



CHILE

FINANCIAL SECTOR ASSESSMENT PROGRAM

TECHNICAL NOTE ON SYSTEMIC LIQUIDITY

September 2022

This Technical Note on Systemic Liquidity was prepared by a staff team of the International Monetary Fund in the context of the Financial Sector Assessment Program in Chile. It is based on the information available at the time it was completed on August 24, 2022.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
PO Box 92780 • Washington, D.C. 20090
Telephone: (202) 623-7430 • Fax: (202) 623-7201
E-mail: publications@imf.org Web: <http://www.imf.org>
Price: \$18.00 per printed copy

International Monetary Fund
Washington, D.C.



CHILE

FINANCIAL SECTOR ASSESSMENT PROGRAM

August 24, 2022

TECHNICAL NOTE

SYSTEMIC LIQUIDITY

Prepared By
**Monetary and Capital Markets
Department**

This Technical Note was prepared by IMF staff in the context of the Financial Sector Assessment Program that held virtual meetings with authorities in Chile in March/April 2021. It contains technical analysis and detailed information underpinning the FSAP's findings and recommendations. Further information on the FSAP can be found at <http://www.imf.org/external/np/fsap/fssa.aspx>

CONTENTS

Glossary	3
EXECUTIVE SUMMARY	4
INTRODUCTION	7
I. LIQUIDITY RISKS AND MARKET STRUCTURE	7
A. A Highly Interconnected Financial System	7
B. An Incomplete Money Market	9
C. Towards an Interbank Repo Market	12
II. CENTRAL BANK OPERATIONAL FRAMEWORK FOR SYSTEMIC LIQUIDITY SHOCKS	14
A. Liquidity Management Framework	14
B. Central Bank Balance Sheet Expansion in Times of Crisis	15
C. Collateral Framework	18
III. EMERGENCY LIQUIDITY ASSISTANCE	24
A. The Case for an Effective Lender-of-Last-Resort Framework	24
B. Legal Framework and Essential Conditions for ELA	26
C. Operationalization	29
TABLE	
1. Table of Recommendations	6
FIGURES	
1. Schematic Representation of a System-wide Liquidity Shock in a Banking System without Secured Money Market	11
2. Schematic Representation of a System-wide Liquidity Shock in a Banking System with Secured Money Market	11
3. Schematic Representation of a System-wide Liquidity Shock in a Banking System with a Complete Safety Nets Framework (Secured Money Market and LOLR)	25
4. Mutually Reinforcing Effects of the Three Flaws in the Chilean Liquidity Framework	26

Glossary

BCCh	Banco Central de Chile (Central Bank of Chile)
BCP	Central Bank Bonds denominated in Chilean pesos
BCU	Central Bank Bonds denominated in UFs
CMF	Comision para el Mercado Financiero (Financial Markets Commission)
CCP	Central Counterparty
CCVP	Special cash purchase / forward sale program
CEF	Consejo de Estabilidad Financiera (Financial Stability Council)
CLP	Chilean Peso
CSD	Central Securities Depository
DCV	Depósito Central de Valores (Central Securities Depository)
ECB	European Central Bank
ELA	Emergency Liquidity Assistance
FCIC	Conditional Financing Facility for Increased Loans
FOGAPE	Fondo de Garantía para el Pequeño Empresario (Small Business Guarantee Fund)
FPD	Standing Deposit Facility
FPL	Standing Lending Facility
FSAP	Financial Stability Assessment Program
IMF	International Monetary Fund
ICSD	International Central Securities Depository
LOLR	Lender of Last Resort
MOU	Memorandum of Understanding
MCM	Monetary and Capital Markets Department
MoF	Ministry of Finance
MPR	Monetary Policy Rate
NDF	Non-Deliverable Forward
PDBC	Central Bank of Chile notes
SOMA	Open Market Operations System
SP	Superintendency of Pensions
TA	Technical Assistance
UF	Unidad de Fomento, an inflation-indexed unit of account
USD	United States Dollar

EXECUTIVE SUMMARY

Chile is characterized by a highly interconnected financial system, which presents risks and opportunities for the development of liquidity markets. On the one hand, the large domestic non-bank financial sector (pension funds, mutual funds, insurers) creates a large investor base for domestic debt securities, fostering the development of these markets. On the other hand, the non-bank financial sector is vulnerable to shocks which may have significant spillovers to funding markets and to the banking system.

While the interbank money market is active, it is incomplete and sensitive to systemic liquidity shocks, given the absence of a secured money market. Because the interbank money market operates only on an unsecured basis, it is very vulnerable to confidence shocks. As a result, the trigger threshold for central bank system-wide interventions is rather low. While active domestic debt markets offer opportunities for the development of a secured interbank market, incentives for private initiatives towards that goal appear insufficient, as banks can rely on the central bank to address liquidity shocks.

In the context of the social turmoil in 2019 and the COVID-19 pandemic in 2020–2021, the Banco Central de Chile (BCCh) has introduced effective liquidity measures, though at the cost of excessive risk-taking. Unconventional measures to mitigate liquidity risks and to reduce banks' funding costs include targeted long-term refinancing operations, a significant expansion of eligible collateral (to bank bonds, corporate bonds, and credit claims), cash purchases/forward sales of bank instruments from non-bank financial institutions, foreign exchange swaps, and relaxations of regulatory liquidity requirements. While those measures have been largely effective in dealing with these two extraordinary macroeconomic shocks, they have caused a massive increase in the central bank's balance sheet and an excessive risk-taking.

Beyond the pandemic, the BCCh will need a more conservative collateral framework. While a return to the very narrow pre-crisis collateral framework would not seem justified, the BCCh's future steady-state collateral framework should incorporate more prudent haircuts and other risk control measures. Risk equivalence should be the guiding principle for the calibration of risk control measures, which should lead to a greater differentiation across eligible assets based on the identified risks. Haircuts should be conservative enough to protect the central bank against losses from liquidation of assets following a counterparty default. The acceptance of bank bonds as collateral should be limited to crisis times, with strict limits. A move from the current earmarking system to a pooling system, which would require some legal adjustments, would simplify collateral management.

An effective Emergency Liquidity Assistance (ELA) framework would help the BCCh to use its system-wide liquidity measures more parsimoniously. The ELA framework will address residual idiosyncratic liquidity stressed situations, thereby facilitating the gradual unwinding from system-wide unconventional measures.

The finalization and implementation of the ELA framework will require a close cooperation between the central bank and the banking supervisor. That cooperation should be formalized in a Memorandum of Understanding between the BCCh and the Financial Markets Commission (CMF). Significant technical work will be required to operationalize the ELA framework, including the preparation of an ELA Regulation, ELA internal procedures, an ELA Master Agreement and a funding plan template.

Table 1. Chile: Table of Recommendations

Recommendations	Authority	Timeline*
Interbank repo market		
Set up a working group with market participants on the development of the interbank repo market, and consider expanding the discussion with non-bank financial institutions	BCCh/CMF	Near-term
Define a strategy for repo market development, including improving infrastructures and setting appropriate incentives	BCCh/CMF	Medium-term
Organize interbank repo tests in real conditions	BCCh/CMF	Medium-term
Collateral framework		
Define a more conservative haircut schedule, based on risk equivalence	BCCh	Near-term
Define additional risk control measures for bank bonds collateral	BCCh	Near-term
Define a steady-state collateral framework, with eligibility extended to all marketable assets meeting minimum credit requirements, and excluding bank bonds	BCCh	Near-term
Reflect the recommendation against holding bank bonds in purchase program implementation and begin unwinding the current holdings	BCCh	Medium-term
Move from collateral earmarking to pooling	BCCh/MoF	Medium-term
Publish the revised collateral framework	BCCh	Medium-term
Regularly assess eligible collateral encumbrance and availability	BCCh	Medium-term
Reinforce the role of the risk management function in the design and implementation of monetary policy measures	BCCh	Medium-term
Emergency Liquidity Assistance		
Prepare an ELA Regulation, including all requirements for access to ELA, the ELA interest rate, and the maximum maturity of an ELA loans (2 weeks)	BCCh	Near-term
Prepare ELA procedures, including a priority order and risk control measures for ELA collateral	BCCh/CMF	Near-term
Finalize the MoU between the central bank and the banking supervisor	BCCh/CMF	Near-term
Prepare an MoU between the central bank and the Ministry of Finance	BCCh/MoF	Medium-term
Prepare an ELA Master Agreement	BCCh/CMF	Near-term
Prepare a funding plan template	BCCh/CMF	Near-term
Operationalize the solvency and viability assessments	CMF	Near-term
Prepare for ELA accountability and communication	BCCh/CMF	Near-term
Prepare for ELA through simulations	BCCh/CMF	Near-term
* Near-term: within 12 months; Medium-term: within 1 to 2 years.		

INTRODUCTION

1. **This technical note is focused on systemic liquidity issues and safety nets in Chile.** The review evaluated the Banco Central de Chile's (BCCh) operational framework and its ability to address systemic and idiosyncratic liquidity shocks. The review also assessed the functioning and resilience of key funding markets in Chile.
2. **This Technical Note is organized as follows.** Section I assesses the main liquidity risks and the functioning and resilience of liquidity markets. Section II covers the systemic liquidity risk management framework, with a focus on the BCCh's monetary policy operational and collateral frameworks. Section III is focused on the lender-of-last-resort framework.

