green Agreement that outlines general principles for managing the risks and opportunities associated with climate change. The agreement also establishes guiding principles for financial sector entities, as proposed by the Task Force on Climate-Related Financial Disclosures (TCFD) (table V.8); details the independent commitments of each entity; and establishes that the Finance Ministry will draw up a road map of regulatory recommendations for the development of green financing in Chile (the 2020+ Road Map).

In December the FMC published for consultation General Regulation NCG N° 386, which modernizes the information to be included in the social responsibility and sustainable development reports that companies registered in the Securities Registry must include in their annual report. The new guidelines incorporate requirements on environmental, social, and corporate governance (ESG) aspects.

### ***Authorization for institutional investors to participate in securities clearing and settlement systems***

Currently, participation in securities clearing and settlement systems is limited to stockbrokers, securities and commodities traders, banks, and securities exchanges. On 2 March, the FMC opened a public consultation on a regulation that would also allow the participation of institutional investors, whereby these investors could directly enter their operations in these systems.

According to the FMC, institutional investors would benefit from this regulatory change through a reduction in the transaction costs associated with settling their transactions, in terms of both collateral management services and the fees paid to the agents that are currently processing their settlement; while the intermediaries that currently settle these operations would have lower capital and collateral requirements.

### ***Information security and cybersecurity management***

The FMC opened a consultation in November of last year on a regulation to strengthen risk management in the areas of information security and cybersecurity. The objective of this regulation is to provide guidelines and best practices in this area for banks, subsidiaries, banking service support corporations, and payment card issuers and operators.

In December of last year, the FMC modified its regulations on the outsourcing of services by banks and financial institutions, loosening the requirement on keeping data processing services in Chile for services that are outsourced overseas and that affect activities deemed critical or strategic. Thus, the board of directors of each entity will be responsible for evaluating and weighing the pros and cons associated with outsourcing services, including contingency sites, so that they can contract suppliers that best meet their needs.

### ***Congressional initiatives***

In recent weeks, various initiatives related to financial policy have been discussed in Congress. Understandably, bills containing measures for addressing the economic consequences of the COVID-19 pandemic have taken priority, and thus the legislative procedures for other bills are likely to be slower than originally expected.

Law N°19,628 on privacy protection was passed on 28 February, with the objective of prohibiting the reporting of information to third parties, without the consent of the debtor, on debt contracted to finance education at any level.

Thus, just as it is illegal to report information on debt owed to utilities companies (electricity, gas, water, and telephone services), it is now illegal to report



debt owed either to institutions of higher education, to banks and financial institutions, or under the framework of the lines of financing administered by CORFO for the pursuit of higher education; nor any debt contracted for the purpose of formal educational services at any level of studies, whether for oneself or for someone else. Notably, while this sort of initiative may pursue laudable objectives, it does not contribute to allowing lenders to base their decisions on complete information.

In March, a bill was passed to limit the responsibility of credit card users for transactions made with lost or stolen cards, in terms of the responsibility of the user and the issuer in the case of fraudulent use of these means of payment. This bill is a parliamentary motion that seeks to resolve situations that until now were not regulated, such as who assumes the responsibility in the event of fraudulent transactions made before the user can notify the issuer that the card has been lost or stolen, as well as what happens with payment means other than credit cards.

Another important bill is on Financial Portability (reported in the last FSR), which is being processed with some urgency. Additionally, a bill on Financial Consultants has been in process since 2015. Given the potential impact on financial stability of mass recommendations by unregulated pension fund consultants (box V.1), it would be advisable to continue the search for a legislative solution to resolve these problems.

Finally, the Financial Stability Board of Chile has expressed concern for the risks implied by certain legislative initiatives on financial issues, which, in their effort to support households and firms, do not adequately weigh the impacts on the financial system or on the access to credit and other financial services. These initiatives include a potential mandatory deferral of installment loan payments, which would hinder adequate risk management in financial institutions, raise the cost of financing, and draw down liquidity in the system; and an allowance to activate unemployment insurance provisions associated with loans when, strictly speaking, that is not the situation, and the workers in question continue to receive an income.

**TABLE V.9**  
Main regulations passed during the FSR 2020.1 period

Publication date	Organization	Document	Content
5-Dec-2019	CBC	Resolution 2269-01-191205	Modifications to the Compendium of Foreign Exchange Regulations and Manual, repealing chapters IV, V, VI, and XI.
20-Dec-2019	FMC	Circular N° 2.243 (Banks)	Compendium of Accounting Regulations for Banks (various chapters)
20-Dec-2019	CBC	Resolution 2273E-01-191220	Replacement of the regulations for the Real Time Gross Settlement System of the Central Bank of Chile, replacing Chapters III.H.4 and III.H.4.1 of the Compendium of Financial regulations.
23-Dec-2019	FMC	Circular N° 2.244 (Banks)	Outsourcing of Services. Overseas data processing services.
23-Dec-2019	FMC	Circular N° 2.245 (Card Operators)	
31-Dec-2019	SIR	NCG N° 10	Modification of General Regulation NCG N° 1 on bankruptcy trustee bonds, with a revised, coordinated, and systematized text.
18-Mar-2020	FMC	NCG N° 435	Regulation of remote participation and voting for specified Shareholder Meetings, Bondholder Meetings, and Investor Assemblies. Modification of NCG N° 273.
20-Mar-2020	CBC	Resolution N° 3013-844	Modification of Chapter 3.1 of the Compendium of Monetary and Financial Regulations (CMFR)
31-Mar-2020	CBC	Resolution N° 3013-845	Modification of Chapter III.B.2.1 of the Compendium of financial Regulations, on the liquidity management and measurement in banks.
9-Apr-2020	FMC	NCG N° 437	Modification of NCG N° 200, on financial risk hedging operations, investment in financial derivative products, and stock loan operations.
15-Apr-2020	CBC	Resolution N° 3013-850	Modification of Chapter III.F.4 of the Compendium of Financial Regulations.

Source: Website of each institution.

