Unconventional Monetary Policy Responses to the COVID-19 Crisis
The Chilean Experience

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Lecture presented at the joint INS-MCM IMF seminar on "Unconventional Monetary Policy in Emerging Markets", February 4th 2021.

Agenda for today

- **A bit of theory**
- **Main stress indicators**
- **Policy implementation challenges**
- **Technical trade-offs in policy design**
- **Policy evaluation**
- **Concluding remarks**

A bit of theory (1)

- **COVID-19 crisis very different** from the standard/recent observed recessions in either advanced or emerging economies.

- **Instead of** a shock *in* the financial system that then spreads *to* the real economy, the COVID-19 crisis is a shock *to part* of the real economy that then spreads *to* the rest of the real economy and *to/through* the financial system.

- It is an **external (global)** shock that affects the non-traded/service sector.

- It is by nature known to be **transitory** (but very deep and not short).

- It is a **supply/productivity** shock to part of the real economy, that has aggregate demand spillovers.

A bit of theory (2)

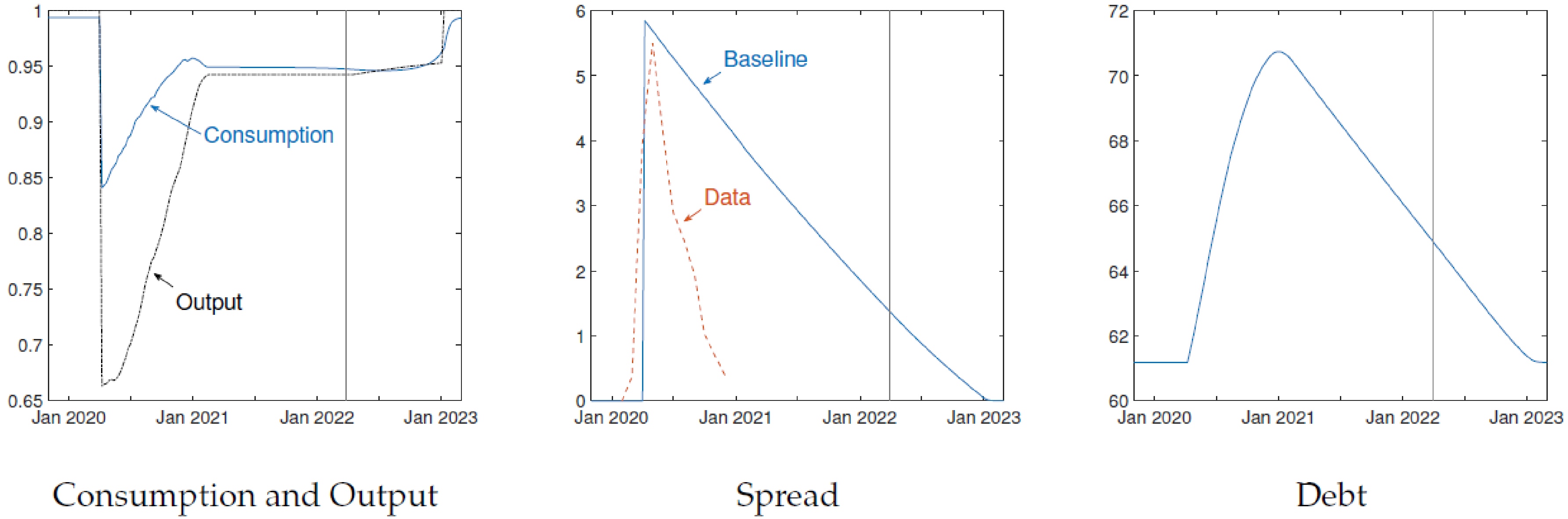
- It is *not* caused by reckless pre-crisis leverage, with policies now engineered to support demand and manage a de-leveraging. Policies instead have looked to up-leverage the economy.

- **Moral hazard** is significantly less relevant issue for policy design at the outset. Same for the liquidity/solvency concerns at the outset.

- In short, the COVID-19 crisis is more akin to a **textbook example** of a transitory income shock that requires smoothing.

- The global nature of the shock prevents current accounts to play a strong adjusting role. Rather it is a public/private rebalancing of excess saving.

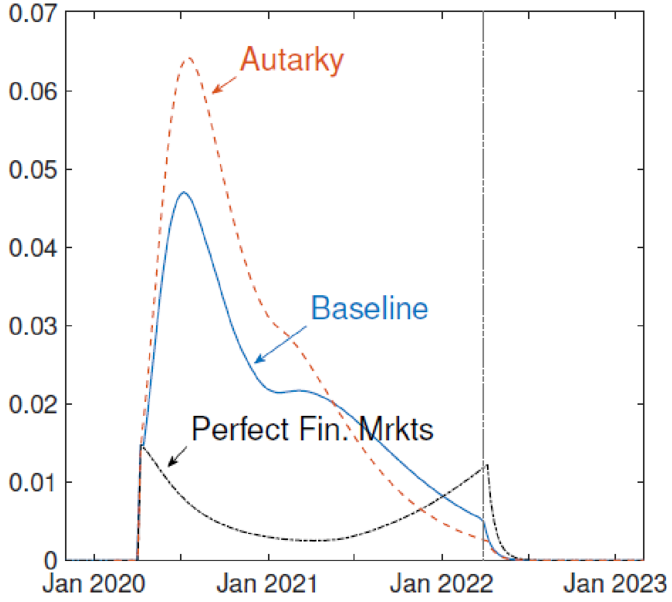
From the theory: smoothing of consumption requires significant up-leverage, as pandemic is a transitory but very large shock.



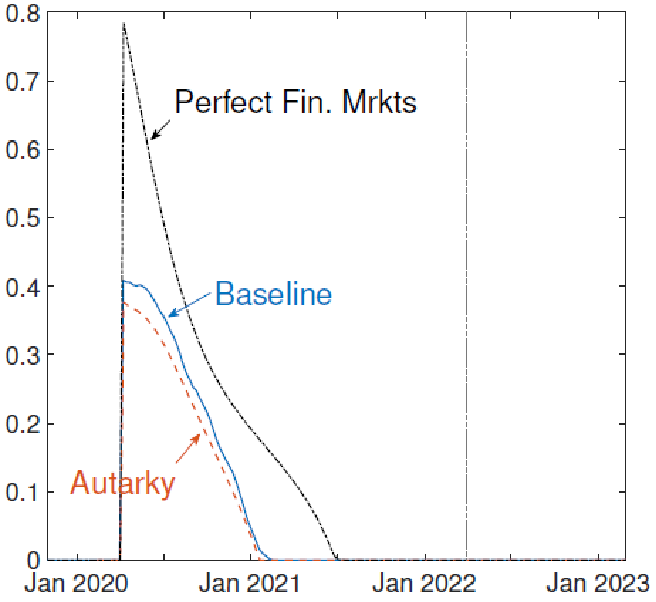
- Depressed consumption and output (15% drop first year)
- Spreads spike and remain elevated
- Debt increases with slow mean reversion

Source: Arellano, Bai, Mihalache (2020), "Deadly Debt Crisis: COVID-19 in Emerging Markets", Staff Report 603, Federal Reserve Bank of Minneapolis, presentation at 2021 Covid Workshop at the Central Bank of Chile.

From the theory, proper functioning of financial markets is critical. There is no trade-off between health and economy.



Daily Fatalities per 10 K

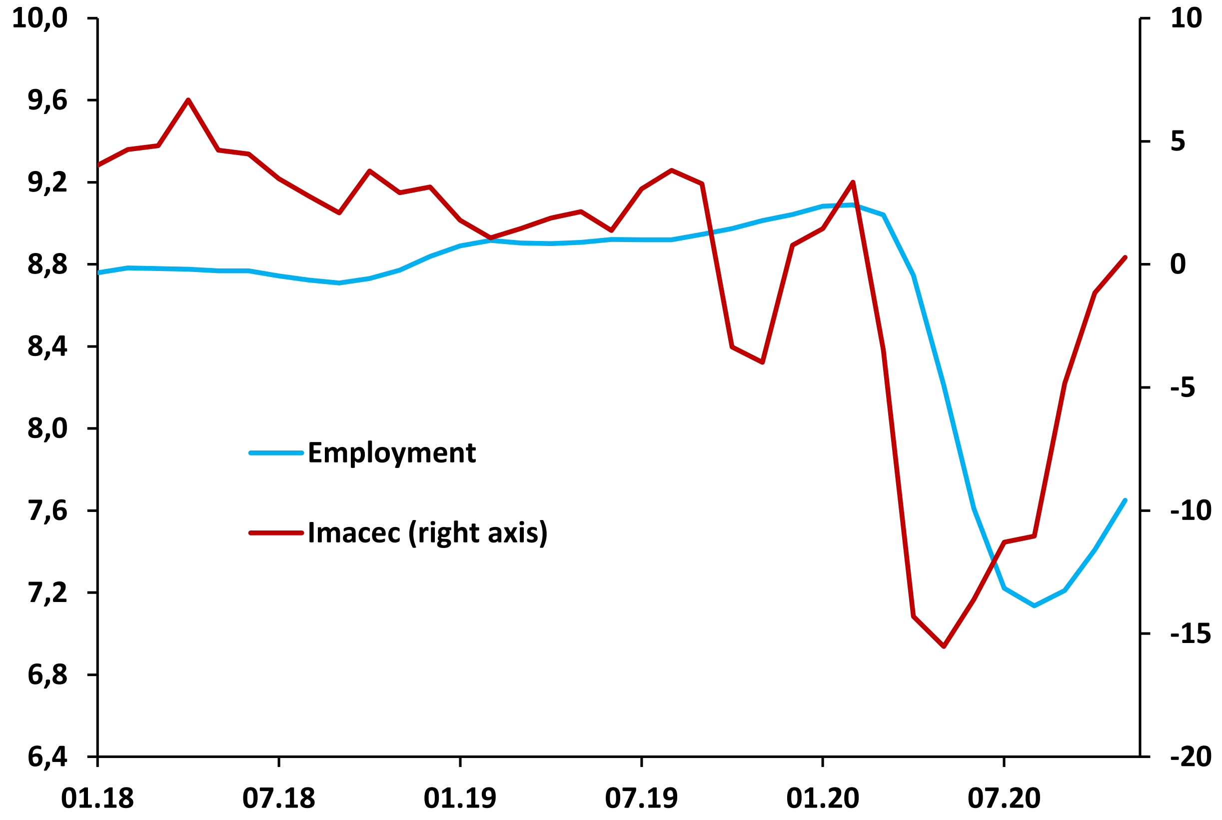


Lockdown

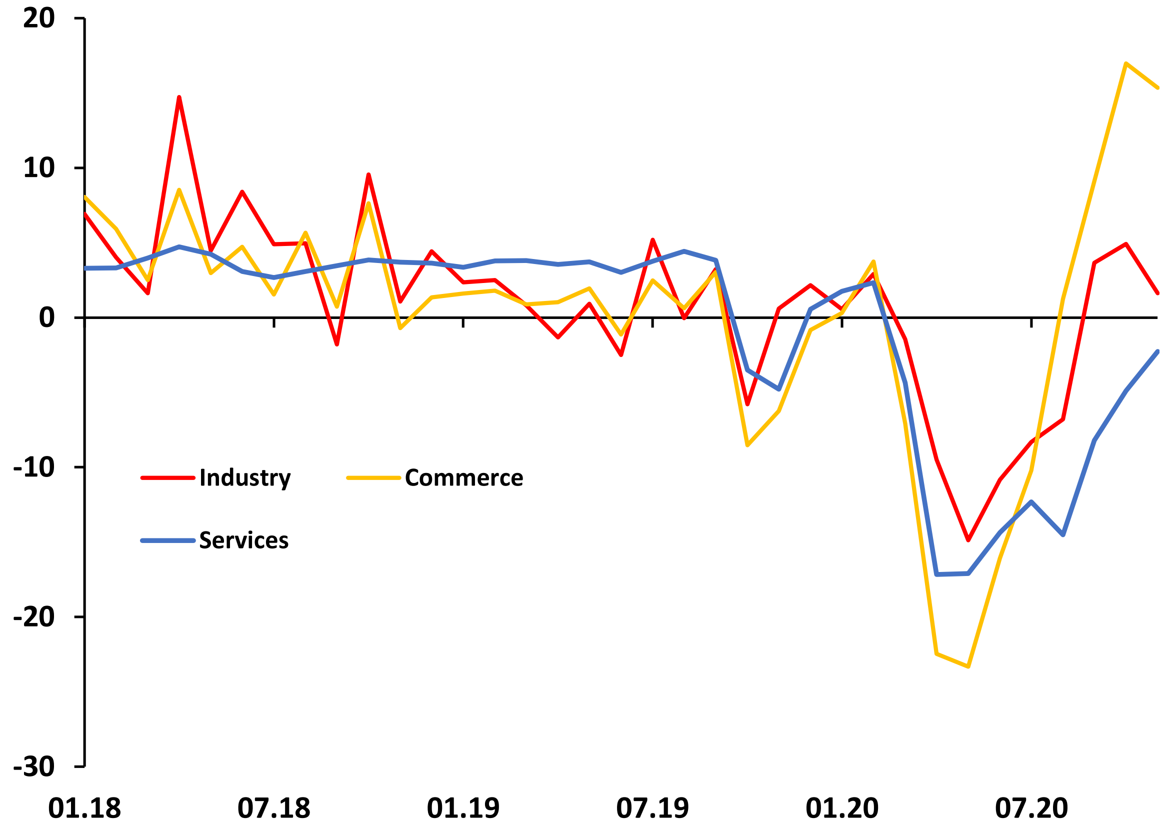
Source: Arellano, Bai, Mihalache (2020), "Deadly Debt Crisis: COVID-19 in Emerging Markets", Staff Report 603, Federal Reserve Bank of Minneapolis, presentation at 2021 Covid Workshop at the Central Bank of Chile.

