MONETARY POLICY REPORT

September 2019

MONETARY POLICY REPORT*/ SEPTEMBER 2019

*/ This is a translation of a document originally written in Spanish. In case of discrepancy or difference in interpretation the Spanish original prevails. Both versions are available at www.bcentral.cl.

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*/ This *Report* takes into account the monetary policy decision announced on 3 September. For all other purposes, the statistical cutoff date of the *Monetary Policy Report* was 28 August 2019.

PREFACE

The main objective of the Central Bank of Chile's monetary policy is to keep inflation low, stable, and sustainable over time. Its explicit commitment is to keep annual CPI inflation at around 3% most of the time, within a range of plus or minus one percentage point. To meet this target, the Bank focuses its monetary policy on keeping projected inflation at 3% annually over a policy horizon of around two years. Controlling inflation is the means through which monetary policy contributes to the population's welfare. Low, stable inflation promotes economic activity and growth while preventing the erosion of personal income. Moreover, focusing monetary policy on achieving the inflation target helps to moderate fluctuations in national employment and output.

The *Monetary Policy Report* serves three central objectives: (i) to inform and explain to the Senate, the Government, and the general public the Central Bank Board's views on recent and expected inflation trends and their consequences for the conduct of monetary policy; (ii) to publicize the Board's medium-term analytical framework used to formulate monetary policy; and (iii) to provide useful information that can help shape market participants' expectations on future inflation and output trends. In accordance with Section 80 of the Bank's Basic Constitutional Act, the Board is required to submit this *Report* to the Senate and the Minister of Finance.

The *Monetary Policy Report* is published four times a year, in March, June, September, and December. It analyzes the main factors influencing inflation, which include the international environment, financial conditions, output and aggregate demand, and recent price and cost developments. The last chapter presents the most probable path for monetary policy in the next two years and describes sensitivity scenarios to show how the monetary policy reaction could change in the face of particular changes in the baseline scenario. Some boxes are included to provide more detail on issues that are relevant for evaluating inflation and monetary policy.

This *Report* was approved at the Board's meeting on 3 September 2019 for publication on 4 September 2019.

The Board

SUMMARY

Since the last *Report*, both headline and core inflation have remained around 2%, in a context of a weaker macroeconomic outlook. This has increased the risks surrounding the timely convergence of inflation to 3%. This owes largely to the evolution of the external scenario, where global uncertainty has intensified due to trade tensions, growth has slowed in different countries and trade volumes have diminished. The persistence and growing complexity of conflicts and the predominance of a greater pessimism in the markets lead to forecast that the external impulse for the rest of the year and a good part of 2020 will be much lower than estimated in the June *Report*. In the second quarter, domestic activity and demand grew less than expected. Although this was partly due to one-off factors in some sectors, it is worth noting the slower pace of consumption, the less dynamic salaried employment in the private sector and consumer and business expectations that have receded with respect to the beginning of the year. Thus, maintaining the dynamism of investment and the expectation of higher growth rates in the second half of the year will not be enough to reverse the widening of the activity gap that already took place in the first half. All of this occurs in a context in which headline and core inflation remain low, particularly in the components most closely linked to such slacks. Against this background, at its September meeting the Board decided to reduce the monetary policy rate (MPR) by 50 basis points, placing it at 2%, and indicating that an amplification in the monetary stimulus could be required, which would be evaluated in the next meetings in the light of the evolution of the macroeconomic scenario.

The international scenario has seen important changes in recent months, which mean that the impulse that the Chilean economy will receive from abroad will be substantially less than was estimated in the last *Report*. The baseline scenario forecasts a significant decrease in world growth in the period 2019-2021. As the various sources of stress have continued or intensified while new ones have emerged, the probability of occurrence of negative events has increased. Attention continues to be focused on trade, due to the escalating conflict between the U.S. and China, which has spread to other fronts and countries.

Initially, the effects of the trade war were expected to be especially visible in the countries directly involved. However, the importance of global value chains has passed them on to many more economies, as reflected by the weakness of world trade and manufacturing activity. This has significantly affected investment expectations and decisions in a number of countries (box I.1). The spiraling U.S. China conflict has increased distrust because of the impossibility of predicting changes in tone, announcements and counter-measures. All this

INTERNATIONAL BASELINE SCENARIO ASSUMPTIONS

	Avg. 00 - 07	Avg. 10 - 17	2018	2019 (f)	2020 (f)	2021 (f)
	(annual change. percent)					
Terms of trade	8.2	2.0	-2.1	-0.9	-0.3	2.0
Trading partners GDP (*)	3.6	3.9	3.6	3.1	2.9	3.1
World GDP at PPP (*)	4.5	3.9	3.6	3.1	2.9	3.1
World GDP at market exchange rate (*)	3.2	3.1	3.0	2.5	2.3	2.5
Developed economies' GDP at PPP (*)	2.4	1.8	2.2	1.6	1.4	1.5
Emerging economies' GDP at PPP (*)	6.5	5.3	4.8	4.3	4.1	4.4
External prices (in US$)	4.6	0.8	2.4	-2.0	1.1	2.0
	(levels)					
LME copper price (US¢/lb)	154	312	296	270	260	270
WTI oil price (US$/barrel)	44	75	65	56	53	51
Brent oil price (US$/barrel)	42	83	71	63	57	56
Gasoline parity price (US$/m^3) (*)	366	633	544	484	447	436
Libor US$ (nominal, 90 days)	3.6	0.5	2.3	2.3	1.8	1.9

(*) For definition, see glossary.
(f) Forecast.

Source: Central Bank of Chile.

compounded with the increased likelihood of a no-deal exit of the UK from the European Union and the intensification of geopolitical risks in other regions.

So far, the direct effects of the trade war on Chile's commerce have been bounded and heterogeneous. Although volume exports fell in the first half of the year, part of it was explained by supply-side factors, as reflected in mining shipments. Also in some manufacturing sectors, including salmon production, whose levels have been high for some time, holding back their annual expansion rates. Meanwhile, Latin America's poor performance has continued to affect the basic metal industry, whose main target markets are in the region (box III.1). Accordingly, in the baseline scenario, the effects of the trade war on Chilean exports are expected to increase onwards.

Increased uncertainty and pessimism has also affected global financial markets, and monetary policy has become more expansionary around the world. Over the past few weeks, volatilities rose, stock markets fell and currencies depreciated against those that are seen as a haven. The deterioration of the global outlook is reflected in the sharp decline of long-term interest rates, which has been replicated in Chile, through a depreciated peso and lower interest rates, both nominal and indexed.

In the baseline scenario, the negative effects of the trade war will affect most severely the emerging countries' growth, particularly in Asia. In the next two years, both China and the rest of emerging Asia will see their growth rates significantly reduced from previous estimates. The same is true for Latin American trading partners, where the worsened external scenario is combined with idiosyncratic factors in Argentina, Brazil and Mexico. For the developed world, the forecast adjustments are of smaller magnitude. U.S. growth is still sustained by the strong dynamism of consumption, although it is expected to moderate in 2020-2021. In the Eurozone, the downward correction is slightly greater, due to recent developments in Germany, whose economy relies highly on exports.

The outlook for the terms of trade is also dwindling, albeit moderately. Commodity prices in general have fallen since June, because of a perceived weakening of global demand, particularly from China, and a more appreciated dollar, which will continue to affect their future development. In the baseline scenario, the average prices of both copper and oil are foreseen to drop somewhat over the period 2019-2021.

On the domestic front, second-quarter activity and demand grew less than estimated in June. In GDP, the biggest difference was explained by sector-specific supply factors in mining, electricity, gas and water, and agriculture. As was the case in other economies, the manufacturing industry posted negative annual rates of change. Also worth noting is the one-off impact of strikes in mining and education in June. On the demand side, consumption performed less favorably, beyond the fact that the same elements that affected GDP also had an impact on its growth. On the other hand, gross fixed capital formation (GFCF) was more dynamic than expected, presumably in the mining sector.

This behavior of consumption occurs in a context of sharp decline in expectations —as measured by the IPEC— and a reduced creation of private salaried jobs according to different sources of information. The opinions of the interviewees for the *Business Perceptions Report* (IPN) and the IPEC and IMCE answers to questions on employment and unemployment tend to confirm an unfavorable view of employment. Consumer loans have moderated their growth despite the lower interest rates.

The higher growth in GFCF in the second quarter leaned on the construction and works component. The biggest momentum comes from large-scale projects in mining that, as expected, continues to drive activity in other lines, such as architecture and engineering services and construction. However, no significant increase is observed in the rest of the sectors and annual growth in machinery and equipment declined further.

In the baseline scenario, 2019-2021 cumulative activity growth is expected to be lower than projected in June. GDP growth in 2019 is foreseen between 2.25% and 2.75% (2.75% to 3.5% in June); for 2020 it will increase between 2.75% and 3.75% (3% to 4% in June); for 2021 the forecast remains between 3% and 4%. This considers higher annual growth rates in the second half of 2019, which will not suffice to compensate for the low figures of the first half. This because some of the negative factors of the second quarter will not be completely reversed and the lower dynamism of consumption will show some persistence. Plus the greater global uncertainty and lower growth of our trading partners will reduce exports. On the fiscal front, it is assumed that in 2019 the economy will receive a boost consistent with the structural policy goals announced by the authority. This couples with the effects of recent fiscal measures, defined within said margins. The projection also contemplates the effects of the significant increase in the monetary impulse stemming from the MPR cut of 100bp in the last three months, which allows for very favorable financial conditions. The effect of the stronger monetary impulse will be particularly evident in 2020. This and potential growth being above 3% —due to the developments discussed in the June *Report*— explains why the growth range forecast for said year is similar to the previous estimate, despite a less favorable external scenario. This considers that the worsened international scenario will have lasting, but not permanent, effects, and therefore should not affect the economy's medium-term growth capacity.

With regard to inflation, the annual change in the CPI and the CPIEFE is still around 2%, with no major differences from the June forecast. However, more significant changes can be seen at the level of CPIEFE components. Services inflation has been below expectations, remaining low from a historical perspective. It is worth noting that surprises have been widespread and that those areas most closely linked to the state of the activity gap and the labor market have been adjusted even further. In contrast, inflation of goods was somewhat higher than expected, but largely explained by one item in the basket —tourist package— that shows a historically volatile behavior, which supposedly will be reversed. In the baseline scenario, the convergence of inflation to the target will occur in the latter part of the policy horizon. Market expectations assume a similar path. The projection supposes that part of the recent inflationary surprises will persist for a while —in line with an activity gap whose starting point is above what was expected in June— and that the real exchange rate will remain above its averages of the last fifteen and twenty years.

ECONOMIC GROWTH AND CURRENT ACCOUNT

	2018	2019 (f)	2020 (f)	2021 (f)
	(annual change. percent)			
GDP	4.0	2.25-2.75	2.75-3.75	3.0-4.0
National income	3.8	2.3	3.7	4.2
Domestic demand	4.7	2.4	3.5	3.6
Domestic demand (w/o inventory change)	3.9	3.0	3.3	3.6
Gross fixed capital formation	4.7	4.0	4.0	4.1
Total consumption	3.7	2.7	3.1	3.4
Goods and services exports	5.0	-1.3	1.6	2.2
Goods and services imports	7.6	-1.9	2.3	2.0
Current account (% of GDP)	-3.1	-3.3	-3.1	-2.6
Gross national saving (% of GDP)	19.6	19.3	19.9	20.6
Gross national investment (% of GDP)	22.7	22.7	23.1	23.2
GFCF (% of nominal GDP)	21.3	21.9	22.1	22.1
GFCF (% of real GDP)	21.2	21.5	21.6	21.7
	(US$ million)			
Current account	-9,157	-9,600	-9,200	-8,200
Trade balance	4,669	4,400	3,400	4,800
Exports	75,452	70,900	71,400	75,200
Imports	-70,783	-66,500	-68,000	-70,400
Services	-3,996	-4,400	-4,200	-4,000
Rent	-12,241	-11,100	-10,000	-10,700
Current transfers	2,411	1,500	1,600	1,700

(f) Forecast.

Source: Central Bank of Chile.

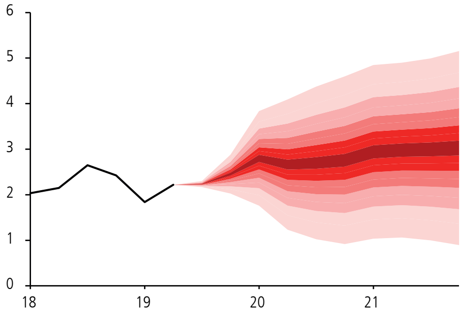
INFLATION (1)

	2018	2019 (f)	2020 (f)	2021 (f)
	(variación anual, porcentaje)			
Average CPI inflation	2.4	2.2	2.7	3.0
December CPI inflation	2.6	2.7	2.8	3.0
CPI inflation in around 2 years (2)				3.0
Average CPIEFE inflation	1.9	2.2	2.5	2.9
December CPIEFE inflation	2.3	2.5	2.7	3.0
CPIEFE inflation in around 2 years (2)				3.0

(1) For 2018, it shows annual change obtained with the 2013=100 basket. As from 2019, the 2018=100 basket is used, so figures are not strictly comparable with those of earlier years.
(2) Inflation forecast for the third quarter of 2021.
(f) Forecast.

Source: Central Bank of Chile.

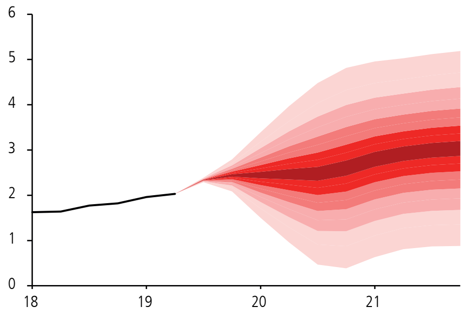
CPI INFLATION FORECAST (*)
(annual change, percent)



(*) The figure shows confidence interval of baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. Confidence intervals are built based on the RMSE of averaged MAS-MEP models from 2009 to 2017. Also, the intervals contain the risk evaluation on growth performed by the Board. For 2018, the annual variation of CPI is obtained by splicing the 2013=100 series with the monthly variations of the 2018=100 basket starting in February 2018. See box IV.1, March 2019 *Report*.

Source: Central Bank of Chile.

CPIEFE INFLATION FORECAST (*)
(annual change, percent)



(*) The figure shows confidence interval of baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. Confidence intervals are built based on the RMSE of averaged MAS-MEP models from 2009 to 2017. Also, the intervals contain the risk evaluation on growth performed by the Board. For 2018, the annual variation of CPI is obtained by splicing the 2013=100 series with the monthly variations of the 2018=100 basket starting in February 2018. See box IV.1, March 2019 *Report*.

Source: Central Bank of Chile

The Board estimates that recent developments have jeopardized the timely convergence of inflation. Accordingly, at its September meeting it decided to reduce the MPR to 2%, indicating that an amplification in the monetary stimulus could be required, which would be evaluated in the next meetings in the light of the evolution of the macroeconomic scenario. Toward the medium term, the moment to commence the withdrawal of the monetary stimulus will depend on the data showing clear evidence that the most adverse conditions have been overcome and the convergence of inflation to the policy target has been secured.

Events exist that, despite being able to place growth inside the forecast ranges, require a different trajectory of monetary policy rate to ensure the convergence of inflation to the target. In the Board's view, the main concerns have to do with the future behavior of domestic spending. On the one hand, consumption and investment behavior may be less dynamic than assumed, further delaying inflation's convergence. This could occur, among other cases, if the deterioration observed in business and household expectations had a greater effect than expected on spending decisions, or if external or domestic events deteriorated said expectations even further. Such circumstances would call for a greater monetary impulse.

The Board assigns more weight to the type of events just described than to others that might justify less monetary expansion. The latter could materialize, for example, if there were a more dynamic response of non-mining investment to the significant reduction in interest rates and/or to the impulse measures recently announced by the Executive. They could also happen due to events that reduce productivity growth and potential GDP, resulting in a narrower activity gap and increased inflationary pressures. For this reason, the Board estimates that the projection scenario is biased downward for activity and unbiased for inflation.

Of course, more extreme events could occur that would drive growth outside the forecast ranges and imply materially different policy decisions to ensure the convergence of inflation to the target. For example, scenarios of a much deeper worsening of external conditions, or where further weakened consumption and investment interact with a persistent deterioration of expectations that would erode the usual effectiveness of monetary policy. This type of scenario would require using up a large part of the remaining space available to monetary policy making.

In short, the macroeconomic scenario has undergone significant changes in recent months. The economy has shown less dynamism than expected, with inflation still at low levels that are expected to remain well into the projection horizon. At the same time, the outlook for the international scenario has deteriorated significantly, in a context in which various factors have increased uncertainty. After considering the effects on the timely convergence of inflation to the target, the Board decided to reduce the MPR to 2%. Accordingly, it reaffirms its commitment to conduct monetary policy with flexibility, so that projected inflation stands at 3% in the two-year horizon.

BOX
XXIII ANNUAL CONFERENCE OF THE CENTRAL BANK OF CHILE: INDEPENDENCE, CREDIBILITY, AND COMMUNICATION OF CENTRAL BANKING

The Central Bank of Chile has hosted an annual conference uninterrupted since 1997, which brings together noted experts to debate a monetary policy issue that is relevant for Chile and emerging economies. The papers presented at the conference are subsequently published in a book. The twenty-third Annual Conference, held on 22–23 July of this year, was devoted to the theme of central bank independence, credibility, and communication[1]/.

The keynote speaker at the Conference was Kenneth Rogoff (Harvard University), and the program included original presentations by Elías Albagli (Central Bank of Chile), Francesco Bianchi (Duke University), Michael Bordo (Rutgers University), Stephen Cecchetti (Brandeis University), Michael McMahon (Oxford University), Ricardo Reis (London School of Economics), Annette Vising-Jorgensen (University of California at Berkeley), and Pierre Yared (Columbia University). Each paper was discussed by a specialist and will be published in a forthcoming book in the series. The conference also featured a discussion panel composed of governors or former governors of the central banks of Israel, South Africa, Colombia, and New Zealand.

Central bank independence, understood as the separation of monetary and fiscal policy, has played a central role in inflation control around the world, including in Chile. The Central Bank of Chile gained independence in December 1989, when inflation had soared to over 30%. A decade later, inflation was around 3%. Since the 2000s, the Bank has pursued a monetary policy based on a target of 3% in a two-year horizon. This has been accompanied by a framework of inflation targets with a floating exchange rate, so as to avoid policy conflicts between inflation control and defense of the currency. The paper by Albagli, Calani, Hadsi-Vaskov, Marcel, and Ricci (2019) demonstrated the role of the floating exchange rate in softening the Chilean economy's adjustment to external shocks. The discussion panel emphasized that the concept of central bank independence is not homogeneous around the world, which is in line with the study presented by Bianchi (2019), who shows that episodes of high global inflation coincide with a loss of independence.

Independence is one of factors that helps give credibility to a central bank's mandate to control inflation and safeguard the stability of the payment system. Credibility, understood as the degree to which monetary policy can control the expectations of economic agents, is earned gradually to the extent that there is consistency between monetary policy announcements and their subsequent implementation [2]/. This gradualness implies that one desirable strategy for fighting inflation is precisely a gradual inflation-targeting policy, as has been implemented in Chile. However, high credibility is a necessary, but insufficient condition for controlling inflation. Yared (2019) described conditions in which an unmooring of expectations can generate high inflation that can be difficult to escape. Taking another angle, Reis (2019) pointed out a new element to consider in the practical exercise of a central bank's independence, related to macroprudential policies aimed at providing liquidity to the financial system. Such policies can have fiscal implications that need to be incorporated in the policy design and implementation, so as to allow their coordination while at the same time maintaining monetary policy independence.

The role of communication was addressed from two perspectives, as part of monetary policy conduct and as a tool for institutional strengthening. With regard to the former, there is a consensus that communication has always been a fundamental part of monetary policy. The implementation of an inflation-targeting framework and the process of building credibility require a central bank's actions to be predictable. It is therefore critical to inform the general public and key market actors regarding the central bank's assessment of the state of the economy, as well as how monetary policy will react under different scenarios.

There are also new challenges. The last big financial crisis showed that there is a limit to the expansionary capacity of traditional

[1]/ Conference material, including the papers presented and videos of the presentations, are available on the Central Bank's website: https://www.bcentral.cl/en/web/guest/-/xxiii-annual-conference-of-the-central-bank-of-chile.

[2]/ King, Lu, and Pasten (2016).

monetary policy, when the interest rate approaches zero. In that scenario, unconventional policies become increasingly justified, in which case communication plays an even greater role since such policies imply the active management of future expectations. Moreover, precisely because they are unconventional, they require an additional effort to explain the policy scope and implementation process. Additionally, these policies have been adopted in conjunction with macroprudential policies for financial stability, which also require an important communication effort during their implementation. In their presentations, Cecchetti (2019) and Vising-Jorgensen (2019) recommended simplifying communications and reducing the number of members on the Board of Governors of the U.S. Federal Reserve as specific proposals for strengthening the communication strategy of monetary policy conduct in the United States.

Communication also plays a fundamental role in the institutional strengthening of a central bank, as highlighted by the keynote presentation and the discussion panel. Lower inflation has lessened the attention on this issue, which has little priority among the general public's concerns about the economy. In this context, questions could arise about the independence of a central bank, or there could be a move to expand its duties into other areas. At the same time, societies demand increasingly high standards of transparency and accountability. The presentations by McMahon (2019) and Cecchetti (2019) argued for central banks to open new channels of communication with the general public that go beyond the traditional communication instruments. Their conclusions emphasized the challenge of developing and communicating simpler messages, so as to reach wider audiences, without reducing the development and soundness of the underlying arguments.

In sum, the presentations cover a wide spectrum of issues related to the general theme of the Annual Conference, devoted to central bank independence, credibility, and communication. Consequently, the policy implications have varying degrees of relevance for Chile. On the one hand, the benefits of a floating exchange rate (Albagli et al., 2019) and central bank independence (Bianchi, 2019) are issues that are already largely resolved in Chile, although the risks of an unmooring of expectations (Yared, 2019) merit constant monitoring. On the other, while some of the conclusions of Cecchetti (2019) and Vising-Jorgensen (2019) are not applicable to Chile because they specifically address the U.S. system, their concern for improving communication in monetary policy conduct is relevant, and this concern is shared by McMahon (2019). Finally, as highlighted by Reis (2019), the implications of macroprudential financial policies for central bank independence and the coordination of monetary and fiscal policy are challenges that need to be taken into account in the monetary policy framework in Chile.