**TABLE V.10**  
Main regulations published for public consultation during the FSR 2020.1 period

Date	Organization	Regulation	Material and objectives
19-Nov-19	FMC	Methodology for computing regulatory capital	Presentation of the methodology for calculating regulatory capital to comply with the limits established in the GBL, incorporating international standards and taking into account the characteristics of the local system.
25-Nov-19	FMC	Information security and cybersecurity management	Guidelines and best practices for banks and other financial entities on information security, cybersecurity, and the reduction of breaches.
2-Dec-19	FMC	Modification of the Social Responsibility and Sustainable Development Report	Modernization of the information that must be included in the Social Responsibility and Sustainable Development Report that companies in the Securities Registry must submit in their annual report, providing more information on these issues for their stakeholder groups.
3-Dec-19	FMC	Monthly reporting requirement on financial and solvency information, for insurance and reinsurance companies	Requirements on the reporting of technical, financial, and solvency information by insurance companies on a monthly basis, incorporating mandatory information on debt and equity, specifying the indicators that must be reported
27-Jan-20	FMC	Methodologies for determining credit RWA in the banking system	Specification of methodologies for determining credit-risk-weighted assets, adjusting to the Basel III standardized model, with the possibility of authorizing internal models.
27-Jan-20	FMC	Additional Tier 1 capital requirements for the banking system	Definition of the procedures for the calculation, implementation, and supervision of capital buffers for banks established in Chile, based on Basel III guidelines.
2-Mar-20	FMC	Authorization for Institutional Investors to participate in Securities Clearing and Settlement Systems	Extension of the scope of authorization, to allow this type of investor to directly enter their clearing and settlement orders into the securities clearing and settlement systems.
3-Apr-20	FMC	Calculation of the ratio of Tier 1 capital to total assets	Definition of the limit on the hedging indicator defined by the General Banking Law, incorporating deductions to the capital component and to net assets and establishing a separate requirement for systemic banks.
3-Apr-20	FMC	Hybrid instruments for the constitution of regulatory capital	Definition of requirements and conditions for the issue of hybrid instruments by banks to be considered as part of regulatory capital, incorporating mechanisms for loss absorption.
9-Apr-20	SP	Authorization for people who are starting the pension process to transfer their funds to a current account	This provision would give affiliates the option of freezing the amount of their pension savings from the moment they submit their pension application until the pension is awarded (or the application withdrawn).
13-Apr-20	FMC	Chapter B-1 of the Compendium of Accounting Regulations	Discussion of legal and technical aspects of the treatment of excess mortgage guarantees as a risk mitigator for commercial loans.
16-Apr-20	SP	NT369 Modification of investment regimes	Expansion of investment options in the national market, allowing investment in investment funds that invest preferentially in specified instruments.
21-Apr-20	FMC	Modification of NCG N°412 on Demonstration of Knowledge	Modification of the regulations on the demonstration of knowledge for brokers joining the receivables exchange as subjects obligated to provide such demonstration; and loosening of certain regulations contained in NCG N° 412, in the context of the pandemic.

Source: Website of each institution.



**TABLE V.11**  
List of documents reviewed

Document	Title	Organiza- tion	Prudential regulation	Supervision	Transparency and governance	FinTech	Covid-19 response	Other
1	Payment Aspects of Financial Inclusion in the FinTech Era	BIS / CPMI				*		
2	Guiding Principles for the Operationalisation of a Sectoral Countercyclical Capital Buffer	BIS / BCBS	*	*	*			
3	Basel III Monitoring Data for External Research: Usage Policy	BIS / BCBS			*			
4	Margin Requirements for Non-centrally Cleared Derivatives	BIS / BCBS / IOSCO						*
5	Measures to Reflect the Impact of Covid-19	BIS / BCBS					*	
6	Benchmark Rate Reforms	BIS / BCBS		*	*			
7	Designing a Prudential Treatment for Crypto-Assets	BIS / BCBS	*		*	*		
8	Launch of the Consolidated Basel Framework	BIS / BCBS	*	*				
9	Joint BCBS-BCG Statement on Proportionality	BIS / BCBS	*	*				
10	Responsibility E: A Compilation of Authorities' Experience with Cooperation	BIS / CPMI		*				
11	Impending Arrival: A Sequel to the Survey on Central Bank Digital Currency	BIS / CPMI				*		
12	Report on Central Banks and FinTech Data Issues	BIS / IFC			*	*		
13	Report on International Cooperation to Address the Financial Stability Implications of COVID-19	FSB					*	
14	Covid-19 Pandemic: Financial Stability Implications and Policy Measures Taken	FSB					*	
15	Regulatory, Supervisory, and Oversight Recommendations for "Global Stablecoin" Arrangements	FSB		*		*		
16	Vulnerabilities of leveraged loans and CLOs	FSB	*	*				
17	Financial Stability Implications of BigTech in Finance and Third-Party Dependencies in Cloud Services	FSB					*	
18	Enhancing Cross Border Payments: Stage 1 Report to the G20	FSB						*
19	Global Stablecoin Initiatives	IOSCO				*		
20	Issues, Risks, and Regulatory Considerations Relating to Crypto-Asset Trading Platforms	IOSCO				*		
21	Recommendations for a Framework Assessing Leverage in Investment Funds	IOSCO	*					
22	The Green Swan: Central Banking and Financial Stability in the Age of Climate Change	BIS						*
23	Covid-19 and Operational Resilience	BIS / FSI			*		*	

Source: Website of each institution.

## BOX V.1

# REGULATION OF PENSION CONSULTANTS AND FINANCIAL STABILITY

The incorporation of multi-funds into the Chilean pension system in 2002 was intended to increase the expected value of pensions, by allowing affiliates to take on a level of risk in line with their investment horizon and their particular risk profile. The reform was also expected to be beneficial to the capital market, in general: by allowing a greater diversification of pension fund investments, it would increase the efficiency of resource allocation in the economy<sup>1/</sup>.

One of the central characteristics in the design of the multi-fund system is that, within the different risk-return combinations, affiliates have a lot of freedom to choose how their funds are invested, depending on their particular preferences. However, this freedom of choice is subject to certain limits aimed at minimizing the possibility of loss for the affiliates, especially when they are retired or nearing retirement. For example, people who are less than 10 years from the legal retirement age cannot allocate their pension savings to riskier funds. Similarly, in the case of people who do not actively choose a fund allocation, the default allocation is based on the person's age.

Over the past few years, there has been an emergence of unregulated pension consultants who, in taking advantage of the freedom of choice built into the system, trigger a number of undesirable effects, when they periodically make generic recommendations for system affiliates to change the fund allocation of their pension savings<sup>2/</sup>.

The number of affiliates who reallocate their pension savings, whether on their own initiative or based on a recommendation from these agents, is not insignificant (200,000 in January of this year, according to data from the Superintendence of Pensions). This more active reallocation of savings among the different types of pension funds has been increasing since the 2008 global financial crisis (Berstein et al., 2011).

This box analyzes the risks associated with this type of financial consulting, both for the protection of the affiliates' funds and for the appropriate functioning of the capital market.

### Risks of pension consulting services

Pension consulting services, like other financial consulting services, generally help people make informed decisions, in accordance with their needs and their level of risk aversion, which should contribute to improving their well-being. This is especially important when people have a low level of financial education<sup>3/</sup>.

However, the people receiving advice are exposed to a range of risks, including contracting services from consultants who do not have the adequate training; being given information that is false, imprecise, or technically unfounded; and being advised by agents who have conflicts of interest with the recommendations they make, such that their advice does not necessarily benefit their customers.

These conflicts of interest can be exacerbated in the case of pension consultants, as seen in Chile and other jurisdictions. Their recommendations have the capacity to trigger massive portfolio changes among the affiliates who use these services and, therefore, to affect the prices of assets in the portfolios. This dynamic implies that the consultants have information with which to anticipate movements in asset prices and thus earn returns for themselves or a related third party by buying or selling the assets in question.

Given these risks, financial consulting—and in particular pension consulting—is regulated in several high-income countries. For example, in the United Kingdom, financial consulting is regulated independently of whether it involves personalized or general services. In contrast, in the European Union and Australia only personalized services are regulated, although in the latter case pension fund investment consulting is considered personalized.