Stress indicators: Significant aggregate impact in Chile with heterogeneous effects

Employment and IMACEC*
(quarterly moving average, millions of people; annual change, percentage)

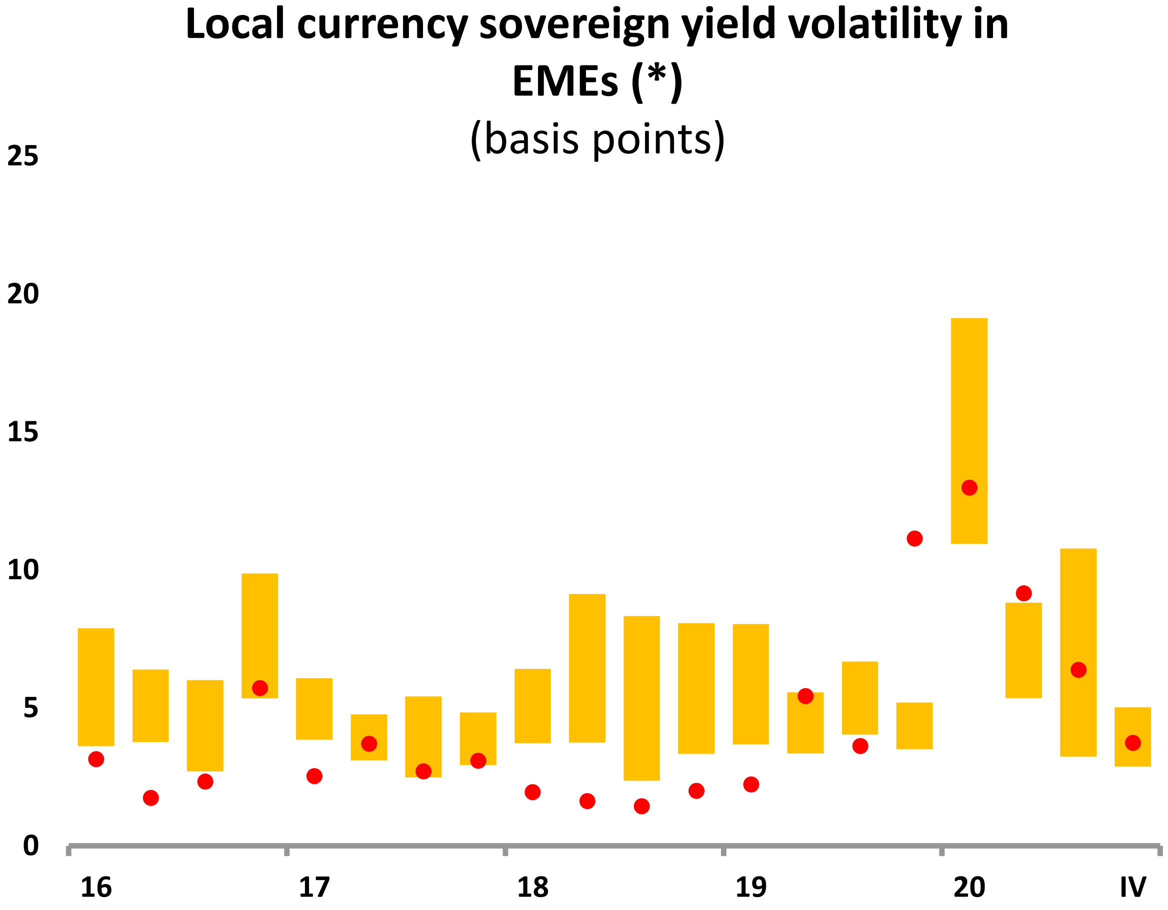


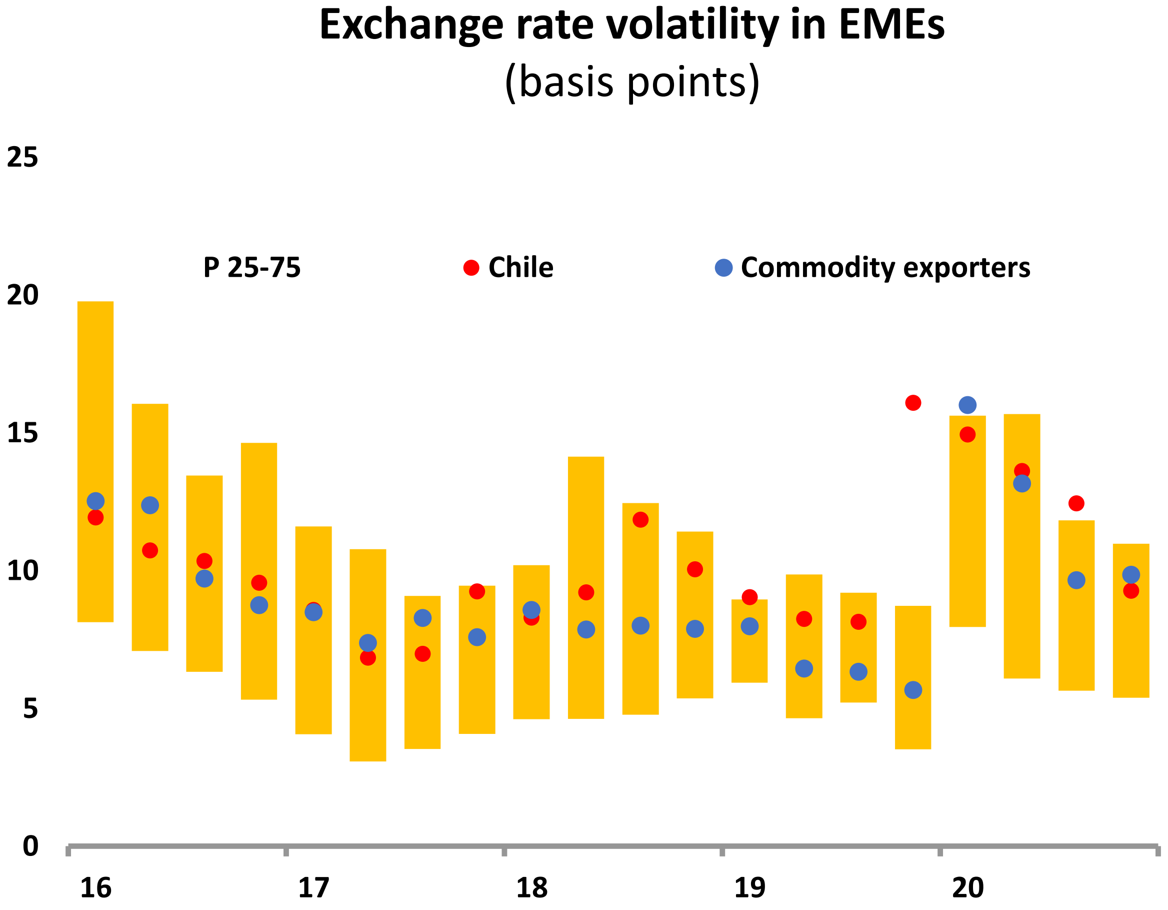
IMACEC* industry, commerce and services
(annual change, percentage)



Source: Central Bank of Chile and National Statistics Institute
Note: * IMACEC is a monthly GDP proxy

Financial volatility remains elevated

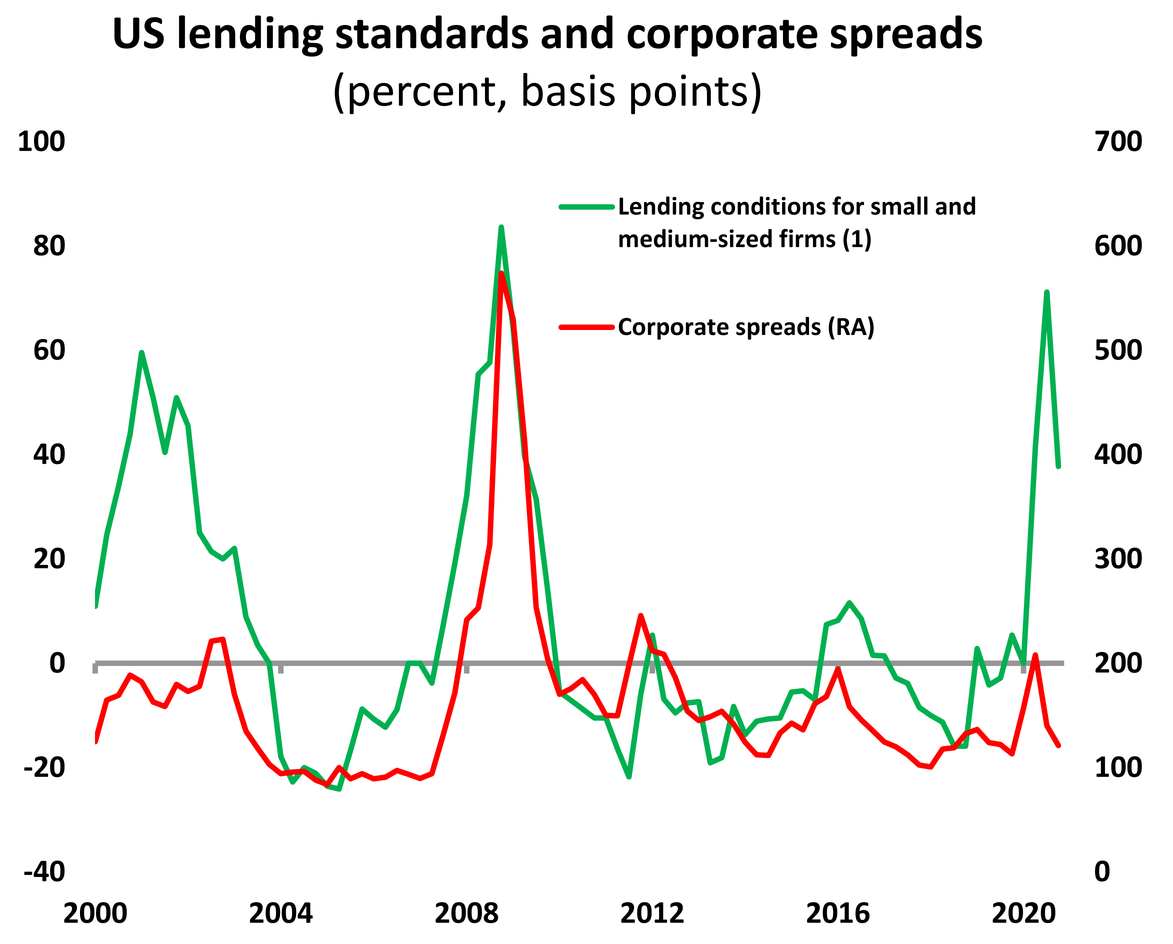


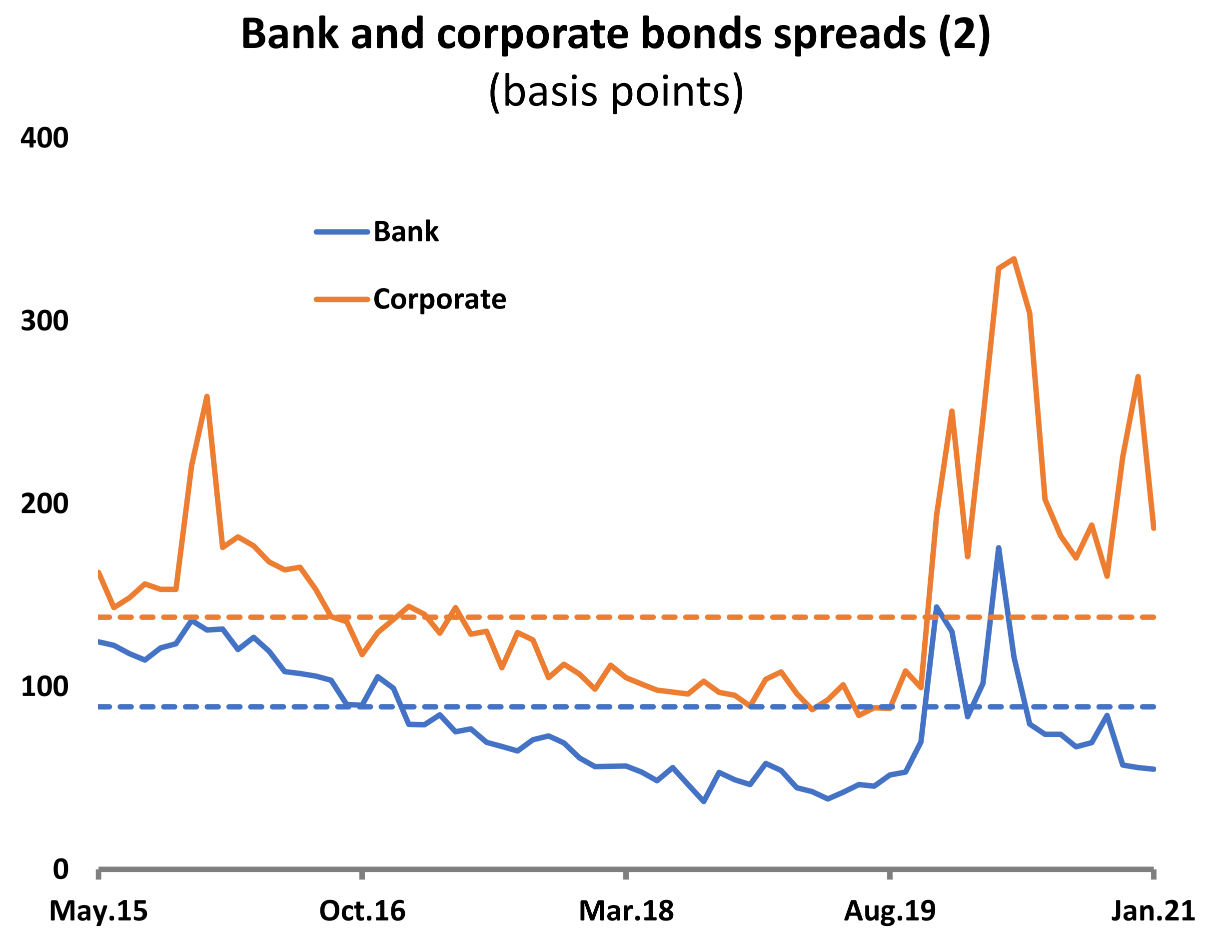


(1) Emerging market economies (EMEs) include: Brazil, China, Colombia, Hungary, India, Indonesia, Malaysia, Mexico, Peru, Poland, Russia and Turkey. Commodity exporters include Australia, Canada, Norway and New Zealand.