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MONETARY POLICY DECISIONS IN THE LAST THREE MONTHS

JUNE MEETING

The June *Monetary Policy Report* indicated that headline and core inflation—the CPI and CPIEFE—had remained around 2% in annual terms. First-quarter output had recorded lower growth than projected in the baseline scenario in March, due to negative performances in mining and several of the more volatile sectors—tied to natural resources—in non-mining GDP. Demand-related sectors—like construction and services—had performed in line with expectations. On the spending side, investment, in particular in machinery and equipment, and exports had slowed substantially. In contrast, consumption had remained dynamic, in line with the forecast. Internationally, the main development was the intensification of the trade conflict between the United States and its main trading partners, which had increased risk aversion, triggering price swings in riskier assets, a drop in most commodity prices, and a depreciation of currencies against the US dollar.

In the June *Report*, the Board had updated the structural parameters that are used to assess the state of the economy, the outlook, and the calibration of monetary policy. This allowed a quantification of the impact of the large wave of immigration over the past several years on trend and potential growth, resulting in an increase in both: the former to a range of 3.25 to 3.75% for the 2019–2028 period and the latter to around 3.4% for 2019–2021. The neutral monetary policy rate had been re-estimated downward by 25 basis points (bp), to a range of 3.75 to 4.25%, in part reflecting the drop in the natural rate of interest at the world level. Thus, considering the higher trend and potential growth and the less dynamic economy in the first quarter of the year, the output gap was larger and more persistent that previously estimated. At the same time, the downward revision of the neutral monetary policy rate translated into a less expansionary monetary stimulus than projected.

The baseline scenario of the *Monetary Policy Report* considered that GDP would grow between 2.75 and 3.50% in 2019, lower than the forecast, mainly due to the effect of the negative surprise in the first quarter. For 2020 and 2021, the growth forecast was higher than for 2019, at 3–4% in both years. This was based on the assumption that the macroeconomic effects of the immigration phenomenon would become increasingly manifest, increasing wage labor, consumption, and investment. It was also founded on the expectation that large investment projects would be executed as projected, with a strong concentration in the next two years. With regard to inflation, annual headline inflation would fluctuate around 3% in 2020, while core inflation (CPIEFE) would reach that level in early 2021. In the latter case, convergence would be slower than previously forecast, mainly due to the larger-than-projected output gap over the policy horizon. The external stimulus to the economy would be lower than in the last two years and also lower than expected, due to slower growth of trading partners and somewhat lower terms of trade than forecast in the March *Report*.

In this context, all the Board Members agreed that the scenario required an increase in the monetary stimulus and that the most relevant policy options involved cutting the monetary policy rate (MPR) by 50 bp. This could be implemented in one of two ways: first, through a reduction of 25 bp and a downward bias indicating that there would be a second cut of the same magnitude; and second, through a reduction of 50 bp and a neutral bias indicating that the next adjustment in the MPR would depend on the degree of certainty regarding inflation convergence to the target.

Some Board Members pointed out that the two options were practically identical from the perspective of their macroeconomic impacts, so the decision was essentially tactical. The main advantage of the first option, according to these Board Members, was a lower communications cost, because it would reduce the risk that the action could be interpreted as a more adverse signal on the macroeconomic scenario. Several Board Members mentioned that the option of cutting the MPR in two steps was not exempt from communication costs, since it could signal a degree of conditioning for the second cut or be interpreted as a scenario requiring a cut of more than 50 bp, which was not consistent with the baseline scenario in the *Report*.

With regard to the option of reducing the MPR by 50 bp, the Board Members emphasized that while it would come as a surprise, it was important to make it clear that the decision was based on an unusual combination of factors—in particular, the upward revision of trend and potential growth, in conjunction with a reduction in the neutral rate, low inflation, and a slowdown in growth. It would also be necessary to explicitly state that under the current meeting schedule—eight in the year—rate shifts of this magnitude would be more frequent, in part because more information would be available at the meetings. Thus, the Board voted unanimously to reduce the MPR by 50 bp, to 2.5%, with the communication of a neutral bias.

JULY MEETING

For the July meeting, the main news had been the evolution of inflation—in particular, the surprise to the downside in the services CPIEFE. Given that this component tends to respond more to the output gap and wages, and that it had reached minimal rates from a historical perspective, it provided an important indicator of the risk for inflation convergence to the policy target. The surprise in CPIEFE services inflation suggested a fairly generalized trend in the components that are more closely related to wages, pointing to a potentially larger impact from immigration. Thus, in the short run, the CPIEFE inflation forecast would be materially different from the last *Report*, which had not been incorporated into the private outlook. The evolution of inflation expectations had been strongly to the downside, despite the clearly expansionary adjustment in the MPR in June, which in addition had surprised the vast majority of economic agents.

In terms of domestic output, the April and May Imacec had been in line with expectations, after correcting for some one-off factors. For June, the figures were expected to be less encouraging, since the combination of two large strikes and fewer business days would reduce the annual growth rate by around half a percentage point. Thus, while growth had been higher in the second quarter than in the first, the rate of acceleration would depend even more on what happened in the second half. Nevertheless, both international and local news raised considerable doubts about the expected turn-up of the economy and, therefore, about inflation convergence to 3%.

Domestically, qualitative indicators, such as the deterioration of consumer expectations, and high-frequency data, such as data on imports and construction, revealed risks to the downside for the local economy. In the external scenario, the trade conflicts and political uncertainty in the main world economies had intensified and spread into new dimensions of economic relations between countries. Expectations of more expansionary monetary policy had consolidated at the global level, and some economies had implemented movements in that direction. The complex international scenario was already affecting Chile, with offsetting effects on exports and capital inflows, while the copper price had been relatively stable. At any rate, while part of the reduction in the value of Chilean exports could be attributed to the trade war—which was possibly being reflected in the lower prices of several of the main export products—it also reflected the worse economic performance of the country's main trading partners in Latin America.

All the Board Members agreed that the information accumulated since the publication of the last *Monetary Policy Report* had increased the risks for a timely inflation convergence to the target within the policy horizon. In particular, services inflation was lower, and the risks surrounding the future evolution of output and demand had increased, in a context of high external uncertainty. Thus, all the Board Members agreed that the valid options for this Meeting were to hold the MPR at 2.5%, with an expansionary bias, or to reduce it by 25 bp, also with an expansionary bias.

Given that there had been a large and surprising cut in the MPR at the last meeting, several Board Members were of the opinion that updating the macroeconomic scenario was particularly important for extracting the implications for monetary policy. This was because monetary policy did not stop with an immediate rate adjustment, but rather formed part of a larger path where any given change was just one factor. In other words, adjusting the rate again based on partial and qualitative information could increase, rather than reduce, the uncertainty in the economy if it was not clear how much the macroeconomic forecast had changed and how deep and persistent the additional monetary stimulus was intended to be. Thus, they agreed that while the qualitative information was sufficient to raise an alert on inflation convergence to the target in the policy horizon, it was not necessarily sufficient to compensate for the lack of more recent hard data and updated forecasts.

In contrast, one Board Member deemed that taken as a whole, the available information called for cutting the MPR by 25 bp, since it was clear that the 50 bp reduction at the last meeting had not been sufficient to ensure the timely convergence of inflation to the target. In particular, the output and demand data showed slower-than-projected growth; inflation remained low and had surprised to the downside in a broad group of services; and the external scenario was uncertain and gradually weakening. Moreover, the evolution of the exchange rate and inflation expectations had also contributed to pushing back inflation convergence. He added that the market expected this assessment, since asset prices indicated that the MPR would be cut by 25 bp in September, with a strong probability of a second cut toward the end of the year. Expectations surveys also incorporated reductions.

In this context, the majority of the Board Members voted to hold MPR at 2.5%. Board Member García voted to cut the MPR by 25 bp, to 2.25%.

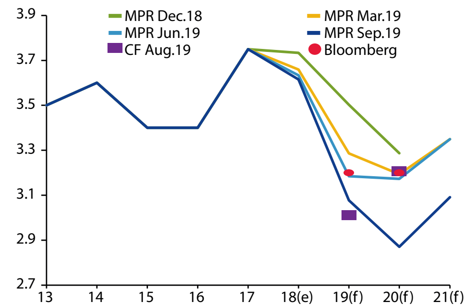
I. INTERNATIONAL SCENARIO

This chapter analyzes the recent evolution of the world economy and the outlook for the next two years. It also describes the most probable scenario and the main risks.

The international scenario has changed significantly in the past few months, which has led to a substantial reduction in the external stimulus expected for the Chilean economy relative to the last *Monetary Policy Report*. In particular, the outlook for world growth rates and the growth of trading partners fell significantly, especially for 2020, when they are expected to hit their lowest levels since the global financial crisis. The revision is particularly sharp for the emerging economies, especially in Asia, where the growth estimates for the next two years in China and the rest of the bloc are markedly lower than previous forecasts. With these revisions, the outlook contained in the baseline scenario used in this *Report* is below the market forecast (figure I.1). The terms of trade have also been revised downward, albeit moderately, reflecting the general drop in commodity prices, including copper, in the face of lower-than-expected world demand.

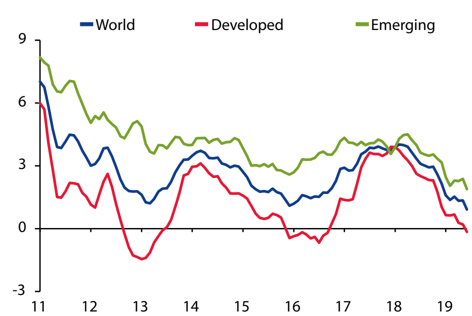
These revisions mainly stem from the intensification of the conflict between the United States and China, which has created a climate of distrust due to the impossibility of predicting the changes in tone, the announcements, or the countermeasures that either party will make. Thus, the difficulty of anticipating the definitive structure of future international trade relations is having a major effect on expectations and investment decisions (Box I.1). These could also be reflecting the weakening of world trade and output in sectors tied to manufacturing—in contrast to the resilience of consumption and services sectors in several countries. Moreover, the frictions continued to spread to other economies and other areas. In addition to the differences between the United States and both Mexico and the European Union, Japan stiffened its trade restrictions on the Republic of Korea. In the United Kingdom, the possibility of a no-deal Brexit has grown. The situation has also become more complex in Italy, while in Latin America, the outlook in Argentina worsened after the last elections. Several geopolitical risk factors have gained strength, such as the protests in Hong Kong and the tensions in the Middle East. All of this has led to a marked increase in the preference for safer assets, which has reduced long-term interest rates, while the stock markets fell, most currencies depreciated, and commodity prices dropped, with the exception of gold which as acted as a safe-haven asset. In this context, a large group of economies have started the process of monetary loosening.

FIGURE I.1
World growth
(annual change, percent)



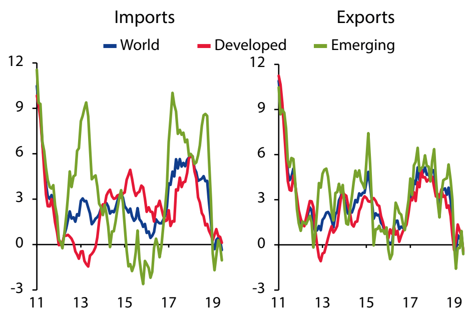
(e) Estimate.
(f) Forecast.
Sources: Central Bank of Chile, Bloomberg, and Consensus Forecasts.

FIGURE I.2
Industrial production (*)
(annual change, percent)



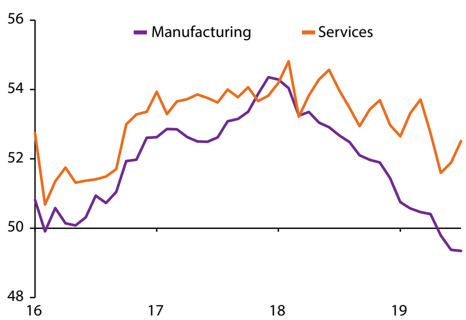
(*) Three-month moving average.
Source: CBP World Trade Monitor.

FIGURE I.3
Foreign trade (*)
(annual change, percent)



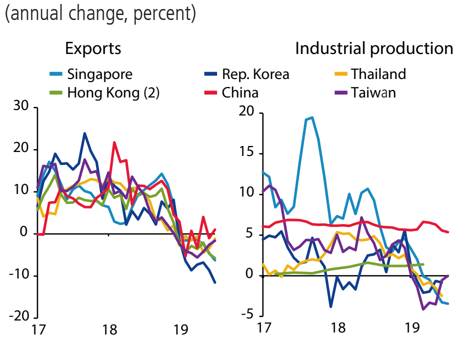
(*) Three-month moving average.
Source: CBP World Trade Monitor.

FIGURE I.4
Global PMI (*)
(seasonally adjusted index)



(*) A value over (under) 50 indicates optimism (pessimism).
Source: JP Morgan.

FIGURE I.5
Emerging Asia (1)
(annual change, percent)



(1) Three-month moving average.
(2) Industrial production data are quarterly.
Sources: Bloomberg and Office of Industrial Economics of Thailand.

RECENT EVOLUTION AND OUTLOOK

In the second quarter, many economies continued to slow. The international trade performance and its effect on the manufacturing sector continue to shape the trend of growing weakness. In the first half of this year, the average annual growth rate of world exports was almost zero, and industrial production grew just slightly more than 1% (versus about 3% in 2018 in both cases). Unlike past slowdown episodes, the data are more synchronized among the economic blocs (figures I.2 and I.3). The purchasing managers' index (PMI) worsened in the past three months and even dropped into contractionary territory (figure I.4). Investment has also suffered, with business confidence indicators falling in response to the high degree of uncertainty.

In China, output grew 6.2% in annual terms in the second quarter, the lowest rate in nearly three decades. The slowdown was due, in large part, to the poor performance of industry, which continued weakening in July, as did credit and investment, according to the most recent data. The lower Chinese demand for manufacturing inputs has hurt the rest of the emerging Asian economies, which are among the hardest hit by the trade war due to their high exposure to global value chains (Box I.1). Exports have contracted in several of these countries in recent months, which has had its correlate in the industrial sector (figure I.5). Both elements explain the downturn in the bloc in recent quarters.

Thus, the market outlook for emerging Asia (excluding China) has fallen substantially since the start of the year (figure I.6). In Singapore—where exports represent nearly 180% of GDP according to 2018 data—the annual output growth rate was almost zero in the second quarter, the lowest in ten years, with sharp contractions in trade and manufacturing. In the same period, Thailand recorded its lowest GDP growth rate of the past several years (2.3% annually); this reflected the meager performance of exports, where the contraction was exacerbated by the appreciation of the baht, which also affected tourism. The Republic of Korea grew slightly more in the second quarter (2% annually). However, this was essentially due to higher public spending, which offset the weak performance of the private sector, where corporate investment has slowed due to the global uncertainty. Exports, the economy's main driver, fell again in July (–11% annually), especially to China, which accounts for nearly 30% of shipments. The contraction could be exacerbated by the new restrictions imposed by Japan. In Hong Kong, the rising tension threatens to further destabilize the region, due to its position as a strategic trade and financial center. It is a key trading partner for several countries in the bloc, such as Singapore. On the other hand, some countries could benefit from the current scenario, for example, due to the transfer of business previously conducted in China. This is happening in Vietnam, among other economies, where spending on foreign direct investment projects was an estimated 7% higher in January to July of this year than in the same period of 2018 [1]/.

In the United States, net exports and investment made a negative contribution to GDP in the second quarter, which nevertheless slowed less than expected

[1]/ Foreign Investment Agency (FIA) of Vietnam.

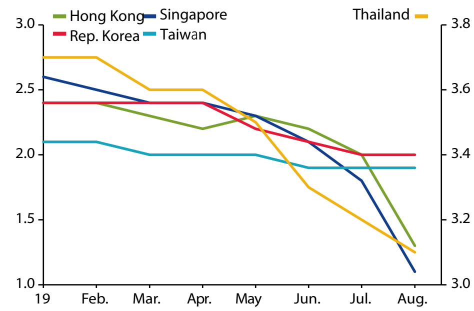
(2% annualized quarterly; 3.1% in the first) due to a strong recovery primarily in consumption, as well as government spending. In the same period, the Eurozone grew at its lowest rate since late 2013 (1.1% annually), reflecting the slowdown in industry and exports. The hardest hit was Germany, due to its dependence on the external sector, as well as other factors: output contracted in the second quarter relative to the first, and the authorities have already signaled the possibility of a recession in the third quarter. Investor confidence (ZEW) has also collapsed. At the same time, the country has the fiscal backing to potentially implement this type of stimulus.

In Latin America, several economies have been affected by idiosyncratic factors, whose effects have been exacerbated by global events. In recent weeks, there was a marked deterioration in the outlook for Argentina. Although the country's economic data were already weak (–2.7% annualized monthly output, on average, in the first half), the scenario worsened after the primary elections, which undermined economic agents' confidence and reignited fears of a default, even after the government's announcement of public debt restructuring. In the first quarter, public debt approached 90% of GDP, the majority of which is in the hands of the private sector and is coming due in 2019–2021. In Brazil, output grew more than projected in the second quarter (1% annually). This reflected the better performance of investment, whose recovery, in any case, was still fairly moderate. Structural reforms have been more extensive than expected, and the government has announced budget cuts. In Mexico, the authority also reiterated its fiscal austerity plan, in the midst of heightened political uncertainty and the market's rejection of the rescue of the state-owned oil company. GDP fell 0.8% annually in that period, as industry remained weak. However, thanks to the strong dispute between China and the United States, Mexico became the latter's main trading partner in the first half of the year, despite the differences between the two countries. Exports are propping up the economy's performance, where non-oil exports have been particularly dynamic (figure I.7).

Peru and Colombia are among the countries in the region where immigration has increased the most, and they share the resulting challenges, especially in terms of the impact on fiscal spending and the labor market. In both, there has been an intensification in some sources of political tension. Nevertheless, the outlook appears less somber compared with the rest of the bloc. In Colombia, annual output growth was around 3% in the second quarter, with a good performance in most components, especially trade. The external sector has been less dynamic, consistent with the deterioration in the world scenario. In Peru, GDP growth declined to 1.2% annually. The outlook points to an improvement in the second half, once the transitory factors affecting primary sectors have dissipated, combined with an increase in public spending.

In this context, the baseline scenario incorporates a significant reduction in the world growth forecast for the 2019–2021 period, with an emphasis on 2020 (2.9%; 3.2% in June) (table I.1). The revisions are similar for the country's trading partners. The biggest changes are in emerging countries, especially in Asia, including a downward revision of five tenths of a point for China next year. The reduction is also significant for the rest of the countries, which in the

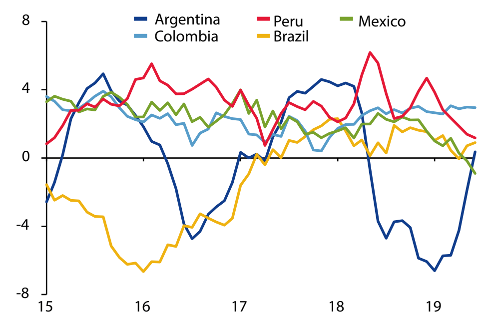
FIGURE I.6
Emerging Asia: 2019 growth outlook (*)
(annual change, percent)



(*) Evolution of the 2019 growth outlook, from January to August of this year.

Source: Consensus Forecasts.

FIGURE I.7
Monthly economic activity index in Latin America (*)
(annual change, percent)



(*) Three-month moving average.

Source: Bloomberg.

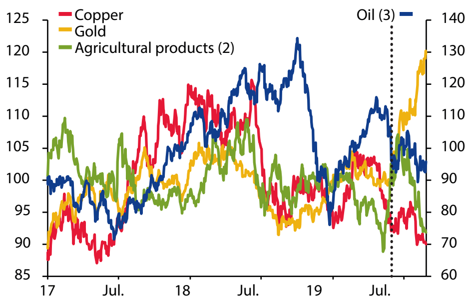
TABLE I.1
World growth (*)
(annual change, percent)

	Avg. 00-07	Avg. 10-16	2017	2018 (e)	2019 (f)	2020 (f)	2021 (f)
World at PPP	4.5	3.9	3.7	3.6	3.1	2.9	3.1
World at market FX	3.2	3.1	3.2	3.0	2.5	2.3	2.5
Trading partners	3.6	4.0	3.7	3.6	3.1	2.9	3.1
United States	2.7	2.2	2.4	2.9	2.2	1.6	1.7
Eurozone	2.2	1.1	2.4	1.9	1.1	1.3	1.4
Japan	1.5	1.4	1.9	0.8	0.7	0.5	0.7
China	10.5	8.1	6.9	6.6	6.1	5.5	5.7
India	7.1	7.5	6.7	6.8	7.0	6.8	7.0
Rest of Asia	5.2	4.7	4.4	4.1	3.7	3.0	3.2
Latin America (excl. Chile)	3.4	2.3	1.1	0.4	0.2	1.4	1.8
Commodity exp.	3.1	2.4	2.7	2.3	1.9	2.0	2.2

(*) See glossary for definitions.
(e) Estimate.
(f) Forecast.

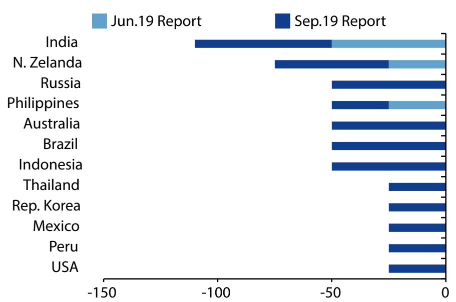
Source: Central Bank of Chile.

FIGURE I.8
Commodity prices (1)
(index: average 2017–2019=100)



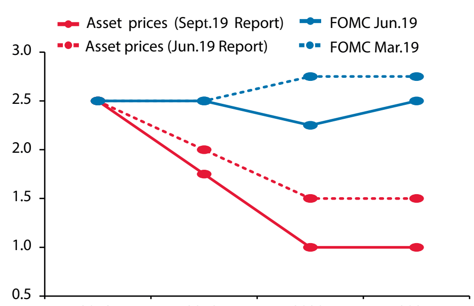
(1) Vertical dotted line marks the cutoff date of the June Report.
(2) The S&P GSCI Agriculture Index, maintained by Standard & Poor's and Goldman Sachs.
(3) Simple average of the Brent and WTI oil prices.
Source: Bloomberg.

FIGURE I.9
MPR adjustments in 2019: Selected countries (*)
(basis points)



(*) Adjustments made this year by the respective countries, as of the cutoff data in June and between the June and September cutoff dates.
Source: Bloomberg.

FIGURE I.10
Expectations for the federal funds rate (*)
(in December of each year, percent)



(*) The U.S. Federal Reserve sets a range for the FFR. The figure graphs expectations for the upper limit of the range.
Sources: Bloomberg and U.S. Federal Reserve.

next two years will grow eight tenths of a point less than estimated in the last *Report:* 3% in 2020 and 3.2% in 2021. In Latin America (excluding Chile), the GDP growth forecast for this year and the next two years is, on average, six tenths of a point lower than in June. The outlook for commodity exporters has not changed substantially. The central banks of these latter countries have emphasized the risks imposed on their economies by the global scenario and have even taken actions to address these risks. The forecasts for the developed world have also been stable.