<sup>1/</sup> History of Law 19,795.

<sup>2/</sup> Personalized pension consulting is regulated by DL 3,500.

<sup>3/</sup> According to the 2015 PISA test, 38% of Chilean students do not have achieved minimum financial literacy standards.

The requirements established in these jurisdictions include the following: minimum qualification and education requirements for consultants; the obligation to provide the customer with clear information on costs or potential conflicts of interests; and the obligation to always act in the customer’s best interests.

### Negative externalities of pension consulting

In the case of countries with individual or mixed capitalization systems, which allow affiliates to choose the type of fund in which their pension savings are invested, bulk pension consulting can affect financial stability.

In Chile, given the size of the pension funds, sudden major changes in portfolios can generate significant pressure on asset prices in the local markets. For example, the pension fund portfolio adjustments in mid-November 2019 (figure V.1) triggered large fluctuations in sovereign rates.

suggestions, and they are regulated jointly by the Superintendence of Pensions (SP) and the Financial Market Commission (FMC). Under this regulation, consultants that provide personalized consulting services must meet specific requirements on qualification, education, guarantees, responsibility, and minimum content for contracts.

However, pension consultants that issue non-personalized recommendations to switch funds are not subject to the joint oversight of the SP and the FMC.

Thus, as a result of the current situation, characterized by the existence of unregulated pension consultants and a multi-fund pension system that allows affiliates to freely adjust their investment portfolios, there are pension consultants with the capacity to affect market prices, causing high exposure to the risks described above.

### Possible regulatory responses

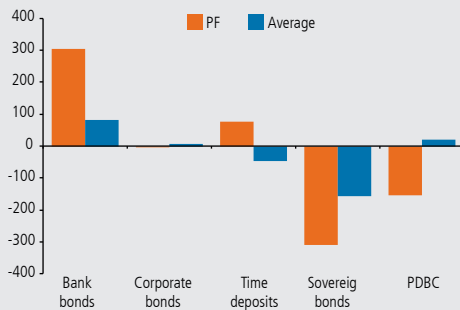
To partially address this situation, a bill was presented in Congress in 2015 to bring bulk pension consulting into the regulatory perimeter of the SP, granting the supervisor the power to establish minimum content for contracts between consultants and their customers, to require consultants to meet minimum qualification and education standards, and so forth. This should help mitigate the conflict-of-interest risks and curb the delivery of false information, which would in turn contribute to protecting affiliates, developing an adequate market of pension consultants, and increasing the transparency and integrity of the local capital market.

However, while this would have an impact in terms of disciplining market conduct, it will not necessarily solve the negative externalities produced by massive movements between pension funds.

As mentioned earlier, the multi-fund pension scheme is designed to let people choose an appropriate risk level for their individual profile. Thus, movements between multi-funds should be driven by changes in the risk profile of the affiliate rather than by a search for short-term returns, and investment recommendations should focus on the specific characteristics of the affiliate.

At the same time, the empirical evidence suggests that the frequent rebalancing of pension fund portfolios has negative effects on long-term yields (Fuentes et al., 2018 and Da et al., 2017). A recent study by the Superintendence of Pensions concludes that over 70% of the affiliates who switched funds

**FIGURE V.1**  
Change in the stock of instruments held by pension funds (billions of pesos, November 2019)



(\*) PF: Change in the stock between 13 and 15 November 2019. Average: Average change in the stock in a two-day period between 23 October and 13 November 2019. Source: Central Bank of Chile, based on data from the CSD.

Another effect of this bulk pension consulting is that, to be able to respond to sudden portfolio reallocations, the pension funds increase their investment in liquid resources—which have relatively lower yields—thereby affecting the returns of all the fund affiliates (Da et al., 2017).

### Regulatory situation in Chile

Pension consultants can make recommendations on different issues related to the pension system, including investment

between March 2014 and January 2020 recorded a poorer performance than they would have had if they had stayed in their original fund or used the default strategy<sup>4/</sup>.

In this line, and considering that a change between funds can be positive for affiliates when it is not done with the objective of earning short-term gains, other jurisdictions have addressed these problems either through the imposition of limits on the frequency with which pension system affiliates can rebalance their portfolios or through restrictions on the type of fund available to the different affiliates (table V.12).

**TABLE V.12**  
Limitations and restrictions on investment funds for select pension systems

Country	Type of fund	Limitation on frequency of changes	Restriction on accessible funds
Chile	Five risk profiles		People over 60 cannot invest in riskier funds
Colombia	Three risk profiles	One change every six months	
Costa Rica	One risk profile per fund manager	It is necessary to change fund managers in order to change risk profiles	
Slovakia	Three risk profiles		
Slovenia	Risk profiles vary with age of affiliate	One change per year	Investment only allowed in risk profiles corresponding to the affiliate's age or older
Estonia	Four risk profiles		
Latvia	Three risk profiles	Two changes per year	
Lithuania	Risk profiles vary with age of affiliate		
Mexico (since Jan-2020)	Risk profiles vary with age of affiliate	No changes allowed	No changes allowed
Mexico (until Jan-2020)	Risk profiles vary with age of affiliate	Change allowed only once every three years	People over 60 are transferred to the most conservative fund
Peru	Four risk profiles		People over 60 cannot invest in risky funds
Poland	Risk profiles vary with age of affiliate	No changes allowed	No changes allowed
Romania	One risk profile per fund manager	It is necessary to change fund managers in order to change risk profiles	

Source: Website of each institution.

## Final reflections

Massive movements between multi-funds, triggered by generic recommendations from pension consultants, can stem from an original motivation driven by conflict of interest and can have a significant impact on financial stability. This requires a policy response that includes the regulation and supervision of financial consultants.

At the same time, it would be advisable to study the experiences of other jurisdictions that have sought to minimize the negative effects of frequent changes between multi-funds, while retaining the positive effects of allowing people to choose a risk level in line with their individual profile. The experience of other jurisdictions is diverse: some have a smaller number of funds than the local system<sup>5/</sup>, while others limit the number of fund movements per year or only allow movements into neighboring funds.

<sup>4/</sup> Technical Note N°6: Evolución y desempeño de los cambios de fondos (Superintendencia of Pensions, 2020).

<sup>5/</sup> One of the recommendations of the Presidential Advisory Committee on the Pension System in 2015 was to reduce the multi-funds from five to three.





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## GLOSSARY

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**Additional provisions:** Bank provisions constituted in excess of the level determined through the application of their portfolio assessment models. The objective is to safeguard the risk of unpredictable economic fluctuations that could affect the general macroeconomic environment or the situation of a specific economic sector.

**Adverse shock:** An exogenous change that has a negative effect on one or more dimensions.

**Application programming interface (API):** A set of rules and specifications followed by software programs to facilitate communication between programs; an interface between different software programs to facilitate their interaction.

**Arrears rate (AR):** Also called portfolio in arrears. A measure of credit risk calculated as the ratio of loan installments that are past due by over 90 days to the total debt. For commercial loans to firms, the delinquent installments are past due by up to three years; for commercial loans to people, up to one year; for consumer loans, up to 180 days.