LIQUIDITY RISKS AND MARKET STRUCTURE

A. A Highly Interconnected Financial System

3. **Chile's financial system is well developed, offering the potential for an active money market.** Pension funds, mutual funds and life insurance companies offer a wide range of products and services to Chilean savers and are important providers of funds for the domestic banking system. The existence of this significant non-bank financial industry provides domestic banks with a large, diversified, investor base for bank bonds, time deposits and other bank-issued products.
4. **Pension funds are the largest buyers of bank bonds, while mutual funds are the main buyers of time deposits.** As of [September/October 2020], pension funds held about 46 percent of outstanding bank bonds and mutual fund held about 51 percent of time deposits. Banks and life insurance companies are other large categories of investors for those products.
5. **While the diversity of funding sources should help protect the banking system against liquidity shocks, it may also occasionally transmit shocks from the non-bank financial sphere.** On aggregate, the Chilean banking system benefits from well-diversified funding sources, with retail deposits accounting for about half all total liabilities, while the other half comprises mutual funds, pension funds and bank deposits, locally issued and (to a much lesser extent) externally issued bonds, external loans, and, since 2020, sizeable central bank refinancing. While that diversity of funding sources offers Chilean banks a natural protection against local shocks affecting a specific category of depositors or creditors, significant counterparty concentration in certain product categories (such as bank bonds or time deposits) may also expose the banking system to significant spillovers from shocks affecting the non-bank financial sector. Furthermore, medium-sized banks are more vulnerable than the larger ones to liquidity risks given their exposure to short-term financing from mutual funds.
6. **The social turmoil in Chile in 2019 and the COVID-19 pandemic have caused large portfolio shifts in the non-bank financial sector.** Heightened risk aversion led to several waves of redemptions from mutual funds (in particular longer-term debt funds and equity funds), in addition

to the three extraordinary pension funds withdrawals, and to significant portfolio shifts for mutual funds, pension, and insurance companies, characterized by a shortening of maturities and an increased dollarization (perceived as a flight-to-quality). Securities denominated in U.S. dollar may be perceived as more liquid than domestic securities denominated in Chilean peso¹; as a result, non-bank financial institutions tend to sell domestic bank bonds (more liquid than domestic corporate bonds) and increase their holdings of foreign securities when they face heightened withdrawal risks. Within the pension funds and mutual funds industries, preference for liquidity led to withdrawals from longer-term fixed-income funds and flows into money market funds.

7. Those portfolio shifts in the non-bank financial sector had major effects on the liquidity of the bank sector. On the one hand, massive selling pressure on domestic bank bonds led to a surge in bank bond spreads—resulting in several interventions by the central bank to prevent a major rise in bank funding costs, which would have reduced the effectiveness of monetary policy accommodation and aggravated the economic crisis. On the other hand, a significant share of the funds withdrawn from pension funds was directed by savers to the banking sector, mostly in the form of term deposits.

8. Shocks affecting the non-bank financial sector have very heterogeneous effects on Chilean banks, due to significant differences in funding structures. Medium-sized banks are generally more reliant on wholesale funding than the largest banks, which can rely on a larger basis of stable retail deposits. Pension funds are major investors in bank bonds, so massive asset reallocations and withdrawals from pension funds, such as the ones observed in 2019–2020, have a disproportionate impact on the medium-sized banks that rely more heavily on bond issuance. Shocks affecting mutual funds impact disproportionately banks that rely significantly on term deposits, in particular medium-sized banks. Those effects on bank liquidity are magnified when sales of bank bonds by pension funds and mutual funds are coordinated, which was the case during the most stressed phases in 2019–2020.

9. The market liquidity in domestic private debt securities is limited, resulting in large spread sensitivity to external shocks. As is the case of most bond markets, the Chilean sovereign debt market is exposed to global shocks (including rising risk aversion), which lead to large outflows as investors seek safety and liquidity in some G7 bond markets. Domestic bank bond yields are more sensitive to shocks than sovereign bond yields due to the lower liquidity of the bank bond market, which is dominated by long-term investors such as pension funds. Domestic corporate bonds are even more vulnerable to shocks due to the very limited liquidity of this market segment. Insurers are major investors in corporate bonds, with typically a buy and hold strategy.

10. Sudden changes in the banking system’s liabilities structure may expose banks to heightened maturity mismatch. This risk is particularly significant for medium-sized banks more reliant on wholesale funding than larger ones. Without any intervention by the BCCh, the selling pressure on bank bonds by pension funds and fixed-income mutual funds would have likely caused

¹ It is admittedly difficult to distinguish the preference for assets with (perceived or actual) greater liquidity from other considerations, such as hedging against country risk.

a significant shortening of the average maturity of the banking system's liabilities structure (through the forced substitution of bank bonds, as they mature, by short-term interbank funding), exposing the most vulnerable banks to heightened rollover risk.

11. Some banks are seeking to expand their bond issuance abroad, which would further diversify the investor base. Those efforts are welcome steps that could make those banks less vulnerable to shocks in the domestic non-bank financial sphere, even if foreign investors would inevitably react to changes in perceived country risk. However, at this stage it seems that those initiatives are limited to first-tier, large banks, already enjoying a broad diversity of funding sources, including large, stable retail deposits.

12. The highly interconnected nature of the Chilean banking system exposes the banking system to sharp swings in its funding costs, which justifies a close cooperation between the central bank and the relevant supervisory agencies. While the diversity of its funding sources is a major advantage for the banking sector, the dominance of a limited number of liquidity providers in certain product categories also means that it is vulnerable to systemic and idiosyncratic shocks affecting non-financial institutions. Changes to the legal framework for pension funds, for instance, may have an impact on the banks' funding. In crisis times, the frequency of portfolio switching² in pension funds tend to increase, including following recommendations from fund "advisors", thereby exacerbating market procyclicality and asset price volatility. The BCCh monitors the non-bank financial sector and closely cooperates with the Financial Market Commission (CMF) and the Superintendency of Pensions (SP), and has been able, during the 2019-2020 crisis, to take decisive measures to address liquidity issues originating in the non-bank financial sector, with significant spillover to the banking system.

B. An Incomplete Money Market

13. The interbank money market is almost entirely unsecured, providing uneven access to liquidity to banks. The interbank transactions (which are subject to the regulation on provisions) take place mostly without any collateral, making access to bank excess liquidity (which is structural in Chile because of the accumulation of foreign reserves) costlier and more difficult for smaller banks. In crisis times many smaller banks prefer accessing the central bank liquidity operations as a result.

14. The unsecured money market is an important, though insufficient, shock absorber for small liquidity shocks. In net terms, autonomous factors result in a significant, structural liquidity surplus. While the BCCh usually absorbs a significant share of the liquidity surplus on long maturities through the issuance of long-term BCCh notes (PDBC), redemptions are well spread out over time, which ensures comfortable liquidity conditions that should accommodate most small liquidity shocks without the need for any ad hoc liquidity-providing operation by the BCCh. The unsecured

² Legal initiatives are ongoing to raise the standards for transparency and responsibility of the market agents, including pension advisors, which should have an effect on the frequency of portfolio switching.

money market plays that role of shock absorber for small liquidity shocks but appears insufficient against larger shocks, as it is very vulnerable to confidence shocks.

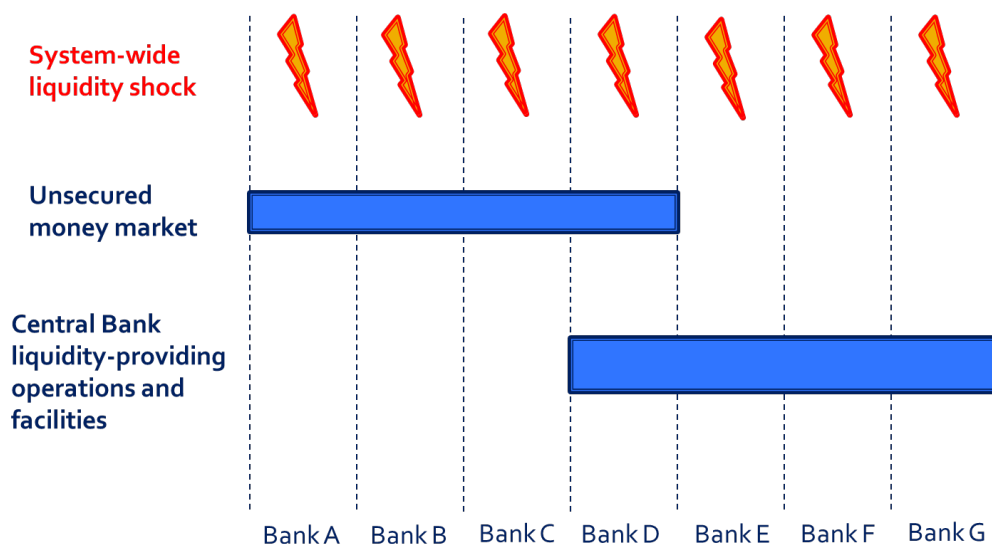
15. In the absence of collateralized transactions, the first “line of defense” against liquidity shocks, the money market, is only effective to the extent that trust exists between counterparties. The absence of any major bank failure in Chile since the 1980s suggests a solid supervisory performance and a generally low level of banking risk. However, in crisis times, perceptions of bank credit risk and trust between market participants may change rapidly, resulting in a more fragmented interbank market—particularly when it rests solely on unsecured transactions. Discussions with banks suggest an uneven access to the money market, i.e. a degree of fragmentation in “normal” times. This is not necessarily problematic as it is healthy for banks to screen and select their counterparties. Nevertheless, the absence of a secured interbank market means that any surge in money market fragmentation leads to a need for central bank funding, while in other jurisdictions an increase in perceived bank credit risk may be accommodated by collateral.

16. Because of the absence of an interbank repo market, the threshold for central bank interventions in response to liquidity shocks seems rather low. Ideally, liquidity shocks resulting from actual or perceived shocks on banks’ creditworthiness could be mitigated by the secured interbank market: the protection offered to the lenders by the collateral should allow the continued circulation of liquidity between banks. As an illustration, the euro area money market transitioned from significantly unsecured to predominantly secured since the Great Financial Crisis of 2007–2009, and has remained so since then, which has supported the interbank circulation of liquidity also in times of significant stress³ (e.g., in 2011–2015 during the euro area sovereign debt crisis and in 2020 during the COVID-19 pandemic). The absence of this major shock absorber, this second “line of defense”, in Chile, means that the BCCh is more likely to have to intervene to address liquidity shocks, even when they could be accommodated through private backstops.

17. The absence of an interbank repo market results in a more aggressive monetary policy response to liquidity shocks. The systemic liquidity shocks resulting in Chile from the social turmoil of 2019 and from the COVID-19 pandemic in 2020–2021 certainly justified a strong response by the BCCh. The BCCh took a wide range of measures (described in the next section) that effectively mitigated liquidity risk and supported the banks’ lending activity, at a cost of a massive expansion of its balance sheet and significant risk taking. Considering the same systemic liquidity shocks, a more complete money market, including a “second line of defense” in the form of an active, effective secured money market, would have likely reduced the need for central bank interventions, i.e. the BCCh would likely have been as effective with a less significant balance sheet expansion and less risk taking.