Source: Central Bank of Chile and Bloomberg

Dislocation in the cost of funding by banks and corporates

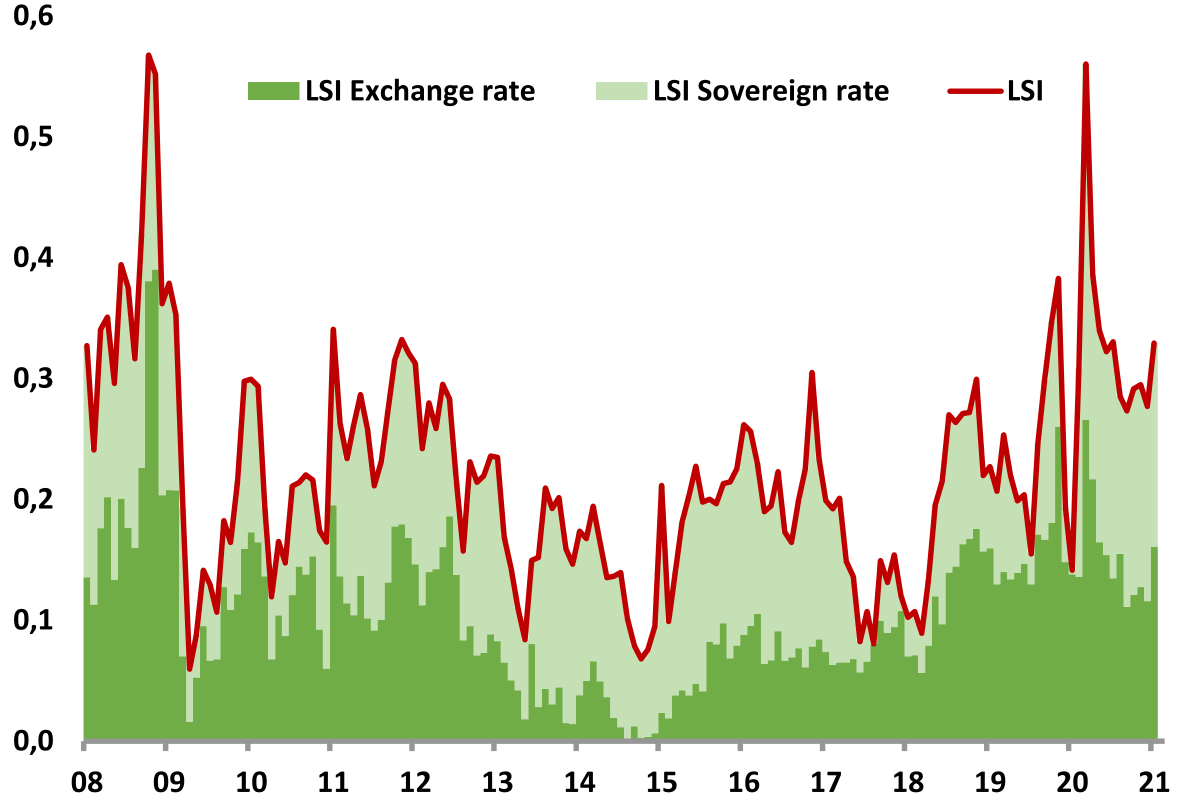




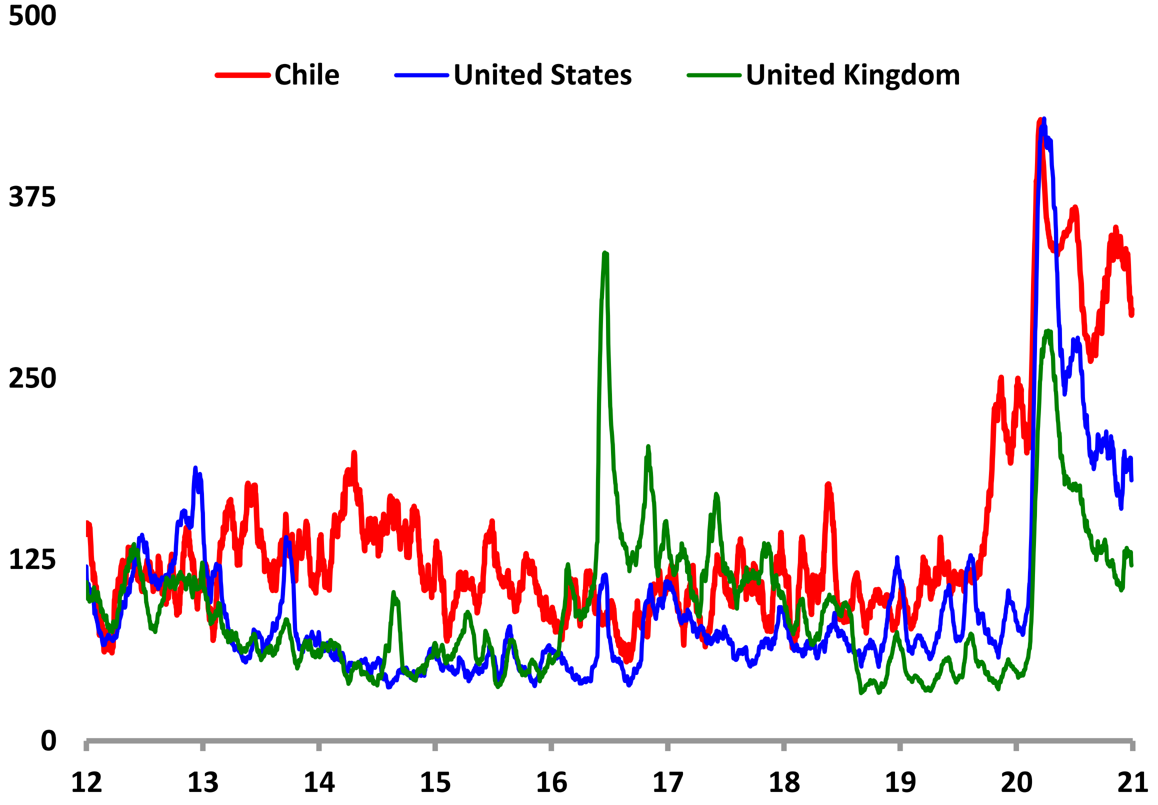
(1) Positive (negative) values indicate tighter (looser) lending conditions.
(2) Dashed lines indicate the 2015-18 average of the respective series.
Source: Central Bank of Chile, Federal Reserve Bank of St. Louis, and Santiago Stock Exchange.

Stress indicators reflect uncertainty from both COVID-19 and idiosyncratic features

Local Stress Index (1)
(Index: 2018 average = 0,1)



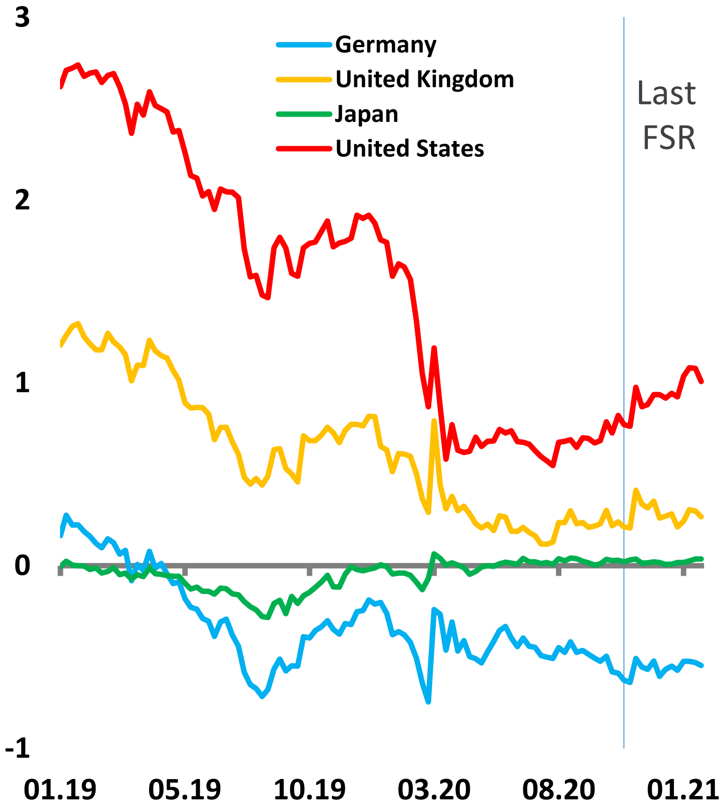
Daily economic policy uncertainty Index (2)
(Index: Jan. 2012 = 100)



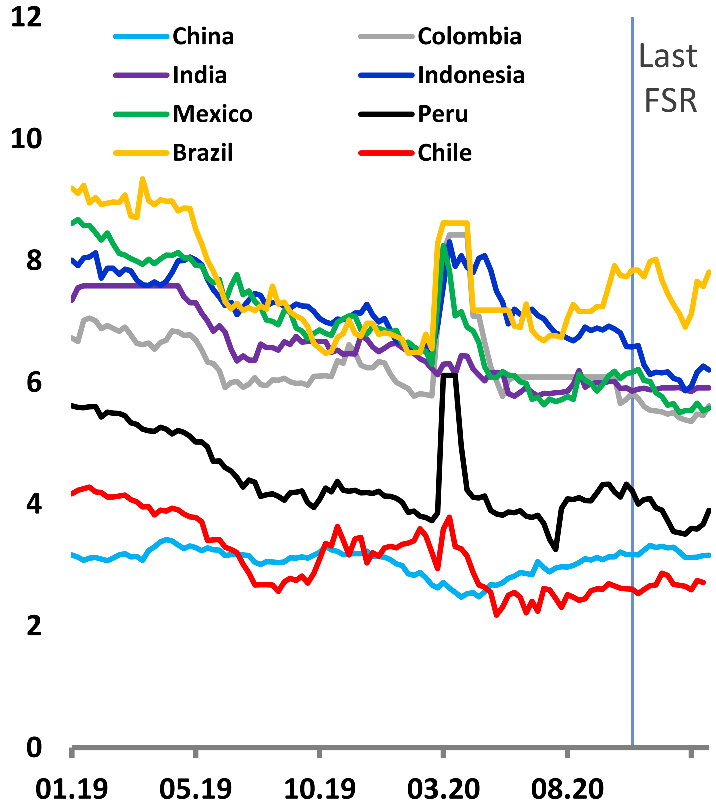
(1) Lower (higher) index values indicate looser (tighter) financial conditions in the respective markets.
(2) 30 – day moving average. Lower (higher) index values indicate a lower (higher) level of general uncertainty.
Source: Central Bank of Chile.

Flight to safety to long-term official securities

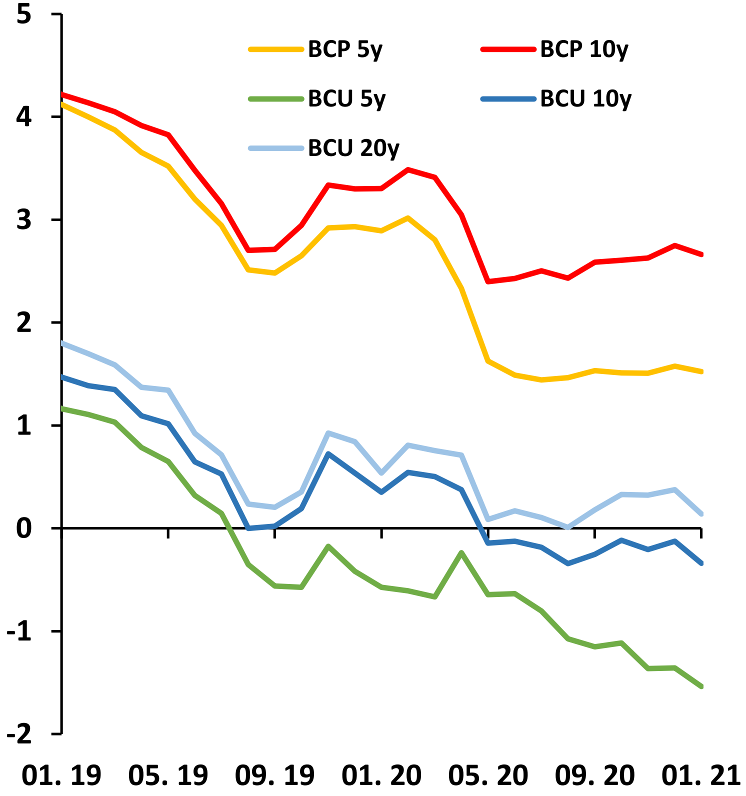
Ten-year sovereign bond interest rates: Developed economies (*)
(percent)



Ten-year sovereign bond interest rates: Emerging economies (*)
(percent)