**Asset adequacy testing (AAT):** A requirement for the constitution of additional technical reserves by insurance companies that have inadequate asset flows relative to their liabilities from the sale of life annuities.

**Assets received in payment:** Assets received by a bank as payment for all or part of a liability in arrears.

**Automatic bill payment:** A service for paying bills automatically through a bank account on a preestablished due date specified by the user and offered by a merchant.

**Banks, large:** Banks with a large market share and wide diversification of operations (loans and derivative and nonderivative financial instruments).

**Banks, medium-sized:** Banks with a smaller market share but equally diversified operations as the large banks.

**Basel III:** A set of new capital and liquidity requirements for the banking industry, developed by the BIS with the aim of substantially strengthening the Basel II capital framework. The objectives include the following: raise the quality, consistency, and transparency of the capital base; strengthen risk hedging; introduce leverage limits; promote a countercyclical capital framework; and introduce a global liquidity standard. These requirements were implemented gradually through 2019.



**BigTech:** Large, established technology companies that are expanding their range of services to include the direct provision of financial services or bank-like products.

**Brexit:** The term used for the result of the referendum establishing that the United Kingdom will withdraw from the European Union, held on 23 June 2016.

**Buy-and-hold investors:** Investors that, due to the nature of their liabilities, pursue a passive investment strategy, in which they keep the instruments in which they invest in their portfolio for a long time, independent of the short-term price fluctuations in the market.

**Capital adequacy ratio (CAR):** A measure of a bank's financial soundness, measured as the ratio of regulatory capital to credit-risk-weighted assets.

**Central counterparty (CCP):** A clearing house that intermediates between counterparties to a bilateral contract, in one or more financial markets, acting as the buyer for all sellers and as the seller for all buyers in a given market, thereby guaranteeing the future execution of open contracts.

**Central government:** Institutions associated with the three branches of the state (executive, legislative, and judicial), as well as Law N° 13,196, the interest earned from recognition bonds and the oil price stabilization fund.

**Central securities depository (CSD):** A financial entity that provides securities accounts and central custody services and plays an important role in guaranteeing securities trade.

**Clearing houses:** Entities that settle financial instrument transactions between participating members, without acting as a central counterparty to the transactions.

**Close-out netting:** The process of early termination and settling, in the event of insolvency of one of the counterparties to multiple OTC derivative contracts under a single master agreement, through which all the contracts are reduced to a single net liability for one of the parties.

**Compendium of Financial Regulations (CFR):** A collection of regulations issued by the CBC, in the exercise of the powers and duties assigned in the Basic Constitutional Act to regulate the financial system and the capital market, and other legal regulations.

**Continuous Linked Settlement System:** A cross-border payment system for the settlement of foreign exchange transactions, which eliminates settlement risk via a payment versus payment (PvP) mechanism.

**Contract for difference (CFD):** An agreement through which the participants exchange the difference in the value of an underlying asset between the contract start and end dates. If the value increases, the seller pays the difference to the buyer. If the value decreases, the buyer pays the difference to the seller. The underlying assets can be currencies, commodity prices, stock indexes, interest rates, etc.

**COVID-19:** Infectious disease caused by the recently discovered novel coronavirus (SARS-CoV-2), which produces similar to the flu and in some cases Severe Acute Respiratory Syndrome. COVID-19 is currently a pandemic that is affecting many countries around the world, causing severe social and economic impacts.

**Credit risk:** The possibility that a bank borrower or counterparty will fail to meet its contractual obligation, whether in interest or capital.

**Credit valuation adjustment (CVA):** An adjustment that takes into account the risk of a deterioration in the credit quality of a counterparty to derivative or securities financing operations.

**CuentaRut:** A financial product offered in Chile by the Banco Estado, consisting in a demand deposit account with a debit card. The requirements for obtaining this product are relatively low: the customer is only required to have a current national identification card and meet the age requirement.

**Currency mismatch:** The difference between foreign currency liabilities and foreign currency assets, less the net position in derivatives (the difference between buy and sell positions in derivatives contracts). An alternative measure is calculated as the difference between external debt and the net derivatives position, scaled by exports minus imports.

**Cyclically adjusted price-earnings (CAPE) ratio:** Measure of the market value of U.S. securities. The ratio between the value of the S&P 500 index and the 10-year average net income after taxes, adjusted for inflation.

**DAX:** Stock index consisting of the 30 largest companies on the Frankfurt Stock Exchange.

**Debt service ratio (DSR):** Measures the payments that households must make to fulfill their consumer and mortgage loan commitments, as a percentage of their disposable income.

**Debt service-to-income (DSTI) ratio:** Measures household or individual indebtedness as a ratio of monthly or annual debt service payments to income.

**Debt-to-income (DTI) ratio:** Measures the debt held by households with different financial and nonfinancial entities as a percentage of their disposable income.

**Default of 90 days or more:** The total amount of a loan that is past due by 90 days or longer, even if only some of the monthly payments are past due.

**Default rate (DR):** The ratio between the number of borrowers with arrears of over 90 days and the total number of borrowers in the corresponding portfolio.

**Delinquent loans:** Loans with arrears of over 90 days from the maturity date. The full amount of the loan is considered delinquent for accounting data, versus the total debt for administrative data.

**Direct investment company:** A foreign direct investment company is a company that resides in one economy and in which an investor in another economy owns, either directly or indirectly, 10% or more of shares (or voting power) if the company is incorporated, or the equivalent if the company is not incorporated.

**Direct investor:** A foreign direct investor is an entity (an institutional unit) that resides in one economy and that has acquired, either directly or indirectly, at least 10% of the shares (voting power) of a corporation (company) residing in another economy, or the equivalent in the case a company that is not incorporated.



**Emerging Market Bond Index (EMBI):** An indicator calculated by JPMorgan that measures the return on government bonds issued by emerging market countries (sovereign bonds), with a specific structure and liquidity.

**Eurostoxx 50:** Stock market index covering the 50 largest companies in the Eurozone.

**Expected shortfall:** A risk measure that estimates the expected value of losses on an investment portfolio for a specified probability and time horizon.

**External formal secondary market (EFSM):** Market in which the financial instruments that are eligible for overseas investment by the pension funds must be traded, together with other investments that are made in international markets, without detriment to the pension funds' trading of securities from foreign issuers on a national formal secondary market, in accordance with the Securities Market Law.

**Factoring:** A financing operation in which accounts receivable are transferred to a financing company (the factor). These accounts are typically part of a firm's current operations.

**Fair value assets:** Fair value is understood as the price that a financial instrument would receive, at a given point in time, in a free and voluntary transaction between duly informed and independent parties. Bank accounting standards establish that certain assets must be reported at fair value, including held-for-trading securities, available-for-sale securities, and derivative contracts.

**Federal funds rate (FFR):** Monetary policy rate of the U.S. Federal Reserve.

**Federal Reserve System (Fed):** The U.S. Federal Reserve is the central bank of the United States.

**Financial market infrastructures:** Institutions that enable the effective operation of financial markets, including payments systems, central counterparties, securities settlement systems, central securities depositories, and trade repositories.