³ European Central Bank, Euro money market study, 2020:
https://www.ecb.europa.eu/pub/euromoneymarket/pdf/ecb.euromoneymarket202104_study.en.pdf

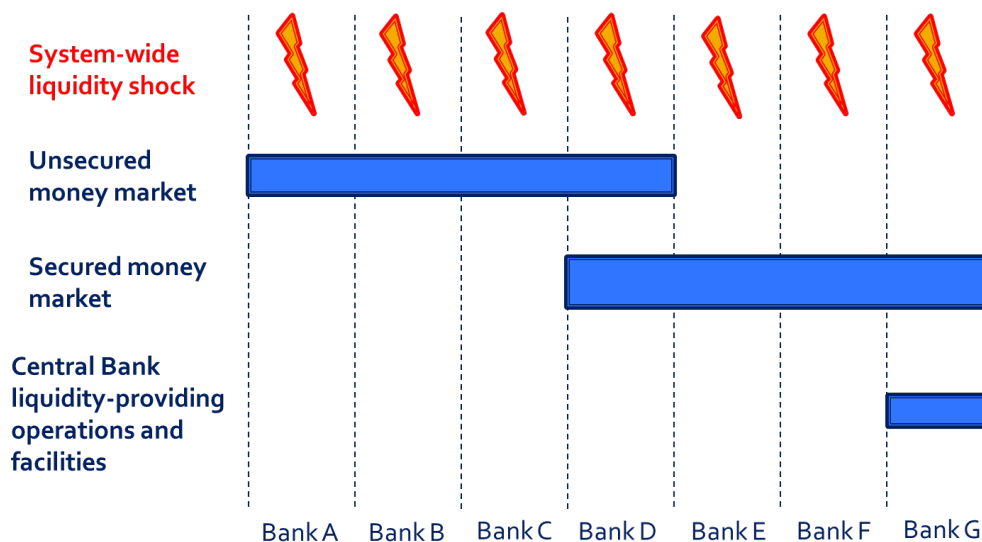
Figure 1. Schematic Representation of a System-wide Liquidity Shock in a Banking System without Secured Money Market



The area of the bars is a schematic representation of the volumes in each market or operation.

Description: The unsecured money market partly absorbs the systemic liquidity shock through the reallocation of excess reserves between banks (for banks A, B, C, D). The excess demand for liquidity is accommodated by the central bank liquidity-providing operations and operations (for banks D, E, F, G). Banks E, F, G may be deprived from access to the unsecured money market, for instance due to excessive perceived credit risk.

Figure 2. Schematic Representation of a System-wide Liquidity Shock in a Banking System with Secured Money Market



The area of the bars is a schematic representation of the volumes in each market or operation.

Description: The systemic liquidity shock is partly absorbed through the reallocation of excess reserves between banks (for banks A, B, C, D). The secured money market allows a further interbank reallocation of excess reserves, as collateral offers appropriate protection to the lenders and preserves some banks' (D, E, F, G) market access, despite perceptions of higher credit risk. Consequently, the residual need for central bank funding is much smaller than in the scenario without secured money market, resulting in a leaner central bank balance sheet, with less risk-taking and easier normalization.

C. Towards an Interbank Repo Market

18. The flexibility in Chilean savers' asset allocations should be matched by equivalent fluidity in collateral markets. The Chilean financial system is characterized by a high flexibility in savers' asset allocations, e.g., shifts between pension funds, between mutual funds (e.g. from fixed-income funds to money market funds), between pension funds and bank deposits etc. This high flexibility occasionally results in massive portfolio shifts, with significant effects on bond spreads and banks' funding costs, which in turn may lead for a need for central bank intervention. This situation is not optimal as it may lead to excessive risk taking by the central bank and complicated trade-offs for the central bank when considering the exit from support measures. Fostering the fluid circulation of collateral between market participants would reinforce private backstops and reduce the need for public intervention. An active interbank repo market would add an essential market segment, allowing the secured circulation of liquidity within the financial system's core.

19. The development of a secured money market could incentivize the use of locally-denominated assets, as opposed to foreign currency debt, when liquidity shocks occur. The possibility to use domestic debt securities as collateral to obtain funding would attenuate the preference for foreign debt securities in times of liquidity stress, thereby reducing the impact on domestic bond spreads and the need for central bank intervention.

20. An interbank repo market would support the transmission of monetary policy in Chile. The unsecured money market is generally focused on short maturities, while an interbank repo market would allow a greater differentiation in maturities (e.g., up to 3 to 12 months), thereby supporting the development of the term money market and of a more complete money market curve. This would support the calibration of BCCh's liquidity management operations and the transmission of its monetary policy.

21. Chile's developed capital markets offer an excellent basis for the development of a secured money market. There is no shortage of good-quality assets that could be used as collateral to secure interbank transactions. The domestic sovereign debt market is liquid and could likely become (as in many countries) the first source of collateral for interbank secured transactions. The notes issued by the BCCh (PDBC) to absorb the structural liquidity surplus offer a complementary source of very high-quality assets for use in repos. While the domestic bank bond market is somewhat less liquid than the sovereign bond market, bank bonds could also be considered as possible collateral in repos—while acknowledging that the correlation risk between the performance of those bonds and the risk of default of the borrower would require more conservative risk control measures by the lenders. While domestic corporate bonds suffer from generally poor liquidity, the development of a secured money market may reinforce incentives for market participants to maintain a more liquid and active corporate bond market, with transparent prices.

22. Fostering the development of a nonexistent market segment requires appropriate infrastructures and incentives. Infrastructures can be of a technical nature (e.g., electronic trading platforms, securities settlement systems with delivery vs. payment...) and of a legal nature (e.g., legal

framework for secured transactions, master repurchase agreement...). Incentives are typically related to the existence of profitable opportunities for market participants, the possibility to better manage risk through market transactions, as well as regulatory and reputational considerations.

23. The mission’s discussions with market participants suggest that the absence of an interbank repo market in Chile is mainly an incentive issue. While a few market participants reported that the existing legal framework for secured transactions in Chile might be improved, most reported a lack of incentives. Some banks mentioned that they lack regulatory incentives for lending on a secured rather than on an unsecured basis. Those discussions also suggested that there is a widespread belief amongst market participants that the BCCh would take the necessary measures to provide the necessary liquidity whenever needed—those perceptions may have become more entrenched since the powerful measures taken by the BCCh in 2019–2020. Some medium-sized banks do not appear as active money market participants, as they may rely solely on the BCCh to address their eventual liquidity needs.

24. The BCCh should accelerate and formalize its assessment of the causes for the absence of an interbank repo market, in close cooperation with market participants. The identification of the necessary remedial measures should follow a detailed assessment of the root causes for the lack of development of a secured money market in Chile—more detailed than in the scope of this mission. The BCCh has already initiated discussions with market participants on this crucial topic. The BCCh could considering formalizing this work in a working group with relevant market participants (banks and central clearing counterparties), with the definition and implementation of an action plan aimed at developing an interbank repo market. The role of non-bank financial institutions in the development of the secured money market (beyond the interbank perimeter) should also be examined.

25. The objective of that work should be a broad strategy to foster the development of an interbank repo market, including improving infrastructures and setting appropriate incentives. Beyond possible improvements in the legal framework for secured transactions, it seems clear that changes may be required on the incentives front, for instance: (i) a preferential regulatory treatment of secured lending operations vs. unsecured loans; (ii) sufficiently penalizing conditions (e.g., high interest rates, conditionality) for the central bank’s backstops (Permanent Liquidity Facility (FPL), Emergency Liquidity Assistance (ELA)); (iii) a requirement for funding plans for banks relying excessively on central bank funding; (iv) restrictions on the use of bank bonds as collateral with the central bank; (v) countering expectations for aggressive central bank interventions when small liquidity shocks occur; (vi) a gradual unwinding of central bank unconventional measures once they are not needed any longer; and (vii) assessing the appropriateness of the width of the currently narrow corridor of standing facilities. While the following sections of this Technical Note will elaborate on some of those measures, a deeper analysis, in close consultation of market participants, will be required to elaborate an effective action plan to develop the interbank repo market.

26. Organizing interbank repo tests in real conditions may support bank confidence in that instrument. The lack of development of the repo market may also be due to the persistence of

habits and the lack of incentives to change them. On the one hand, bank treasurers may have limited incentives from their management to be innovative; risk/reward considerations may not encourage the treasurer of a bank with excess liquidity to propose envisioning secured lending to new counterparties. If, on the other hand, banks with a liquidity need can easily access it at the central bank, it can be expected for the secured interbank market to never take off. Organizing tests of interbank repo transactions (for small, symbolic amounts) in real conditions, under the supervision of the central bank, may help banks gain confidence in using those instruments and understand the business case for secured interbank credit lines.

CENTRAL BANK OPERATIONAL FRAMEWORK FOR SYSTEMIC LIQUIDITY SHOCKS

A. Liquidity Management Framework

27. The main objective of the BCCh's liquidity management framework is the implementation and transmission of its monetary policy. The BCCh conducts monetary policy under an inflation-targeting regime and a floating exchange rate. The BCCh commits to use its instruments so that annual CPI inflation fluctuates around 3 percent. The BCCh's operational goal is an annual projected inflation of 3 percent over a two-year policy horizon. The BCCh manages bank liquidity towards this policy objective, by transmitting its monetary policy stance to the banking system and to the real economy.

28. The Chilean banking system is characterized by a structural significant liquidity surplus, which essentially reflects the gradual accumulation of foreign reserves. The BCCh transmits its monetary policy stance through the absorption of this excess liquidity.

29. Banks must comply with reserve requirements as well as technical reserves, which help absorb part of the liquidity surplus. Reserve requirements are calculated for each bank based on a percentage of its time deposits (currently 3.6 percent) and another percentage of its demand deposits (currently 9 percent). They must be fulfilled on average on a monthly basis, over a maintenance period from the 9th day of one month to the 8th of the next. In addition, technical reserves must be fulfilled by each bank for total deposits exceeding a multiple (currently 2.5) of its capital⁴. Technical reserves must be constituted through deposits at the central bank or in securities issued by the central bank or by the State.

30. The BCCh uses a wide range of instruments to actively absorb excess liquidity. The BCCh absorbs this excess liquidity through the issuance of central bank notes (PDBC) of maturities ranging from 7 to 360 days and longer-term central bank bonds denominated in Chilean pesos

⁴ Under the General Banking Law, for those purposes only "effective capital" is considered (i.e. 8 percent of risk-weighted assets and the systemic risk buffer up to 3.5 percent of risk-weighted assets).

(BCP) and *Unidad de Fomento* (UF), an inflation-indexed unit of account (BCU)⁵. The BCCh publishes an issuance program every month (before the start of each maintenance period), based on its forecasts of liquidity conditions (determined by autonomous factors). The BCCh also publishes a debt plan at the beginning of each year, informing market participants about the projected growth of the monetary base and the total amounts to be issued by instrument.