As indicated, the adjustments to the baseline scenario mainly derive from a more negative impact of the ongoing trade war, whose effects have spread to different fronts. Nevertheless, the data on the consumption side provide a contrast with their good performance, as seen in indicators like retail sales in many countries and consumer expectations. The fundamentals of this part of spending seem more resilient, as labor markets are still tight in the main economies, according to data on unemployment, job creation, and wages. This has supported services, whose outlook (PMI) for the most part remains in positive territory (figure I.4). Going forward, the heightened uncertainty can be expected to end up affecting consumption fundamentals, resulting in a loss of some of the current resilience.

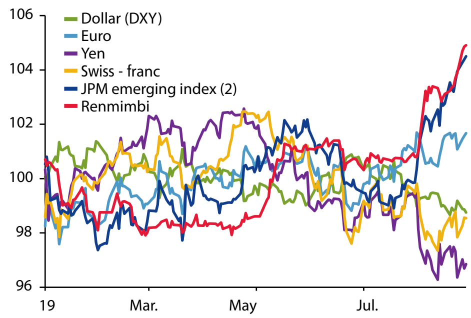
The outlook for the terms of trade declined slightly relative to the last *Report*, as most commodity prices have fallen since June. This reflects the perception of weaker world demand, in particular due to China's importance as a consumer of these products, and the more appreciated dollar, factors that will continue to have an impact in the future. Taking the average of the ten business days before the cutoff dates of this and the last *Reports*, the copper price declined around 3%, fluctuating around the minimum of the last two years. With the oil price, there was some disparity between the Brent and the WTI, but the average price fell on the order of 10%, with some temporary hikes associated, in large part, with disruptions in supply and production cuts in the OPEC countries. In the baseline scenario, the copper price is projected at just under US$2.70 per pound in 2019–2021; the oil price, US$56 (versus US $2.80 and US$61 in June, respectively). In contrast, the price of gold, which is considered a safe asset, has increased in recent months (around 15% since the June Report), recording the peak of the last six years (figure I.8).

In this context, global monetary policy has become more expansionary, through either actual rate adjustments (in some cases surprises) or the adoption of a loose bias (figure I.9). The U.S. Federal Reserve (Fed) reduced its reference rate in July and announced the anticipated end of its balance sheet reduction. The escalation of tension with China refloated the probability of new cuts to the Fed funds rate, which asset prices put at 1% at year-end 2021 (1.5% in June) (figure I.10). The European Central Bank adjusted its forward guidance, paving the way for future stimulus measures, including a second wave of quantitative easing. According to the minutes from the last meeting, these measures could be implemented starting this month. In the emerging world, China announced, together with other measures, the replacement of its fixed interest rate with a fluctuating preferential rate, which facilitates firms' access to cheaper credit. Other Asian countries reduced their monetary policy rates, as did Latin American countries, including Mexico, Peru, and Brazil. All these changes occurred in a context of still-low inflation and inflation expectations, which remained below their respective targets in most developed countries in terms of both headline and core inflation.

The financial markets showed signs of the impact of the heightened uncertainty, with an increase in volatility indices, a drop in the stock markets, capital outflows from emerging economies, and the appreciation of the dollar against the bulk of currencies. The yen and the Swiss franc also strengthened, as safe-haven assets (figure I.11). The Chinese renminbi, in turn, was allowed to depreciate, to its lowest level since 2008. In Latin America, political developments further generated major turbulence in Argentina, with very little contagion to the rest of the region (figure I.12). The country's credit rating was lowered by the main rating agencies. The deterioration in the global scenario was also reflected in a marked drop in interest rates in the fixed-income market, in line with the trend for term spreads. The set of these instruments with negative returns grew substantially. In some economies, the yield curves inverted in some tranches, which to some degree reignited fears of an economic recession.

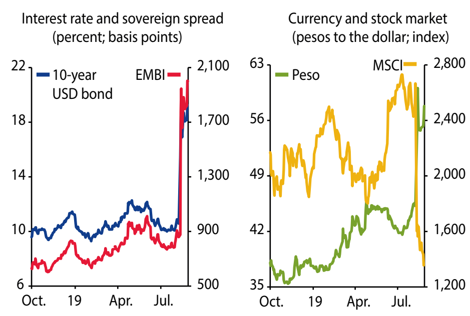
A scenario of a much deeper deterioration of the external context, and its impact on local growth, could lead to monetary policy decisions that are materially different from the projections in the baseline scenario.

FIGURE I.11
Evolution of selected currencies (1)
(index: average 2019=100)



(1) Increase (decrease) indicates depreciation (appreciation).
(2) JP Morgan index comprising Singapore, India, China, Chile, Mexico, Brazil, South Africa, Hungary, Russia, and Turkey.
Source: Bloomberg.

FIGURE I.12
Financial indicators for Argentina



Source: Bloomberg.

BOX I.1
IMPACT OF THE TRADE WAR ON THE EXTERNAL STIMULUS IN THE BASELINE SCENARIO

In the last year, there has been a marked deterioration in the global business climate due to the trade war between the United States and China. Box I.1 of the September 2018 *Monetary Policy Report* addressed the effects of these developments on output and financial conditions at the world level. Box I.1 of the March 2019 *Report* provided additional information on the policy responses that had been orchestrated to contain these effects. There, the analysis focused on the short-term impact and the estimated risks at longer horizons, concluding that the stimulus measures would allow a soft convergence of the global cycle to potential growth.

Given the recent intensification of t he conflict, th is box reevaluates the possible impacts of the trade war on the world economy through various channels, including its effects on the financial markets, uncertainty, corporate i nvestment decisions, and world growth. This perspective is important for informing the calibration of the external stimulus that the Chilean economy will receive in the forecast horizon. It is complemented by Box III.1 in this *Report*, which outlines the possible consequences of these developments for the domestic economy through different transmission channels.

The intensification of the trade conflict and its impact on the financial markets

Over the past few months, several announcements related to the trade conflict have pounded the financial markets. Specifically, on Sunday, 5 May 2019, the President of the United States announced that the 10% tariffs imposed on a group of Chinese products in September 2018 would rise to 25%. This represented an about-face from the apparent progress on negotiations following the truce called in December 2018, at the G20 meetings in Buenos Aires. On 1 August, after another failed round of negotiations, the President of the United States announced the imposition of a 10% tariff on all imports from China that were not already subject to tariffs. Subsequently, the central bank of China permitted an exceptional depreciation of the renminbi, which led the United States to formally declare China to be a "currency manipulator." More recently, China announced tariff hikes on US$ 75 billion of U.S. imports. This latest countermeasure by the Asian giant includes increasing current tariffs by 5 to 10%, re-imposing a 25% tariff on the automotive sector, and applying a 5% tariff on crude oil imports. After these announcements, the U.S. government raised its existing tariffs in retaliation. In addition to magnifying uncertainty, these measures will have brought the average U.S. tariff from 1.5% to over 5%, which represents a significant reversion of the level of openness of the larger global economy.

A first methodological approximation to quantify the causal effect of the trade war on the financial markets is based on an event study—the analysis of market movements on the days of the announcements. To this end, 20 important announcements (tweets and communications by government agencies in the United States and China) were identified as relating to the trade war[1]. On the days on which negative announcements were made, rates and risky-asset returns fell significantly, while volatility increased. For example, in the case of interest rates on two-year U.S. bonds, the accumulated drop during the 18 negative episodes reviewed was approximately 48 basis points (bp), which represents more than half of the accumulated adjustment since early 2018 [2]/. In the case of the U.S. stock market, the accumulated decrease in the S&P500 index was 14% (figure I.13) [3]/.

These effects have also been observed in other economies (figure I.14). The accumulated impact—associated with announcements related to the trade war—on ten-year Chinese bonds is –29 bp; on the stock market, –23%. The effect in Germany is –18 bp on bonds and –22.5% on the stock market. Positive announcements also generated significant effects, with the expected sign, on the

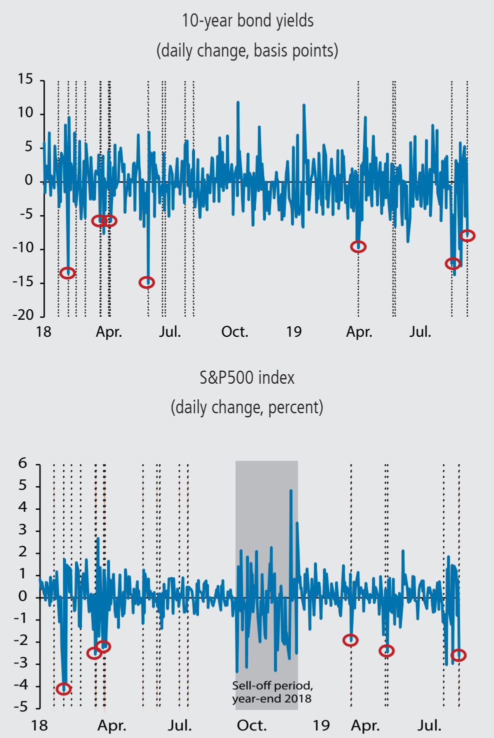
[1]/ For a detailed description of the announcements identified, see Albagli, Carlomagno, and Chernin (2019) and PIIE

[2]/Similar estimates are obtained using the methodology of Rigobon and Sack (2005), which controls for the magnitude of the effect of the news.

[3]/Statistically significant effects are not found for any of the three days following the events considered.

stock exchanges in China, Germany, and Colombia [4] .This evidence is consistent with other studies. For example, based on a wide set of financial indicators, Goldman Sachs also concludes that the trade tension has significantly worsened financial conditions in the United States (Goldman Sachs, 2019). Moreover, different methodologies point to the intensification of the trade conflict as one of the primary candidates for explaining the worse performance of risky assets and the strong correction in the fixed-income market, indicating that investors are less willing to take risks.

FIGURE I.13
Effect of the trade war on U.S. financial assets (*)
(most relevant news for each asset in red)

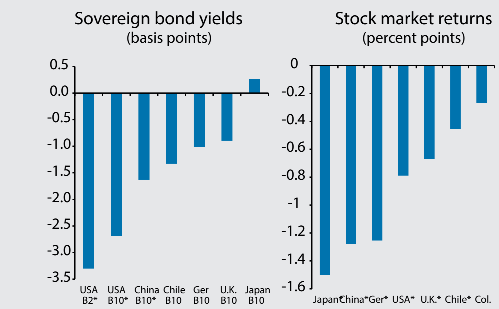


(*) Data through 23 August 2019. Vertical dotted lines indicate days with negative announcements related to the trade war. Red circles show the sharpest drops coinciding with announcements about the trade war.

Source: Albagli, Carlomagno, and Chernin (2019).

[4]/For the rest of the cases, the effects have the expected sign but are not statistically significant.

FIGURE I.14
Effect of the trade war on financial asset yields (1) (2)
(average effect per announcement)



(1) Average effect from negative news associated with the trade war on two-year (B2) and ten-year (B10) sovereign bond yields.

(2) Asterisks indicate statistical significance of at least 10%.

Source: Albagli, Carlomagno, and Chernin (2019).

The impact of the trade conflict on the real economy

The intensification of the conflict has coincided with the continuous deterioration of expectations and output indicators, including the downturn in the industrial outlook, investment, and international trade data (figure I.15). In fact, global trade is growing at its lowest rate since the global financial crisis of 2009, and the geographical distribution of the adjustment is suggestive of the potential impact of the trade conflict on the real economy. For example, The British publication The Economist compared the behavior of 2,400 listed companies in the United States and found that firms that are more exposed to trade with China had cut back more on their investment (The Economist, 2019).

The main mechanism explaining the recent behavior of these variables has to do with the inherent complexities of current trade relations. For decades, international cooperation and a continuous tariff-reduction process have driven a growing integration of global value chains (GVC), where the goods exported by one country use inputs produced in several intermediate phases by multiple economies, taking advantage of comparative advantages. According to data from the United Nations Conference on Trade and Development (UNCTAD), the trade associated with global value chains represents 56% of total trade. A recent IMF report suggests that because of these interrelations, the weight of the United States and, especially, China in world trade is considerably larger than suggested by the gross data (IMF, 2019). In the medium and long term, these production chains can be redesigned through the incorporation of new suppliers new suppliers or the relocation of production to other countries, but a sudden break can be expected to have significant negative effects in the short term. In a recent study, Bayoumi et al. (2019) document a high degree of rigidity in the productive structures that make up the GVCs, which implies major disruptive effects from the imposition of barriers to trade, as well as high costs to re-create (or reorient) them once the chains are broken. The intensification of the trade conflict and the new directions that it has taken in recent months could be producing a climate of distrust in the face of the impossibility of predicting the new map of tariffs and world trade that will ultimately prevail. Given this atmosphere of uncertainty, it is to be expected that corporate investment decisions that are partially irreversible will be particularly affected [5]/. A recent article in The Wall Street Journal provides valuable examples of how this could be playing out in the most recent period (WSJ, 2019).

Internal estimates, based on panel data for a set of 28 economies, confirm that since the start of the confrontation, countries that are more exposed to GVCs have recorded an additional slowdown in their exports, together with a weaker manufacturing outlook (PMI). The exercise yields results in the same direction for the growth of investment and GDP, although they are not statistically significant (table I.2). This evidence is consistent with the traditional transmission channels that operate for this type of shock, where greater uncertainty first affects expectations, then puts a brake on trade and investment, and finally transmits to other broader economic indicators. Thus, there could still be an additional impact on the growth of Chile's main trading partners in association with the measures already adopted [6]/.

FIGURE I.15
Industrial production and global exports (*)
(annual change, percent)

(*) Three-month moving average.

Source: Bloomberg.

TABLE I.2
The impact of the trade war through global value chains (1) (2)

	PMI manufacturing	Exports (q/q change, %)	Investment (q/q change,%)	GDP (q/q change,%)
(a) Additional change since the start of the trade war: 2018Q2–2019Q2	-2.02** (0.88)	-1.44 (0.99)	-2.86** (1.14)	-0.45*** (0.16)
(b) Additional effect on countries with a high exposure to GVCs	0.18 (0.28)	-1.98*** (0.25)	-41.5*** (0.66)	-8.83*** (0.13)
(a)x(b) Additional effect countries with a high exposure to GVCs during the trade war	-2.15** (1.02)	-1.78** (0.92)	-1.94 (3.29)	-0.17 (0.43)

(1) Robust standard errors are in parentheses. Asterisks (*, **, and ***) indicate statistical significance at 10, 5, and 1%, respectively.
(2) Panel regressions with fixed effects for the period 2016 Q3—2019 Q2. Includes 28 countries with available PMI. All the regressions include 318 observations and control for log initial GDP at PPP per capita. Row (a) captures the average difference in the dependent variable (PMI, nominal export growth in US$, real investment, or real GDP) since the start of the trade war. Row (b) captures the average difference in the dependent variable for the half of the countries with higher exposure to GVCs. Row (a)x(b) shows the additional effect on countries that are more exposed to GVCs since the start of the trade war.

Source: Central Bank of Chile.

[5]/ See, for example, Bernanke (1983) and Dixit, Dixit, and Pindyck (1994).

[6]/ While the aggregate effect of bilateral trade wars is usually negative due to the loss of efficiency at the global level, that does not eliminate the possibility that some countries might benefit, for example, as a result of the redirection of demand toward third countries.

The scenario of deteriorating business expectations and the recent slowdown in investment contrast with the relative strength of the labor market and services sector in various countries. A key assessment for calibrating the impact of these developments on world growth in the coming years, therefore, is whether the robust labor market will be sufficient to sustain growth or whether consumer expectations and spending decisions will eventually go the way of the aforementioned investment trends. A determining element for informing this assessment has to do with the scope and duration of the trade conflict, in particular, the persistence of uncertainty and expectations.

Up until the June Report, the baseline scenario assumed that the conflict would not escalate further and that some kind of agreement would be reached over the course of 2019. In the baseline scenario of this Report, this assumption has been revised, in recognition that the conflict may not be resolved before late 2020 and that its reversal could be more gradual. This translates into a greater level of uncertainty, which will reduce world growth in the next two years, in part because the increased volatility in the financial markets dilutes the offsetting effect of a larger monetary stimulus. In this context, the growth of Chile's trading partners has been reduced by 0.3 percentage points (pp) for 2020 and 2021, which represents a significant correction relative to previous forecast revisions. Notably, China is expected to grow 5.5% in 2020, which is below the market consensus estimate. Given the importance of GVCs, the 2020 growth forecast for emerging Asia has been revised down by almost 1 pp. The revision to the growth forecast is more moderate for the developed economies, in particular the United States.

Thus, the baseline scenario contemplates a substantial reduction in world growth, but not a sharp slowdown or a recession in any of the large economies. However, there is still a possibility of more extreme events like a global recession, with significant effects for the emerging economies, including Chile. Of course, more decisive action in terms of monetary policy—in countries that still have room to act—and especially fiscal policy would tend to reduce the probability of that scenario. It is also possibly that a faster reorganization of the GVCs could contribute to a better performance of global investment, as is already occurring with the relocation of production structures to some countries. At the same time, the redistribution of trade flows, in response to the current conflicts, creates space for new agreements and exchanges in this area, which would help offset the deterioration of the external sector and its effects.

II. FINANCIAL CONDITIONS

This chapter reviews the evolution of local and international financial conditions.

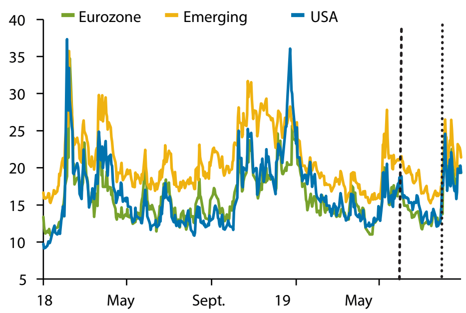
The macroeconomic scenario has changed significantly in recent months. On the one hand, the local economy has been less dynamic than expected, which has kept inflation low. On the other, the outlook for the international scenario has deteriorated significantly, in a context in which several factors—in particular, the intensification of the trade war—have increased uncertainty (Box I.1). In this scenario, several central banks have adopted—or announced that they will adopt—more expansionary monetary policy, and financing costs have decreased, especially at longer terms.

The main source of global tension continues to be the trade war between the United States and China. The financial markets have been fairly sensitive to potentially negative events on this front. Thus, following the U.S. announcement of new tariffs on China in early August, and the successive declarations of retaliations, the implied volatility in the stock markets rose significantly, the stock indexes fell, and currencies depreciated in favor of those perceived as safe havens (figures II.1 and II.2; table II.1). At the same time, commodity prices deteriorated. The Chilean market reacted on par with the rest of the world, with a drop in the stock market and a depreciation of the peso. In recent weeks, the exchange rate has hovered above Ch$700 to the dollar, accumulating a depreciation of 1.7% since the cutoff date of the last Report. The MER-5 declined 2%, due to the appreciation of the yen and the Canadian dollar; the MER-X decreased 0.5%; and the MER did not change. The peso also depreciated in real terms: the real exchange rate (RER, index: 1986=100) increased to 95 in August, which is above the averages of the last fifteen and twenty years. As a working assumption, it is expected to stay above those averages for the next two years.

The intensification of the trade war has been exacerbated by growing tensions in other areas. The possibility of a no-deal Brexit has increased. Tensions have risen in Hong Kong, as has the risk of a Chinese intervention, which could have repercussions outside the country. In Latin America, the markets reacted negatively to the results of the primary elections in Argentina, which triggered a sharp rise in the country's credit spreads and a significant drop in its stock market and currency, affecting—albeit to a limited degree—the valuation of other stock markets in the region, including the Chilean exchange.

Sovereign and corporate spreads have not changed much for the emerging economies relative to the last Report; they remain low, reflecting the ample liquidity in the world economy. Thus, the EMBI Global and the CEMBI moved

FIGURE II.1
Implied volatility in the stock markets (1) (2)
(percent)

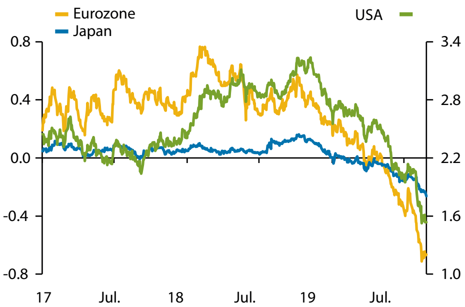


(1) Eurozone: V2X Index; emerging economies: VXEEM Index; USA: VIX Index.
(2) The first vertical dotted line marks the cutoff date of the June 2019 Report; the second, the U.S. announcement on 1 August of new tariffs on imports from China.
Source: Bloomberg.

FIGURE II.2
Stock markets (1) (2)
(index: 2018–2019 = 100)

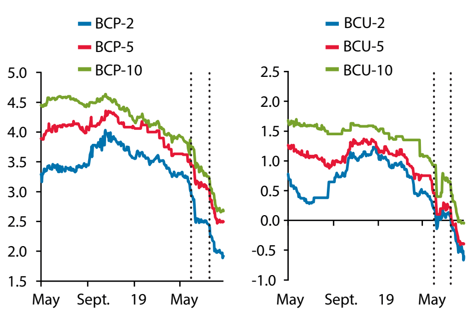
(1) Regional stock indexes: MSCI Index in local currency; Chile: IPSA; China: Shanghai Composite Index.
(2) The first vertical dotted line marks the cutoff date of the June 2019 Report; the second, the U.S. announcement on 1 August of new tariffs on imports from China.
Fuente: Bloomberg.

FIGURE II.3
Ten-year nominal government bond interest rates
(percent)



Source: Bloomberg.

FIGURE II.4
Interest rates on Central Bank of Chile bonds (1) (2)
(percent)



(1) Left-hand vertical dotted line marks the cutoff date of the June 2019 *Report.*
(2) Right-hand vertical dotted line marks the press release from the July 2019 *Monetary Policy Meeting.*
Source: Central Bank of Chile.

TABLE II.2
US dollar exchange rates (1)
(Percent)

	Change in NER, September 2019 Report			
	Jun.19 Report	Mar.19 Report	Dec.18 Report	Sep.18 Report
Latin America (excl. Chile) (2)	**2.4**	**3.2**	**0.6**	**1.5**
Brazil	2.1	4.5	4.8	-0.6
Chile	1.7	4.7	4.0	5.6
Colombia	2.0	7.8	4.7	12.4
Mexico	3.3	0.6	-5.6	1.3
Peru	0.9	1.7	-0.7	1.6
Commodity exporters (2)	**1.3**	**1.6**	**3.4**	**3.5**
Australia	2.3	2.6	5.0	5.7
Canada	-1.3	0.9	1.8	3.2
New Zealand	2.1	5.2	4.4	1.8
South Africa	5.4	0.9	4.2	0.8
Developed economies (2)	**0.2**	**1.2**	**0.5**	**1.9**
Eurozone	0.8	1.3	1.7	3.2
Japan	-3.0	-1.4	-3.3	-1.2
United Kingdom	3.9	4.5	1.2	1.3
Other emerging economies				
China	2.7	2.9	-0,5	0.7
Rep. Korea	1.8	5.0	5,4	6.1
India	2.7	1.0	-2,2	-0.5
Indonesia	-1,1	1.3	-1,2	-1.4
Poland	2.3	1.5	1,6	3.3

(1) The values reflect the percent change between the cutoff date of the corresponding *Monetary Policy Report* and the cutoff of this Report. The NER of each series is calculated as the average of the last ten business days. Positive (negative) sign indicates depreciation (appreciation) of the currency against the US dollar.
(2) Includes the currencies of the economies included in this table, using the weights in the April 2019 WEO.
Sources: Central Bank of Chile, Bloomberg, and International Monetary Fund.