**Financial Stability Board (FSB):** An international organization that monitors and makes recommendations on the global financial system and has the mandate to promote international financial stability.

**Financial Stability Board of Chile (FSB):** The Financial Stability Board of Chile was created in 2011 to oversee the integrity and solidity of the financial system, providing the coordination and information-sharing mechanisms necessary for a preventive management of systemic risk and the resolution of critical situations involving the exercise of the powers and authority of the economic superintendences. The board is made up of the Finance Minister, who acts as chair; the Chairman of the FMC; and the Superintendent of Pensions. In addition, the CBC acts as a permanent advisor on all issues related to its functions.

**Financial stability:** The CBC defines financial stability as the state in which the financial system is able to fulfill its functions normally or without significant disruptions, even in the face of temporary adverse events.

**Foreign private equity assets:** Private equity is an investment in firms whose shares are traded not on the exchange, but rather directly among investors.

**Formal Exchange Market (FEM) operators:** A group of banks and currency exchange houses authorized by the Central Bank of Chile, to which they report all transactions.

**Formal Exchange Market (FEM):** The Central Bank of Chile has the authority to require that certain international exchange operations are carried out in the FEM, which is currently made up of banks and other entities authorized by the CBC.

**Forward guidance:** A communication tool used by central banks to signal their future monetary policy decisions in the medium term, so as to influence the expectations of economic/financial agents.

**Four-party model:** Industrial organization of retail payment markets comprising cardholders, merchants, Issuers, and acquirers, where issuers have contracts with acquirers and cardholders, and acquirers have contracts with issuers (and brands) and merchants.

**FSB Working Group on Operational Continuity (FSBWGOC):** A working group established in December 2016 by Chile's Financial Stability Board (FSB) with the objective of analyzing the operational risks of the payment system and its participants and proposing legal and regulatory changes as needed to mitigate these risks and their impact on the financial system.

**FTSE 100:** Stock market index covering the 100 companies with the highest market capitalization on the London Stock Exchange.

**G20:** An international forum for cooperation and consultation among developed countries and emerging economies, on issues related to global economic stability. Members include the seven most industrialized countries in the world (G7), Russia, the European Union, and a group of other economies, including Brazil, India, China, and South Africa.

**G7:** An international forum for cooperation and consultation among the seven largest industrialized economies in the world: Canada, France, Germany, Italy, Japan, United Kingdom, and United States.

**Greenhouse gases (GHG):** Gases in the atmosphere, either naturally occurring or present as a result of human actions, that absorb and emit radiant energy within the thermal infrared range on the Earth's surface, in the atmosphere, and in the clouds.

**High-quality liquid assets (HQLA):** Assets that can be liquidated in markets in a stress period and, in most cases, can be used in central bank operations. Some HQLA have discounts or haircuts.

**House price index (HPI):** Estimated using a stratification or mixed adjustment method, based on anonymized administrative records from the Chilean IRS on actual transactions on new and used residences at the national level.

**Indebtedness:** Ratio of financial indebtedness, measured as Financial debt/ (Equity plus minority interest).

**Instantaneous payments:** Payments that are transmitted in real time, where the settlement is final and the beneficiary has immediate access to the associated funds in real time (or close to real time). Instantaneous payment systems must be available 24 hours a day, 365 days a year.





**Interest coverage ratio:** A measure of repayment capacity, defined as the ratio of earnings before interest and taxes (EBIT) to financial expense.

**Interest rate risk:** Exposure to losses caused by adverse changes in interest rates, which affect the value of the instruments, contracts and other transactions recorded on the balance sheet.

**International custodian:** Custodian or securities depository with primary residence overseas.

**Intraday liquidity facility:** Financing granted by the Central Bank of Chile to banking entities through the RTGS system. This facility operates daily through the purchase of financial instruments with a repurchase agreement. The terms and conditions of these operations are contained in the Central Bank's financial regulations.

**IPSA (Índice de Precio Selectivo de Acciones):** Selective Stock Price Index covering the 40 largest companies on the Santiago Stock Exchange.

**Lender of last resort:** Under an instability or crisis scenario, the CBC is authorized to act as the lender of last resort (BCA, Article 36), providing credit to banks that, while solvent, are experiencing a temporary liquidity shortage. This type of loan can have a duration of up to 90 days, after which a loan extension would require the prior favorable assessment of the FMC and a unanimous vote by the CBC Board. This liquidity tool is not intended to be used to rescue troubled banks, but rather to help contain risks that would otherwise be propagated to the system and affect the general population.

**Leverage:** Measure of the banks' debt level over equity; used as a complementary tool to capital adequacy requirements.

**Liquidity coverage ratio (LCR):** A measure of bank liquidity designed to measure the short-term liquidity of banks under a systemic stress scenario. Defined as the ratio of high-quality liquid assets on the bank's balance sheet to its net stressed cash outflows in a 30-day window.

**Liquidity credit line (LCL):** Credit line activated by the CBC, with a cap equal to the average cash reserves in national currency of each bank. Access to and use of the LCL is subject to the same conditions of increased lending established for the Facility of Credit Conditional on Lending Increase (FCIC), with the difference that the cap is equal to a given bank's reserves. The LCL will be available for a period of six months, with a maturity of up to two years.

**Liquidity ratio:** Official reserves in foreign currency over short-term liability financing needs in foreign currency.

**Loan-to-value (LTV) ratio:** The ratio of a given loan to the value of the underlying asset purchased, usually a home.

**Loan-to-value (LTV) ratio, aggregate:** The ratio of a given loan (usually a mortgage) to the appraised or market value of the underlying asset. At the bank or system level, it is measured over the base of loan flows and is calculated as the weighted average (by loan amount) of the LTV of individual loans granted in a given period.

**Loans in default:** Debtors and their loans for which there is little chance of recovery, due to a weak or null capacity to pay. This portfolio includes debtors who must undergo a forced debt restructuring, as well as any debtor with arrears of 90 days or more on the payment of interest or principal on a loan.

**Market risk:** The potential loss in value of the net positions held by a financial entity, as the result of adverse changes in market prices.

**Master agreements for derivative contracts:** Standardized contracts that allow the counterparties to establish the general terms and conditions for derivative transactions, establishing standard protocols, for example for defining default and transaction settlement procedures.

**MF1:** Type 1 mutual funds, which invest in short-term debt instruments with a duration of 90 days or less. This mutual fund invests in short-term debt securities and medium- and long-term debt securities. The duration of a Type 1 fund's investment portfolio must be 90 days or less. Shares are invested in short-, medium-, and long-term debt instruments.

**MF2:** Type 2 mutual funds, which invest in short-term debt instruments with a duration of 365 days or less. This mutual fund invests in short-term debt securities and medium- and long-term debt securities. The duration of a Type 2 fund's investment portfolio must be 365 days or less. Shares are invested in short-, medium-, and long-term debt instruments.