31. The BCCh aims at maintaining the overnight interbank rate around its Monetary Policy Rate (MPR). The renewal and issuance of new debt allows the net liquidity absorption to be smooth. The BCCh adjusts the calibration of its issuances depending on liquidity conditions, with the objective of maintaining the overnight interbank rate around the MPR. Overall, this approach to manage bank liquidity has been successful in recent years, with only negligible deviations between the overnight interbank rate and the MPR in calm times⁶.

32. A narrow corridor of overnight standing deposit and lending facilities aim at stabilizing the overnight interbank rate close to its target (the MPR). The interest rates on the Permanent Deposit Facility (FPD) and the Permanent Liquidity Facility (FPL) serve as natural floor and ceiling, respectively, for the overnight interbank rate. They create a symmetrical corridor around the target, with the FPD rate set at MPR minus 25 basis points and the FPL rate at MPR plus 25 basis points. This is a narrow corridor, reflecting the BCCh's preference for limited volatility of the overnight interbank rate around the target. While this Technical Note does not provide a specific guidance on the width of the standing facilities corridor (a crucial parameter of the monetary policy operational framework), a wider corridor would reinforce incentives for interbank activity.

33. In response to the economic recession caused by the social turmoil in 2019 and the COVID-19 pandemic in 2020–2021, the BCCh cut the MPR from 3 percent to 0.5 percent, its effective lower bound. With most of its liquidity injections conducted at the MPR or a rate indexed on the MPR, the BCCh was able to provide significant monetary policy accommodation, which helped mitigate the negative effects of the pandemic on bank lending and on the economy.

B. Central Bank Balance Sheet Expansion in Times of Crisis

34. The BCCh took decisive measures to address the successive liquidity shocks in Chile in 2019 (related to social turmoil) and in 2020–2021 (related to the COVID-19 pandemic). In addition to the monetary policy accommodation brought by the reduction of the MPR to its effective lower bound, the BCCh took a wide range of unconventional monetary policy measures aimed at (i) attenuating liquidity stress, (ii) reducing funding costs, and (iii) supporting bank lending. Those measures have been largely effective, though at the cost of a large expansion of the central bank balance sheet as well as increased risk-taking.

⁵ Since 2015 the BCCh has only issued PDBC. BCP and BCU have not been issued recently, with the latest issuances occurring in August 2016 in the case of BCP and in September 2013 in case of BCU.

⁶ During the Great Financial Crisis of 2007–2009, the social turmoil in 2019, and the COVID-19 pandemic in 2020–2021, some persistent deviations exceeding 15 basis points were observed.

- 35. Faced with banks' increased need for precautionary reserves, the BCCh temporarily suspended the issuance of central bank notes and conducted buybacks.** Buybacks of BCP and BCU helped effectively increase banks' reserves, considering their preference for liquidity amidst heightened funding stress.
- 36. The BCCh intervened in the foreign exchange market to attenuate exchange rate volatility and set up foreign exchange swaps to provide domestic banks with U.S. dollar liquidity.** The social turmoil in 2019 caused significant outflows by non-residents. While Chile proved resilient to this capital flow reversal thanks to its favorable external financial position and the mitigating effects of its floating exchange rate, those outflows caused volatility in domestic capital markets and contributed to U.S. dollar liquidity stress. The foreign exchange spot sales, non-deliverable forwards (NDF), and swaps introduced by the BCCh for relatively long maturities (30 and 90 days initially, then 180 days) helped provide the U.S. dollar liquidity needed by some banks and reduce their U.S. dollar funding costs, while others managed to continue relying solely on their usual U.S. dollar funding sources (such as correspondent banks, and issuances abroad).
- 37. Combined with regulatory forbearance, the extension of liquidity injections by the BCCh helped mitigate funding stress and maturity mismatches.** In association with a reduction of the policy rate, longer-term refinancing operations can be a powerful tool to reduce bank funding stress and to signal that interest rates will remain low for a long time. During the global financial crisis in 2008-2009, the BCCh introduced a Term Liquidity Facility (FLAP). The BCCh reiterated longer-term injections of liquidity in response to the liquidity shocks of 2019–2020, which helped mitigate the negative effects of portfolio shifts on bank funding costs. At the same time, the BCCh, with the prior opinion of the CMF, temporarily relaxed regulatory liquidity requirements, by suspending maturity mismatch requirements. Those combined measures were effective in mitigating bank liquidity stress.
- 38. In the context of the COVID-19 pandemic, the BCCh introduced targeted refinancing operations that effectively attenuated the negative impact of liquidity shocks on bank lending.** Through the Financing Facility Conditional on Increased Lending (FCIC), the BCCh has provided long-term loans (with a maturity of four years) at an attractive interest rate (the MPR) to banks, up to an amount based on each bank's credit provision. For initial operations the maximum take-up was based on each bank's total stock of credit; later it was calculated based on each bank's credit growth over a defined period. To make that targeted operation effective, the BCCh significantly expanded eligible collateral (see Section C).
- 39. Significant bank take-up at the FCIC has led to a major shift in banks' liabilities structure, with central bank refinancing compensating for a decrease in time deposits and bank bonds, or reducing the banks' needs for those funding sources.** Overall the FCIC has been attractive to banks in its successive forms, and also in its latest modalities (FCIC3), which aimed at facilitating the funding of refinancing operations of well-performing and guaranteed loans. Banks' reliance on this four-year, cheap, central bank funding has helped them deal with reduced demand for bank bonds and time deposits.

40. Purchases of time deposits and longer-term bank bonds by the BCCh helped mitigate upward pressures on bank bond spreads and facilitate portfolios reallocation. Reacting to investors' preference for liquidity, the BCCh lifted the maximum maturity (initially five years) on the bank bonds targeted by its purchase program. By buying longer-term, relatively illiquid bank bonds, the BCCh accommodated significant portfolio shifts in the non-bank financial sector, in particular withdrawals from pension funds (the largest buyers of bank bonds) and fixed-income mutual funds.⁷ Those bank bonds purchases by the central bank also attenuated the surge in bank bond spreads, facilitating rollover while containing the increase in bank funding costs.

41. The BCCh set up a special cash purchase/forward sale program (CCVP) to facilitate the extraordinary pension fund redemptions of 2020. Through that facility, the BCCh implements direct cash purchase of bank bonds, and sells them forward to the same counterparty at a term of one or three months. The CCVP facility is accessible to participants in the Open Market Operations System (SOMA), including non-bank financial institutions such as pension funds. The CCVP helped mitigate the risk of fire sales by pension funds facing significant withdrawals, thereby facilitating portfolio rebalancing by non-bank financial institutions while containing their impacts on bank funding costs. The Superintendency of Pensions also facilitated those adjustments by relaxing investment limits on certain counterparties and instruments, supporting the effectiveness of the CCVP facility.

42. Looking forward, the BCCh will be able to extend its asset purchase programs and repo operations to State debt securities. A constitutional and legal amendment adopted in 2020 allows the BCCh to purchase State debt securities in the secondary market, in case of market stress and financial instability, under a qualified decision of its Board, adopted by 4 of its 5 members. Until then, such operations were not legally possible for the BCCh, although State debt securities could be used as eligible collateral for regular liquidity-providing operations, applying pledging procedures.

43. Aggressive forward guidance by the BCCh has contributed to the effectiveness of its unconventional monetary policy measures. As liquidity injections are anchored to the MPR, committed forward guidance by the central bank on the future level of the policy rate and on the continuation of unconventional measures has contributed to their impact on bank funding and lending strategies.

44. While the BCCh's unconventional measures seemed justified and effective in the context of the 2019-2020 liquidity shocks, consideration should be given to their impact on market functioning and to their timely discontinuation. Through its many unconventional measures, the FCIC, the CCVP and the bank bond purchases, the BCCh has become a major lender to the banking system. A significant portion of this central bank funding has long maturities (for instance FCIC loans have a four-year term, and the BCCh has purchased longer-term bank bonds). Conversely, the share of bank bonds (held in particular by pension funds) and time deposits (held in particular by mutual funds) has declined in the banking system's liabilities structure. Those

⁷ The bank bond purchases were introduced shortly before the first pension funds' withdrawal, with the objective to reduce volatility and contain spreads.

significant shifts in banks' liabilities may have long-term effects on market functioning and liquidity: for instance, primary bank bonds issuances and the secondary market turnover for bank bonds have declined significantly since the start of central bank purchases. Too prolonged access to cheap central bank funding might discourage some banks from resorting to other funding sources, in turn complicating the unwinding of its unconventional liquidity measures by the central bank. Ultimately, in a banking system characterized by a structural liquidity surplus, it should be clear that central bank funding cannot be a major funding source beyond crisis times, while the circulation of liquidity in active, liquid, complete (i.e., also secured) markets should be a primary policy objective.

45. Though justified in the context of major liquidity shocks in 2019–2020, the BCCh's balance sheet expansion could have been moderated by the existence of an interbank repo market. Some of the unconventional measures introduced by the BCCh had other objectives than only supporting bank liquidity (in particular the FCIC, which aimed at avoiding a credit crunch) and could not have been substituted by the interbank repo market acting as shock absorber. Still, as explained in the first section of this note, an interbank repo market could help absorb part of liquidity shocks, through the secured reallocation of excess reserves. This mitigating effect would seem very relevant in Chile in view of (i) the high heterogeneity of banks' funding situations and (ii) the breadth of available collateral for repos.

46. Significant bank bond purchases expose the BCCh's balance sheet to systemic risks. Many central banks are reluctant to include unsecured bank bonds in their asset purchase programs, because holding such bonds may be seen akin to unsecured lending to banks, from a risk perspective. This concern leads those central banks to generally prefer buying bank bonds with a second layer of protection, such as a government guarantee (e.g., in case of systemic risk), or assets mobilized as guarantees, e.g., in covered bonds and asset-backed securities. The significant accumulation of bank bonds by the BCCh potentially exposes its balance sheet to idiosyncratic and systemic bank default risks, also considering that the risk control framework for that purchase program was insufficient (insufficient haircuts, no issuer concentration limit). This would justify a more cautious approach to bank bonds purchases, e.g., replacing the existing facility (activated at the counterparties' initiative) by fixed-size operations (launched at the BCCh's initiative), as well as a timely discontinuation of those purchases, possibly before other unconventional measures.

C. Collateral Framework

47. An effective collateral framework is essential to protect the central bank's balance sheet. It is crucial to a central bank's effectiveness in the pursuit of its monetary policy and financial stability objectives, in particular in times of crisis, when liquidity shocks and market disruptions may require a significant expansion of the central bank's balance sheet.