–5 and +15 basis points (bp), to around 380 and 350 bp, respectively. In Latin America, the shifts have been somewhat more skewed to the upside (+35 and +30 bp), which could be related to the situation in Argentina. Chile has recorded a performance in line with the general trend for emerging economies, with small movements in these indicators (–5 and +10 bp, respectively).

In response to the change in the economic scenario, and its impact on the expected evolution of output and inflation at the global level, a considerable number of central banks have adopted, or anticipated, a more expansionary monetary policy. At the same time, the search for risk-free assets has generated a significant reduction in interest rates on long-term bonds in various economies. Since December, the ten-year rate has accumulated a fall of 150 bp in the United States and 100 bp in the Eurozone (figure II.3). In the emerging countries, the average drop in the same period was somewhat greater: 155 bp,[1]/ with an especially steep move in Brazil (–280 bp). In Chile, the nominal ten-year rate fell 175 bp, which was mirrored by the two- and five-year BCP (–185 and –170 bp, respectively). The rates on ten-, five-, and two-year indexed securities declined around 165 bp, leading to negative values in the most recent period (figure II.4). Several factors have contributed to the evolution of local rates, such as the recalibration of the MPR in June, the significant change in the international macroeconomic scenario, which has

[1]/ Simple average of the change in China, Thailand, Indonesia, Brazil, Mexico, Colombia, Peru, and Chile.

changed the orientation of monetary policy, and a significant reduction in term spreads (figure II.5). The latter could be related to substantial portfolio adjustments by institutional investors.

In recent months, there has been an increase in the quantity of financial assets with negative returns, which now account for over 30% of total investment-grade bonds in circulation at the international level (figure II.6). While most of these returns are concentrated in the Treasury bonds of countries perceived as having a low default probability—such as Japan and Germany—there has recently been an increase in the share of securities with negative returns in the corporate bond market. These represent over 5% of total bonds in circulation in Switzerland, the Netherlands, and Finland,[2] and some are outside the AAA segment.

DOMESTIC CREDIT MARKET

The cost of credit is currently low, consistent with the expansionary monetary policy and the global evolution of the fixed-income market. Compared with the cutoff of the last Report, placement rates decreased in all segments and remain low from a historical perspective (figure II.7). Average residential mortgage rates are historically low, as a result of a marked decline over the course of 2019 (–70 bp between January and July). Thus, according to July data, they are located at 2.55%. In the consumer and commercial portfolios, the reduction is explained by the reduction in interest rates on credit cards and overdraft lines, respectively.

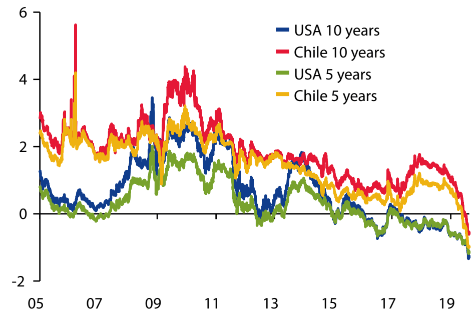
The real annual growth rates of consumer and business loans have continued to decline relative to the start of the year, and they are currently below their historical averages (figure II.8). This could be reflecting less dynamic demand for bank credit in these segments; which is corroborated by the different qualitative sources—namely, the Business Perceptions Report (BPR) and the Bank Lending Survey (BLS). Real mortgage loans are the one exception to this trend, as the growth rate has continued to rise in a context of an increase in home purchases for investment purposes.

With regard to corporate bonds, local issues have increased in recent months, while international issues declined. The former—accumulated in 12 months—grew around US$860 million in the second quarter of this year[3].

The use of these funds is dominated by non-productive purposes. Thus, bonds issued to refinance other liabilities increased strongly in the second quarter, to UF79 million (accumulated in 12 months) (figure II.9).

[2] Calculated on the basis of the market value of the investment-grade debt in circulation in July 2019.
[3] Including financial and non-financial firms.

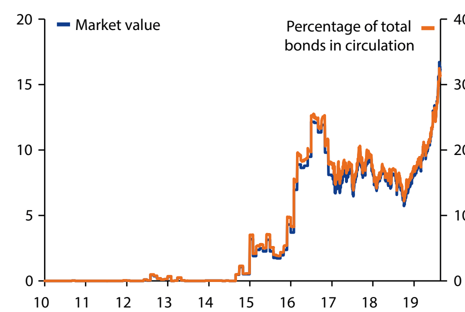
FIGURE II.5
Term spreads in Chile and the United States (*)
(percent)



(*) Term spreads in the United States and Chile are calculated using the methodology of Adrian et al. (2003) and Beyzaga and Ceballos (2017), respectively.

Sources: Bloomberg, Central Bank of Chile and Federal Reserve Bank of New York.

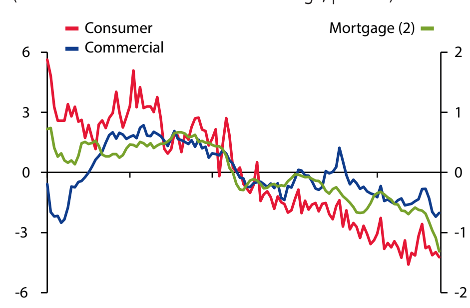
FIGURE II.6
Assets with negative returns at the international level (*)
(billions of dollars; percent)



(*) Calculated using on investment-grade debt in circulation in 24 economies.

Source: Bloomberg.

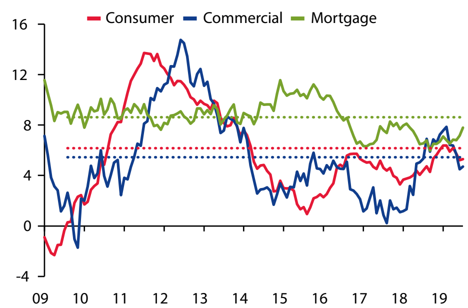
FIGURE II.7
Interest rates by type of loan (1)
(deviation from the 2010–2019 average, percent)



(1) Weighted average rates of all operations in each month.
(2) UF-denominated loans.

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

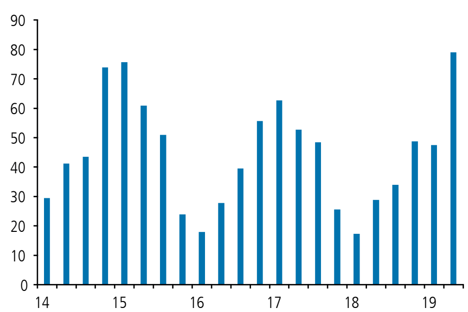
FIGURE II.8
Real loans (1) (2)
(annual change, percent)



(1) Real data constructed with the spliced CPI series with base year 2018.
(2) Horizontal dotted lines indicate the average of the last 10 years for each series.

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

FIGURE II.9
Local corporate issues for refinancing liabilities (*)
(millions of UF, annual moving sum)



(*) Excluding financial companies.

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

In general, the qualitative information confirms the trends in domestic financial conditions. First, the BPR reaffirms the existence of low interest rates in the banking system, which is justified by the presence of a high degree of competition, especially in the mortgage segment. Second, the people interviewed describe a certain reticence to take on debt, despite the low costs. Third, the survey corroborates that, in general, those who have in fact taken on debt, in both the business and personal segments, have done so as part of a liability refinancing process to reduce their financial burden. Finally, the BLS for the second quarter of 2019 indicates that demand has strengthened moderately for real estate loans and residential financing, while the rest of the commercial portfolios have become somewhat less dynamic.

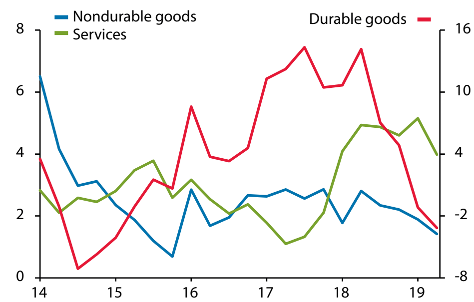
III. OUTPUT AND DEMAND

This chapter reviews the recent evolution of output and demand and their short-term outlook, in order to examine possible inflationary pressures.

In the second quarter of the year, GDP grew 1.9% in annual terms (2.1% for non-mining GDP), while total domestic demand increased 1.8% (2.8% excluding changes in inventories). Both were below the forecast in the June *Monetary Policy Report*. On the output side, the bulk of the difference was explained by one-off supply factors, in particular in mining, agriculture, and electricity, gas, and water. There was also a negative impact from the strike at Codelco and the teachers' strike on personal services. As seen in other economies, industry recorded a low performance, particularly in some lines associated with the external sector (figure I.2). On the demand side, the annual growth rate of private consumption declined across all components, albeit to varying degrees, over and above the impact of the one-off factors affecting GDP. On the other hand, gross fixed capital formation (GFCF) was more dynamic than expected, due to a better performance of the construction and other works component, presumably in the mining sector, which more than offset the lower-than-expected growth of machinery and equipment. With regard to foreign trade, exports contracted more than expected in annual terms.

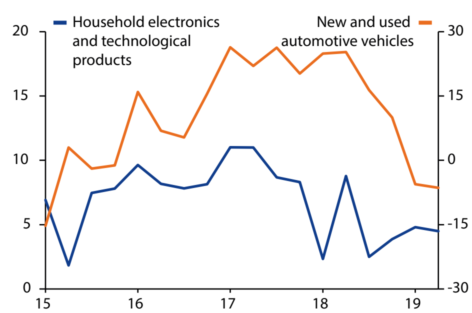
In the baseline scenario, GDP growth in the 2019–2021 period will be lower than projected in June. This year, GDP will grow between 2.25 and 2.75% (2.75 to 3.5% in June); in 2020, between 2.75 and 3.75% (3.0 to 4.0% in June); and for 2021 the forecast remains between 3% and 4%. This takes into account higher annual growth rates in the second half of 2019—as apparent in some of the partial data for July—which will not be sufficient to offset the low data from the first half of the year. This, because some of the negative factors in the second quarter will not be totally reversed, and the less dynamic consumption trend will be somewhat persistent. In addition, the greater global uncertainty and the lower growth of Chile's trading partners will reduce exports. Although it is not incorporated in the baseline forecast, there is a risk that the drought affecting part of the country could reduce agricultural production and diminish the value added from electricity generation. On the fiscal side, the assumption is that in 2019 the economy will receive a stimulus in line with the structural policy targets declared by the government, as well as the effect of the recent fiscal measures, defined within those margins. The forecast also incorporates the effects of the significant increase in the monetary stimulus, whose impact will be felt especially in 2020. With regard to private expectations, the August Economic Expectations Survey indicates that in 2019, total GDP will grow 2.6% (3.2% in May); in 2020, 3.1%; and in 2021, 3.3% (3.4% for both years in May).

FIGURE III.1
Private consumption
(real annual change, percent)



Source: Central Bank of Chile.

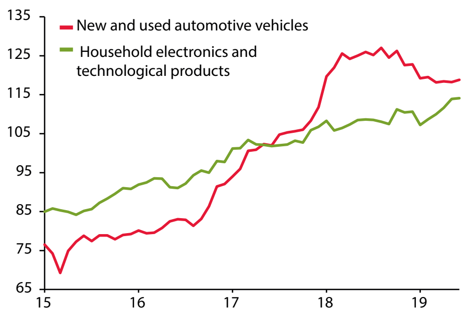
FIGURE III.2
Durable goods sales (IACM) (*)
(annual change, percent)



(*) Quarterly series.

Source: National Statistics Institute (INS).

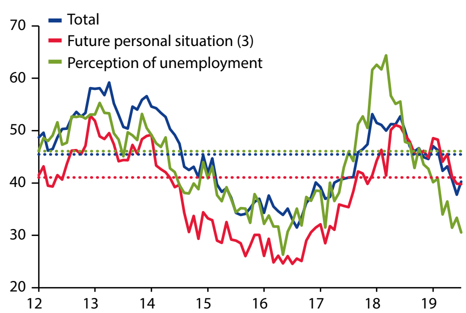
FIGURE III.3
Durable goods sales (IACM) (*)
(index: 2015–2019=100, three-month moving average)



(*) Seasonally adjusted series.

Sources: Central Bank of Chile, based on data from the National Statistics Institute (INS).

FIGURE III.4
Consumer Confidence Index (IPEC) (1)(2)
(original serie)



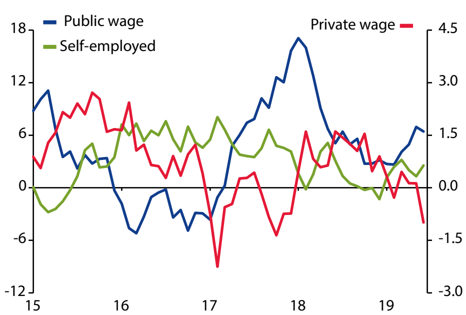
(1) A value under (over) 50 indicates pessimism (optimism).

(2) Horizontal dotted lines mark the average of March 2003 to July 2019 for each series.

(3) Indicator strongly correlated with consumption trends. For more details, see the Central Bank of Chile Working Paper N° 824, July 2018.

Source: Adimark.

FIGURE III.5
Employment by job category
(annual change, percent)



Source: National Statistics Institute (INS).

In the second quarter, the annual growth rate of private consumption declined to 2.3% (3.2% in the first quarter; 4.0% in 2018). This trend was recorded across all components, albeit to varying degrees (figure III.1). The sharpest adjustment was in durable goods, largely due to the decline in automobile sales and household products, which had lower annual growth rates than in the second quarter of 2018 (figure III.2). Nevertheless, both remain at high levels (figure III.3). Nondurable goods and services consumption also performed below expectations. The former grew 1.4% annually in the second quarter, the lowest rate in several quarters. The lower annual growth rate of nondurables consumption is, in part, explained by the one-off factors affecting GDP, in particular the lower agricultural production. Qualitative information corroborates the slower growth of consumption. The August Business Perceptions Report (BPR) reveals that the interviewees tied to the goods trade—including both durables and nondurables—remain among the most pessimistic, especially due to the lower-than-projected growth of demand.

The behavior of consumption occurs in a context of a deterioration in consumer expectations since the start of the year, as revealed by the different components of the Consumer Confidence Index (IPEC) (figure III.4). On the other hand, according to data from the INE, private wage labor has become less dynamic (figure III.5). With regard to wages, several sources of information show a slowdown in the last year. Qualitative information confirms these trends. In particular, as reported in the BPR, most of the people interviewed stated that they had not made any changes to their staff and did not intend to make new hires, while employee turnover had declined, indicating that people were more concerned about keeping their jobs. With regard to the credit market, the growth rate of consumer loans has slowed, despite the low interest rates.

In the baseline scenario, although higher growth rates are projected going forward, the forecast for consumption growth in the second half is lower than in June. This reflects the fact that the less dynamic consumption in the second quarter is expected to be somewhat persistent, while no major changes in fundamentals are expected in the immediate future. Durable and nondurable consumer goods imports fell more sharply in annual terms in the second quarter, although they are still high levels. In the BPR, several interviewees in the trade sector mentioned a reduction in their goods imports, given that consumption is perceived as sluggish. Moreover, according to the Monthly Business Confidence Index (IMCE) for this sector, the perception of excessive inventories has increased relative to the first quarter.

Gross fixed capital formation recorded a higher annual growth rate relative to the previous quarter, at 4.8%. The driver of this trend was the construction and other works component, which grew 6.4% in the period (figure III.6). By sector, the biggest contribution was from projects related to mining. The development of large-scale projects has continued to benefit other sectors, such as architectural and engineering services and construction. This is corroborated by the Association of Engineering Consulting Firms, whose report for the second quarter indicates that the annual growth rate of the sector increased in the period, mainly due to higher demand from private companies, especially in mining (figure III.7).

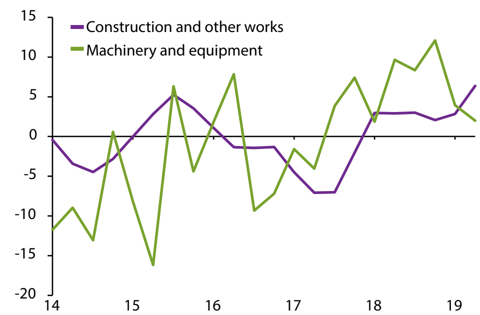
In contrast, the machinery and equipment component of GFCF recorded another drop in its annual growth rate, which reached 2.0% in the second quarter (3.9% in the first quarter; 8.2% in 2018). By sector, the push from mining investment continues to be the primary factor making a positive contribution to nominal capital goods imports—excluding transport vehicles—thus far in the year (figure III.8).

In the baseline scenario, the growth forecast for GFCF in 2019 is lower than in June. Although the evolution in the second quarter was somewhat better than expected, the outlook has deteriorated for a number of reasons. On the one hand, the available information shows that the increase in investment continues to be concentrated in large mining projects, with no sign of higher investment in the other sectors. On the other, the deterioration of the external scenario has caused a depreciation of the peso and a drop in the stock market, which limit the space for a substantial recovery of capital goods imports in the immediate future (figure III.9). In addition, business confidence has declined (IMCE). However, the low financing costs and the government's announcements regarding public investment should provide some support to this component of demand.

It is important to note that the deterioration in the outlook for investment is a global phenomenon, deriving from the interaction of the heightened uncertainty, the drop in trade, and their effects on global supply chains. In the case of Chile, the economy's participation in these chains is high in comparison with the rest of Latin America, but it is mostly concentrated in the mining sector, which is precisely where the biggest increase in investment is found. Certainly, a steeper and/or more prolonged drop in the copper price could have effects on the development of these projects, but the available information to date suggests that this risk remains limited (Box III.1). Data from the survey by the Capital Goods and Technological Development Corporation (Corporación de Desarrollo Tecnológico y de Bienes de Capital, CBC) and from the Sustainable Project Management Office (OGPS) of the Ministry of Economy show that companies have continued to move forward with the execution of large mining projects, and they predict that they will proceed without any major setbacks. With regard to real estate investment, the persistence of low mortgage interest rates has upheld dynamic home sales in some sectors. The information collected in the BPR establishes that some specific investments in the mining, forestry, and salmon sectors have continued to revitalize activity in some regions. In contrast, the majority of firms are not planning any large initiatives, either because they have idle capacity or because they are waiting for a more persistent improvement in the economy and/or their business results.

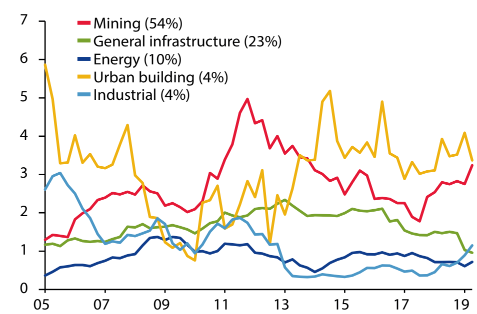
With regard to foreign trade, the volume of exports fell more than projected in the second quarter of the year (figure III.10). On the one hand, supply factors have had an important impact on mining and agricultural shipments, in line with the evolution of output. Additionally, some industrial sectors, such as salmon production, have been at record production levels for some time. Consequently, their annual growth rates are low or negative, even while their assessment of their business performance is positive, as reflected in the BPRs of the past year. On the other hand, the meager performance of several Latin American economies has continued to affect the basic metal industry, whose main destination markets

FIGURE III.6
Gross fixed capital formation
(real annual change, percent)



Source: Central Bank of Chile.

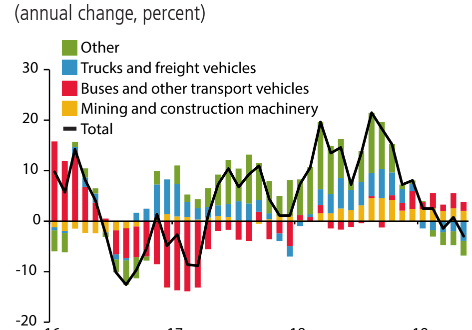
FIGURE III.7
Engineering works by sector (*)
(fixed-base index: 1996=1)



(*) Percentages in parentheses are the sector's share of total output in 2018. They account for 96% of the total.

Source: Association of Engineering Consulting Firms.

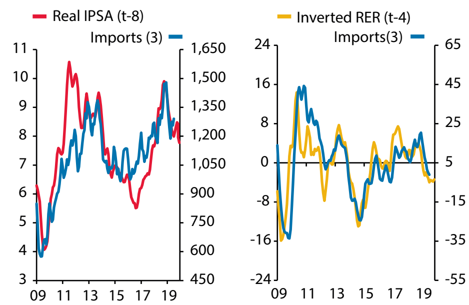
FIGURE III.8
Nominal capital goods imports (*)
(annual change, percent)



(*) Quarterly moving average.

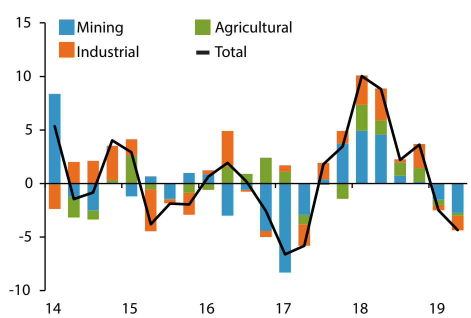
Source: Central Bank of Chile.

FIGURE III.9
Real capital goods imports, IPSA, and exchange rate (1)(2)
(level in thousands of 2013 US$; millions of 2013 US$) (annual change, percent)



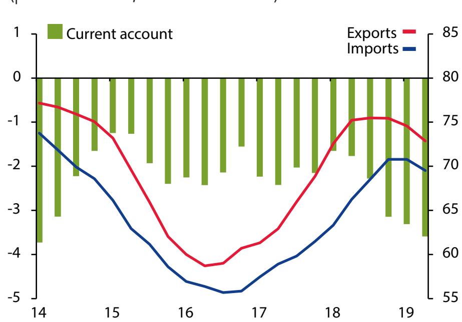
(1) Quarterly moving averages.
(2) Series deflated by the capital goods import price index, with base year 2013=100. Spliced with the base year 2008=100 series of this index using annual changes. July 2019 takes the same value as the second quarter of 2019.
(3) Excluding other transport vehicles.
Sources: Central Bank of Chile and Bloomberg.