**MF3:** Type 3 mutual funds, which invest in medium- and long-term debt instruments, with a minimum duration of over 365 days. This mutual fund invests in short-term debt securities and medium- and long-term debt securities. A minimum and maximum duration are defined for the investment portfolio. This information must be contained in the definition adopted by the fund, and it must be longer than 365 days. Shares are invested in short-, medium-, and long-term debt instruments.

**MF6:** Type 6 mutual funds, which can be freely invested. These funds are not classified under the definitions of types 1 through 5. The investment policy is unrestricted, but while they are not subject to regulated guidelines, they must establish internal regulations.

**Mitigators:** Elements within the financial system, or conditions among the agents that participate therein, that tend to reduce the impacts of a shock. For example, a regulatory framework and market practices that ensure that the banking system has healthy capital ratios, adequate provisions, appropriate liquidity ratios, and match levels that reduce exposure to possible currency or rate risks.

**Multi-funds:** A system in which pension fund managers offer a range of five different pension fund portfolios, which differ in terms of the share of the portfolio that is invested in variable-income securities, implying different levels of risk and returns.

**Net international investment position (NIIP):** The difference between the economy's external assets and liabilities, at the end of a given period.

**Net stable funding ratio (NSFR):** Defined as the ratio of the amount of available stable funding to the amount of required stable funding. This ratio must be, at a minimum, 100% at all times. Available stable funding is defined as the share of own and other resources that can be expected to be reliable over the horizon considered by the NSFR (one year). The amount of required stable funding for a given institution is a function of its liquidity characteristics and the residual maturities of its different assets, as well as its off-balance positions.



**Nonbank lenders (NBLs):** Nonbank entities that provide consumer, mortgage, and commercial loans, including retailers, family compensation funds (CCAF), savings and loan associations (S&Ls), automobile finance companies, life insurance companies, and leasing and factoring companies.

**Nonperforming loan (NPL) ratio:** A measure of credit risk, calculated as the ratio between nonperforming loans and total loans.

**Nonperforming loans:** Bank loans, or a fraction thereof, that are past due by up to 90 days from the maturity date. On loans with fixed monthly payments, only the amount of the past-due payment is considered, although the full amount of the loan could be transferred to the nonperforming portfolio if acceleration clauses are enforced.

**Normal loans:** Loans to debtors with the payment capacity to meet their obligations and commitments, for whom there is no sign that this condition will change, based on an evaluation of their economic-financial situation.

**Office class (A+, A, B, C):** Classification used to categorize offices according to their characteristics, from high to low. The characteristics considered are location, access, floor plan size, absence of pillars, ceiling height, access control, closed-circuit TV, security equipment, fire detectors and extinguishers, air conditioning, elevator speed, structured cabling, and whether the building has Leadership in Energy and Environmental Design (LEED) certification.

**Open Market Operations System (SOMA in Spanish):** Trading platform through which the Central Bank of Chile (CBC) interacts with authorized financial institutions, to implement monetary operations to increase or decrease bank reserves.

**Operational risk:** Exposure to losses deriving from deficient internal processes, personnel and systems or external events, including legal risks but excluding strategic and headline (or reputational) risk.

**Output floor:** Percent of risk-weighted assets calculated using a standardized approach, which establishes the floor of RWAs calculated for regulatory purposes.

**Over-the-counter (OTC):** A term used to describe the trading of financial instruments directly between two parties, without going through the organized securities exchanges.

**Pension fund investment regime:** Regime regulating specific investment issues for the pension funds, which by nature require more flexibility and detail, and setting investment limits that promote adequate fund diversification. The regime is elaborated by the Superintendence of Pensions and approved by the Technical Investment Board and the Ministry of Finance.

**Prepaid debit cards:** A physical, electronic, or computer device that has a unique identification system, tied to a fund provision account opened by the card issuer for the purpose of crediting sums of money deposited therein by the purchaser; and whose utilization as a payment instrument amounts to a financial liability for the issuer vis-à-vis the public or affiliated commercial establishments or services.

**Principles of Financial Market Infrastructures (PFMIs):** 24 principles developed by the Committee on Payments and Market Infrastructures (CPMI) and IOSCO, aimed at systematizing and diffusing international best practices and legal and regulatory standards applicable to financial market infrastructures.

**Prior assessment report:** The Chilean regulatory and supervisory framework comprises systems that require institutions to share their analysis and opinions. Under these mechanisms, for specific legally defined cases, the agency that is empowered to issue a regulation is required to first solicit the prior assessment of another agency. These technical, objective opinions are written from a macrofinancial perspective and are known as prior assessment reports or prior favorable assessments.

**QR code:** An image that contains a code communicating specific information that can be read using an electronic device, typically a cellular phone with a camera.

**Regulatory capital:** Tier 1 (core) capital plus Tier 2 (supplementary) capital. The latter mainly includes subordinated bonds and additional provisions.

**Residual short-term external debt (RSTED):** External debt coming due within 12 months of a given date (that is, short-term external debt plus the current portion of long-term external debt).

**Return on assets (ROA):** Measured as the ratio of earnings after taxes, amortizations, and extraordinary items to total assets.

**Return on equity (ROE):** Measured as the ratio of earnings after taxes, amortizations, and extraordinary items to shareholders' equity plus minority interest.

**Risk appetite:** The quantity and type of risk that economic agents are willing to pursue, retain, or assume.

**Risk-based capital:** The higher capital level derived from a comparison of the capital necessary for maintaining debt ratios, the solvency margin, and the minimum capital required by Law.

**Risk-weighted assets (RWA):** Bank assets weighted on the basis of five risk categories, set forth in Article 67 of the General Banking Law. The ratio of regulatory capital to risk-weighted assets serves as a measure of capital adequacy (known as the Basel ratio), which is internationally accepted as a measure of bank solvency.

**S&P 500:** Stock index based on the market capitalization of the 500 largest companies that are publicly traded in the United States.

**Secondary market:** A market where financial assets are traded after issue. Every transaction implies a purchase/sale between investors.

**Securities depository:** Special-purpose corporation whose sole objective is to receive publicly offered securities and facilitate their transfer.

**Shadow banking:** Financial intermediation conducted outside the banking system.



**Small Business Guarantee Fund:** Fondo de Garantía para Pequeños Empresarios (FOGAPE). A state fund that guarantees a specified percentage of the principal on loans, leasing operations, and other financing mechanisms granted financial institutions to eligible beneficiaries.

**Spread:** The excess yield of a given financial asset relative to the risk-free return, charged by investors for tolerating an additional risk level.

**Standing deposit facility:** Overnight liquidity absorption facility, where the CBC receives deposits in pesos, which earn interest after one day.

**Standing liquidity facility:** Overnight liquidity window, where the Central Bank of Chile purchases eligible financial assets in exchange for an amount in pesos, equivalent to the present value of the assets discounted at the current market rate for the day of the operation, less haircuts and margins. All operations include a repurchase agreement to buy back the instrument on the next bank business day. The Central Bank charges interest on the amount initially loaned in pesos.