48. Until the 2019–2020 crisis, the BCCh was very narrowly considering the development of domestic capital markets. Eligible collateral was limited to debt securities issued by the BCCh and by the State. While the BCCh-issued debt securities could be mobilized as collateral through a pledge or a resale agreement between the counterparty and the BCCh (repo), State debt securities could be mobilized only through a pledge. The constitutional amendment and legal adopted in

2020 will allow (under the restrictive conditions defined by the law) the mobilization of State debt securities also through purchasing and disposing of the property of those debt instruments.

49. The massive expansion of its balance sheet in response to liquidity shocks in 2019-2020 led the BCCh to significantly broaden asset eligibility. Making the FCIC effective required expanding collateral eligibility to corporate bonds, bank bonds, time deposits, commercial paper, well-performing bank loans as well as the larger commercial portfolios, with a guarantee by the State being required for bank loans under a quality threshold. Those changes have made the BCCh's current collateral framework much broader than the pre-crisis framework.

50. The collateral expansion implemented by the BCCh in the context of the FCIC has been complementary to other measures to support bank lending, in particular State guarantees and regulatory adjustments. The COVID-19 pandemic led the Government to significantly expand its Small Business Guarantee Fund (FOGAPE), by increasing its size (a ten-fold increase in the volume of guarantees) and scope (the cap on sales for eligibility was increased from USD 1 million to USD 40 million a year, the cap on credit-loss coverage was set at 15 percent). While those guarantees were provided initially only for new loans, changes in 2021 ("FOGAPE reactiva"), allowed flexibility in reloan refinancing. The acceptance of State guaranteed loans as collateral for FCIC bolstered the scheme's attractiveness for banks. The reduction of credit risk weights for State-guaranteed loans also contributed to the effectiveness of this policy package, resulting in a remarkable resilience of the provision of bank credit during the pandemic.

51. Looking ahead, the BCCh should define its collateral framework in normal times, possibly different from its pre-crisis framework, taking lessons from the crisis into account. The "optimal" perimeter of a central bank collateral framework may differ across central banks, depending on various considerations including the structural liquidity position of the banking system (resulting from autonomous factors, i.e., exogenous to the central bank), the degree of development of local capital markets, and the significance of systemic liquidity risks.

52. The main arguments in favor of a narrow collateral framework include (i) a preference for limited complexity in risk control measures and due diligence work by the central bank, and (ii) avoiding the moral hazard (for banks and other economic agents) resulting from the perception that the central bank would massively inject liquidity in case of needs. Therefore, some central banks prefer a narrow collateral framework in normal times, so that they can announce more significant collateral expansions in case of need.

53. A broad collateral framework could be justified by a preference for diversification and reducing the risks of collateral scarcity. The main arguments in favor of a broad collateral framework include: (i) a preference for clear collateral sufficiency to minimize any (real or perceived) risk of collateral scarcity, which might undermine the effectiveness of unconventional monetary policy measures; (ii) a preference for collateral diversification, both to better protect the central bank's balance sheet against systemic risks and to encourage the diversification of banks' investment portfolios; (iii) the avoidance of privileged treatment of some issuers (for instance the State), to minimize the premium attached to collateral eligibility and potential resulting price

distortion; (iv) a sufficiently effective liquidity framework to address systemic liquidity shocks, thereby avoiding to overburden the lender-of-last-resort instrument.

54. Overall, a larger collateral framework than the BCCh’s pre-crisis framework seems appropriate, in the Chilean context. Capital markets for private debt securities seem sufficiently developed in Chile to justify their broad acceptance (within strict risk limits) as collateral by the BCCh. The pre-crisis framework gave an undue advantage to public debt securities (issued by the State and the central bank), thereby exacerbating the portfolio shifts to those securities in times of market stress. Those shifts resulted in heightened volatility in bond spreads for banks and non-bank corporate issuers—eventually leading to a massive central bank intervention. Broadening collateral eligibility to other asset classes, beyond public debt securities, would attenuate those biases, and possibly the need for unconventional central bank measures in times of stress.

55. The BCCh should expand collateral eligibility to all marketable assets complying with minimum credit requirements. Corporate bonds meeting minimum credit requirements should be considered as eligible collateral also in normal times. While this collateral expansion would admittedly require a greater differentiation of risk control measures (such as haircut add-ons for illiquidity) and raise operational challenges related to the lack of liquidity of corporate bonds in Chile, it would encourage a greater diversification of banks’ portfolios, attenuate the preference for public debt securities in crisis times, and possibly foster more active and liquid corporate bond markets. In addition to minimum credit requirements, additional restrictions for eligibility could be defined, based on minimum outstanding amounts, and operational requirements (e.g., issuance in dematerialized form, according to Chilean Law, eligibility at the local CSD and/or ICSD).

56. Bank bonds raise specific risks for the central bank, which justify their ineligibility in normal times, and at a minimum very strict risk control measures in crisis times. Most central banks see bank bonds as offering them a poor protection, because of the correlation between the performance of those bonds and the risk of default of their counterparties (banks). In case of a systemic crisis—i.e., precisely when the central bank may consider broadening its collateral to bank bonds (and/or buying them)—this correlation risk increases. Consequently, central banks such as the Federal Reserve and the European Central Bank (ECB) avoid buying unsecured bank bonds and prefer buying and taking as collateral bank-issued bonds with a second layer of protection, e.g., in the form of ABS, covered bonds, and State-guaranteed bonds. In the absence of securitization in Chile, the BCCh should have a conservative approach to bank bond eligibility—e.g., through their ineligibility in normal times and very strict limits (e.g., by issuers) in crisis times.⁸

57. The mobilization of bank bonds by related parties should be prohibited. The acceptance of unsecured bank bonds also exposes the central bank to the risk of bank cross-holdings and other circular arrangements between banks, resulting in massive risk for the central bank in case of a fully-fledged systemic crisis. While there is no indication that that happened in Chile so far, strict safeguards should be defined to prevent such behaviors. Furthermore, a strict

⁸ The Eurosystem, for instance, restricts the use of uncovered bank bonds to unrelated parties and caps to 5 percent of the collateral pool of each counterparty the uncovered bank bonds of each group of related banks.

prohibition on the use (as collateral with the central bank) of bonds issued by related parties (e.g., other entities that are part of the same financial conglomerate) would be needed, also in crisis times.

58. There is room to strengthen the BCCh’s risk control framework. Currently, the BCCh’s risk control framework is incomplete, insufficiently conservative, and lacks differentiation. The BCCh does not apply any haircut on debt securities issued by the State and the central bank. In the context of its collateral expansion during since 2020, the BCCh applies a 10-basis point risk premium adjustment (added to the discount rate) to bank-issued debt (bank bonds, time deposits), a 30-basis point adjustment to corporate bonds, and a 50-basis point adjustment to commercial paper. A uniform 10 percent haircut applies to bank loans of the risk categories A1 to A6, eligible as collateral for the FCIC. In addition, some concentration limits apply to bank loans collateral pools—but there is otherwise no general issuer limit. Overall, this risk management framework is relatively simplistic and insufficiently conservative (which is understandable in the context of the emergency measures rapidly and effectively implemented by the BCCh in the context of the COVID-19 pandemic) and would deserve a greater differentiation.

59. A more conservative, differentiated, haircut schedule would better protect the BCCh’s balance sheet. The current haircuts are unlikely to be sufficient to protect the central bank in case a counterparty defaults and it needs to liquidate the collateral. As a general principle, haircuts should be conservative enough to protect the central bank against (i) valuation mistakes, (ii) the possible exogenous drop in the assets’ value during the liquidation period, and (iii) possible negative effects of the bank’s default on asset values. Consequently, the haircuts should be sufficiently conservative and differentiated to reflect various degrees of market volatility, liquidity, and correlation risk. While challenges to obtain the relevant information may exist, a greater differentiation of haircuts depending on the credit risk on the issuers could be envisioned. A haircut add-on system could also help better reflect the varying maturity risk, depending on the eligible assets’ residual maturity.

60. Risk equivalence should be the guiding principle for the design of the risk control framework. Risk equivalence is verified when all eligible assets are equally risky, from a central bank perspective. This condition ensures the optimal protection of the central bank’s balance sheet, while avoiding adverse selection of collateral by the banks, and undesired incentives for banks to hold the most “advantageous” collateral (from their perspective). The haircuts should ensure the protection of the central bank at a given confidence level, across the entire range of eligible assets. This can be achieved through a haircut add-on system, with add-ons reflecting the estimated varying risks (e.g., credit risk, liquidity risk, maturity risk) across all eligible assets. While risk equivalence is an ideal and a moving target for the central bank, it can be verified empirically through banks’ behavior, in particular the absence of arbitrage across asset classes.

61. Well-calibrated haircut add-ons should reflect the very heterogeneous liquidity risk across eligible asset classes. The BCCh’s schedule insufficiently differentiates haircuts across asset classes with very different levels of liquidity. This may give an incentive to banks to mobilize their less liquid eligible assets as collateral with the central bank (adverse selection), if the collateral expansions decided during the pandemic were maintained in normal times. In the absence of observable prices, the BCCh (appropriately) uses a marked-to-model approach for a significant part

of collateral pools. More haircut differentiation would not only better protect the central bank against collateral adverse selection by the banks but may also provide a better pricing for the illiquidity risk as well as incentives for better market liquidity (in particular in domestic corporate bonds).

62. Haircuts on credit claims should be much higher and differentiated across risk categories and based on the existence or absence of a State guarantee. The current uniform 10 percent haircut is likely to fuel adverse selection of credit claims mobilized as collateral with the BCCh by the banks. It would seem appropriate to differentiate haircuts across risk categories (currently ranging from A1 to A6, with A5 and A6 loans being eligible only when they include a State guarantee), the existence or absence of a State guarantee, and ideally a credit risk assessment on the debtors. Indeed the loan risk classification by the banking supervisor may not be a sufficient measure of risk (in the context of central bank operations) if it is solely based on debtors' credit history. Combining it with external or internal measures of financial soundness on corporate debtors may provide a better protection to the central bank. As a general principle, the current haircut is unlikely to protect the BCCh against the risk of a large drop in the value of a defaulted bank's loan portfolio, considering the illiquidity of such assets and their specific risks (e.g., the risk of strategic defaulting by some debtors).