FIGURE III.10
Annual growth of real exports
(share, percentage points)



Source: Central Bank of Chile.

FIGURE III.11
Current account and trade balance (*)
(percent of GDP; billions of dollars)



(*) Accumulated in a moving year.
Source: Central Bank of Chile.

are precisely these countries. In terms of the effects of the trade war, thus far the impact on the volume of Chilean exports has been limited and heterogeneous. For example, wood and cellulose products face lower external demand, primarily from China, whereas wine exports to China have been strong. As indicated earlier, the direct impact of the trade restrictions between the United States and China depends on various factors, including whether the exports of a third country, in this case Chile, are complements or substitutes for the goods that are being taxed [1]/. The baseline scenario of this Report considers that the effects on external demand will increase in the coming months, not only through the direct trade channel, but also through the increased uncertainty, the effect on the performance of Chile's main trading partners, and the evolution of the terms of trade, among other factors (Box III.1).

In the second quarter of the year, the current account deficit was 3.6%, accumulated in a moving year (3.3% in the previous quarter) (figure III.11). The baseline scenario projects that the current account deficit will remain around 3% of GDP this year. While the deterioration of the external scenario will have the aforementioned negative impact on exports, this will be offset by less dynamic domestic spending, which will reduce the growth of imports.

[1]/ *Monetary Policy Report*, September 2018, Box I.1.

BOX III.1

IMPACT OF THE TRADE CONFLICT ON THE CHILEAN ECONOMY

In the baseline scenario of this *Monetary Policy Report*, the external stimulus that the Chilean economy is expected to receive has decreased significantly relative to the June forecast. Recent quarters have seen a slowdown in several developed and emerging economies, a decrease in trade and global exports, and an increase in uncertainty. As discussed in Box I.1, the intensification of the trade conflict emerges as one of the main candidates for explaining the recent dynamics of these variables. Emerging Asia and Europe (especially Germany), in particular, have weakened, as their strong participation in global value chains (GVC) has made their economies highly sensitive to China's weak performance and the trade conflict.

This box describes the effects that the trade war could have on the local economy, through different transmission mechanisms. With regard to the direct channel of international trade, the annual decline in Chilean exports has thus far been limited and heterogeneous in terms of products, but the negative effect could intensify in 2020–21 to the extent that our trading partners record lower growth rates. There are clearer signs of transmission to local financial conditions, where the trade conflict has had a significant impact on the stock market and the exchange rate. Finally, another transmission channel is through expectations: the deterioration of external variables has had significant effects on local business and consumer confidence and, therefore, on investment and consumption decisions. The baseline scenario has already incorporated less dynamic domestic demand due to these effects, which is partially offset by the reduction in interest rates, in line with a more expansionary monetary policy and the influence of international movements in longer rates. However, the possibility cannot be ruled out that future events could have even larger effects, for example, in the event the international scenario deteriorates further.

Trade channel

While Chile is not directly involved in the trade war, the local economy could be affected to the extent that it participates in the GVCs of the affected countries. A study by the OECD (2015) estimates that in 2011, 32% Chilean exports were involved in GVCs, which is high compared with the rest of Latin America. In fact, that year, Chile had the highest participation rate in the region, followed by Colombia with almost 30% and Brazil with just under 25%. According to the same study, however, almost two-thirds (63%) of Chile's participation is explained by mining exports. This is followed by the services sectors (22%), while the remaining sectors, including industry, had significantly lower shares. An additional factor to consider is whether the economy produces goods that are complements or substitutes for the goods that are being taxed in the trade war. The former would be negatively affected, whereas the latter could benefit, by replacing production in other economies. Finally, another factor is the lower value of our exports due to the drop in commodity prices, in particular copper [1].

How have these factors been reflected in the evolution of Chilean exports? The volume of goods exports fell –2.5 and –4.4% in annual terms in the first and second quarters of 2019, respectively (6.1% in 2018). The biggest contraction was in mining exports. Although these shipments are involved in GVCs, the reduction in the first half of the year had more to do with supply factors. In particular, it is consistent with the poor performance of mining, which fell –2.0% annually in the first half, due to an Andean winter that covered a larger geographical area than normal and lasted longer; maintenance work and a strike at Codelco; and problems in one of the ports that handles iron exports. This reflects a more general trend, where the variable for adjusting to fluctuations in copper demand tends to be the copper price, not shipments. Nevertheless, if the copper price stays low for a long time, it could affect long-term elasticity through its impact on mining investment decisions.

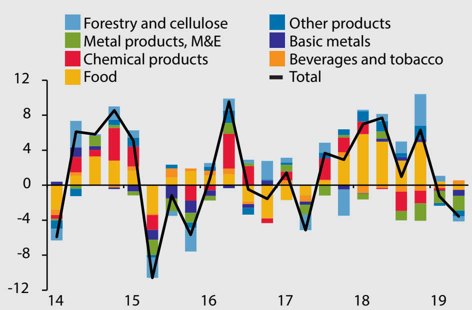
Industrial exports have also recorded a decrease in volume (figure III.12). In this case, there are various contributing factors. On the one hand, sectors like the salmon industry—which accounts for around 15% of the value of industrial exports—are currently at historically high production levels, which means that their annual growth rates are low or even negative, despite a positive

[1] Given the deficit nature of the copper market, lower demand for the metal is mainly accommodated through the copper price rather than through the quantity produced.

assessment of sectoral performance. On the other hand, the products that have recorded the sharpest downturn are tied to the metal-mechanic and basic metal industry. In this case, the poor performance is due to domestic issues in Latin American countries, the main destination markets, which have had a strong impact on these exports (figure III.13). The delay of recovery in these economies will push back the recovery of these exports. With regard to exports to the markets directly involved in the conflict—namely, China and the United States—the effects have been limited and heterogeneous. For example, cellulose and forestry exports have been affected by lower demand from China and producers with high inventories. In contrast, wine exports to China have benefited from the tariffs on U.S. wines.

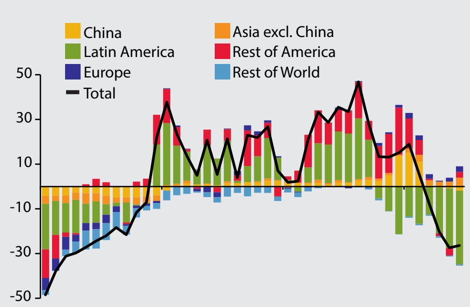
To date, there is no evidence that the trade conflict has had a direct impact through the trade channel, but going forward exports are expected to be affected through the lower growth forecast of Chile's trading partners.

FIGURE III.12
Volume of industrial exports
(annual change, percent)



Source: Central Bank of Chile.

FIGURE III.13
Annual growth of basic metal industry exports, by destination
(share, percentage points)



Source: Central Bank of Chile.

Financial channel, expectations, and domestic demand

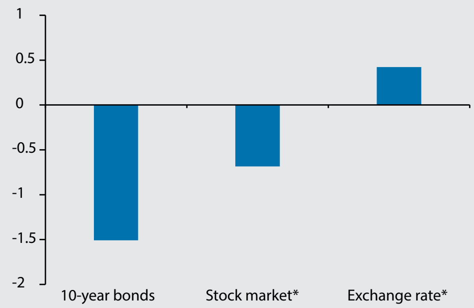
Financial market effects can become an important transmission mechanism for economies that are not directly involved in the conflict. As already mentioned, the uncertainty associated with the trade war has reduced risk appetite, giving way to currency depreciation and falling stock markets, commodity prices, and long-term interest rates. Capital outflows can also be expected, which thus far have only occurred in economies considered to be more vulnerable.

The effect of the trade war on local asset prices can be approximated using the event study methodology described in Box I.1, estimating the average impact associated with the main announcements (tweets) in the development of this conflict (figure III.14). For the local stock market, negative tweets (intensification of the conflict) are estimated to have reduced the IPSA by 0.5–0.7% (with no significant effects for positive tweets), while for the exchange rate, negative tweets imply a depreciation of around 0.4% [2]/. In general, stock market drops and currency depreciation are associated with a lower level of local investment, particularly in the machinery and equipment component (figure III.9). While the exercise does not find any statistically significant effects on local long rates, these rates have declined significantly over the course of the year—in some cases to historically low levels—which could provide some degree of support to investment. In the baseline scenario, these effects have already been incorporated in the lower investment forecast, concentrated in the tradables component.

In addition to the direct effects on financial markets, another important transmission channel is the impact of a deterioration

[2]/ For nominal long rates, negative tweets reduce yields by 1.5 basis points, but the effect is not significant. See Albagli, Carlomagno, and Chernin (2019).

FIGURE III.14
Average effects of the trade war on Chilean financial assets (1) (2)
(basis points, percent)



(1) Ten-year bonds: n basis points. Stock market and exchange rate: percent.

(2) Asterisks indicate statistical significance at 5%.

Source: Albagli, Carlomagno, and Chernin (2019).

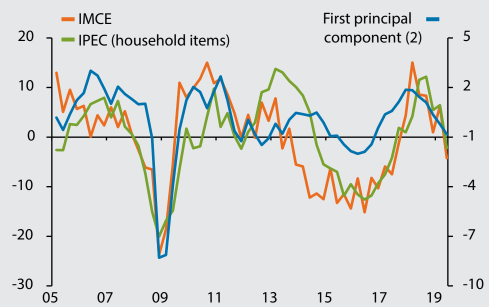
in the global outlook and world GDP on business and household expectations in Chile and, therefore, on domestic demand. The investment forecast for 2019 has been revised steadily downward over the course of the year, with an emphasis on machinery and equipment. By sector, mining has been the main driver of growth in gross fixed capital formation. While a deeper and/or more prolonged drop in the copper price would undoubtedly have an impact on future project development, the available information to date suggests that this risk is still low. In fact, the different surveys and the more dynamic performance of some business services indicate that mining investment has been more dynamic than expected.

A bigger concern is non-mining investment and consumption. Business expectations, measured by the IMCE, deteriorated considerably in the first half of the year. Consumer expectations (IPEC) have fallen even more markedly in recent months, into clearly pessimistic levels. However, while there is a strong association between the evolution of a set of indicators of external activity and local expectations (figure III.15), that does not necessarily mean that the downturn can be attributed to the external variables, since it could also be correlated with multiple developments in the local economy.

To isolate the impact of external variables on local expectations and domestic demand, a structural vector autoregression (SVAR) model is used (see Albagli and Luttini, 2015). In this exercise, the world cycle is identified as the first principal component of the external variables related to output (PC1) (the copper price, the oil price, the Global PMI, and the PMI for the United States, China, Europe, and Brazil) and with the first principal component of the external variables related to financial and risk variables (PC2) (VXO, SP500, EMBI Global, LatAm, Asia, and Europe). To study the effect on the components of domestic demand, the SVAR includes, in addition to the above external variables, some domestic macro variables [3]/ and confidence indicators (IMCE or IPEC, depending on whether the dependent variable is investment or consumption).

The results show that a deterioration in external variables, measured through PC1, causes an immediate and persistent effect on expectations and a more lagged but persistent effect on the components of domestic demand (consumption and investment) (figure III.16). The quantitative exercise also shows that the effects tend to be larger and more persistent via business expectations and investment than through consumer expectations and spending decisions. While it is difficult to determine more precisely how much of the decline in the different expectations indicators can be attributed to specific events in the current climate, the exercise suggests that the deterioration in the external scenario probably explains more of the downturn in business confidence than in consumer confidence, given that business confidence displays a larger response to changes in the external variables.

FIGURE III.15
Business expectations and external variables (1)
(deviation from historical average)



(1) Original series for the IMCE and IPEC. The IMCE only includes the industrial and trade sectors and the questions on the future situation of the company in the next three and six months..

(2) First principal component of PMI Global, USA, China, Europe, Brazil, copper price, oil price.

Sources: Icare/Universidad Adolfo Ibañez and Bloomberg.

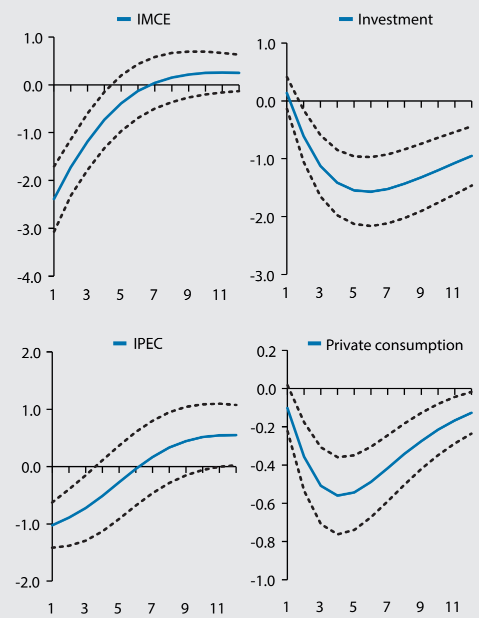
[3]/ Output gap and total investment/ private consumption. Australian mining output is included to control for shocks to the mining cycle.

Conclusions

The trade war has become an important factor in the evolution of the world economic scenario. Consequently, the baseline scenario in this Report incorporates a downward revision in the external stimulus for the Chilean economy in the next two years. There are various transmission mechanisms for this change in scenario. On the one hand, it affects the growth of trading partners and, therefore, external demand and the growth of the volume of national exports. On the other hand, it deteriorates the terms of trade and reduces the country's income from overseas. It also has a negative impact on spending decisions, especially investment, due to the deterioration in financial conditions (in particular, the exchange rate and share prices, partially offset by lower interest rates) and local expectations.

Given the evolution of the external context, there is still a possibility that uncertainty will continue to increase, with a bigger impact on domestic demand and output.

FIGURE III.16
Effect of a negative shock to external factors on expectations, investment, and private consumption (1) (2)
(deviation from the HP trend, percent)



(1) External factors are measured as the first principal component of the PMI Global, USA, China, Europa, Brazil, copper price, and oil price.
(2) The magnitude of the shock to external factors is one standard deviation.
Source: Zuñiga (2019).

IV. PRICES AND COSTS

This chapter analyzes the recent evolution of the main components of inflation and costs, identifying the current sources of inflationary pressure and their likely evolution in the future.

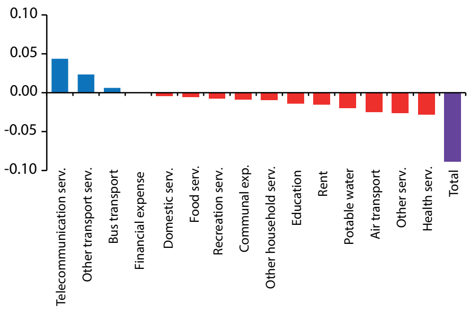
INFLATION[1]/

Since the June *Monetary Policy Report*, the macroeconomic outlook has weakened, which has increased the risks for a timely convergence of inflation to the 3% target in the forecast horizon. This primarily reflects the evolution of the external scenario, together with lower-than-expected growth of output and domestic demand in the second quarter. Consumption growth was lower, private wage employment was less dynamic, and expectations have declined since the beginning of the year. At the same time, annual CPI and CPIEFE inflation remain low, at around 2%, with no major changes relative to the June forecast. However, there have been more significant differences in the components of the CPIEFE. In particular, CPIEFE services inflation has accumulated surprises to the downside across most of its components, remaining low from a historical perspective. Services that are more sensitive to the state of the output gap and the labor market have adjusted even more. Some part of the recent inflation surprises is expected to persist for some time, in line with a larger output gap than projected in June. Taking all these factors into account, the Board decided, at its September meeting, to reduce the monetary policy rate by 50 basis points (bp), to 2.0%, and announced that the monetary stimulus may need to be expanded further, a possibility that would be evaluated at future meetings in light of the evolution of the macroeconomic scenario.

In the baseline scenario in this Report, annual CPI and CPIEFE inflation are expected to continue increasing gradually, to 2.7 and 2.5%, respectively, at the end of this year (2.8 and 2.6% in the June Report, respectively). Headline and core inflation will converge to 3% in 2021, toward the end of the policy horizon. With regard to private expectations, the different measures put annual inflation at 2.8% in December of this year. One and two years ahead, expectations are lower than on the cutoff of the last Report. One year ahead, the different measures—EES, FBS, and inflation insurance—estimate annual inflation between 2.7 and 2.8% (–10 bp). Two years ahead, the median values of the EES and of the FBS are

[1]/ Unless indicated otherwise, the inflation series and components presented in this Report, starting in January 2019, are the new indexes with base year 2018=100, so they are not strictly comparable with earlier data.

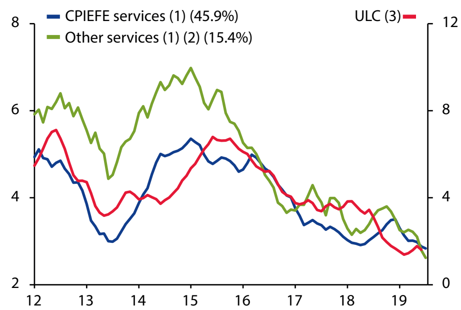
FIGURE IV.1
CPIEFE services: Surprises since the June Report (*)
(accumulated monthly contribution, percentage points)



(*) See the Glossary for more details on the components included in each category.

Sources: Central Bank of Chile and National Statistics Institute (INE).

FIGURE IV.2
CPIEFE services and unit labor costs
(3-month moving average of annual change, percent)



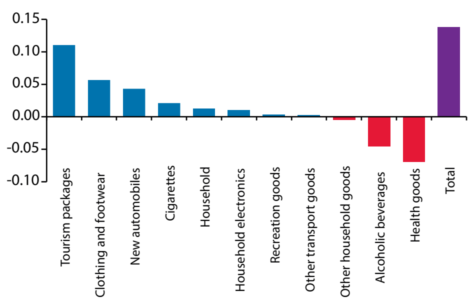
(1) In parentheses: the share in the total CPI basket.

(2) For more details, see *Monetary Policy Report,* March 2017, Box IV.1

(3) Constructed using INE data. Twelve-month moving average of the annual change.

Sources: Central Bank of Chile and National Statistics Institute (INE).

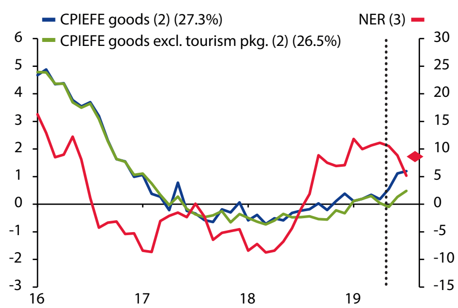
FIGURE IV.3
CPIEFE goods: Surprises since the June Report (*)
(accumulated monthly contribution, percentage points)



(*) See the Glossary for more details on the components included in each category.

Sources: Central Bank of Chile and National Statistics Institute (INE).

FIGURE IV.4
Exchange rate and CPIEFE goods (1)
(annual change, percent)



(1) The vertical dotted line marks the cutoff date of the June 2019 *Monetary Policy Report.*
(2) In parentheses: the share in the total CPI basket.

(3) The red diamond includes NER data for August 2019 through the 28th, compared with the full month of August in 2018.

Sources: Central Bank of Chile and National Statistics Institute (INE).

3.0 and 2.8% annually, respectively. In both surveys, the percentage of responses that put annual inflation below 3% in two years has increased.

As mentioned, CPIEFE services inflation has followed an unexpected trend in recent months, in that the majority of the items that make up this component recorded negative surprises since the cutoff of the June Report (figure IV.1). Thus, within the CPIEFE, inflation has continued to weaken in total CPIEFE services and in other services—which are more correlated with the output gap—and it remains low from a historical perspective (figure IV.2). Given the negative surprises of the last three months, the forecast for the services component of the CPIEFE in the coming months is for a continuation of the low annual inflation rates, in line with the widening output gap in the first half of this year, the weakening of domestic demand (especially consumption), the less dynamic private wage employment, and the decline in expectations since the start of the year.

The goods component of the CPIEFE, in turn, has risen more than projected in the last Report, to an annual rate of 1.2% in July. The nominal exchange rate depreciated against the U.S. dollar in annual terms (8.6% annually in August, based on data through the cutoff date), while the multilateral exchange rates recorded movements in the same direction, but of a smaller magnitude (just over 3.5 and 7.5% for the MER and the MER-5, respectively). The biggest surprise in the period was the behavior of tourism package prices (figure IV.3). This product is historically volatile, however, so the assumption is that the surprise will be reversed in the coming months. There have also been increases recently in clothing and footwear, as well as new automobiles. Thus, discounting the atypical inflation pattern of tourism packages in May of this year, the goods component of the CPIEFE has continued to rise, albeit moderately (figure IV.4).

The contribution of the more volatile components of the CPI basket—food and energy—to annual inflation has fallen, due to lower energy inflation deriving from the annual drop in fuel prices in pesos. This effect more than offset the higher electricity rates, which entered into effect in May of this year, as well as the positive contribution of food, especially after the increase in the prices of cold cuts and pork.

When all the above trends are taken into account, the most significant differences from the forecast are concentrated in core inflation, where the composition effect is consistent with the scenario of weakening demand, specifically in services—where inside inflation is more sensitive to the output gap and the labor market. On aggregate, annual CPI and CPIEFE inflation are similar to the forecast and have stayed around 2% annually (figure IV.5). In this context, the different inflation trend measures remain low from a historical perspective (figure IV.6).

COSTS

The different indicators of cost pressures show that costs are contained. With regard to nominal wages, the annual inflation rate reported by the National Statistics Office (INE)—namely, the wage index (WI) and the labor cost index (LCI)—has fluctuated around 5%, below historical averages, while administrative sources (AFP and AFC), which are published with a longer lag, were around 4.9 and 5.6% annually in May, respectively. The growth of real wages has been relatively stable. Unit labor costs (ULC) have continued to grow at similar rates, after falling last year.

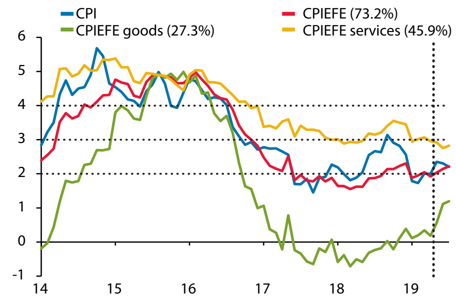
Qualitative measures also indicate that cost and wage pressures remain low. As shown by the IMCE, expectations on costs and wages are below historical averages, although there has been some deviation by sector in recent months, with higher cost expectations in industry and lower wage expectations in construction (figure IV.7). Following the trend of the past several quarters, the majority of the people interviewed for the Business Perceptions Report indicated that they remain focused on cost control, while wage pressures remain low. With regard to imported costs, some of the people interviewed stated that they are starting to see the effect of the higher exchange rate on profits, whereas others expect that to happen some time in the future. The majority of the interviewees continued to report that the magnitude of the price changes is limited by sluggish demand, more informed customers, and strong competition in the market.