**SWIFT:** The Society for Worldwide Interbank Financial Telecommunication is an international cooperative created and owned by banks, which operates a network that facilitates the exchange of payment orders and other financial messages, called FIN messages, between financial institutions (including brokers and securities firms) throughout the world. A SWIFT payment message is an instruction to transfer funds. The resulting exchange of funds (settlement) is effected in a payment system or by a correspondent bank.

**Systemic risk:** The risk that financial instability becomes so widespread that it affects the functioning of the entire financial system, to the point that economic growth and social well-being suffer significantly.

**Targeted longer-term refinancing operations (TLTRO):** Loans by the Central European Central Bank to European banks, with advantageous terms. Designed to refinance banks and reduce their dependence on the ECB.

**Term spread:** The excess yield charged by investors in exchange for holding a long-term bond to maturity, rather than in selling and reinvesting in a bond with a shorter-term series in the same time period.

**Tier 1 capital:** Paid-in capital plus bank reserves and period earnings, net of provisions for the distribution of dividends.

**Trade repository:** An entity that maintains a centralized electronic registry (database) of financial transactions.

**Traditional assets:** Fixed- and variable-income financial instruments, such as bonds and stocks, respectively.

**Treasury bill (T-bill):** A fixed-income security issued by the U.S. Department of the Treasury, with a maturity of up to one year.

**Treasury bond (T-bond):** A fixed-income security issued by the U.S. Department of the Treasury, with a maturity of 30 years. T-bonds were reintroduced in February 2006.

**Treasury note (T-note):** A fixed-income security issued by the U.S. Department of the Treasury, with a maturity of 2, 3, 5, or 10 years.

**TYVIX:** Implied volatility index a ten-year U.S. Treasury bonds.

**Unemployment Solidarity Fund:** Fondo de Cesantía Solidario (FCS). A common fund that provides unemployment benefits for eligible beneficiaries, which is financed through employer and Treasury contributions.

**Vacancy rate:** Measure of availability in the real estate market, approximated as the ratio of the square meters available for rent or sale, over the total current stock.

**Value at risk:** A risk measure that estimates the losses on an investment portfolio for a specified probability and time horizon.

**Virtual currencies:** Also known as digital currencies. A virtual or digital (i.e., not physical) token that has some, but not all, the characteristics of a currency and can also have the characteristics of a commodity or other asset. Called cryptocurrencies when their issue and transaction validation require cryptographic mechanisms.

**VIX:** Chicago Board Options Exchange (CBOE) stock volatility index, based on S&P 500 index options contracts (at one month).

**Vulnerabilities:** conditions within the financial system, or among the agents that participate therein, that weaken their capacity to face a shock or that could magnify its effects.

**Yield curve:** The ratio of the yield or return of fixed-income securities to their maturity.



## ABBREVIATIONS

- AAMHE:** Endorsable mortgage loan managers.
- AAT:** Asset adequacy testing.
- ABN:** Notification of deposit in an overseas correspondent bank
- Achef:** Association of Chilean Factoring Firms.
- AFC:** Administradora de Fondos de Cesantía (Unemployment fund manager).
- AM:** Acquirer's margin.
- APV:** Voluntary pension savings.
- APVC:** Collective voluntary pension savings.
- AR:** Arrears ratio.
- BCA:** Basic Constitutional Act of the Central Bank of Chile.
- BCBS:** Basel Committee on Banking Supervision
- BCBS:** Basel Committee on Banking Supervision.
- BCP:** Central Bank bonds denominated in Chilean pesos.
- BCS:** Bolsa de Comercio de Santiago (Santiago Stock Exchange).
- BCU:** Central Bank bonds denominated in UFs.
- BdE:** Bank of Spain.
- BHIF:** Banco Hipotecario Internacional Financiero.
- BI:** Business indicator.
- BIC:** Business indicator component.
- BIS:** Bank for International Settlements.
- BLS:** Bank Lending Survey.
- BOE:** Bank of England.
- bp:** Basis points.
- CAE:** Crédito con Aval del Estado (Government-backed student loans).
- CAPE:** Cyclically adjusted price-earnings ratio.
- CAR:** Capital adequacy ratio.
- CASEN:** Socioeconomic Characterization Survey.
- CAT:** Cencosud Administradora de Tarjetas S.A. (a credit card company).
- CBC:** Central Bank of Chile.
- CBR:** Conservador de Bienes Raíces (Real Estate Registrar).
- CC:** Retailers.
- CCAF:** Cajas de compensación y Asignación Familiar (Family Compensation Funds).
- CChC:** Cámara Chilena de la Construcción (Chilean Chamber of Construction).
- CCLV:** Cámaras de Compensación y Liquidación de Valores (Securities clearing houses).
- CCP:** Central counterparty.
- CCyB:** Countercyclical capital buffer.

**CEMBI:** Corporate Emerging Market Bond Index.  
**CF:** Conversion fee.  
**CFER:** Compendium of Foreign Exchange Regulations.  
**CFR:** Compendium of financial Regulations.  
**CGFS:** Committee on the Global Financial System.  
**CLS:** Continuous Linked Settlement.  
**COE:** Critical operational events.  
**ComDer:** ComDer Contraparte Central S.A..  
**COMEX:** Foreign trade.  
**CORFO:** Corporación de Fomento de la Producción (Production Promotion Corporation).  
**CPMI:** Committee on Payments and Market Infrastructures.  
**CSD:** Central Securities Depository.  
**D/G-SIFIs:** Domestic/Global systemically important financial institutions.  
**DAX:** Deutscher Aktienindex.  
**DFA:** Dodd-Frank Act.  
**DIPRES:** Dirección de Presupuestos (Budget Office).  
**DLT:** Distributed-ledger technology.  
**DPF:** Time deposit.  
**DR:** Default rate.  
**DSGE:** Dynamic stochastic general equilibrium model.  
**DSR:** Debt service ratio (to disposable income).  
**DSTI:** Debt service-to-income ratio  
**DTI:** Debt-to-disposable income ratio.  
**DTI:** Debt-to-income ratio  
**DvP:** Delivery versus payment.  
**DXY:** Dollar index.  
**EBA:** European Banking Authority.  
**EBIT:** Earnings before interest and taxes.  
**ECB:** European Central Bank.  
**EFFR:** Effective federal funds rate.  
**EMBI:** Emerging Market Bond Index.  
**EME:** Emerging market economy.  
**EMIR:** European Market Infrastructure Regulation.  
**ENF:** Loans to microbusinesses and SMEs over Total commercial loans.  
**EPFR:** Emerging Portfolio Fund Research.  
**EPU:** Economic Policy Uncertainty Index.  
**ESG:** Environmental, social and governance criteria.  
**ESRB:** European Systemic Risk Board.  
**EZ:** Eurozone.  
**FCIC:** Facility of Credit Conditional on Lending Increase  
**FCS:** Fondo de Cesantía Solidario (Unemployment Solidarity Fund).  
**FDI:** Foreign direct investment.