63. Relaxation of risk control measures should remain exceptional and should not be seen as a standard response to liquidity shocks. While a central bank may legitimately revise its risk tolerance when facing a systemic crisis, it should continuously ensure that its collateral framework provide appropriate protection to its balance sheet. Even in face of financial stability risks and exceptional circumstances, the central bank should implement conservative risk control measures. This means that the central bank should generally favor other unconventional measures, such as liquidity injections and expansions of its collateral framework (as done very effectively by the BCCh in the context of the 2019 social turmoil and the COVID-19 pandemic), over relaxations of its risk control measures. Therefore haircut relaxations should remain exceptional and contained. The same principle should apply to any relaxation of margin calls, which should generally not be used as an unconventional policy measure, as lowering the trigger point for margin calls might expose the central bank to the risk of losses in case of counterparty default.

64. The BCCh should combine a revised haircut schedule with additional risk control measures. It is important for a risk control framework to give the central bank sufficiently flexibility to calibrate its risk, in particular in times of significant balance sheet expansion. This may include, for instance, stricter rules (or a prohibition) for unsecured bank bonds and collateral issued by related parties, concentration limits for individual issuers, and rules ensuring sufficient diversity in collateral pools. The BCCh could publicly communicate about a more complete risk control "toolkit" than its current haircut schedule, thereby setting incentives for appropriate bank behaviors and their preparedness for liquidity shocks.

65. Collateral earmarking generally applies to the BCCh's liquidity-providing operations, which complicates the management of collateral for the banks and the central bank. The range of eligible collateral is specific to each type of liquidity-providing operation: for instance, the FCIC

has its own eligibility rules. Consequently, collateral is not prepositioned on a single counterparty account at the BCCh (pooling) but assigned to specific operations (earmarking). Differences in legal frameworks for State debt securities (until recently only pledge was allowed, not purchasing and disposing of the property of those debt instruments) also contributed to that operational complexity. This situation complicates the banks' management of their eligible collateral. While this problem is currently attenuated using fixed rate, full allotment auctions (implying no tender uncertainty for banks), it may become an issue in the context of variable rate, competitive auctions, if such auctions were conducted in the context of a gradual unwinding of the BCCh's unconventional monetary policy measures.

66. A transition to pooling from the current earmarking system could facilitate collateral mobilization. A pooling system allows a bank to preposition eligible collateral for all refinancing obtained from the central bank (i.e., all monetary policy liquidity-providing operations, lender-of-last-resort, intraday credit facility). Any asset in the pool can be used at any point in time as long as the value of the remaining collateral pool (after haircuts) exceeds the value of total credit outstanding. This system significantly facilitates the management of collateral for both the banks and the central bank. Currently pooling applies only to the FCIC operations⁹. The BCCh could consider generalizing it to all its liquidity-providing operations. A pooling system would also foster market liquidity for eligible assets, as they can be freely accessed by banks as long as their central bank credit remains fully covered. A move to pooling would require some adjustments to the legal framework¹⁰.

67. The transparency of the collateral framework could be improved. In the context of the gradual exit from unconventional monetary policy measures, the BCCh could consider communicating on its steady-state collateral framework. That collateral framework could be much broader than the pre-crisis framework and include a single list of eligible collateral (with pooling) and a more complete risk control toolkit. Once finalized, it could be published on a specific section of the BCCh's website (including an updated list of eligible securities), with regular updates to keep market participants abreast of any change and bolster transparency on the BCCh's monetary policy implementation.

⁹ However, it is acknowledged that flexible and efficient pledging procedures can be applied regarding securities deposited in private central depository entities ruled by Law 18.876, which regarding central bank liquidity providing operations could be considered equivalent to pooling. The system of special pledge of securities deposited at the DCV (CSD) in favor of the BCCh is flexible and effective enough, and it has concrete legal protections related to finality and irrevocability, as well as with matters related to eventual execution, in line with international experience and standards in this matter. In addition, all transactions carried out by the BCCh for liquidity purposes use an IT and transactional functionality called "Virtual Portfolio", which is operational in the SOMA platform. Securities are electronically registered in groups (class) of securities. Even though this does not constitute pooling, it does facilitate the operation in cases when high amounts need to be pledged, based on full observance of the legal framework, and robust criteria with legal certainty.

¹⁰ For pledged collateral to be enforceable under the current Chilean legislation, each instrument must be individualized and marked as pledged. Therefore, it is not possible to pledge an entire account (or pool of assets) establishing a "floating charge" on it under the current legal framework.

68. The collateral framework should be reviewed at a regularly frequency, for instance every two years. Revisions to the collateral framework may include changes in eligibility requirements, and adjustments to the haircut schedule and other risk control measures. Such revisions are important to ensure the continued verification of risk equivalence, as the balance of risks across eligible asset classes may change over time. Studying banks' collateral mobilization strategies on a regular basis helps identify possible adverse selection, which generally hints at a possible violation of risk equivalence, and therefore a need for some adjustments.

69. The BCCh should integrate the monitoring of banks' overcollateralization to its liquidity monitoring. The BCCh effectively monitors banks' balance sheets and liquidity positions on a daily basis and maintains regular communications with banks' treasurers. That effective liquidity monitoring could be reinforced through assessments of eligible collateral availability, sufficiency, and encumbrance, on a regular basis. Based on the BCCh's revised eligibility rules and haircuts, the maximum refinancing capacity of each bank could be calculated on a regular basis: a comparison between each bank's current central bank refinancing and its maximum refinancing capacity would provide a good indication on system-wide and idiosyncratic liquidity risks.

70. The role of BCCh's risk management function in the design and implementation of unconventional monetary policy measures could be reinforced. The BCCh's Corporate Risk Department has the responsibility for assessing the overall risk for the central bank and reports directly to the Board, which is a recommended practice. Its leadership role in the design and calibration of risk control measures could be formalized, so that no unconventional measure is designed without its input on that front. The collateral framework should be a "co-production" between the central bank's market operations and risk management departments, reflecting its dual nature: protecting the central bank's balance sheet while achieving the central bank's monetary policy goals.

71. Overall, the BCCh's experience during the crises in 2019–2021 suggests a preference for effectiveness, at the cost of significant risk-taking. There is room to reinforce the risk control framework, without undermining the effectiveness of the unconventional measures introduced successfully by the BCCh during the latest crises. While ultimately the Board has the responsibility for keeping that balance between sometimes conflicting objectives, it is important that the internal organization and processes give rise to the necessary "constructive conflicts" at departmental level, so that the decision-makers can assess all viewpoints and make the best possible decisions.

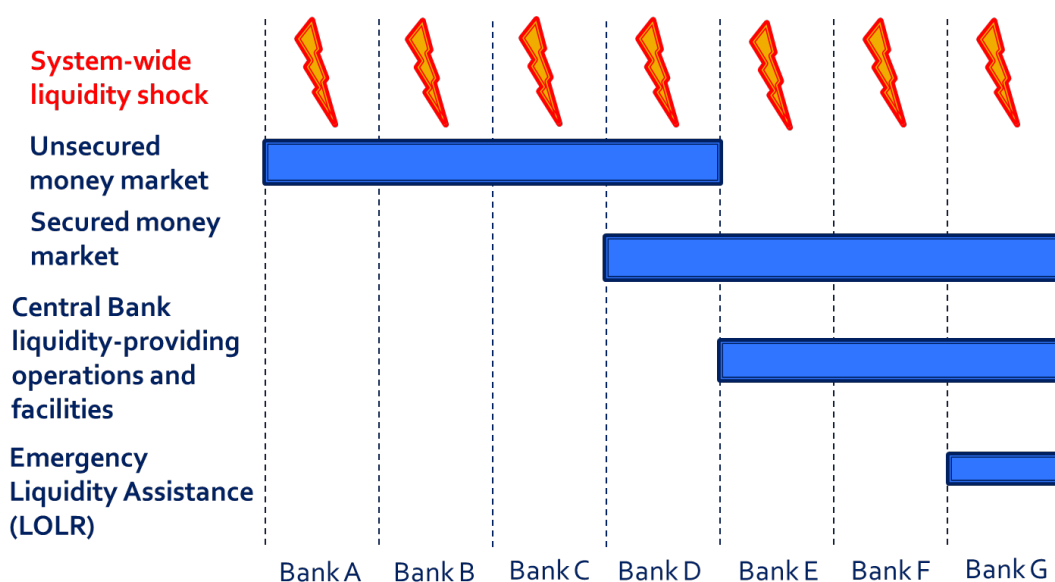
EMERGENCY LIQUIDITY ASSISTANCE

A. The Case for an Effective Lender-of-Last-Resort Framework

72. An effective lender-of-last-resort (LOLR) framework is an essential part of the safety net. The absence of a sound LOLR usually results in (i) a financial system more exposed to idiosyncratic liquidity risks (through contagion), (ii) overburdening monetary policy liquidity-providing operations as a suboptimal tool to address financial stability risks, (iii) moral hazard as banks and other market participants anticipate system-wide liquidity measures by the central bank

as soon as the slightest idiosyncratic shock occurs, and (iv) suboptimal monetary policy design and implementation. When it cannot rely on an effective, conditional instrument to address idiosyncratic liquidity stress situations, the central bank tends to calibrate its system-wide measures so that even the weakest links in the banking system (those that should normally benefit from LOLR support) can maintain appropriate liquidity. This fuels moral hazard and policy risk, disincentives for banks to diversify their funding sources, and might eventually contribute to an inappropriate liquidity management and monetary policy for the entire banking system. By contrast, an effective LOLR framework allows the central bank to calibrate its monetary policy measures based on a monetary policy, system-wide assessment, as residual stress situations can be addressed by LOLR support.