In terms of external costs, the downward trend of the external price index (EPI) in dollars eased in annual terms, due to a more moderate depreciation of currencies against the U.S. dollar and a lower price index in local currency. The value of imported consumer goods (IVUM) contracted around 1.5% annually in the second quarter of 2019, with the external prices of both durable and nondurable goods declining fairly evenly.

INFLATION OUTLOOK

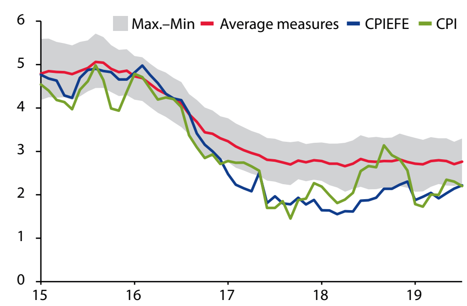
In the baseline scenario, inflation convergence to 3% annually will be slower than projected in June, mainly due to the trend in CPIEFE services inflation. In particular, the forecast assumes that as a result of the negative surprises of the last three months, this component will record low inflation rates for some time. CPIEFE goods inflation is expected to maintain rates above 1% annually in the coming quarters, due to both the reversal of some particular surprises in recent inflation—tourism packages—and the peso depreciation. This assumes that the pass-through coefficient from the peso depreciation to local prices will be around the historical average. As a working assumption, the real exchange rate (RER, index: 1986=100) is expected to remain above its

FIGURE IV.5
Inflation indicators (1) (2)
(annual change, percent)



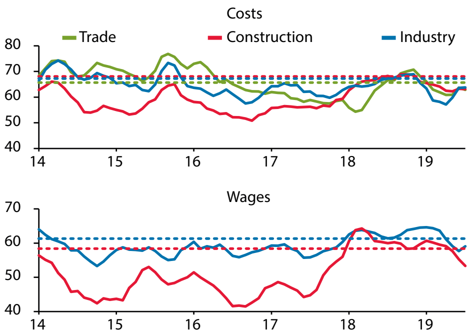
(1) The vertical dotted line marks the cutoff date of the June 2019 *Monetary Policy Report*.
(2) In parentheses: the share in the total CPI basket.
Sources: Central Bank of Chile and National Statistics Institute (INE).

FIGURE IV.6
Inflation trend measures (*)
(annual change, percent)



(*) Core measures consider the seasonally adjusted benchmark series of the subgroups of each of the CPI baskets. The following measures are calculated: weighted median, trimmed mean (trimming the lower 31% and the upper 30% of the weighted distribution of monthly changes), volatility-trimmed mean (trimming the most volatile subgroups, which account for 63% of the total weight in the CPI, with volatility calculated as the standard deviation of monthly changes in the last 6 months), volatility-adjusted mean (where the subgroups are re-weighted dividing the original weight by the standard deviation of the last twelve months), and the first dynamic factor estimated following the methodology of Doz *et. al* (2012).
Sources: Central Bank of Chile and National Statistics Institute (INE).

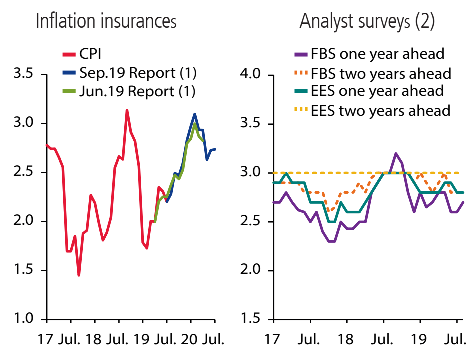
FIGURE IV.7
IMCE: Cost and wage expectations (1) (2)
(Three-month moving average of the diffusion index)



(1) A value over (under) 50 indicates expectations of expansion (contraction).
(2) The horizontal dotted line marks the historical average from January 2004 to July 2019 for each series.

Source: Icare/Adolfo Ibáñez University.

FIGURE IV.8
Inflation expectations
(annual change, percent)



1) The June and September 2019 *Monetary Policy Reports* use the average of the last ten business days through 03Jun2019 and 28Aug2019, respectively.
(2) The FBS is for the first half of each month through January 2018. From February 2018 onwards, the data are from the last survey published in the month. In months when the survey is not published, the last available survey is used.

Sources: Central Bank of Chile and National Statistics Institute (INE).

averages of the last fifteen and twenty years. Thus, annual CPIEFE inflation will be 2.5% in December 2019, while annual CPI inflation will reach 2.7% (2.6 and 2.8% in the June Report, respectively). In headline inflation, the downward revision also incorporates the lower food prices relative to the last cutoff date. The assumption for food, in particular fresh fruit and vegetables, is that price trends will be consistent with the usual seasonal patterns, although there is a risk that the drought that is affecting areas of the country will lead to higher prices. Taken together, the baseline scenario of this report projects that annual CPI and CPIEFE inflation will converge to 3% in 2021, toward the end of the monetary policy horizon.

Private expectations for headline inflation have also declined, especially at horizons of one and two years. One year ahead, the different measures fell around 10 bp, putting annual CPI inflation between 2.7 and 2.8%. Two years ahead, the median of the EES held at 3%, while the median of the FBS decreased to 2.8% (figure IV.8). In addition, the percentage of responses that project inflation of below 3% in two years has increased in both surveys. The breakeven inflation rate—the difference between nominal and real rates—on Central Bank bonds has also fallen. However, as indicated in past Reports, these indicators are more volatile and do not fully reflect market inflation expectations, since they also contain information on liquidity premiums, which make them difficult to interpret (see *Monetary Policy Report*, December 2016, Box IV.1). In fact, the latter rates have recently been affected by the significant reduction in sovereign rates at the global level (figures II.3 and II.5).

V. FUTURE EVOLUTION OF MONETARY POLICY

This chapter presents the most likely trajectory for monetary policy over the next two years, based on the Board's assessment of the dynamics projected for inflation in the policy horizon, with the information at hand at the close of this Report. It also describes variants of the baseline scenarios, which show how the monetary policy response could change if faced with certain changes in the baseline scenario.

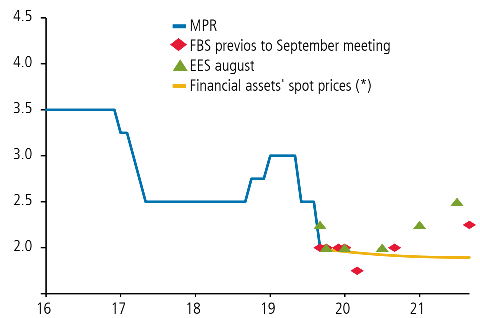
MONETARY POLICY STRATEGY

In a context in which headline and core inflation have remained around 2%, the weakening of the macroeconomic outlook has increased the risks surrounding the timely convergence of inflation to the target. On the one hand, the increase in global tensions and uncertainty, coupled with the deceleration of world growth and the decrease in trade volumes, mean that the impulse that the Chilean economy will receive from abroad will be much lower than what was considered in the June Report. On the other hand, in the second quarter, domestic activity and demand grew less than expected. It is worth noting the slower pace of consumption, the less dynamic salaried employment in the private sector, and consumer and business expectations that have receded with respect to the beginning of the year. Thus, in the baseline scenario, the widening of the gap and its delay in resuming its closing process result in reduced inflationary pressures, with which inflation will converge to 3% in the latter part of the policy horizon. These antecedents led the Board to conclude that adopting a more expansionary stance of monetary policy has become necessary.

Accordingly, at its September meeting the Board decided to lower the monetary policy rate (MPR) by 50 basis points (bp). It also estimated that further stimulus might be required, which will be evaluated in the upcoming meetings in light of the evolution of the macroeconomic scenario. Toward the medium term, the moment to commence the withdrawal of the monetary stimulus will depend on the data showing clear evidence that the most adverse conditions have been overcome and the convergence of inflation to the policy target has been secured.

As always, monetary policy implementation will be contingent on the effects of incoming information about the projected inflation dynamic. Thus, data pointing in either direction will prompt the necessary adjustments to monetary policy. The last section in this chapter delves deeply into the detail of these developments.

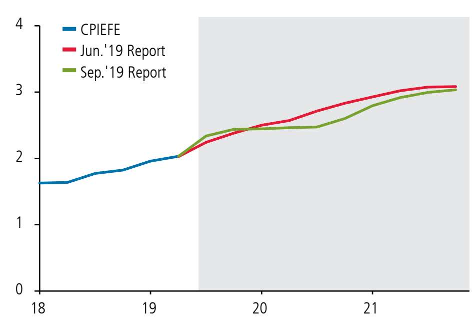
FIGURE V.1
MPR and market expectations (*)
(percent)



(*) Uses interest rates at the statistical closing of swap contracts up to 10 years. Smoothed trajectory.

Source: Central Bank of Chile.

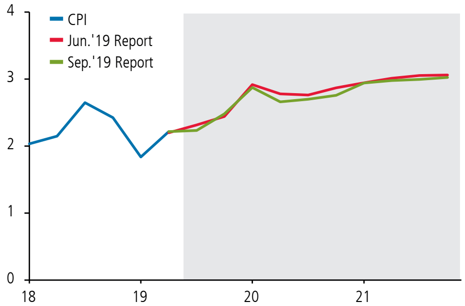
FIGURE V.2
CPIEFE inflation forecast (1) (2)
(annual change, percent)



(1) For 2018, the annual variation of CPIEFE is obtained by splicing the 2013=100 series with the monthly variations of the 2018=100 basket starting in February 2018. See box IV.1, March 2019 Report.
(2) Gray area, as from third quarter 2019, shows forecast.

Sources: Central Bank of Chile and National Statistics Institute (INE).

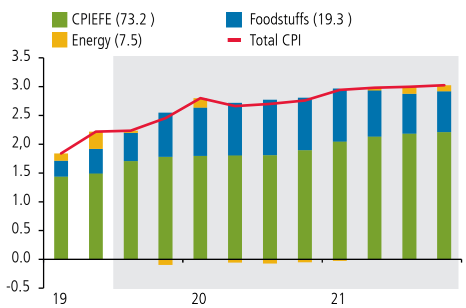
FIGURE V.3
CPI inflation forecast (1) (2)
(annual change, percent)



(1) For 2018, the annual variation of CPI is obtained by splicing the 2013=100 series with the monthly variations of the 2018=100 basket starting in February 2018. See box IV.1, March 2019 Report.
(2) Gray area, as from third quarter 2019, shows forecast.

Sources: Central Bank of Chile and National Statistics Institute (INE).

FIGURE V.4
Contribution to annual CPI inflation (*)
(percentage points)



(*) In parentheses, shares in CPI basket (2018=100 basket). Gray area, as from third quarter 2019, shows forecast.

Sources: Central Bank of Chile and National Statistics Institute (INE).

Over the past few months, the various measures of market expectations began to mention cuts to the MPR. These expectations were enhanced when the Board announced in July that it might be necessary to increase the monetary stimulus, which combined with the worsening of the international scenario and the publication of second-quarter national accounts. Thus, by the September meeting, private expectations pointed to a reduction of 50bp. Going forward, both the Financial Brokers Survey (FBS) and the prices of financial assets at the statistical closing of this Report, incorporated the possibility of an additional 25bp cut (figure V.1)

CONVERGENCE OF INFLATION

The projection of some components of inflation have seen significant differences since June. This, together with the assessment of a wider-than-expected activity gap, and which will begin to close later on, means that in the baseline scenario inflation will stay low somewhat longer and will converge to the target in 2021, in the latter part of the policy horizon.

Surprises in the services component of the CPIEFE have an important bearing on the assessment of the convergence trajectory. In the first place, because this trajectory is low from a historical perspective (2.8% annually in July, vs. an average of 4.2% since 2000) and because it has continued to weaken in the margin. Secondly, because it spreads through all its components: except for the telecommunications and transportation lines, there are negative surprises in all the services that make it up. Thirdly, because this component is the one that is most closely linked to the state of the activity gap and remunerations. Considering all these factors, it is estimated that the negative surprises accumulated in this component of inflation in recent months will delay to reverse.

Regarding the goods component of the CPIEFE, inflation will remain somewhat above 1% in the coming months, both because it is supposed to reverse some particular surprises of the latest indicators —tourist package—and because of the depreciation of the peso. As a working assumption, it is estimated that, during the projection horizon, the RER will remain above its averages of the last 15 and 20 years. Thus, the CPIEFE's annual inflation will be 2.5% in December 2019. Considering that the activity gap will begin its closing process only at the turn of next year, CPIEFE inflation will hover in the neighborhood throughout 2020, to begin to rise more clearly in 2021. At the close of the policy horizon it will stand at 3% (figure V.2).

In the projected trajectory of headline inflation, it must be considered that fuel prices will be lower than forecast in June throughout the projection scenario. Regarding fresh fruits and vegetables, price trajectories consistent with their usual seasonal patterns are assumed, however, there is a risk that the drought that is affecting a part of the country results in higher prices. Thus, the CPI will end 2019 a little below the June forecast, at 2,7%, which will be its average throughout 2020, notwithstanding some ups and downs. The same as with the CPIEFE, CPI inflation will begin to converge to 3% more clearly no earlier than 2021 (figures V.3 y V.4).

CAPACITY GAPS AND THE ACTIVITY GAP

In the second quarter, activity and demand growth fell short of the June Report's forecast, resulting in an estimated activity gap whose starting point is wider than assumed then. However, as has been mentioned before, the measurement of the activity gap (i.e. the difference between non-mining GDP's actual and potential levels) is subject to a high degree of uncertainty, so any assessment of its implications on the inflation trajectory must be complemented with direct information about gaps in goods or factors markets (figure V.5).

As has been pointed out in several Reports, labor market indicators suggest the presence of loopholes. Moderating nominal wage growth rates, immigration that continues to expand labor supply, and job creation in the private sector that moderates are signs that the labor market has significant degrees of slack. The persistence of core inflation levels near 2% points in the same direction, especially because of the aforementioned drop in services inflation and because the lines that correlate with the state of the activity gap and remunerations have fallen further in the margin.

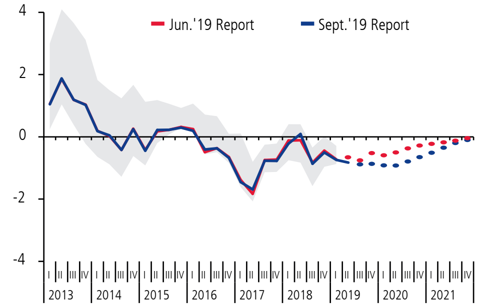
Along the same lines, the qualitative information contained in the Business Perceptions Report (IPN) reveals gaps in various aspects. Regarding the labor market, interviewees mention lower turnover rates, preoccupation for keeping the job, few intentions to hire labor and ample availability of workers. On the side of prices and costs, interviewees have mentioned scarce possibilities of making upward adjustments to their prices in the face of strong competition and better informed and more cautious consumers when they make their buying decisions.

Other indicators, like manufacturing capacity utilization as measured by the IMCE or large companies' perception of credit demand taken from the Banking Credit Survey, have either stagnated or reversed in their latest figures. Electric generation continues to point to the existence of gaps (figures V.6, V.7 y V.8).

THE GAP AND ACTIVITY IN THE BASELINE SCENARIO

As aforesaid, in the baseline scenario the activity gap of the second quarter would be wider and is forecast to begin its closing process later than that assumed in June. This trajectory maintains the 2019-2021 potential non-mining GDP around 3.4%. Also, it considers that in the same period, the accumulated activity growth will be less than projected in June. Thus, after growing between 2.25% and 2.75% this year, the economy will expand between 2.75% and 3.75% in 2020 and between 3.0% and 4.0% in 2021.

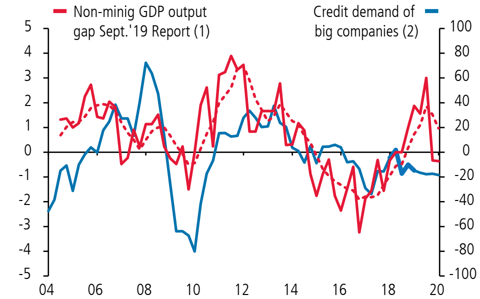
FIGURE V.5
Activity gap (1) (2)
(percent)



(1) Gray area shows minimum and maximum ranges for gap estimates, using different potential GDP inference methods (trivariate, FMV-X, HP, SVAR, MEP, SSA and XMAS Migration gap). See Aldunate et al.(2019).
(2) Dotted lines show forecast.

Source: Central Bank of Chile.

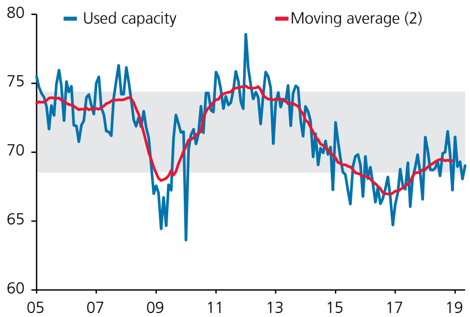
FIGURE V.6
Credit demand perception
(annual change; net percentage of responses)



(1) As from third quarter 2019, shows forecast.
(2) Dotted line shows the series lagged three quarters of the difference between the percentage of BCS (bank credity survey) respondents that percieve a some degree of strengthening of big companies' credit applications and the percentage of respondents that perceive some degree of weakening of said big companies' credit applications. Solid line shows the annual moving average of the series.

Source: Central Bank of Chile.

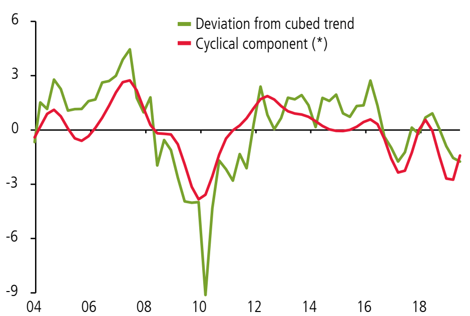
FIGURE V.7
Manufacturing IMCE: capacity utilization (1)
(percentage use of installed capacity)



(1) Gray are shows mean (71.5) +/- one standard deviation.
(2) Moving average centered on +/- six months.

Sources: Central Bank of Chile and Icare/ Universidad Adolfo Ibáñez.

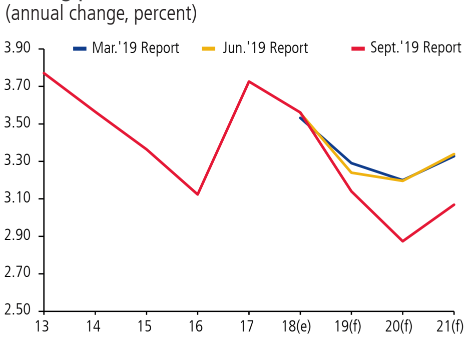
FIGURE V.8
Electric generation (*)
(deviation from trend)



(*) Obtained from a band pass filter (see Christiano and Fitzgerald, 2003).

Sources: Central Bank of Chile and CDEC-SEN.

FIGURE V.9
Trading partners GDP
(annual change, percent)



(e) Estimation.
(f) Forecast.

Source: Central Bank of Chile.

One key element behind the corrections to the baseline scenario is the deterioration of international conditions in recent months. Actually, the impulse that the Chilean economy will receive from abroad is reduced substantially with respect to the previous Report: our trading partners' growth accumulates a cut of 6 tenths of a point in the period 2019-2021 and the terms of trade are also reduced somewhat (figure V.9 and V.10).

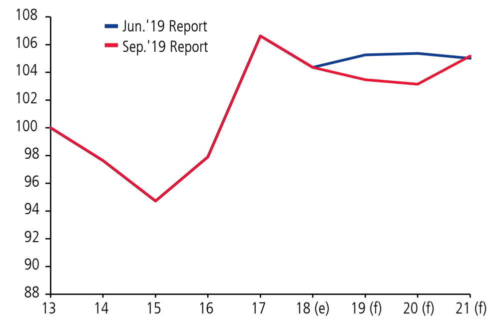
Increased uncertainty on several external fronts is an important factor behind the revisions to our forecasts, because of its effects on consumption and investment decisions. The spiraling of the trade war between the United States and China has installed a climate of distrust. In the United Kingdom, the possibility of a no-deal Brexit has risen, while the situation has become more complex in the Middle East, Hong Kong, Italy and Argentina among other regions.

The adjustment of growth projections is most pronounced for emerging economies. Asia stands out, where China's expected slower growth has important effects on the rest of the region. In particular, in the baseline scenario, China will grow 5.5% in 2020 (5 tenths of a point less than in June). The Chinese economy has already been showing signs of deceleration and GDP growth in the second quarter (6.2% per annum) is its lowest in almost three decades. However, what stands out the most is the recent deterioration of foreign trade figures, bringing home the actual impact of the trade war. Escalating announcements in this area mean that, in this Report's baseline scenario, the Chinese economy will see a sharper slowdown in activity. This is what leads to revising forecasts for the other economies in the region, in particular because of the strong integration of the emerging Asian economies into global value chains (GVCs) (boxes I.1 and III.1). Incoming figures are already reflecting this, with decelerations in activity and significant contractions in exports in South Korea, Thailand and Singapore. This results in a reduction of 8 tenths of a percentage point in the rest of emerging Asia's expansion in the next two years compared with the last Report: to 3% in 2020 and 3.2% in 2021.

The projections for Latin America minus Chile also have important downward revisions. While the triggers of the adjustments are mainly concentrated on idiosyncratic factors, the vulnerabilities inherent in some of them are exacerbated in the current context of uncertainty. This is especially reflected in the outlooks for Brazil, Mexico and, especially, Argentina. Thus, the downward revisions in the region accumulate a total of almost 2 percentage points for the period 2019-2021. Compared with the developed economies, these adjustments are of smaller magnitude. U.S. growth is still sustained by the strong dynamism of consumption, although it is expected to moderate in 2020-2021. In the Eurozone downward correction is slightly greater, due to recent developments in some countries such as Germany, whose economy relies highly on exports.

The terms of trade are also revised downwards, albeit moderately. Contradicting June's forecast, they will fall both this and next year. Key to this projection is the evolution of the copper price, which more than compensates for the lower price of oil. In the former, the greatest difference is observed in 2020, when its price will average US$2.6 per pound (US$2.8 in June). This considers mainly demand-side elements derived from the drop in world growth, in particular the important adjustment of the growth projections of the main consumer —China— and the marked deterioration the manufacturing industry has suffered worldwide. Thus, for much of the projection horizon copper will trade below its long-term prices, in which the appreciation of the dollar also plays a part. The adjustment of the oil price is also affected by prospects of weak demand. Thus, considering the futures of the ten working days before the close of this Report, the baseline scenario assumes a downward trajectory for the oil price.

FIGURE V.10
Terms of trade
(index, 2013=100)



(e) Estimation.
(f) Forecast.
Source: Central Bank of Chile.