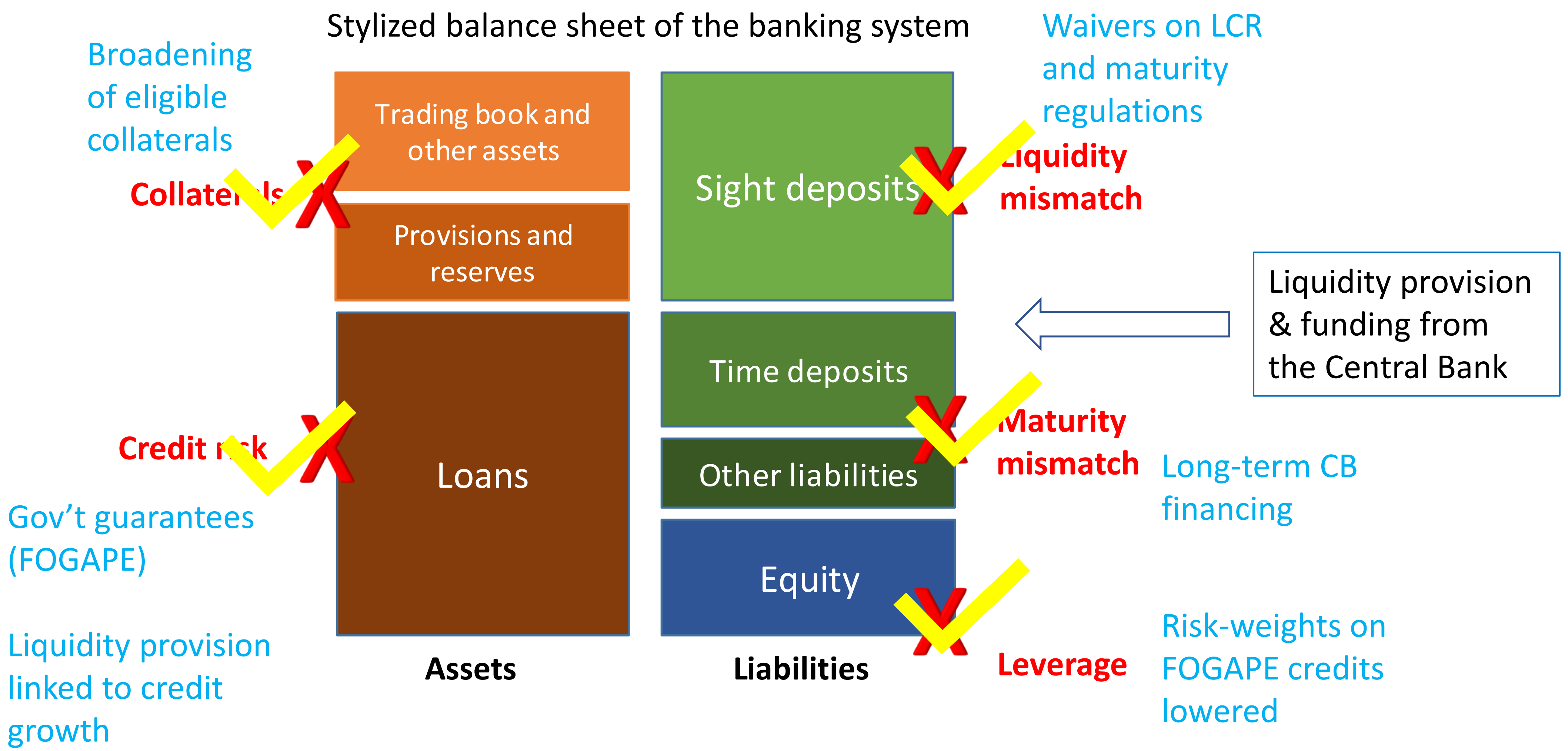


Local sovereign interest rates
(percent)



(*) Weekly data.
Source: Central Bank of Chile and Bloomberg

Implementation challenges for the transmission of monetary policy through the banking system



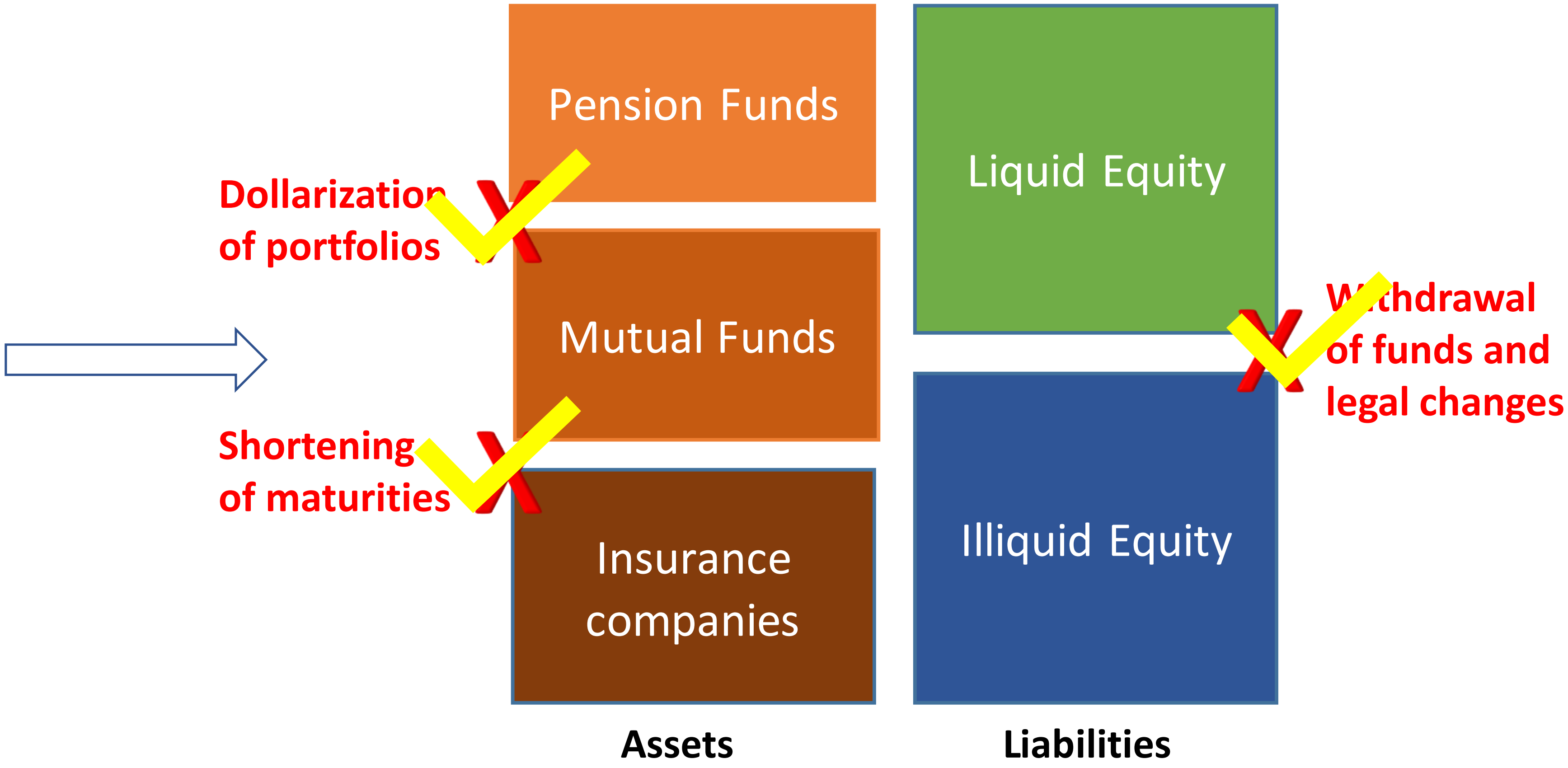
Implementation challenges for financial stability policies due to portfolio shifts in non-bank intermediaries

Purchase of illiquid assets in stressed capital markets

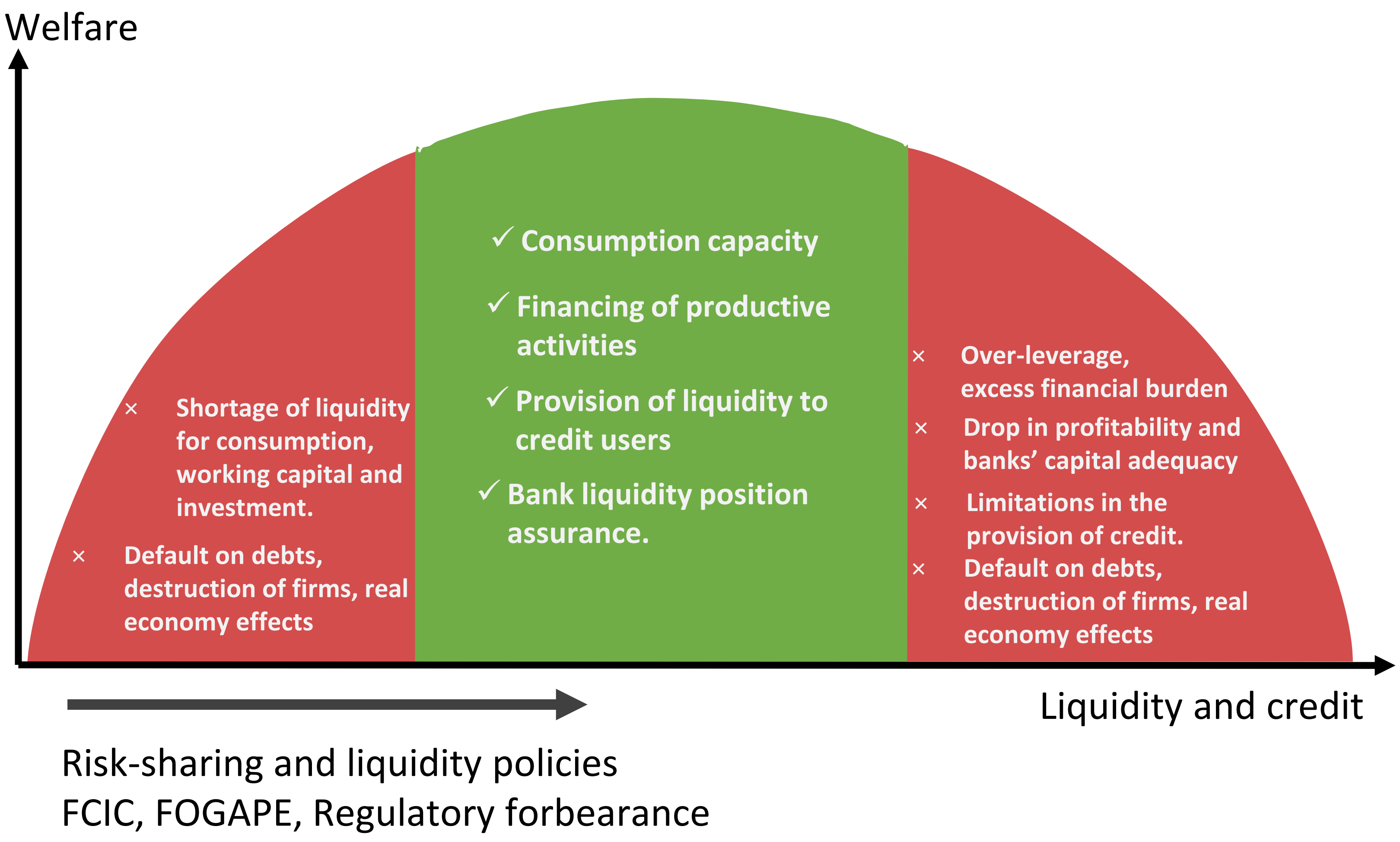
CCVP ("repo-style") with Pension Fund assets

Provision of dollar liquidity

Constitutional change to allow purchase of treasuries in secondary markets

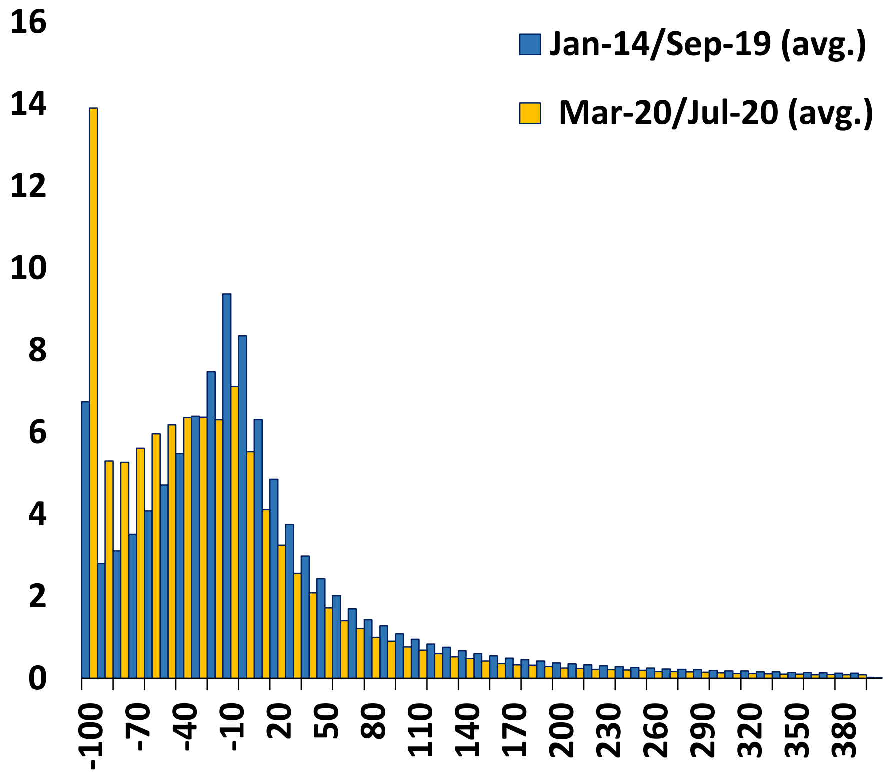


A stylized view of optimal credit provision



Assessing the impact of the pandemic on firms’ cash flows

Distribution of real annual sales growth (1)
(share of total firms)



Sectorial evolution of sales: Mar-20/Jul-20 (2)
(percent)

Sector	Sales growth, average (3)	Share of firms (4)	Share of firms with “*non reporting*” (5)	Share of firms with “*significant drops*” (6)
Manufacturing	-14.2	15.8	15.2	31.1
Construction	-11.8	13.7	24.1	30.2
Retail	-12.8	31.8	16.1	29.0
Transportation	-6.2	11.2	11.8	20.7
Financial services	-6.0	2.0	15.3	22.7
Housing	-18.0	1.7	20.3	22.5
Entrepreneurial services	-12.5	11.8	18.1	27.6
Personal services	-18.1	5.0	26.0	26.6
Restaurants and hotels	-39.9	6.9	41.9	23.6

(1) Based on information from the electronic invoice. Annual sales growth calculated on a monthly basis for each firm
(2) Based on information from the electronic invoice
(3) Simple average of the annual variation of sales
(4) Corresponds to the calculation for the period Feb.19-Mar. 20
(5) Share of firms that stopped reporting sales on the electronic invoice
(6) Corresponds to companies with annual sales drops of over 70%.
Source: Central Bank of Chile.