Figure 3. Schematic Representation of a System-wide Liquidity Shock in a Banking System with a Complete Safety Nets Framework (Secured Money Market and LOLR)

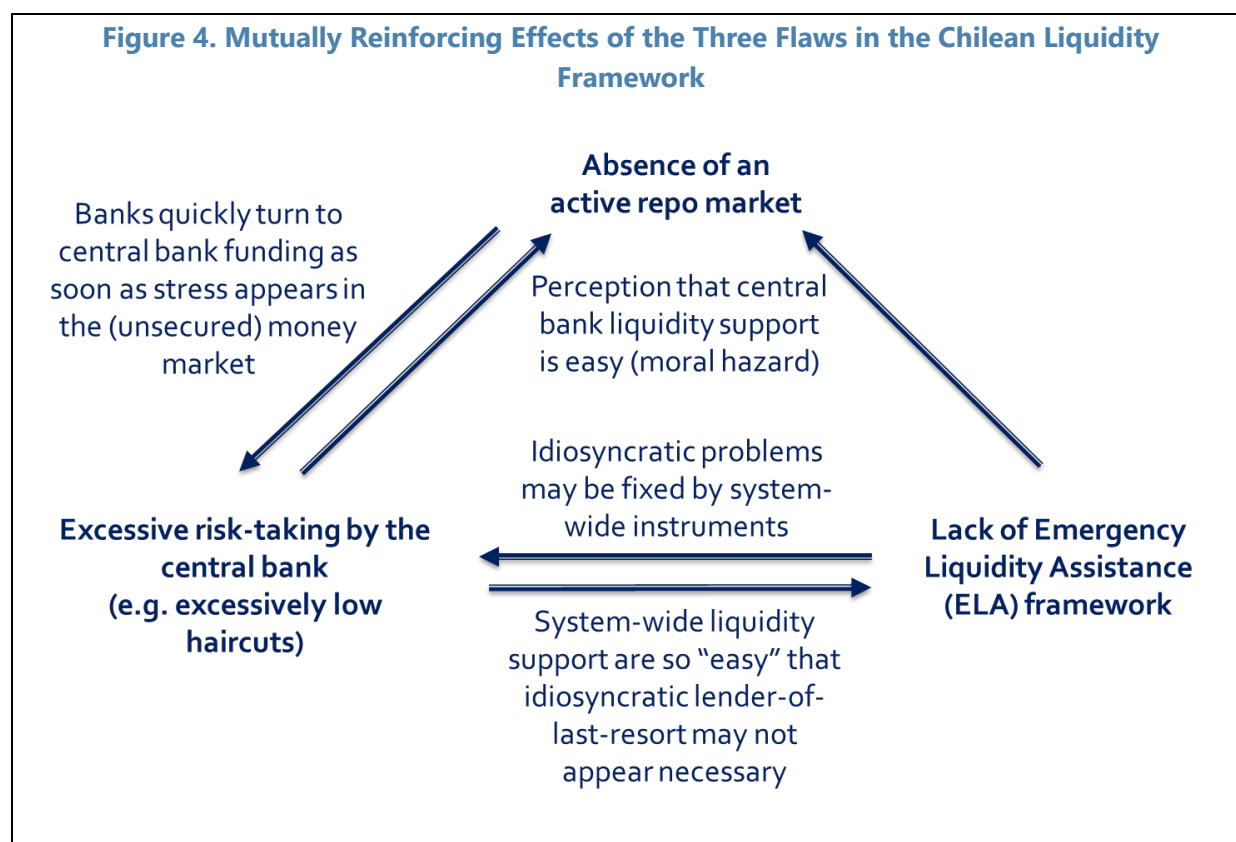


Description: The systemic liquidity shock is partly absorbed through the reallocation of excess reserves between banks (for banks A, B, C, D). The secured money market allows a further interbank reallocation of excess reserves, as collateral offers appropriate protection to the lenders and preserves some banks' (D, E, F, G) market access, despite perceptions of higher credit risk. Residual liquidity needs are addressed (for banks E, F, G) by central bank's system-wide measures. Bank G runs out of eligible collateral for monetary policy and needs additional central bank funding: Bank G receives it as Emergency Liquidity Assistance (LOLR), providing that it verifies all conditions (in particular solvency). Without LOLR, the central bank's system-wide liquidity measures would have been calibrated differently, and probably sub-optimally.

73. While the Chilean banking system did not face any major idiosyncratic liquidity issue during the 2019–2021 crises, an effective LOLR framework would facilitate a gradual unwinding of the BCCh's unconventional measures. The Chilean banking system has faced major challenges in the context of the social turmoil of 2019 and the COVID-19 pandemic in 2020–2021. The BCCh has decisively addressed the liquidity risks, through a wide range of effective unconventional monetary policy measures, though with additional balance-sheet risk-taking. This justifies a timely exit from those measures and a recalibration of the BCCh's risk control measures.

An effective LOLR framework would greatly facilitate that process, as that safety net would ensure that the discontinuation of the BCCh’s unconventional measures would not expose the weakest banks in the system to disproportionate liquidity risks.

74. The absences of the three “missing pieces” in the Chilean liquidity framework may perversely reinforce each other. While Chile has all fundamental assets to achieve a complete, effective liquidity framework—an independent and competent central bank, solid banking supervision, sophisticated market participants, well-developed domestic capital markets—the absences of (i) a secured interbank money market, (ii) a stronger risk management framework by the central bank, and (iii) an effective LOLR framework may feed into each other and perversely lead to a suboptimal status quo, as summarized in Figure 4.



B. Legal Framework and Essential Conditions for ELA

75. Article 36 of the BCCh Basic Constitutional Act provides an adequate legal basis for an effective Emergency Liquidity Assistance¹¹ (ELA) framework. Article 36 allows the BCCh to provide LOLR loans to banks facing temporary liquidity stress, for up to 90 days, and with the objective of preserving financial stability. The term of those loans can be extended by a majority of

¹¹ Emergency Liquidity Assistance (ELA) refers to the set of internationally recommended rules and principles for a central bank’s lender-of-last-resort function.

the BCCh Board Members, with the prior opinion of the banking supervisor (CMF). Article 36 mentions that those loans are conditional on specific rules that the beneficiary bank must comply with. With Article 36, the Chilean legislator has given an adequate legal basis for the design of an effective ELA framework, including a cooperation between the central bank and the banking supervisor.

76. The ELA legal and regulatory framework should be completed. The Central Bank Act only provides the basis of the required ELA legal framework, which should also include (i) an ELA Regulation by the central bank (which should be published), (ii) central bank procedures (which typically remain confidential), (iii) banking supervisor procedures, (iv) a memorandum of understanding (MoU) between the central bank and the banking supervisor, (v) another MoU between the central bank and the Ministry of Finance, and (vi) an ELA Master Agreement. The mission's discussions with the BCCh and the CMF showed commendable efforts towards those goals, though with many technical points still to be addressed.

77. The BCCh should publish an ELA Regulation that should set out all key conditions for the provision of ELA. The ELA Regulation should make it clear that ELA is reserved for (i) solvent and (ii) viable banks. It should also clarify that (iii) ELA must be strictly collateralized. Furthermore, (iv) the provision of ELA should be conditional on the prior signature of an ELA Agreement between the BCCh and the beneficiary bank, setting out a clear conditionality framework. The ELA Regulation should also transparently define (v) the interest rate applicable to ELA loans and (vi) the maximum maturity of an ELA loan (which is distinct from the 90-day maximum term defined by Article 36 of the BCCh Act).

78. The central bank's and the banking supervisor's ELA procedures should then operationalize the ELA Regulation. Those (typically confidential) procedures should define the task allocation within the central bank and the banking supervisor, the various deliverables and internal deadlines for the preparation of ELA assessments, the rules for the internal circulation of sensitive information to maintain confidentiality and eliminate possible conflicts of interests (actual or even only apparent), the forms and procedures for the mobilization of collateral, the templates for key documents (such as the ELA assessment by the central bank and the solvency and viability assessment by the banking supervisor), etc. Considering the diverse skillset required for ELA dossiers (market operations, financial stability, banking supervision, legal, risk management), an effective organization would be a small ELA taskforce gathering BCCh and CMF experts with those profiles.

79. An MoU between the BCCh and the CMF should precisely define the task allocation and the cooperation between the two institutions. Close cooperation between the central bank and the banking supervisor is essential to the effectiveness of an ELA framework. While ELA remains a central bank task, the constructive and timely input by the banking supervisor is essential to a successful handling of critical LOLR situations. The cooperation between the two institutions should be formalized in detail, so that no room is left to doubt or improvisation (which may be disastrous as ELA requests are typically emergencies) and the effective cooperation should not depend on changing personal relations at the top of those institutions.

80. The BCCh-CMF MoU for ELA should be guided by three principles: (i) effectiveness, (ii) no duplication of tasks, and (iii) no dilution of responsibilities. Because ELA is a financial stability measure (rather than a supervisory measure), the central bank should bear the ultimate responsibility of deciding to provide ELA or not, based on a financial stability assessment (going well beyond considerations on an individual bank's situation). At the same time, the BCCh will need input from the CMF on the verification of (i) the solvency requirement and (ii) the viability requirement, (iii) the definition and implementation of the conditionality framework, (iv) the implementation and assessment of funding plans (a crucial monitoring tool), and (v) the assessment of the beneficiary bank's loan book (for use as collateral). Cooperation and information exchanges on all those topics should be formalized in detail in the MoU. There should be no duplication of tasks, i.e. the objective of the MoU to entrust the most relevant institution with every task at hand. While the BCCh-CMF MoU would be of rather technical nature, it could be envisioned to publish it to transparently bind both institutions in that cooperation looking ahead.

81. The MoU between the central bank and the Ministry of Finance should define the information exchanges on ELA dossiers and the possible use of State guarantees in the most critical ELA situations. While the central bank is autonomous and fully responsible for ELA, some critical situations may require a close cooperation with the Ministry of Finance¹², as the risk of major disruptions to financial stability may have spillovers well beyond the financial sector. Whether, and under which conditions, the central bank should inform the Ministry of Finance on the provision of ELA (which is generally a strictly confidential information), should be defined in the MoU. In the most critical situations, the central bank may provide ELA to a systemic bank facing temporary liquidity problems only with a State guarantee¹³: (i) when there is a serious concern on the bank's solvency, (ii) when there is a concern on collateral sufficiency, and (iii) in the case of an ongoing resolution of the bank requesting ELA. This IMF guidance on the use of State guarantees in critical ELA situations should be implemented to the extent it is possible under the Chilean law.

82. The BCCh, with the CMF's support, should prepare an ELA Master Agreement outlining an exhaustive conditionality framework for ELA. No ELA should be unconditional, as the provision of ELA only aims at giving time to the liquidity-stressed bank to take the necessary measures (e.g., deleveraging, asset sales, restoring market access etc.) to restore an appropriate liquidity situation. This largely explains why using system-wide liquidity support measures (which are

¹² The Financial Stability Council (CEF), an advisory institution depending on the Ministry of Finance, could serve as useful forum for those discussions. The CEF is in charge of safeguarding the soundness of the financial system and facilitating the coordination and information-sharing between financial sector regulators (the CMF and the Superintendence of Pensions) and the Ministry of Finance, especially in times of stress. It is comprised by the Chairman of the CMF, the Superintendent of Pensions, and the Minister of Finance, who presides the Council. The BCCh is not considered "part" of the Council, but it acts as a permanent advisor in the field of its legal attributions, due to its constitutional technical and autonomous nature, and considering that the BCCh does not have legal powers or responsibilities to enforce surveillance and control actions regarding the capital market and financial system. In normal times, the Council holds monthly sessions, and during periods of stress it can hold as many meetings as necessary. There are internal protocols and staff level technical taskforces in place to address different topics and issues, as determined by the Council.