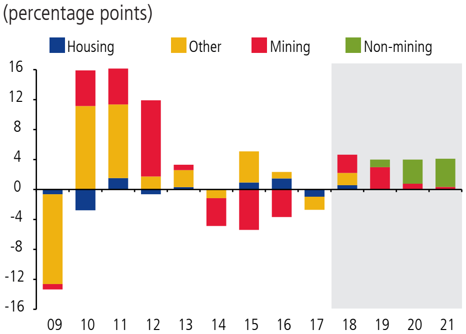
For the Chilean economy, annual growth rates are projected to begin rising in the second half of this year. Thus, GDP will grow between 2.25% and 2.75% in 2019, between 2.75% and 3.75% in 2020, and between 3.0% and 4.0% in 2021. This is mainly explained by the low comparison base of 2018, because, unlike June, no acceleration is expected. These projections consider that some of the negative factors of the second quarter will not be completely reversed and the lower dynamism of consumption will show some persistence. Plus the greater global uncertainty and lower growth of our trading partners will reduce exports. On the fiscal front, it is assumed that in 2019 the economy will receive a boost consistent with the structural policy goals announced by the authority. This couples with the effects of recent fiscal measures, defined within said margins. The projection also contemplates the effects of the significant increase in the monetary impulse stemming from the MPR cut of 100bp in the last three months, which allows for very favorable financial conditions, which will manifest especially in 2020.

Regarding the second half of 2019, our projection continues to assume higher growth in activity that will outperform the first half, which is consistent with some partial data of early third quarter. In any case, this is mainly related to the low comparison base of 2018, because, unlike June's, this Report expects no significant acceleration of non-mining GDP. Although not considered in the projection of the baseline scenario, it must be noted the risk related to the drought that is affecting part of the country, which could reduce agricultural production and the added value of power generation.

On the consumption side, projections suggest that this component of spending, after growing 3.7% in 2018, will grow 2.7% this year. As was mentioned, part of the adjustment for this year is based on the poor performance of its private side in the second quarter, where the figures showed a deterioration in all its components. Actual data on durable consumption, which was already weak in June, fell more than expected. This is mainly related to the evolution of the automotive market which, after the high sales reached in 2018, has shown negative growth rates. There were also lower rates of expansion in non-durables and services, so that the usual consumption registered its lowest rate of expansion in several quarters. However, some of the slower growth was explained by the decline in agricultural production, which in turn implied lower consumption of non-durable goods, particularly fruits and vegetables.

The evolution of consumption fundamentals also justifies lower rates of expansion than projected for 2020 and 2021. Recent trends in the salaried employment in the private sector, together with qualitative labor market indicators (IPEC and IPN, among others), suggest that this variable will not have a rapid recovery, the same for wage dynamism. Coupled with this are the expectations of consumers which have seen marked setbacks in the latest available records. Although external events have an effect on local expectations, their impact tends to be more limited on those of consumers, suggesting that domestic factors may also be playing a relevant part (Box III.1). All this supports the idea of more cautious consumers in their spending decisions. In the IPN, several interviewees from the retail sector mentioned a reduction in their orders for goods from abroad, in the face of a consumption outlook far from buoyant. Add to it that, in the trade sector of the IMCE, the perception of excess inventories is above its historical average. However, toward 2020 and 2021 consumption should resume higher expansion rates in line with GDP.

FIGURE V.11
Real annual contribution to GFCF (*)
(percentage points)



(*) 2018 mining investment is estimated using available FECU information. Housing investment uses household investment data from National Accounts by Institutional Sector. The Other GFCF component is treated as a residue. Forecasts for the years 2019, 2020 and 2021 are made using forecasting models of the Central Bank of Chile and sectoral sources, such as investment plans and the CBC survey.

Source: Central Bank of Chile.

After the slowdown of the first quarter, in the second quarter gross fixed capital formation (GFCF) expanded somewhat more than projected in June. However, several indicators suggest that this is still concentrated in the mining sector. Among them, the information provided by the investment surveys, the IPN and the composition of imports of machinery and equipment. In the baseline scenario it is assumed that investment will be driven mainly by mining. Meanwhile, investment from non-mining sectors is expected to be less dynamic than expected in June (figure V.11). This view is based on the recent dynamics of several of its fundamentals. On the one hand, the worsening of the external scenario has led to a depreciation of the peso and a fall in the stock market that limits the increase in imports of capital goods in the immediate future. It has also played a role in the deterioration of business confidence (IMCE) with respect to the beginning of the year, which will have effects on the future performance of investment (Box III.1). In any case, the low financing costs, together with the Executive's announcements on public investment, should lend support to this component of demand. The baseline projections estimate that GFCF will grow around 4% in 2019-2021 (around 4.5% in June), thus remaining the most dynamic component of demand. All this means that, as a percentage of GDP, on the projection horizon GFCF will average 21.6% in real terms and 22% in nominal terms.

Exports are revised downward substantially in the baseline scenario, as a contraction is foreseen for this year. Much of the adjustment derives directly from the effects of trade warfare. Although so far its effects on Chilean trade have been limited and heterogeneous and some of the recent falls have been explained by supply factors or specific elements in the manufacturing industry[1]/, the escalation of tensions and the adjustment of our trading partners' growth projections will have important effects on volume exports in the projection horizon (Box III.1). This is reflected in that the current account will post deficits of 3% on average in the period 2019-2021. At trend prices[2]/ the deficit will be slightly below 4% of GDP.

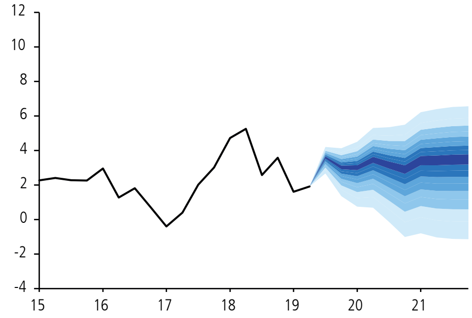
VARIANTS OF THE BASELINE SCENARIO

The monetary policy strategy that is consistent with inflation converging to the target is conditional on the economy unfolding according to the baseline scenario depicted herein. There are events, however, that while they may place growth within the forecast ranges, require a different MPR trajectory to make sure that inflation does converge to the target.

First, consumption and investment growth might slow down beyond the estimates of the baseline scenario, widening the gap. This could be the case, among other things, if the deterioration observed in the expectations of firms and households should have a greater than expected effect on spending decisions, or external or local economic events should further deteriorate those expectations. For example, in line with the analysis presented in box III.1, there is a significant correlation between external activity variables and local agents' expectations and spending decisions, particularly in the case of corporate investment. Thus, the deterioration of the external situation could further slow down spending, delaying inflation's convergence and therefore requiring a greater monetary impulse.

Second, investment might respond more strongly to expansionary financial conditions and the various Executive-driven initiatives. In fact, various long-term interest rates are at record lows, which when combined with the effects of the more expansionary monetary policy on short-term interest rates could propel a greater increase in non-mining investment, that would strengthen the labor market and consumption. This is added to the Executive's announcements, among which are increased public investment, greater spending on concessions and some measures that could accelerate private investment, which are still in the process of legislative discussion. Third, although the Board continues to

FIGURE V.12
Quarterly GDP growth scenarios (*)
(annual change, percent)



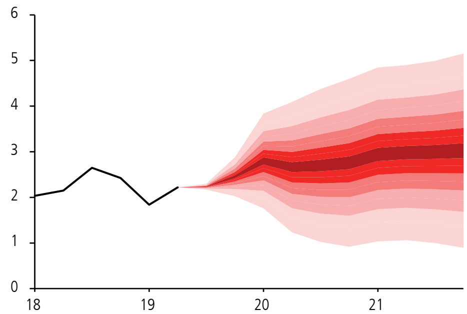
(*) The figure shows confidence interval of baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. Confidence intervals are built based on the RMSE of averaged MAS-MEP models from 2009 to 2017. Also, the intervals contain the risk evaluation on growth performed by the Board.

Source: Central Bank of Chile.

[1]/ Mining shipments dropped because of lower mining output. The level of salmon exports has been high for some time now, holding back annual expansion rates. In the case of manufacturing exports, the poor performance of Latin America has continued to affect the basic metal industry, whose main markets are located in the region.

[2]/ This measure adjusts the value of mining exports and fuel imports considering deviations in the prices of copper and oil from their long-term values. The same applies to income and transfers associated with copper exports. Other exports and imports are valued using current prices. In addition, it does not correct possible changes in the quantities exported or imported due to movements in copper and oil prices. The calculation uses long-term prices of US$2.7 per pound of copper and US$70 per barrel of oil (box V.2 in the September 2012 Report, and box V.1 in the December 2015 Report).

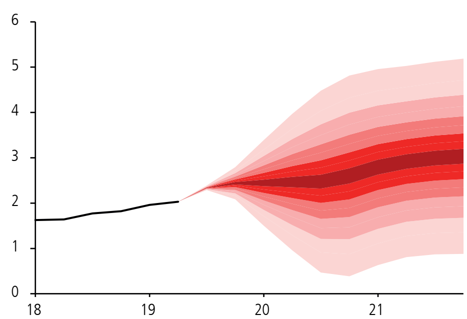
FIGURE V.13
CPIINFLATION FORECAST (*)
(annual change, percent)



(*) The figure shows confidence interval of baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. Confidence intervals are built based on the RMSE of averaged MAS-MEP models from 2009 to 2017. Also, the intervals contain the risk evaluation on inflation performed by the Board. For 2018, the annual variation of CPI is obtained by splicing the 2013=100 series with the monthly variations of the 2018=100 basket starting in February 2018. See box IV.1, March 2019 Report.

Source: Central Bank of Chile

FIGURE V.14
CPIEFE INFLATION FORECAST (*)
(annual change, percent)



(*) The figure shows confidence interval of baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. Confidence intervals are built based on the RMSE of averaged MAS-MEP models from 2009 to 2017. Also, the intervals contain the risk evaluation on inflation performed by the Board. For 2018, the annual variation of CPI is obtained by splicing the 2013=100 series with the monthly variations of the 2018=100 basket starting in February 2018. See box IV.1, March 2019 Report.

Source: Central Bank of Chile

assume that the economy's trend growth is 3.4% for the next ten years, it is possible that events of different kinds could reduce productivity growth and potential GDP. This would result in a smaller activity gap and higher inflationary pressures. Events of this kind would require a lower monetary impulse.

Although these events imply plausible and relatively limited deviations from the baseline scenario, they require different trajectories for the MPR in order to ensure the convergence of inflation to the target. On this occasion, in the Board's opinion, alternative scenarios are more likely where inflation's convergence requires a more expansionary monetary stance. This, because the projection scenario is biased downward for activity and unbiased for inflation (figures V.12, V.13, V.14).

Of course, more extreme events could occur that would drive growth outside the forecast ranges and imply materially different policy decisions to ensure the convergence of inflation to the target. For example, scenarios of a much deeper worsening of external conditions, or where further weakened consumption and investment interact with a persistent deterioration of expectations that would erode the usual effectiveness of monetary policy. This type of scenario would require using up a large part of the remaining space available to monetary policy making.

BOX V.1
CHANGES IN THE BASELINE FORECAST SCENARIO IN THE LAST YEAR

In contrast to projections in September 2018, inflation has remained low, and convergence to 3% is not expected before 2021. The biggest difference has derived from an economy that has not been able to achieve the growth capacity to close the output gap, which has stayed open since the middle of last year. In this context, the orientation of monetary policy has changed significantly in the past year. Thus, the Board went from announcing that it would go forward with a process of withdrawing the monetary stimulus in 2019 and 2020, to cutting the MPR by 100 basis points (bp) in the last three months. Moreover, at its September meeting, the Board indicated that it may be necessary to increase the monetary stimulus further, which will be evaluated at future meetings in light of the evolution of the macroeconomic scenario.

The growth forecasts for 2019 have gradually been reduced over the past year. In September 2018, GDP was expected to grow between 3.25 and 4.25% this year, which has been revised to a range of 2.25 to 2.75% in this Report (table V.1). Several factors are behind this reduction. On the one hand, several sectors were affected by one-off events that were mainly associated with supply factors, such as lower production in mining and agriculture, including a number of mining strikes. These factors were especially relevant in the first half. On the other hand, all the components of demand recorded negative surprises over the course of the year, resulting in a downward revision of the demand growth forecast. In the first quarter, for example, machinery and equipment imports declined sharply; in the second quarter, there was lower growth in all areas of private consumption; and in both quarters, exports contracted significantly. This spending trend coincided with a deterioration in business and household expectations, a less dynamic labor market, and a weakening external scenario, although the degree of uncertainty had not yet reached current levels.

The increase in external uncertainty and its impact on the global and domestic scenario are especially relevant for projecting the spending trend in the second half of 2019 and in 2020 and 2021. This is one of the main factors underlying the revision in the growth forecast for this year and next in the June *Monetary Policy Report* and the current Report. In particular, the baseline scenario of this Report considers that Chile's trading partners will record substantially lower growth than previously projected, and the terms of trade will not increase as expected (table V.2).

At the same time, the change in the assessment of the output gap is not solely based on the evolution of real GDP. In June, the Board updated its estimate of the structural parameters used to evaluate the state of the economy and its outlook and to calibrate monetary policy. This allowed quantifying the impact of the strong immigration of the past several years on trend and potential growth. Both increased, resulting in a larger output gap than previously estimated.

TABLE V.1
Economic growth and the current account in 2019

	Sep. 18	Dec. 18	Mar. 19	Jun. 19	Sep. 19
	(annual change, percent)				
GDP	3.25-4.25	3.25-4.25	3.0-4.0	2.75-3.5	2.25-2.75
Domestic demand	3.7	3.8	3.7	2.9	2.4
Domestic demand (excl. changes in inventories)	3.7	3.9	3.9	3.4	3.0
- Total consumption	3.4	3.3	3.3	3.1	2.7
- Gross fixed capital formation	4.5	6.0	6.2	4.5	4.0
	(percent of GDP)				
Current account	-2.6	-2.7	-2.9	-2.9	-3.3

Source: Central Bank of Chile.

TABLE V.2
International scenario for 2019

	Sep. 18	Dec. 18	Mar. 19	Jun. 19	Sep. 19
	(annual change, percent)				
GDP, trading partners (*)	3.5	3.5	3.3	3.2	3.1
World GDP at PPP (*)	3.6	3.5	3.3	3.2	3.1
	(levels)				
LME copper price (US cents/lb)	285	285	290	280	270
WTI oil price (US$/barrel)	64	55	58	60	56
Brent oil price (US$/barrel)	73	64	66	68	63

(*) See glossary for definitions.

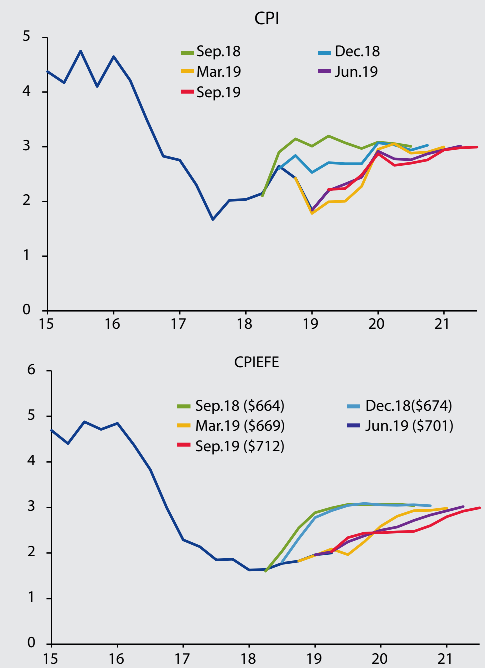
Source: Central Bank of Chile.

The aforementioned changes in the evolution of growth and the reevaluation of the structural parameters were consistent with the inflation dynamics of the last two years. GDP growth in 2018 ended above the forecast, while inflation in December 2018 was somewhat lower, suggesting that supply factors were affecting the evolution of inflation. These factors were mentioned in the March Report,[1] in particular the presence of increased competition in various markets and the impact of immigration on the labor force. The lower inflation was explained by a lower-than-estimated pass-through of the peso depreciation in 2018, because the exchange rate shift reflected a global appreciation of the dollar, and not a unilateral depreciation of the Chilean peso.

Thus, whereas in September 2018 the baseline scenario projected that annual CPI inflation would fluctuate around 3% throughout the policy horizon, today it is expected to reach that level only toward the end of the horizon, that is, in late 2021. A similar pattern is projected for CPIEFE inflation (figure V.15).

In this context, after raising the MPR by 25 bp in October 2018 and January 2019, the Board announced in March that the speed of the monetary stimulus withdrawal would be revised in response to evidence of a slower inflation convergence. In June, after the structural parameters had been updated, the monetary stimulus was recalibrated, with an MPR cut of 50 bp. In July, when low inflation and sluggish domestic demand threatened the timely convergence of inflation, the Board announced that, if these trends persisted, it would be necessary to increase the monetary stimulus further. This occurred in September, when the MPR was lowered by 50 bp, to 2.0%. Furthermore, the Board indicated that the monetary stimulus might need to be expanded further, a possibility that would be evaluated in future meetings in light of the evolution of the macroeconomic scenario.

FIGURE V.15
The baseline scenario for inflation (1) (2) (3)
(annual change, percent)



(1) In the graph of CPIEFE, the numbers in parentheses are the average nominal exchange rate (pesos to the dollar) in the ten business days before the cutoff date for each *Monetary Policy Report*.
(2) For 2018, annual CPIEFE inflation is graphed by splicing the base year 2013=100 series with the monthly changes in the basket with base year 2018=100 starting in February 2018. See *Monetary Policy Report*, March 2019, Box IV.1.
(3) The September and December 2018 *Reports* use the basket with base year 2013=100.

Source: Central Bank of Chile.

[1] In addition, starting in January, the INE updated the CPI basket and methodology, which implied a reduction in annual CPI inflation relative to the December estimate (*Monetary Policy Report*, March 2019, Box IV.1). Thus, using base year 2013=100, CPI inflation was 2.1% from February to December 2018 (eleven months), versus 1.7% using the new basket and methodology (2018=100). For the CPIEFE, the figures were 2.0 and 1.5%, respectively.

Appendix A: The Central Bank of Chile's Balance Sheet

This appendix presents and analyzes the position and projections of the main items on the Central Bank of Chile's financial statements. First, it provides a brief review of the historical reasons for the Bank's negative equity. Second, it analyzes the evolution of the balance sheet in the first half of 2019. Third, it presents asset and liability forecasts for year-end 2019 and 2020. Finally, it describes the financial effects of four recent measures on the Central Bank's balance sheet.

REASONS FOR NEGATIVE EQUITY

During the banking crisis in the early 1980s, the Central Bank of Chile played a key role in preventing the collapse of the financial system. As lender of last resort, the Bank provided the resources to pay off the deposits of the banks that were intervened and bought the loan portfolios of the rest of the banks so that they could continue operating. At the same time, it sold dollars to foreign-currency debtors at preferential prices and provided subsidized loans to the productive sector through lines of credit granted to financial institutions. All of these measures implied large equity losses that affected the Bank's balance sheet for many years. Only recently, in 2019, has the last debtor bank finished paying off the subordinated debt deriving from the portfolio purchase in the 1980s.

Subsequently, in the 1990s, the maintenance of a currency band in a context of massive capital outflows required a continuous accumulation of international reserves. More recently, in 2008 and 2011, the Bank decided to strengthen its international liquidity position by again increasing its reserve level. To offset the monetary effects of these purchases on inflation, the Bank issued long-term debt, generating equity losses that have grown over the years, due to the negative differential between interest rates on the asset and liability sides of the balance sheet.

EVOLUTION IN THE FIRST HALF OF 2019

Currently, around 97% of assets are International Reserves, and 49% of liabilities are policy instruments and promissory notes (debt), making the Central Bank a net creditor in foreign currency and a net debtor in domestic currency. Therefore, the bottom line of the balance sheet is determined by the evolution of the differential between international interest rates (profitability of reserves) and domestic interest rates (the cost of debt). Earnings and losses also depend on changes in the exchange rate of the peso against the currencies that make up the international reserves. As of 11 March 2019, the currency benchmark primarily comprises U.S. dollars (52%) and euros (11%), as well as other currencies such as the Australian dollar (9%), the Canadian dollar (9%), the pound sterling (8%), the Chinese renminbi (8%), and the South Korean won (3%).

Relative to year-end 2018, the size of the Central Bank's assets, liabilities, and equity deficit as a percent of GDP decreased in the first half of 2019 (table A.1).

Between 31 December 2018 and 30 June 2019, the size of the balance sheet shrank Ch$907 billion, from 14.9% to 14.3% of

TABLE A.1
Central Bank of Chile's balance sheet: Summary of balances and earnings
(percent of GDP)

	2016	2017	2018	Jun.19	2019 (f)	2020 (f)
ASSETS	**16.5**	**13.9**	**14.9**	**14.3**	**14.6**	**13.7**
International reserves	16.0	13.3	14.5	13.9	14.2	13.4
Fiscal promissory notes and other gov. credit	0.2	0.2	0.2	0.2	0.2	0.2
Monetary policy instruments	0.0	0.2	0.1	0.1	0.1	0.1
Other assets	0.3	0.2	0.2	0.1	0.1	0.1
LIABILITIES	**19.0**	**17.1**	**16,9**	**16.2**	**15.8**	**15.2**
Promissory notes with secondary market	8.9	8.3	7.3	7.9	7.9	7.1
Bank policy instruments	2.3	1.8	1.8	0.7	0.9	1.1
Other bank liabilities	0.7	0.2	0.9	0.6	0.6	0.5
Other liabilities excl. monetary base	1.0	0.6	0.9	0.6	0.6	0.6
Monetary base	6.1	6.2	5.9	6.4	5.9	5.9
EQUITY (A+B+C)	**-2.5**	**-3.2**	**-2.0**	**-1.9**	**-1.2**	**-1.5**
A. Initial equity	-1.2	-2.3	-3.0	-1.9	-1.8	-1.1
B. Net income	-1.3	-0.9	1.1	0.0	0.7	-0.3
Nonfinancial	0.0	0.0	0.0	0.0	0.0	-0.1
Net interest (1)	-0.3	-0.3	-0.2	0.4	0.4	-0.2
Effect of exchange rates and UF	-1.0	-0.5	1.2	-0.3	0.4	-0,1
C. Capital contributions	0.0	0.0	0.0	0.0	0.0	0,0
Position payable in foreign currency (2)	13.3	12.9	13.6	13.6	13.9	13,2

(1) The difference between interest earned on international reserve investments and monetary policy instruments on the asset side and interest paid on debt securities and monetary policy instruments on the liability side.
(2) Foreign currency assets minus foreign currency liabilities.
(f) FORECAST.

Source: Central Bank of Chile.