**FDIC:** U.S. Federal Deposit Insurance Corporation.  
**Fed:** U.S. Federal Reserve System.  
**FEM:** Formal Exchange Market.  
**FFR:** Federal funds rate.  
**FI:** Fixed income.  
**FL&A:** Factoring, leasing, and automobile loans.  
**FLESB:** Forward-Looking Exercise on Spanish Banks  
**FLI:** Intraday liquidity facility.  
**FMC:** Chilean Financial Market Commission.  
**FMI:** Financial market infrastructures.  
**FOGAIN:** Fondo de Garantía de Inversión (Investment Guarantee Fund).  
**FOGAPE:** Fondo de Garantía para el Pequeño Empresario (Small Business Guarantee Fund).  
**FOMC:** Federal Open Market Committee.  
**FONASA:** Fondo Nacional de Salud (National Health Fund).  
**FPC:** Financial Policy Committee.  
**FSB:** Financial Stability Board of Chile.  
**FSB:** Financial Stability Board.  
**FSBWGOC:** FSB Working Group on Operational Continuity.  
**FSI:** Financial Soundness Indicators.  
**FSR:** Financial Stability Report.  
**FTSE 100:** Financial Times Stock Exchange 100.  
**FX:** Foreign Exchange.  
**G-SIBs:** Global systemically important banks.  
**G20:** Group of Twenty.  
**G7:** Group of Seven.  
**GBI:** Government Bond Index.  
**GBL:** General Banking Law.  
**GDP:** Gross domestic product.  
**GFC:** Global financial crisis.  
**GFSR:** Global Financial Stability Report.  
**GHG:** Greenhouse gases.  
**HFS:** Household Financial Survey.  
**HLA:** Higher loss absorbency.  
**HPI:** House price index.  
**HQLA:** High-quality liquid assets.  
**IAS:** International Accounting Standards.  
**IAS:** International Accounting Standards.  
**ICO:** Initial Coin Offering.  
**IDIS:** Integrated Derivatives Information System.  
**IFRS:** International Financial Reporting Standards.  
**IFRS:** International Financial Reporting Standards.

**ILM:** Internal loss multiplier.

**IMF:** International Monetary Fund.

**INC:** Annualized stock of loans.

**INE:** Instituto Nacional de Estadísticas (National Statistics Institute).

**IOSCO:** International Organization of Securities Commissions.

**IPoM:** Monetary Policy Report.

**IPSA:** Índice de Precio Selectivo de Acciones (Selective Stock Price Index).

**IRS:** Chilean Internal Revenue Service.

**ITL:** Income Tax Law.

**Latam:** Latin America.

**LCL:** Liquidit Credit Line.

**LCR:** Liquidity Coverage Ratio.

**LIC:** Life insurance companies.

**LTV:** Loan-to-value ratio.

**LVPS:** Large-value payment systems in national currency.

**LVPS:** Large-value payment systems.

**LVPSCP:** Large-Value Payment System Contingency Protocol.

**MC:** Markets Committee.

**MD:** Merchant Discount.

**MF:** Mutual funds.

**MiFID:** Markets in Financial Instruments Directive.

**MiFIR:** Markets in Financial Instruments Regulation.

**MINDHA:** Ministerio de Hacienda (Ministry of Finance).

**MoU:** Memorandum of Understanding

**MPR:** Monetary policy rate.

**MR:** Metropolitan Region (Greater Santiago).

**MSCI:** Morgan Stanley Capital International.

**NAFTA:** North American Free Trade Agreement.

**NBFI:** Nonbank financial intermediation.

**NBL:** Nonbank lenders.

**NCG:** Norma de Carácter General (General Regulation) of the Superintendence of Securities and Insurance.

**NGFS:** Central Banks and Supervisors Network for Greening the Financial System.

**NIIP:** Net international investment position.

**NMDaR:** Non-mortgage debt-at-risk.

**NMNBF:** Narrow measure of NBFI.

**NPL:** Nonperforming loan ratio.

**NR:** Nonresident.

**NSFR:** Net stable funding ratio.

**NSO:** Net stressed outflows.

**OCC:** Office of the Comptroller of the Currency.

**OECD:** Organization for Economic Cooperation and Development.



**OPB:** Operating procedures for requesting fund transfers.  
**OR:** Operational risk.  
**OTC:** Over the counter.  
**PAC:** Automatic bill payment.  
**PF:** Pension funds.  
**PFM:** Pension fund managers.  
**PFMI:** Principles for Financial Market Infrastructures.  
**pp:** Percentage points.  
**PRC:** Prudential Regulation Committee.  
**PS:** Payment systems.  
**PVP:** Payment versus payment.  
**QE:** Quantitative Easing.  
**RAN:** Recopilación actualizada de normas (SBIF banking regulations).  
**RBA:** Reserve Bank of Australia.  
**RBS:** Risk-based supervision.  
**RC:** Regulatory capital.  
**ROA:** Return on assets.  
**ROE:** Return on equity.  
**RTGS:** Real Time Gross Settlement System.  
**RUT:** Chilean tax identification number.  
**RWA:** Risk-weighted assets.  
**S&Ls:** Savings and loan associations.  
**S&P 500:** Standard and Poor's 500 Index.  
**SBIF:** Superintendencia of Banks and Financial Institutions.  
**SCH:** Securities clearing houses  
**SD:** Subordinated debt.  
**SEC:** U.S. Securities and Exchange Commission.  
**SELIC:** Overnight interest rate of the Bank of Brazil.  
**SINACOFI:** Sistema Nacional de Comunicación Financiera (National Financial Communication System).  
**SOMA:** Sistema de Operaciones de Mercado Abierto (Open Market Operation System).  
**SP:** Superintendencia of Pensions.  
**SRP:** Self-regulation plan.  
**SUSESO:** Superintendencia de Seguridad Social (Superintendencia of Social Security).  
**SWIFT:** Society for Worldwide Interbank Financial Telecommunication.  
**T-Bill:** U.S. Treasury bill.  
**T-Bond:** U.S. Treasury bond.  
**T-Note:** U.S. Treasury note.  
**TBTF:** Too big to fail.  
**TCFD:** Task Force for Climate-Related Financial Disclosures.  
**TDLC:** Tribunal de la Libre Competencia (Competition Tribunal).

**TITRP:** Technical interest rate for scheduled withdrawals and temporary annuities.

**TLTRO:** Targeted Longer-Term Refinancing Operations.

**TR:** Trade repositories.

**TT:** Transbank.

**TYVIX:** Treasury Note Volatility Index.

**UF:** Unidad de Fomento, an inflation-indexed unit of account.

**UK:** United Kingdom.

**USA:** United States of America.

**VAR:** Value at Risk.

**VAT:** Alue-added tax.

**VI:** Variable income.

**VIX:** Chicago Board Options Exchange Volatility Index.

**VXY:** Chicago Board Options Exchange DXY Volatility Index.

**WEO:** World Economic Outlook.

**WTO:** World Trade Organization.

Alejandro Zurbuchen S.

**LEGAL REPRESENTATIVE**

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ISSN: 0716-2219  
Santiago, Chile  
Agustinas 1180, Santiago, Chile  
P.O Box 967, Santiago, Chile  
Tel.: 56-22670 2000  
[www.bcentral.cl](http://www.bcentral.cl)  
[CBC@bcentral.cl](mailto:CBC@bcentral.cl)

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