Technical trade-offs for credit easing policies require coordination between fiscal/monetary/regulatory policies (1)

FCIC: Facilidad de Financiamiento Condicional al Incremento del Crédito (Liquidity facility conditional on credit increase)

- **4-year lending facility at MPR in ELB (0.5%)**: how to incentivize uptake if banks expect ELB to be revised downward? *Automatic refinancing at lower rate.*
- **Allocation of funds conditional on bank's credit increase**: stock or flow? *stock is relevant for macroeconomic support; flow is relevant for refinancing operations, focus shifts from the former to the latter as the economic fallout progresses.*
- **Magnitude of credit increase**: pressure on available collaterals: *the set of accepted collaterals is broadened significantly so as to include corporate bonds as well as corporate loans.*
- **Credit risk**: FCIC only provides liquidity: *reduction of credit risk perception results from credit guarantees provided by the state (FOGAPE).*
- **Evolving calibration over roughly six month periods**: March 2020 (FCIC1) / June 2020 (FCIC2) / January 2021 (FCIC3)

Technical trade-offs for credit easing policies require coordination between fiscal/monetary/regulatory policies (2)

FOGAPE: Fondo de Garantía para Pequeños Empresarios (Small Business' Guarantee Fund)

- **A popular and focused instrument for SME**: How to tailor it for the COVID-19 crisis? *Its size and scope is broadened significantly, with guarantees of USD 3bill that can lever up to USD24 bill in new credits (10% of GDP, 10x previous programs). Cap on sales for eligibility is increased from USD1mill a year to USD40mill a year.*

- **Extent of credit-loss coverage and moral hazard**: Capped at 15% of individual credit (median credit loss in GFC was 9%), with a deductible of 1-2% of credit loss. *Initially only for new credits, whereas banks initially agreed to automatically refinance other credit operations with a grace period of 6 months.*

- **A cap on lending rate at 3.5%**: During legislative process a cap is established on lending rate.

- **Standardization of products**: 36 months loan with 6 months grace period ("COVID loans").

- **FOGAPE reactiva (2.0):** increased flexibility for re-refinancing of Covid and non-Covid loans, maximum lending rate.

Technical trade-offs for credit easing policies require coordination between fiscal/monetary/regulatory policies (3)

FOGAPE/FCIC introduce other trade-offs in the banking system balance sheet:

- **Liquidity and maturity mismatch**: Banks replace retail funding from time deposits with the FCIC, thus having liabilities with longer maturities.

- **Voluntary refinancing operations:** From commercial credit, FOGAPE-related operations, but also from other voluntary refinancing to mortgages and consumer credit, a significant term mismatch appears. ***CMF/BCCh*** *provide 90-day, renewable waivers for regulatory limits such as the LCR.*

- **Leverage**: Credit expansion can be constrained by available equity in the banking system: shareholders decide to reduce dividend distribution, *CMF allows FOGAPE loans to be classified with lower (sovereign) risk weights.*

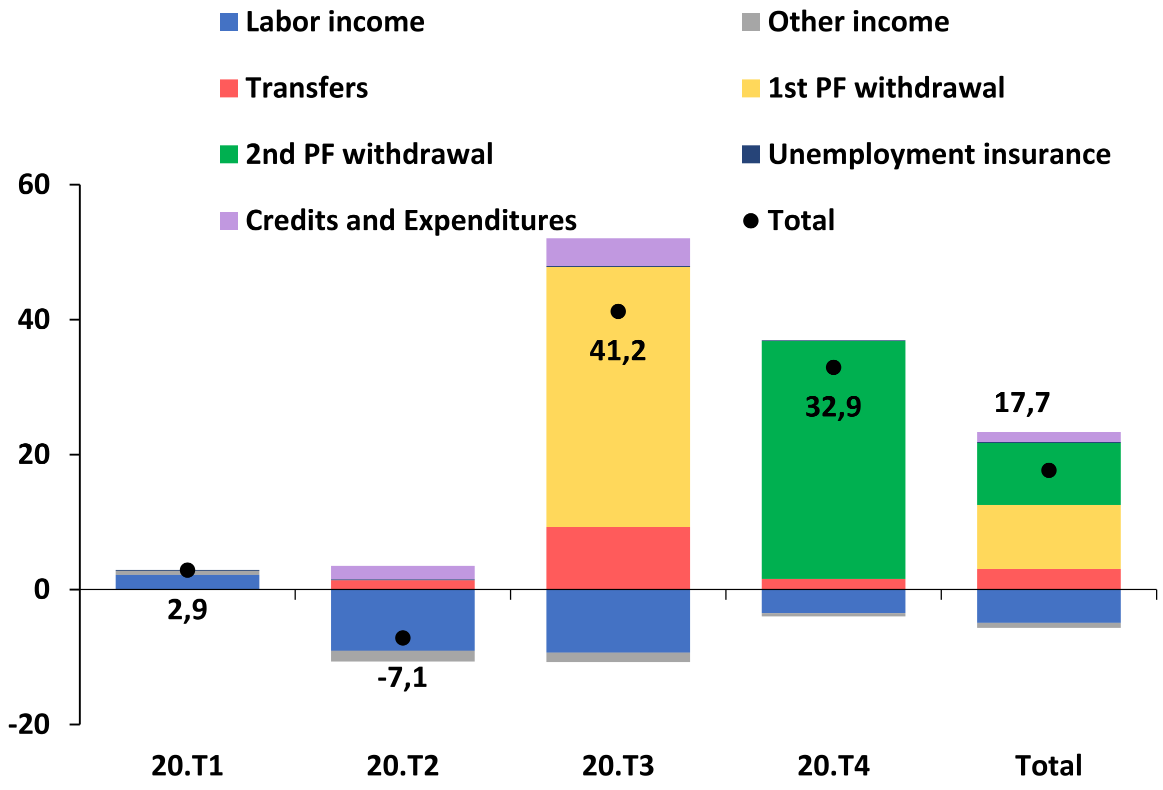
Technical trade-offs for credit easing policies require coordination between fiscal/monetary/regulatory policies (4)

Other measures:

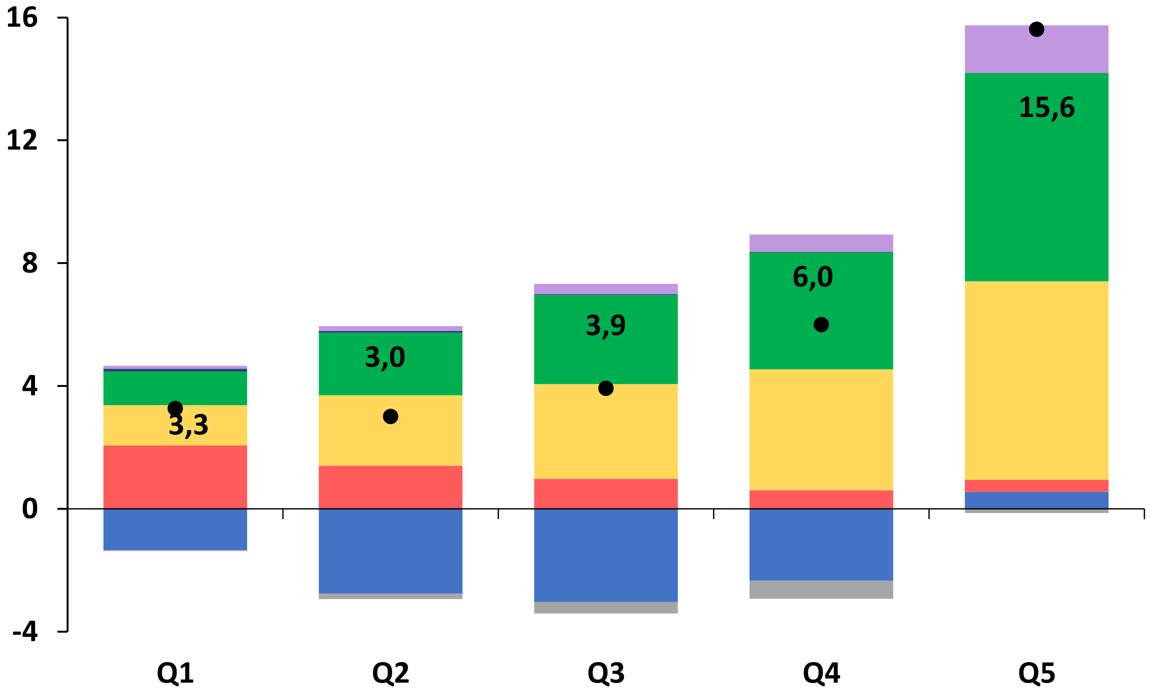
- **Fiscal support** through credits to middle-class, mortgage deferrals.
- **Capital markets** support similar to FOGAPE through fondo CRECE, which provides guarantees usable by non-bank providers of SME financing.
- **CMF allowed** transitory freezing of provisioning of voluntary refinancing of well-performed bank and non-bank loans to households.
- **Speedier issuance** and registration of securities, convertible bonds.
- **Normative change** for REPOs for banks so as to link risk-weights by underlying asset and not counterparties.

Timing and distributional impact of direct support measures

Effect of support measures on household income, 2020
(annual change, percentage)



Change in income and additional liquidity, 2020
(USD billions)

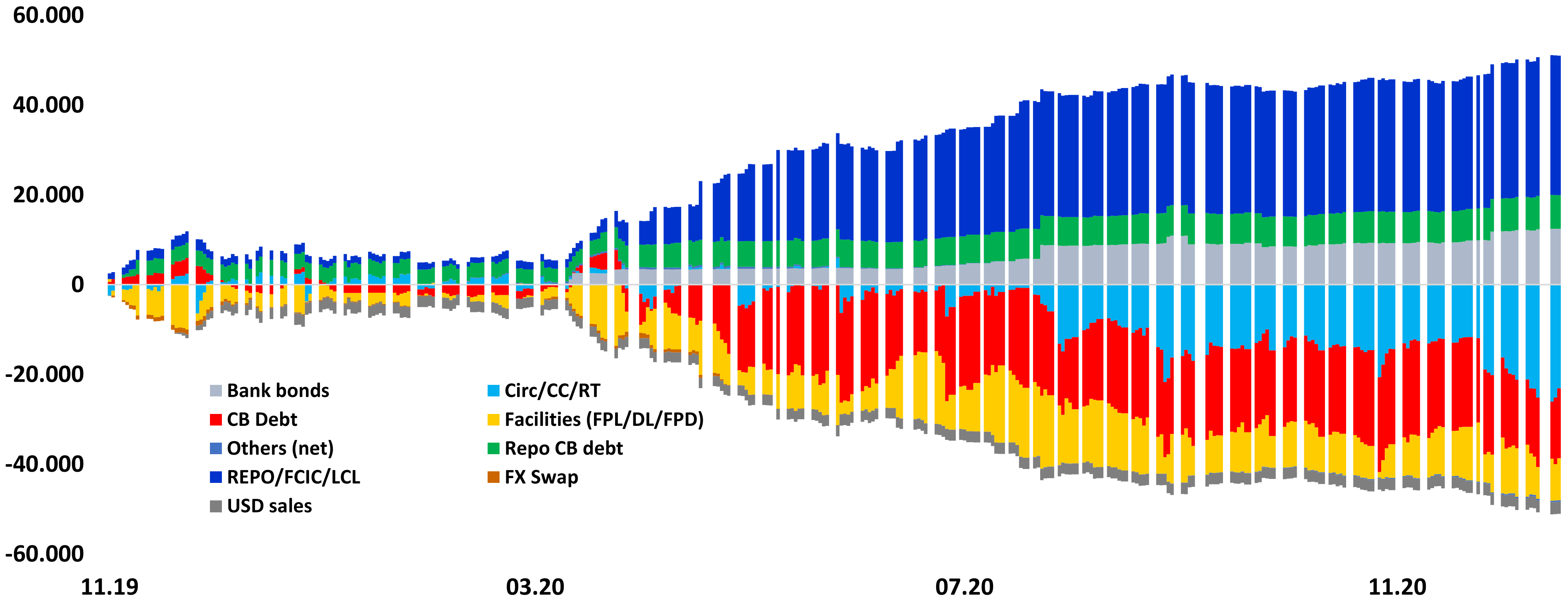


Source: Central Bank of Chile based on Barrero et al (2020).