¹³ Under the Chilean constitutional framework, the provision of State guarantees is only possible under a special law authorizing the government to provide them.

generally not adjusted to individual banks' specific challenges) to address idiosyncratic liquidity stressed situations is not only suboptimal, but also dangerous. The provision of ELA should be conditional on the prior signature of an ELA agreement by the counterparty. The ELA Master Agreement should serve as a model agreement, which can then be adjusted to tailor the conditionality framework to each bank's specific challenges.

83. The ELA Master Agreement should include key building blocks for an exhaustive conditionality. Conditions could typically relate to reinforced reporting requirements, an obligation to conduct targeted audits and to share the results with the central bank and the banking supervisor, a limitation on interbank placements (in order to ensure the minimization of the use of ELA), a prohibition of dividend payments, limits on exceptional operations, specific rules on significant investment and loans (e.g., a prior notification or prior approval regime), limits on salary increases, bonuses, and new hires etc. The ELA Master Agreement could remain confidential or be published.¹⁴

C. Operationalization

84. The forward-looking assessment of solvency should be made by the CMF. In the context of ELA, the definition of solvency should be forward-looking, rather than relying solely on point-in-time capital adequacy ratios: a bank is deemed solvent if it has a credible prospect to maintain or restore appropriate capital adequacy ratios within the short-term. An ELA solvency assessment therefore requires going beyond point-in-time capital adequacy ratios, and considering all relevant forward-looking information on asset quality, loss recognition, recapitalization prospects, etc. It is essential, for instance, to provide clear and specific information on an envisioned recapitalization, such as its amount, its estimated impact on capital adequacy ratios, participating investors, and the tentative schedule. Such information may be critical to the central bank's decision to provide or not ELA.

85. The solvency assessment by the banking supervisor may not necessarily be binary. While the central bank may understandably prefer receiving a clear positive or negative assessment on solvency from the supervisor, in practice a forward-looking solvency assessment sometimes leads to "borderline" assessments. To summarize their forward-looking solvency assessment, the banking supervisor may use a "traffic-light" approach: between a positive assessment ("green") and a negative assessment ("red"), the banking supervisor may express an intermediary, nuanced assessment ("orange"), for instance a qualified concern on the bank's solvency, based on specific risk factors (e.g. implementation risks for an envisioned recapitalization).

86. Such nuanced solvency assessment by the banking supervisor feeds into the decision-making by the central bank, which keeps full discretion, within the limits of the Law, to

¹⁴ The main advantage of keeping the ELA Master Agreement confidential is to avoid controversies with the counterparties when ELA Agreements are discussed with them (as they may differ significantly from the model agreement depending on each bank's specific challenges). The main advantages of publishing the ELA Master Agreement are the reduction of moral hazard (as it then becomes clear that any ELA comes with heavy conditionality) and a better preparation of banks for such critical situations.

provide ELA or not. Because ELA is a financial stability measure, it does not rest solely on a positive or negative assessment of solvency by the banking supervisor. If the solvency assessment is positive, the central bank may, but must not, provide ELA—based on a financial stability assessment. If the solvency assessment is negative, the central bank must not provide ELA. Under the IMF’s ELA guidance, ELA might still be provided with a State guarantee fully protecting the central bank against any loss on that operation, if this is allowed under the national law. If the solvency assessment is “intermediary,” the central bank may still provide ELA, with or without a State guarantee depending on its assessment of risks. In particular, if there is a significant uncertainty on solvency, ELA may only be provided under a State guarantee.

87. The viability assessment should also be forward-looking, under the CMF’s responsibility. In the context of ELA, a bank is deemed viable if it has a credible prospect to maintain a sufficient level of profitability to be considered a going concern business, without a need for repeated recapitalizations. For such assessment, the banking supervisor should typically summarize information on the bank’s profitability history, latest profitability indicators (such as Return on Tangible Equity), considerations on the bank’s business model and competitive advantages.

88. The assessment of financial stability risks should be made by the BCCh. That assessment should typically include an assessment of the systemic nature of the bank requesting ELA, and of contagion risks, considering the broader national economic and financial context. Preserving financial stability should be the guiding principle of the decision to provide ELA or not, and to communicate about it or not. For instance, the central bank may decide to refuse the provision of ELA to a solvent, viable bank if it assessed that financial stability is not at risk—although most central banks would agree to provide ELA in such situation. The ELA framework and decisions should make it clear that ELA remains a discretionary (but not arbitrary measure) by the central bank and that there is no “entitlement” to ELA for any bank.

89. The BCCh’s collateral policies for ELA should be guided by the principle of prudence. By essence, an ELA loan is a risky operation for a central bank, which requires a prudent collateralization. An ELA request typically arises when a bank has exhausted its eligible collateral for monetary policy and needs additional central bank funding, as no other funding source if available. Consequently, in most ELA cases only “unconventional” collateral remains to collateralize ELA. The BCCh’s ELA Regulation may clarify which asset classes can be used as ELA collateral. Credit claims typically account for the bulk of ELA collateral. Therefore, the successful mobilization of credit claims (though with insufficient haircuts) as collateral for the FCIC has been a major operational step for the BCCh towards an effective collateral for ELA. The BCCh will need to significantly increase its haircuts on credit claims to prudently protect its balance sheet when providing ELA. A haircut add-on system, differentiating haircuts on credit claims depending on their credit risk classification, their maturity, and the existence or absence of guarantees, can be an effective approach to modulate ELA haircuts.

90. The BCCh should reinforce its ELA risk control measures in a discretionary manner, in case of need. In addition to conservative haircuts, the BCCh should implement additional risk control measures (e.g. concentration limits) and reinforce them in a discretionary manner in case of

heightened risks (e.g. in case of non-compliance of a bank receiving ELA). The principle of central bank discretion also applies regarding the selection of assets to collateralize ELA (by contrast with monetary policy operations which leave the asset selection with the banks). The BCCh should define a preference order for the mobilization of collateral, as part of its internal procedures.

91. The interest rate on ELA loans should be defined as a premium over the rate of the BCCh's Permanent Liquidity Facility (FPL). The ELA interest rate should be a penalty rate to ensure that ELA is only requested as last resort, though not so high that it could jeopardize the liquidity-stressed bank's solvency. Central banks typically set it at a premium of 100 to 300 basis points over their highest monetary policy rate (in the case of the BCCh, the FPL rate).

92. The maximum maturity of ELA loans should be set at two weeks by the ELA Regulation. This maximum maturity of ELA loans should be distinguished from the legal term on ELA, i.e., the longest possible time window for the provision of ELA (90 days under Article 36 of the BCCh Act, with strict conditions for the extension of the term beyond 90 days). ELA should only be provided for short periods (not longer than two weeks) for two reasons. First, the provision of ELA should be strictly minimized, based on short-term forecasts of the bank's liquidity needs: a much longer forecasting period would likely result in an over-calibration of the ELA envelope, unduly putting the central bank at risk. Second, the bank's compliance with the ELA conditionality framework should be regularly reviewed (every two weeks), to put constant pressure on the bank to take the necessary measures to repay ELA as soon as possible and restore a sound liquidity situation.

93. Every two weeks, the CMF should inform the BCCh on the bank's compliance and progress in the necessary measures to exit LOLR support. Because the banking supervisor has the best overview of the bank's situation and actions, its input is essential to guide the central bank's decisions on the continuation or discontinuation of the provision of ELA. In general, a lack of compliance by a bank under ELA would not lead to a discontinuation of ELA (which may have adverse consequences for financial stability), but instead to a reinforcement of the central bank's risk control measures (e.g., higher overcollateralization) and/or a stricter conditionality framework (e.g., a requirement to conduct an audit and share the results with the central bank and the banking supervisor). Those measures are more likely to ensure appropriate compliance by the bank than a threat of "pulling the plug", which may not be credible if the bank is systemic.

94. The BCCh and the CMF should define a funding plan template. A funding plan is a balance sheet projection over a medium-term horizon (typically one or two years, in the context of ELA), with typically quarterly forecasting points and quarterly revisions. A bank receiving ELA must provide a funding plan outlining its strategy to fully repay ELA within the term defined by the central bank (e.g., maximum 90 days, in the Chilean context). That funding plan should reflect the measures envisioned by the bank to restore a sound liquidity situation, for instance asset sales, a recapitalization, more conservative lending and investment policies, etc.

95. The CMF should provide the BCCh with its assessment of the funding plan submitted by the bank under ELA. The funding plan submitted by the bank should be realistic and it should

reflect a commitment by the bank's senior management. It should be presented to the central bank and the banking supervisor by the bank's CEO and CFO. The funding plan should be assessed by the banking supervisor, and this input should feed into the central bank's decision-making on ELA. When successive funding plans are submitted by a bank, the assessment should focus on revisions between those successive versions as well as deviations between realizations and forecasts. Whether negative deviations (resulting in higher-than-expected ELA needs) result from factors that are exogenous or endogenous to the bank's management can be an essential input to decision-making on ELA.

96. The BCCh should define its communication policies on possible ELA operations. The BCCh has taken the commendable initiative to be the first central bank to receive a Central Bank Transparency Code assessment by the IMF, in early 2021. That exercise covered ELA, which is one of the most sensitive areas for any central bank. Indeed, the immediate disclosure on the provision of ELA may jeopardize depositor and creditor confidence in the bank receiving ELA and possibly others (through contagion), which would run counter to the financial stability objective. Therefore, it is generally advised to keep the provision of ELA initially confidential, to minimize the risks for financial stability. At the same time, the principle of central bank accountability applies: ELA operations should be covered by internal and external audits, and they should be the subject of external communication, typically ex post (once ELA has been repaid) and along the lines recommended by the auditors. The communication strategy for ELA operations may be detailed in internal procedures, although some flexibility should be kept to adapt the communication to specific circumstances—always with the goal of preserving financial stability.

97. ELA preparedness could be bolstered through joint BCCh/CMF simulations. The CMF and the BCCh already participate periodically in stress exercises in order to test their preparedness and strengthen their coordination mechanisms. Those simulations could also test both institutions' readiness to cooperate and provide the necessary inputs for an ELA assessment, e.g., based on case studies.