UMP evaluation (1): A significant expansion of the CBCh balance sheet

Cumulative sources of liquidity movements (*)

(USD millions)

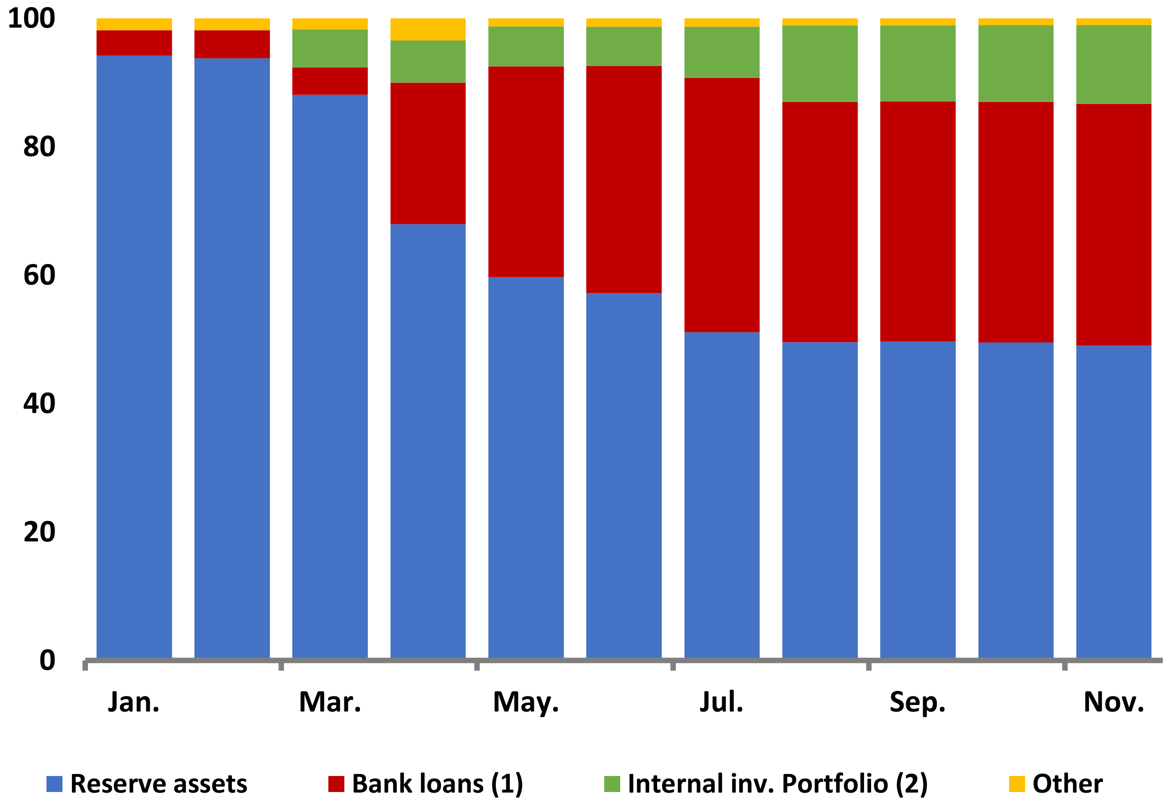


(*) FCIC: Conditional Financing for Increased Loans
LCL: Activation of liquidity facility
FPL: Standing liquidity facility
FPD: Standing deposit facility

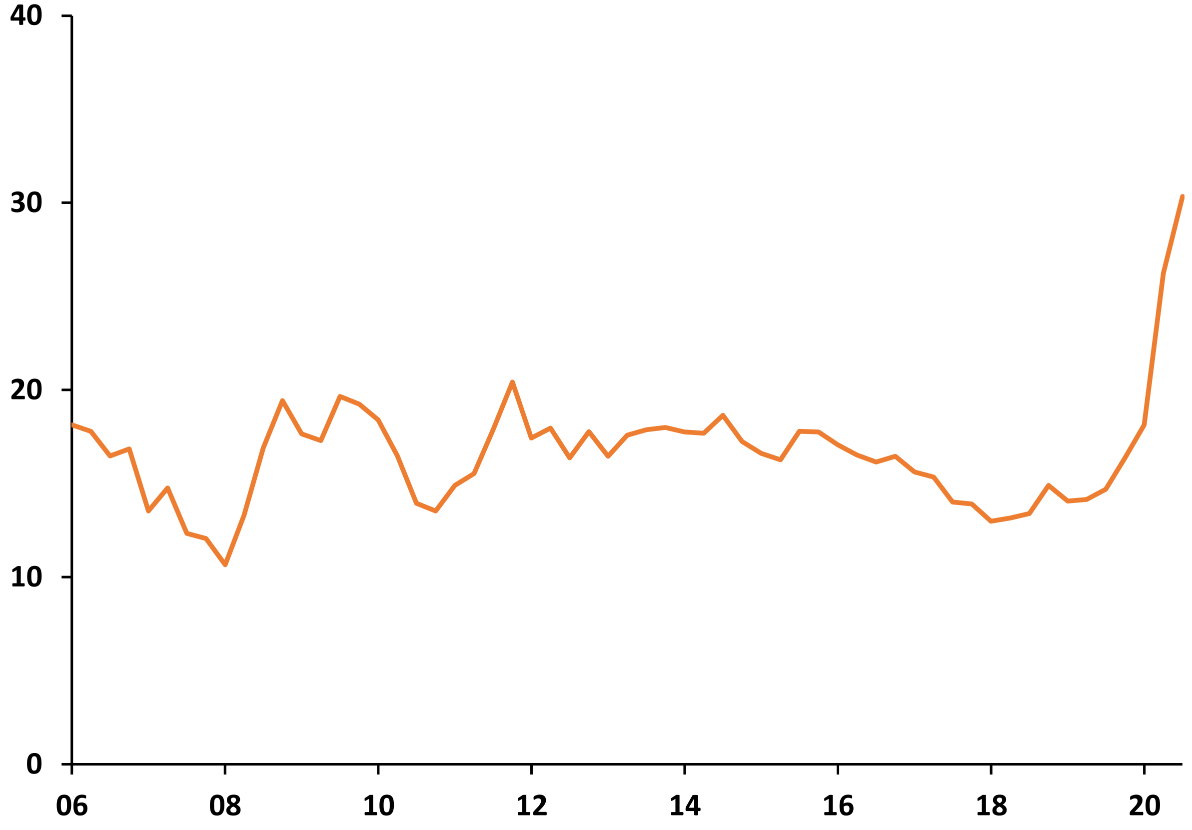
Source: Central Bank of Chile.

UMP evaluation (1): A significant expansion of the CBCh's balance sheet

Central Bank of Chile's asset composition
(percent)

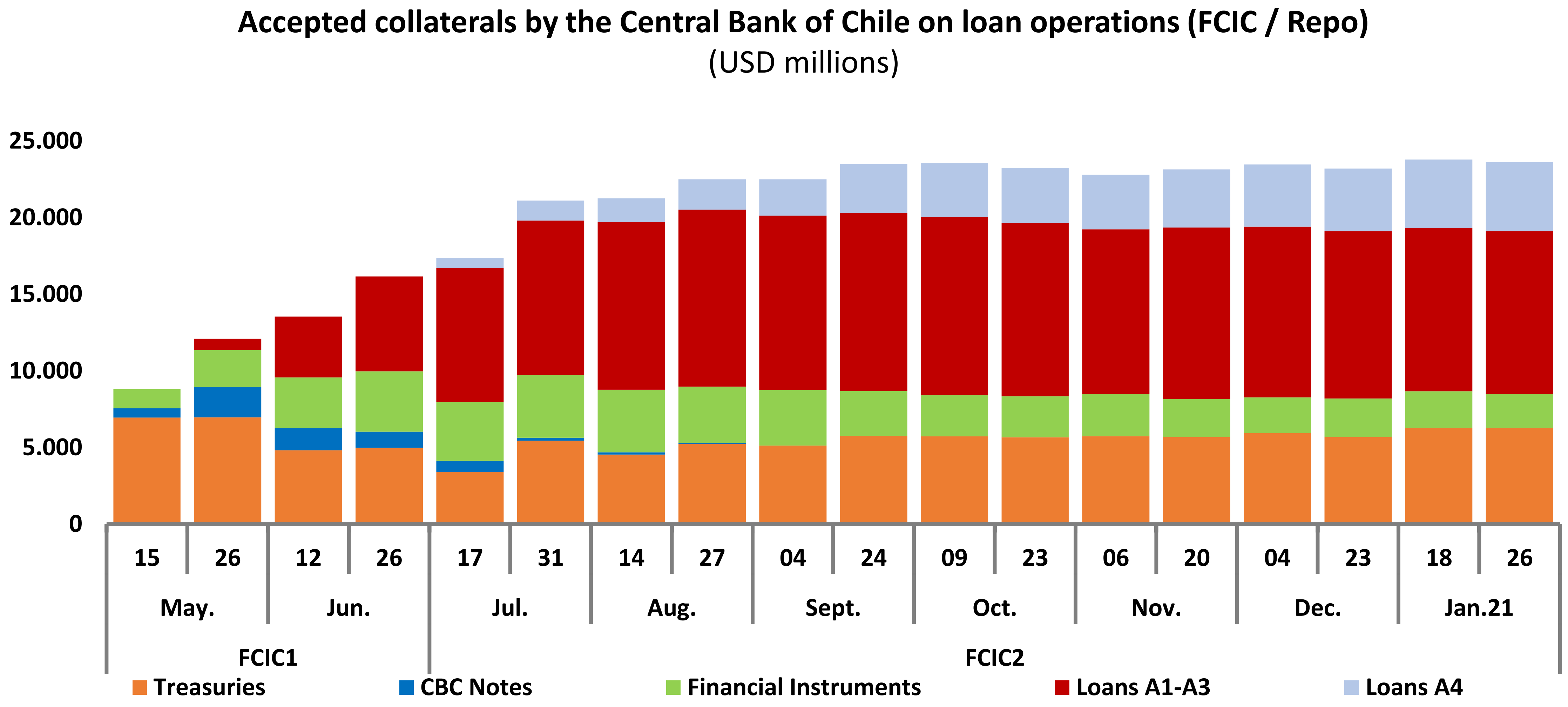


Assets on the Central Bank's balance sheet
(percentage of GDP)



(1) Includes FCIC, repos, and standing liquidity facility.
(2) Includes bank bonds, time deposit, and CCVP purchases.
Source: Central Bank of Chile and FMC.

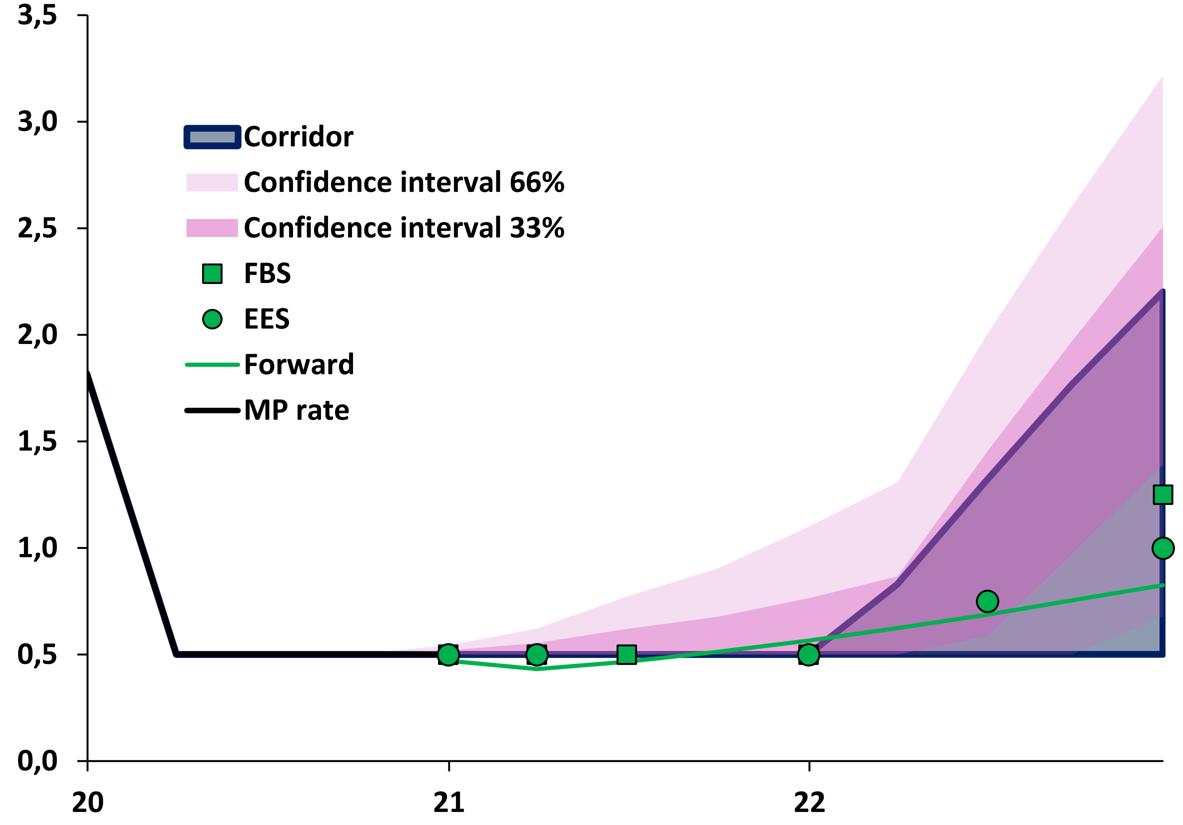
UMP evaluation (2): Broadening of collaterals for FCIC/Repo



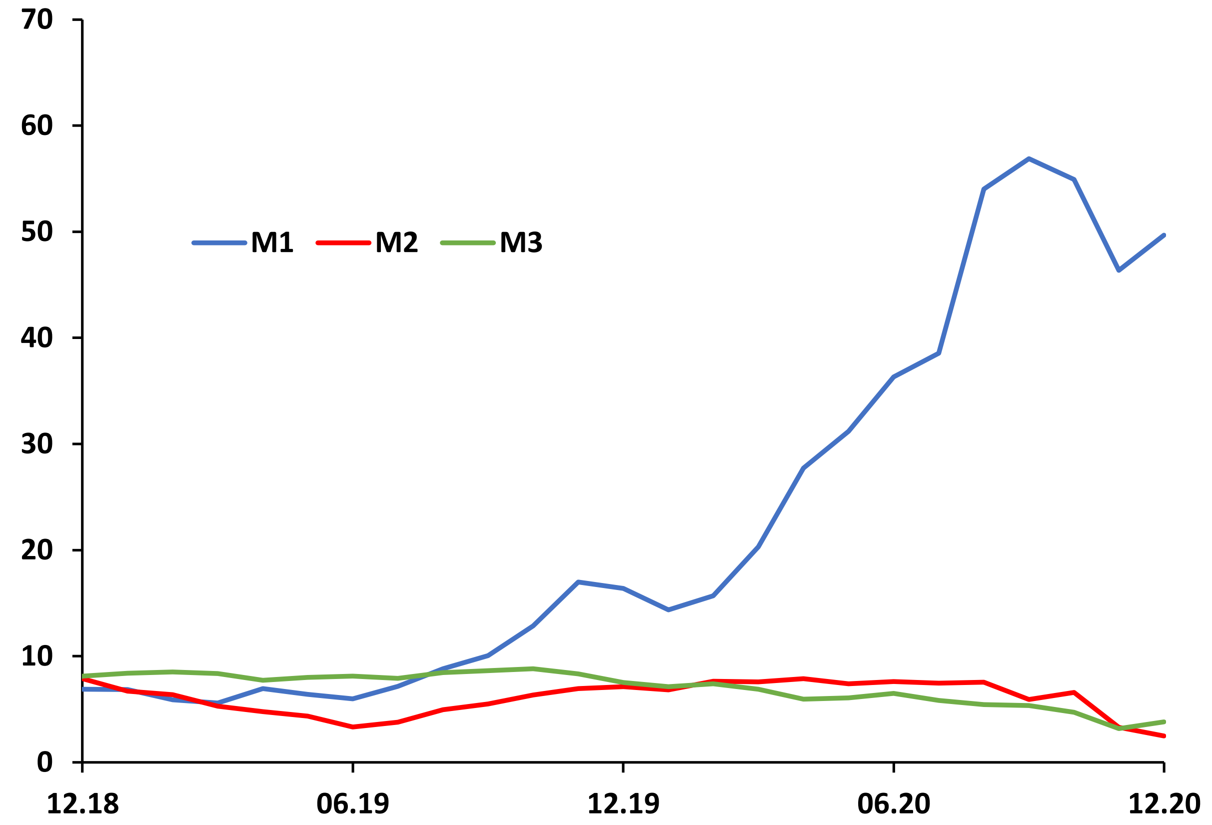
Source: Central Bank of Chile. A# is the risk classification for individual loans. The higher the # the higher the risk. FCIC3 will broaden to A5 – A6 with gov't guarantees.

UMP evaluation (3): Aggressive forward guidance, logistical challenges for money supply

Monetary policy rate corridor (*)
(percent)



Monetary Aggregates
(real annual change, percentage)

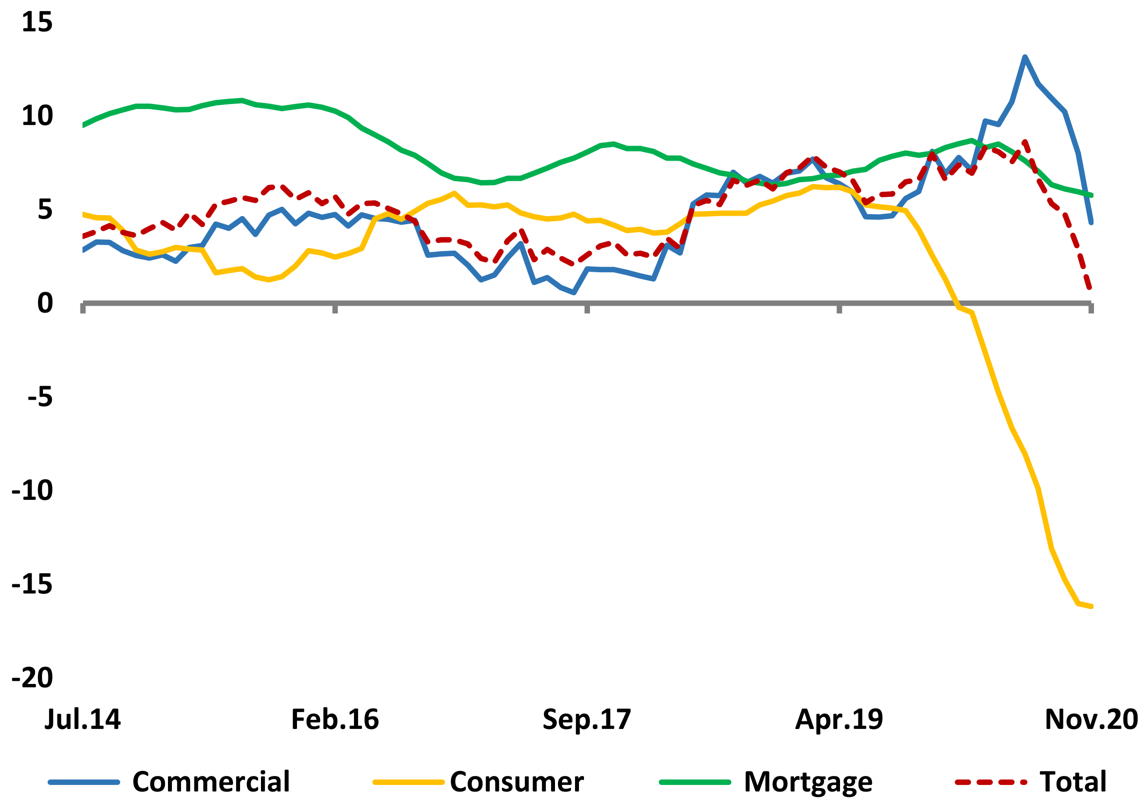


(*) The corridor is built following the methodology of Box V.1 of the March 2020 Report. It includes the FBS of December 2nd, the EES of Nov 9th and the forward curve derived from 10-day average of financial assets until December 2nd.

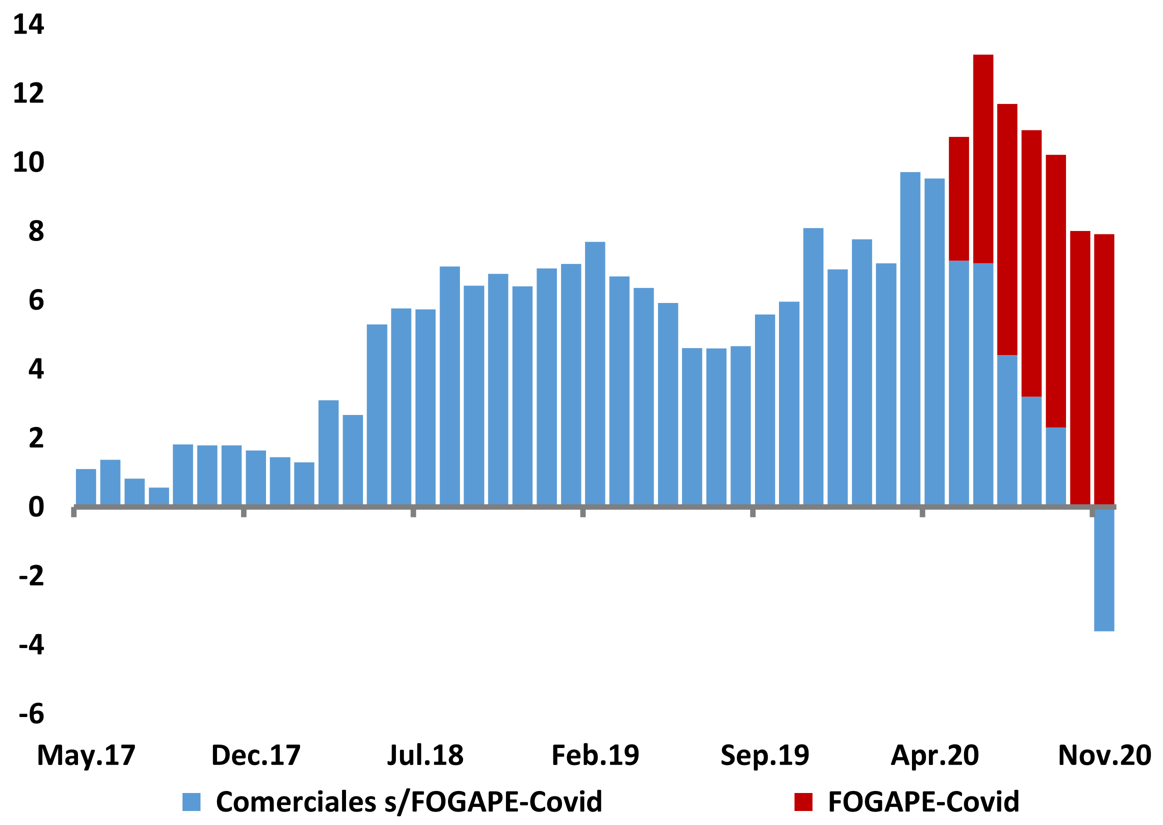
Source: Central Bank of Chile

UMP Evaluation (4): Credit provision accelerated to the corporate sector, helped by guarantees

Growth of loans
(real annual change, percent)



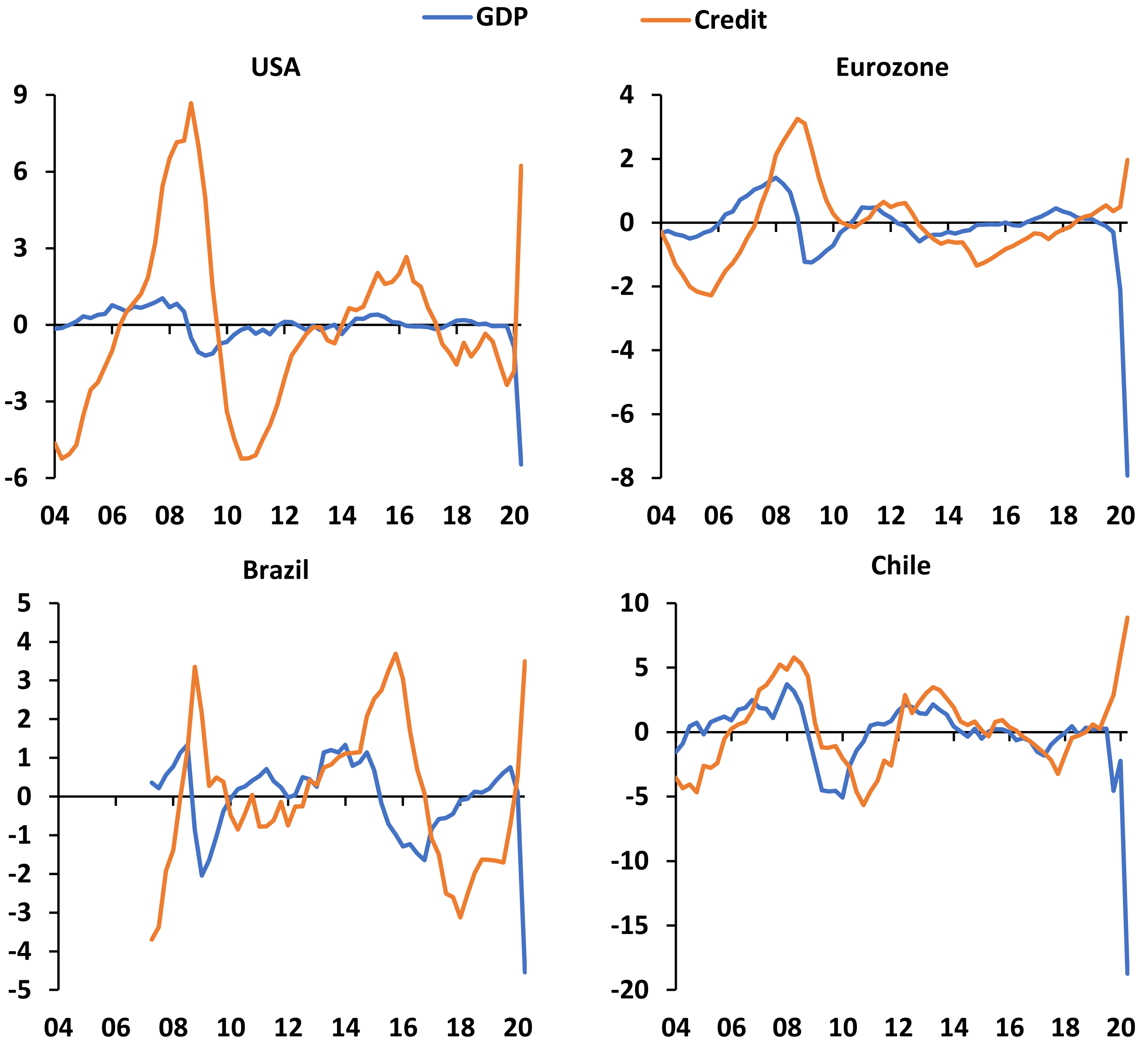
Growth of commercial loans
(real annual change, percent)



Source: Central Bank of Chile and FMC.

UMP Evaluation (5): Strong countercyclicality of commercial credit has been a feature in several jurisdictions

Economic Activity and credit cycles (*)
(deviation from trend, percent)

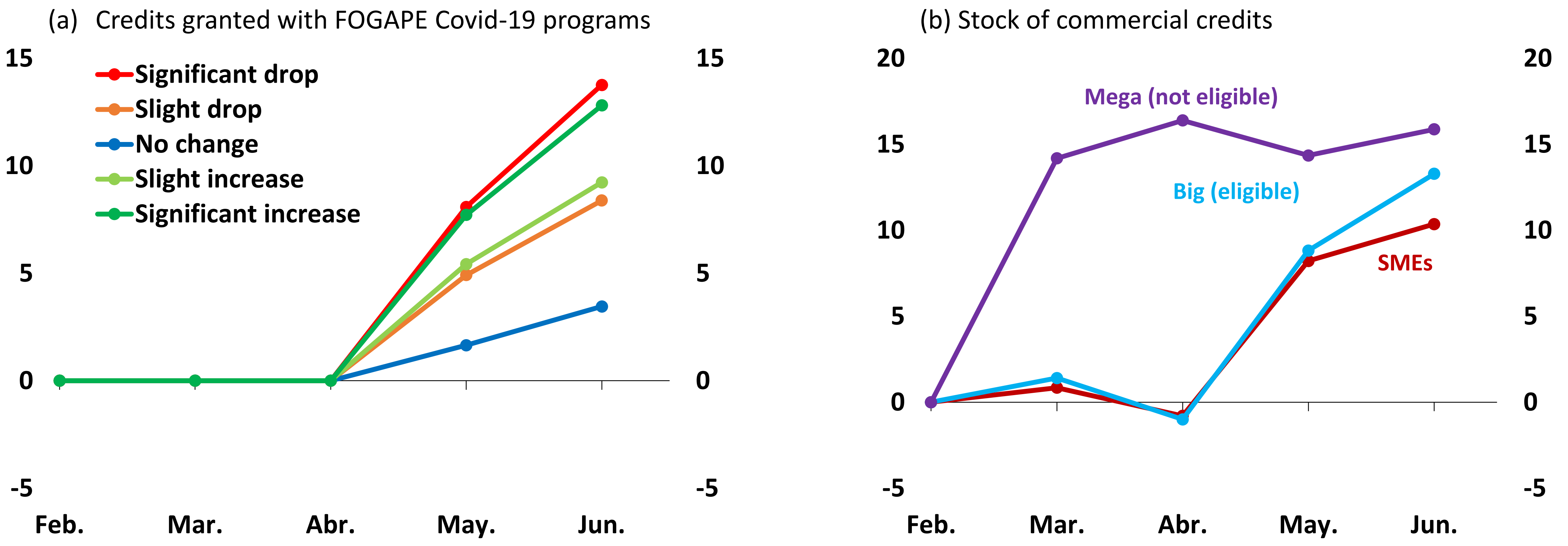


(*) Calculated as the difference between the log of the GDP level and credit, relative to a trend calculated using a HP filter.
Source: Central Bank of Chile.

UMP Evaluation (6): Loans granted through the FOGAPE-Covid-19 programs channeled, to a greater extent, to companies that had had significant drops in their sales

Stock of commercial credits by size and behavior of sales

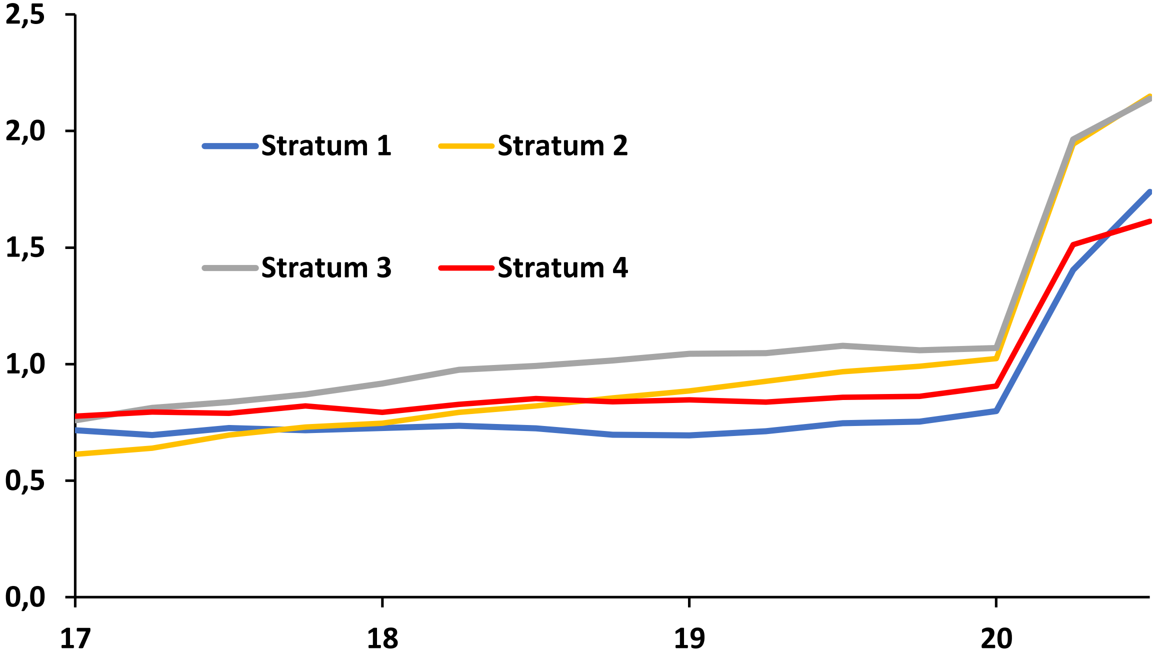
(change in annual variation compared to February 2020, percent)



Source: Central Bank of Chile

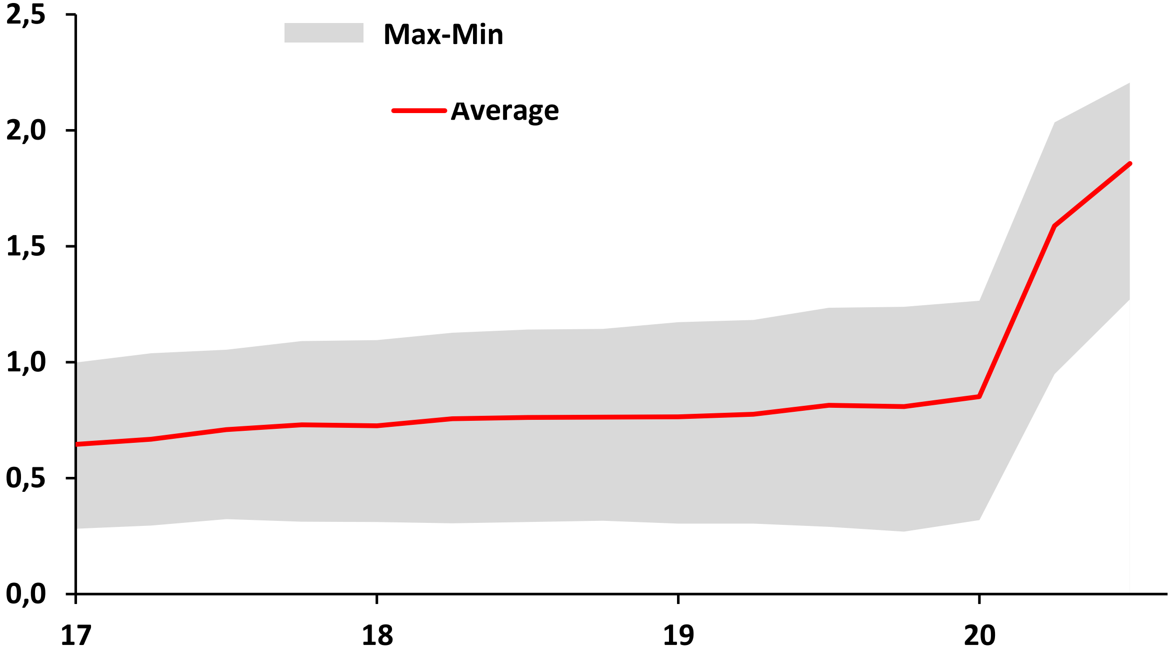
UMP Evaluation (7): Leverage has increased, posing challenges going forward

Indebtedness (1) (2)
(debt / sales ratio)



(1) The debt to sales ratio is calculated at the level of each firm for each period. The numerator is stock of banking and foreign debt of each firm. The denominator is calculated as the average of the real sales of each firm (deflated by the UF) between the third quarter of 2018 and 2019. The indebtedness by sales stratum is calculated as the median among the firms of each stratum.
(2) Stratum 1 and 2: annual sales less than UF 25,000. Stratum 3: annual sales greater than UF 25,000 and less than UF 100,000. Stratum 4: annual sales greater than UF 100,000.
Sources: Central Bank of Chile, FMC and National Statistics Institute.

Indebtedness: selected economic sectors (*)
(debt / sales ratio)



(1) The debt to sales ratio is calculated at the level of each firm for each period. The numerator is stock of banking and foreign debt of each firm. The denominator is calculated as the average of the real sales of each firm (deflated by the UF) between the third quarter of 2018 and 2019. The indebtedness by sector is calculated as the median among the firms of each sector. The red line is the simple average between the sectors. The gray area indicates the maximum and minimum debt-to-sales ratio among the selected sectors for each period. The included sectors are: business services, housing services, financial services, personal services, commerce, restaurants and hotels, industry, construction and transport.
Sources: Central Bank of Chile, FMC and National Statistics Institute.

From the theory: macroeconomic effects of debt-relief programs

- Loan: financial assistance long-term default-free loan of 10% of output
- Financial assistance breaks even

	Loan Program	Voluntary Restructuring
	Baseline	60% to 52%
Welfare gains country (% output)	7.5	10.6
Debt crisis: length reduction (years)	2	3
Health crisis: deaths prevented (% deaths)	2.1	1.1
Lender gains (% output)	4.7	0

- Gains from programs: better mitigation, improve debt crises, relax fin. frictions
- Loan program generates 7.5% gain to country and 4.7% to lenders in baseline

Source: Arellano, Bai, Mihalache (2020), "Deadly Debt Crisis: COVID-19 in Emerging Markets", Staff Report 603, Federal Reserve Bank of Minneapolis, presentation at 2021 Covid Workshop at the Central Bank of Chile.

What about foreign exchange policy?

- **In principle,** COVID-19 crisis creates the need for mostly local currency support, due to cash flow crunch of firms (higher for SMEs) and households.
- **Extent of transaction-dollarization** is key for the role of forex policy in liquidity provision.
- **Under IT and flexible exchange rates,** foreign exchange intervention can be rationalized in three directions:

I. Monetary policy at the ELB, plus significantly un-anchoring of inflation expectations below the target, could provide a basis for unsterilized foreign exchange accumulation as a QE policy akin to price-level targeting.

II. Periods of financial dislocation and volatility can require sales or purchases of foreign exchange over limited periods of time.

III. Regular assessment of the adequacy of reserves can lead to processes of accumulation/decumulation of foreign exchange reserves to properly guard against financial stability risks.

What about foreign exchange policy?

- **Technical details:**

I. Spot vs forward intervention (with or without delivery).

II. Preannounced amounts vs discretion.

III. Diversification and market risk-profile.

IV. Support from external backstops (Swap lines, FCL)

Concluding remarks

- COVID-19 has provided a multidimensional challenge to policymakers: intellectually and in policy design/implementation.
- Speed has been of the essence in the world, but in some areas the pace has been lacking due to political economy dimensions, as well as technical/legislative lags. Autonomous central banks have been quick to react.
- Data sources and analysis have taken center stage: role for research teams and statistics.
- High degree of coordination required between institutions/policies, and also within teams at each institution.
- Pre-existing buffers have drained, and institutional structures and practices have suffered under the economic/sanitary stress.

Concluding remarks

- The heterogeneity of the across households, firms, sectors, economies will necessarily shape the design of recovery policies.

- For instance the lingering effect of the pandemic to balance sheets of the most affected will require a tweaking of tools and policies.

- Political economy considerations will continue to have an important role in the debate, and this will pose a challenge for autonomous central banks, requiring enhanced transparency and communication.

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Main economic measures adopted

Objective	Entity	Area	Measure	Potential impact	Date
Facilitate access to credit	CBC	People and small businesses	Conditional Financing for Increased Loans (FCIC1). Program extension (FCIC2),	Increase credit and decrease the CAR.	March, 2020 June, 2020
	Finance Ministry	People and small businesses	Credit line for working capital with state guarantee (FOGAPE) up to 3 months of sales. Reduce deductible for FOGAPE guarantee and increase maximum financing for firms with sales under 1,000 UF.	Mitigate credit risk of firms.	April 28, 2020 June, 2020
	FMC		Use of mortgage collateral to back loans to SMEs.	Mitigate credit risk of firms.	May, 2020
			Adjustments in the treatments of good received.	Reduce provisions.	March, 2020
			For loan amounts guaranteed by the Treasury of Chile, CORFO, and FOGAPE, reduce de credit risk weight from 100% to 10% for the purpose of RWAs, replacing the legal provision that allowed a share of these guarantees to be considered as part of voluntary provisions that make up regulatory capital.	Reduce capital requirements.	August, 2020
			Relaxation of timeline for implementing Basel III.	Postpone start of new capital standards.	March, 2020
	Banco Estado	People and small businesses	Capital increase in order to increase lending.	Increase capital loans. Ambiguous effect on CAR.	March, 2020

Liquidity provision	CBC	Commercial banks	Inclusion of corporate bonds as collateral.	Increase access to liquidity.	April, 2020
			Extension of foreign currency sale program.		March, 2020
			Longer maturities for peso and dollar liquidity programs.		
			Extension of the temporary suspension (90 days) of maturity mismatch requirements.	Reduce regulatory requirements.	April, 2020
			Extension of the relaxation of the LCR limit.		
			Activation of Liquidity Credit Line (LCL).	Reduce short-term funding costs.	March, 2020
			Special asset purchase program (BCP, BCU, bank bonds).	Reduce long-term funding costs.	June, 2020
			Check Clearing House regulations incorporated a special protocol to implement actions in contingency situations.	Mitigate liquidity risk.	July, 2020
		SOMA participants	Special cash purchase/forward sale program (CCVP) for bank instruments. Effective only for rollovers.	Reduce long-term funding costs.	September, 2020
			Purchase of time deposits. **Effective only through October**.	Reduce funding costs.	July, 2020
	Finance Ministry	People and businesses	Tax deferral or suspension.	Mitigate credit risk of firms.	September, 2020
			Microbusiness protection fund.		March, 2020
			Extension of the labor income protection program.	Mitigate household credit risk.	September, 2020

(*) Green: new measures Sep-Dec 2020; Black: ongoing measures as of Sept 2020.