GDP. On the asset side, international reserves decreased Ch$865 billion, mainly due to a reduction in foreign correspondent accounts (Ch$1.262 trillion) and IMF special drawing rights (SDR) (Ch$12 billion), which was partially offset by an increase in the value of the foreign currency portfolio (Ch$409 billion). In other asset accounts, the subordinated debt of Ch$89 billion was extinguished with the final payment by the Banco de Chile on 30 April 2019, and lending to financial institutions increased through a greater use of the standing liquidity facility (Ch$45 billion). On the liability side, PDBC debt increased by Ch$1.988 trillion, while long-term bond debt contracted Ch$604 billion. The use of the standing deposit facility decreased by Ch$2.112 trillion and other liabilities by Ch$1.289 trillion, mainly foreign currency deposits by commercial banks.

In terms of flows, the balance sheet changes described above explained the increase in the monetary base of Ch$1.059 billion in the first half (table A.2).

The Bank's equity position went from –$3.7603 trillion on 31 December 2018 (equivalent to –2.0% of GDP) to –$3.6895 trillion on 30 June 2019 (–1.9% of GDP). The increase is mainly explained by earnings on the international reserves due to the reduction in international interest rates (Ch$1.037 trillion), losses deriving from the appreciation of the peso against the reserve currencies (Ch$613 billion), and the payment of interest on debt instruments (Ch$320 billion). Administrative expenses ($28 billion) and the costs of issuing and distributing banknotes and coins ($8 billion) represent a minor share of the Bank's expenses.

TABLE A.2
Balance sheet flows of the Central Bank of Chile (1)
(billions of pesos)

	2016	2017	2018	Jun.19	2019 (f)	2020 (f)
1. Net international reserves	878	-2,155	1,000	-554	-554	0
2. Policy instruments in domestic currency	1,382	330	-770	1,096	476	635
3. Central Bank promissory notes in dollars	0	0	0	0	0	0
4. Other domestic currency operations, excl. monetary base (2)	-230	433	960	-38	23	191
5. Other foreign currency operations (3)	-839	2,155	-1,000	554	554	0
Monetary base (change = 1+2+3+4+5)	1,191	763	190	1,059	499	826
Position payable in foreign currency (forex operations=1+3+5) (4)	39	0	0	0	0	0

(1) Exchange flows. The corresponding balances are also affected by interest, indexation, and price adjustments, where applicable.
(2) Service on Treasury promissory notes in UF, subordinated debt service, and other operations in domestic currency.
(3) Treasury and bank deposits and other operations in foreign currency.
(4) Includes forex market operations deriving from policy decisions and forex operations for operational purposes of the Central Bank.
(f) Forecast.

Source: Central Bank of Chile.

BALANCE SHEET PROJECTIONS FOR 2019 and 2020

The main working assumptions underlying the forecast are the following: (i) there will be no foreign exchange operations during the forecast period; (ii) the evolution of the monetary base will be consistent with the growth of the economy and inflation; and (iii) in the remainder of 2019, there will be no issues of long-term debt, in accordance with the debt plan published in December 2018. For 2019 and 2020, the assumptions include the absorption of maturing debt and coupons paid in the period, less the expected growth of the monetary base with PDBC issues. The standing deposit facility will be used to adjust for a deficit or surplus of funds. In relation to the macroeconomic assumptions, the baseline scenario projects that over the remainder of 2019, the gap in returns associated with the differential between local and international interest rates will be stable relative through the close of the first half of this year and then will decrease in 2020. Exchange rates are projected to move in accordance with their forward values on the cutoff date of this Report. Finally, inflation should reach 2.7% and 2.8% in December 2019 and 2020, respectively.

Based on these assumptions, equity gains of approximately 0.4% of GDP are expected from net interest in 2019, while equity losses of 0.2% of GDP are projected for 2020. Valuation effects are projected to result in equity gains of 0,2% of GDP in 2019 and equity losses of 0.1% of GDP in 2020.

Finally, for year-end 2019, the size of the balance sheet is projected at 14.6% of GDP, which will fall to 13.7% of GDP in 2020. Equity deficits of 1.2% and 1.5% of GDP are projected for 2019 and 2020, respectively.

EQUITY EFFECTS OF RECENTLY IMPLEMENTED INTERNAL POLICIES

Since 2017, the Bank has implemented a series of measures that have affected the Bank's equity position. While not all of these initiatives have been carried out for budgetary reasons, all of them have had a positive impact on the equity position of the Central Bank. Three have affected liabilities, generating cost savings, while one modified the currency composition and duration of assets, increasing the return on international reserves.

The cost-cutting measures implemented by the Central Bank include the following: (i) reduction of debt duration: since 2017, the annual debt plan has been implemented through the issue of PDBC instead of longer-term bonds; (ii) budget tightening: since 2018 the real annual growth of the Central Bank's operating budget has decreased from 3.3% to 2.0%; and (iii) the elimination of the payment of interest on commercial bank reserves in national currency starting in 2019.

The shortening of debt duration is part of the Central Bank's implementation of the new liquidity standards, favoring the issue of short-term securities over longer-term instruments. The elimination of interest on bank reserves in national currency represents a modernization of this instrument, given that the interest payment, equivalent to half the inflation rate, was established in the 1980s when inflation was much higher than it is today. Finally, the budget adjustment was implemented as part of the austerity and efficiency plan launched for the five-year period starting in 2018.

On the asset side, the international reserve investment policies were modified in March 2019, following a long study of the historical trends of the key variables, especially during times of stress. The main changes were to increase the duration by almost five years and to change the currency and portfolio structure, which supports the preservation of capital and the maintenance of adequate liquidity levels.

These changes are related to the two primary objectives of holding international reserves: to safeguard the stability of the currency and the normal functioning of internal and external payments. During episodes of high volatility in the international markets, investors take refuge in safe assets. In this context, the new asset allocation and the longer portfolio duration, together with the new currency allocation, will contribute to higher returns on the international reserves at times when the level becomes a key indicator for the assessment of the country's external sustainability.

Since the start of implementation and considering the forecast through 2020, the operationalization of the debt plan using PDBCs will provide cost savings of Ch$92 billion, equivalent to about 4 basis points (bp) of GDP. In the same period, the restriction of the growth of the operating budget will have an impact of Ch$3 billion, equivalent to 0.2 bp of GDP.

The elimination of interest payments on bank reserves will have an accumulated impact on costs of Ch$58 billion, equivalent to 3 bp of GDP.

Finally, the change in the investment policy will generate an estimated increase in earnings of Ch$480 billion through the end of the forecast period, equivalent to 25 bp of GDP (tables A.3, A.4 and figure A.1).

RECOVERY OF EQUITY AND THE LONG-RUN EFFECTS OF THE EQUITY MEASURES

In the baseline scenario, the earnings on reserves and the lower cost of debt will gradually reduce the Bank's equity deficit over time. Thus, equity will turn positive in March 2028. This projection is based on various forecast assumptions, including GDP growth in line with the Central Bank's projections of trend GDP and local inflation of 3%.

According to these projections, it is estimated that, in the long run, the four asset and liability measures will generate an earlier convergence of equity to positive values. Specifically, the change in the international reserve investment policy will hasten the recovery by 6.2 years. With regard to the liability measures, the shortening of the Bank's debt duration, through the exclusive issue of PDBCs, will shorten the recovery by 2.1 years.

TABLE A.3
Asset and liability measures with equity effects
(billions of pesos)

	2017	2018	2019 (f)	2020 (f)
(I) LIABILITY MEASURES				
(a) Debt plan with PDBC (1)	3.1	13.5	34.1	76.2
(b) Lower budget growth (2)	0.0	1.1	1.8	0.5
(c) Elimination of interest payments on bank reserves (3)	0.0	0.0	27.2	30.4
(II) ASSET MEASURES				
(d) Change in investment policy (4)	0.0	0.0	706.6	-226.2

(1) Starting with the 2017 Debt Plan, debt will be issued exclusively through PDBCs.
(2) Since 2018, the real budget growth rate has decreased from 3.3% to 2.0%.
(3) Board Resolution N°2156-01-180614, published on 21 June 2018, repealed Title II on the "Payment of Interest on National Currency Reserves" contained in Chapter 3.1 of the *Bank's Compendium of Monetary and Financial Regulations*. Starting in January 2019, this measure suspended the payment of interest by the Central Bank, to banks and savings and loan associations that are supervised by the SBIF, on reserve requirements for national currency deposits and other liabilities with a maturity of 30 days or more.
(4) The new international reserve investment policies, which entered into effect on 11 March 2019, increase the duration of the portfolio benchmark by about 5 years, reduce the number of sub-portfolios from 3 to 2, and changes the weight of the following currencies: USD (52%), EUR (11%), AUD (9%), CAD (9%), GBP (8%), CNY (8%), and KRW (3%); and eliminates the JPY, CHF, and NZD.
(f) Forecast.

Source: Central Bank of Chile

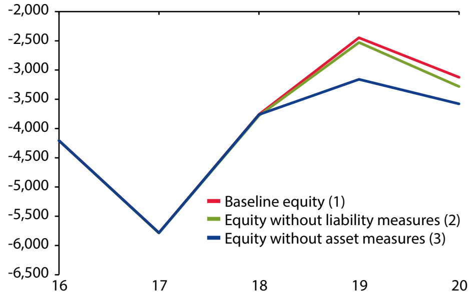
TABLE A.4
Asset and liability measures with equity effects
(basis points of GDP)

	2017	2018	2019 (f)	2020 (f)
(I) LIABILITY MEASURES				
(a) Debt plan with PDBC (1)	0.2	0.7	1.7	3.6
(b) Lower budget growth (2)	0.0	0.1	0.1	0.0
(c) Elimination of interest payments on bank reserves (3)	0.0	0.0	1.4	1.4
(II) ASSET MEASURES				
(d) Change in investment policy (4)	0.0	0.0	35.1	-10.6

(1) Starting with the 2017 Debt Plan, debt will be issued exclusively through PDBCs.
(2) Since 2018, the real budget growth rate has decreased from 3.3% to 2.0%.
(3) Board Resolution N°2156-01-180614, published on 21 June 2018, repealed Title II on the "Payment of Interest on National Currency Reserves" contained in Chapter 3.1 of the *Bank's Compendium of Monetary and Financial Regulations*. Starting in January 2019, this measure suspended the payment of interest by the Central Bank, to banks and savings and loan associations that are supervised by the SBIF, on reserve requirements for national currency deposits and other liabilities with a maturity of 30 days or more.
(4) The new international reserve investment policies, which entered into effect on 11 March 2019, increase the duration of the portfolio benchmark by about 5 years, reduce the number of sub-portfolios from 3 to 2, and changes the weight of the following currencies: USD (52%), EUR (11%), AUD (9%), CAD (9%), GBP (8%), CNY (8%), and KRW (3%); and eliminates the JPY, CHF, and NZD.
(f) Forecast.

Source: Central Bank of Chile.

FIGURE A.1
Central Bank of Chile's equity and asset and liability measures (balances)
(billions of pesos)



(1) Actual equity through 2018 and forecast for 2019 and 2020 with the baseline scenario.
(2) Simulated equity for the case of no implementation of the liability measures indicated in Tables A.3 and A.4.
(3) Simulated equity for the case of no implementation of the asset measures indicated in Tables A.3 and A.4

Source: Central Bank of Chile.

The elimination of interest payments on bank reserves, in turn, will move up the recovery by 0.6 years. Finally, restricting the growth of the operating budget will shorten the recovery of equity by 0.3 years.

Appendix B: International Reserve Management

International reserves are liquid assets in foreign currency that are held by the Central Bank of Chile. They constitute a policy tool for executing the Bank's primary objectives: to safeguard the stability of the currency and the normal functioning of internal and external payments. Reserves are managed so as to provide efficient and secure access to international liquidity in accordance with the legal framework defined in Article 38, Title III, of the Basic Constitutional Act of the Central Bank.

In order for the international reserves to be an effective tool for meeting the Central Bank's objectives, they must have an adequate size and liquidity. When this is achieved, the international reserves can vary due to price and exchange rate fluctuations, but these changes will not affect the Central Bank's ability to meet its commitments. In this context, the objectives of liquidity and capital preservation constitute the central focal points of reserve management, as they ensure that at any given time the Central Bank will, with some degree of confidence, have access to the necessary resources for policy execution in a short time and at a reasonable cost.

INSTITUTIONAL FRAMEWORK FOR RESERVE MANAGEMENT

To carry out its international reserve management, the Central Bank maintains a clear separation of responsibilities at the hierarchical level, in line with international recommendations in this area. The Bank also undergoes periodic internal and external audits, including a review of the different investment processes. This ensures that the decision-making process and management assessment within the Bank remain clearly defined and that the risks are mitigated.

The principle of separation of functions is applied to international reserve management. The International Markets Area participates in the definition of the investment policy, which is approved by the Board, and is responsible for implementing the policy in terms of defining, executing, and monitoring investment strategies. The Payment Systems and Operations Area is responsible for optimizing investment operations, including the registry, accounting, and generation of all payment instructions and/or fund movements to ensure compliance with all contractual liabilities. Both areas report to the Financial Markets Division, which submits proposals to the Board regarding the investment policy.

The Corporate Risk Area is responsible for evaluating and managing the corporate, financial, and strategic risks of the Central Bank of Chile. It thus performs the functions related to financial compliance and validation of the benchmark calculation methodologies, portfolio allocation, and risk measures applicable to international reserve management, reporting directly to the Board and the General Manager. The Corporate Risk Area also acts as the technical counterpart to the Financial Markets Division in the risk management processes for the Bank's financial operations.

The Office of the Comptroller and Auditor General, which reports directly to the Board, periodically evaluates the efficiency and efficacy of internal controls, operational risk management, and the integrated reserve management process.

TABLE B.1
Benchmark structure of the international reserve investment portfolio (1) (2)

Structure	Credit risk	Share	Benchmark
Liquidity portfolio	Sovereign	45%	*Bloomberg Barclays Index: Global Aggregate Treasuries unhedged.* (100%) (USD) *Bloomberg Barclays Index: Global Inflation-Linked unhedged. (12,73% USD), (10,91% GBP), (7,27% EUR)*
Diversification portfolio	Sovereign	55%	*Bloomberg Barclays Index: Global Aggregate Treasury unhedged.* (16,36% AUD), (16,36% CAD), (14,55% CNY), (12,73% EUR), (5,45% KRW), (3,64% GBP)
Total portfolio	Sovereign	100%	

(1) Global Treasury Index EUR, excluding countries with shallow markets and/or an average rating of less than A-.
(2) Global Treasury Index KRW, including only securities issued by the South Korea Treasury.
Source: Central Bank of Chile.

The strategic asset allocation, which serves as a guideline for reserve management, is periodically reviewed to ensure that the risk-return profile is consistent with the policy framework and strategic objectives established by the Board. The investment policy is designed taking into account the Bank's potential liquidity needs and the financial effects on the balance sheet. In this context, a new reserve management benchmark was approved and implemented in the first quarter of 2019.

NEW INVESTMENT POLICY

The new investment policy establishes that the investment portfolio (table B.1) is made up of two portfolios: the liquidity portfolio (45%) and the diversification portfolio (55%). The objective of the former is to guarantee the necessary liquidity for fulfilling policy objectives, so this portfolio is invested exclusively in U.S. Treasury bonds, one of the most liquid fixed-income markets in the world. The objective of the diversification portfolio, in turn, is to diversify risk and to contribute to obtaining medium- and long-term returns that are consistent with the expected evolution of the Bank's balance sheet, although it is also highly liquid.

The new benchmark for the investment portfolio incorporates an adequate degree of currency diversification. In this regard, exposure to the U.S. dollar and the euro were reduced, in favor of currencies such as the Chinese renminbi, the Australian dollar, the Canadian dollar, and the pound sterling. Unlike the previous benchmark, which contemplated a share of bank risk, the new benchmark only considers sovereign risk, although it is possible to invest in agency, bank, and supranational risk subject to specified limits. One of the most important changes was the extension of the duration from two to approximately seven years. While this implies a higher exposure to interest rate risk and, therefore, higher expected volatility in the market value of assets, it allows achieving higher returns in the long run, while still maintaining an adequate level of liquidity. Because this portfolio benchmark is exposed to longer maturities, inflation-indexed instruments were incorporated into the structure for the first time, as a diversification measure and for protection against inflationary processes.

The new benchmark was constructed using a risk factor model, which facilitates its economic interpretation and offers a more robust performance from a risk-return perspective in the face of various financial scenarios. During the design phase, the portfolio was subjected to a range of stress conditions (volatility analysis across multiple scenarios) to ensure that it behaved as expected under adverse market conditions. The new benchmark entered into force on 11 March 2019.

In addition to the investment portfolio, the international reserves comprise the cash portfolio (namely, current account balances held primarily by commercial banks) and the other assets portfolio (IMF special drawing rights, certified gold, and other assets). The investment portfolio accounts for the largest share of total reserves, and it is where the Bank employs an active management strategy. Management of the cash and other assets portfolios, which are smaller, depends more on the actions of third parties than on the Central Bank.

The benchmark allocation of the investment portfolio includes a total of seven currencies: U.S. dollars (52.00%), euros (11.00%), Canadian dollars (9.00%), Australian dollars (9.00%), pounds sterling (8.00%), Chinese renminbi (8.00%), and South Korean won (3.00%). Within these, the liquidity portfolio is invested entirely in nominal U.S. Treasury bonds; while the diversification portfolio includes nominal sovereign bonds (69.1%) denominated in Australian dollars (16.36%), Canadian dollars (16.36%), Chinese renminbi (14.55%), euros (12.73%), South Korean won (5.45%), and pounds sterling (3.64%); and inflation-indexed (30.9%) denominated in U.S. dollars (12.73%), euros (7.27%), and pounds sterling (10.91%).

With regard to credit risk, the benchmark contemplates 100% sovereign risk exposure. The total interest rate risk of the investment portfolio, measured by duration, is approximately 81.9 months. By

TABLE B.2
Benchmark currency, maturity, and duration structure of the investment portfolio (as of 30 June 2019) (1) (2) (3) (4)

		USD		EUR		CAD		AUD		GBP		CNY		KRW		Total	
		Share	Duration (month)	Share	Duration (month)	Share	Duration (month)	Share	Duration (month)	Share	Duration (month)	Share	Duration (month)	Share	Duration (month)	Share	Duration (month)
Liquidity	Investment portfolio	45.0%	74.9														
portfolio (LP)	Subtotal PL	100.0%															
Diversification	Investment portfolio	7.0%	45.6	11.0%	82.6	9.0%	83.0	9.0%	83.6	8.0%	141.3	8.0%	79.9	3.0%	107.8	55.0%	86.7
portfolio (DP)	Subtotal PD	12.7%		20.0%		16.36%		16.36%		14.55%		14.55%		5.45%		100.0%	
Total portfolio		**52.0%**	**71.0**	**11.0%**	**82.6**	**9.0%**	**83.0**	**9.0%**	**83.6**	**8.0%**	**141.3**	**8.0%**	**79.9**	**3.0%**	**107.8**	**100.0%**	**81.9**

(1) Liquidity portfolio in U.S. dollars is composed exclusively of nominal bonds (100%). Diversification portfolio in U.S. dollars is composed of indexed bonds (12.7%).
(2) Diversification portfolio in euros (20.0%) is composed of nominal (12.7%) and indexed (7.3%) bonds.
(3) Diversification portfolio in pounds sterling (14.5%) is composed of nominal (3.6%) and indexed (10.9%) bonds.
(4) The duration of indexed bonds is adjusted by a factor of 0.5.

Source: Central Bank of Chile.

sub-portfolio, the liquidity portfolio has a duration of 74.9 months; the diversification portfolio, 86.7 months (table B.2).

The credit risk associated with the investment of international reserves is managed through the definition of eligibility criteria and maximum exposure to countries, supranational entities, commercial banks, and agencies. The variables used to monitor this risk include credit rating, institutional equity, market size, debt ratios, and explicit guarantees. Market risk is managed primarily through a risk budget (tracking error).

To complement internal international reserve management, the Bank has had an external management program for a share of the reserves since 1995. The objectives of this program are to provide an active benchmark for evaluating internal management, to add economic value, and to facilitate the transfer of knowledge and technology.

At the end of the first half of 2019, a share of the investment portfolio (3.0%) was under the independent management of two external companies: BlackRock Institutional Trust Company N.A. (BlackRock) and Amundi Asset Management (Amundi). These firms received their management mandate in February and October 2016, respectively.

RESERVE MANAGEMENT IN THE FIRST HALF

In the first half of 2019, the return from international reserve management was 4.11% measured in local currency, which does not take into account the appreciation or depreciation of the currencies in the portfolio. Expressed in pesos, the first-half return was 1.24%; expressed in U.S. dollars, 3.70% (table B.3), which represents the sum of the yield on assets in local currency and the exchange rate effect on those assets vis-à-vis the dollar. In general terms, the solid performance of the international reserves is explained by the widespread decline in interest rates in the investment countries (figure B.1), which implied an increase in the market value of the fixed-income assets The differential return attributable to reserve management in the first half was 24 basis points[1]/ under the benchmark.[2]/

On 30 June 2019, the international reserves totaled US$39.5163 billion (figure B.2). Of the total, US$36.3152 billion was allocated to the investment portfolio, US$2.0615 billion to the cash portfolio, and US$1.1396 billion to other assets. With regard to the currency allocation, 53.3% of total reserves is invested in U.S. dollars, 10.1% in euros, and 36.6% in other currencies.

[1]/ Due to the change in the investment structure implemented over the course of the first half of the year, the calculation of the differential return was based on a composite of the two benchmarks.

[2]/ Although the Board granted a performance waiver to the manager for the duration of the period of convergence to the new benchmark, the differential returns presented herein do not take the waiver into account.

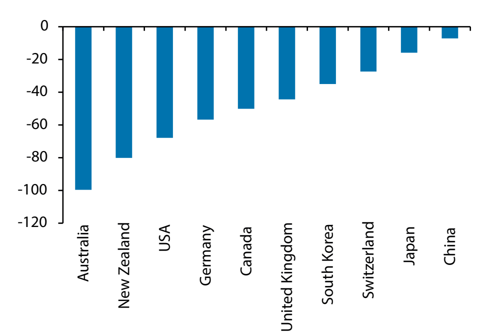
TABLE B.3
Absolute and differential returns on international reserve management (1) (2) (3) (4)
(percent)

Period	In local currency		In dollars		Differential
	Int.Res.	BMK	Int.Res.	BMK	
2019	4.11	4.27	3.70	3.94	-0.24
2018	1.70	1.66	-0.35	-0.32	-0.03
2017	0.77	0.62	4.17	4.06	0.11
2016	0.90	0.90	0.13	0.17	-0.04
2015	0.73	0.90	-3.74	-3.58	-0.16
2014	1.65	1.52	-2.94	-3.14	0.21
2013	0.26	0.21	-0.71	-0.77	0.06
2012	0.66	1.01	1.43	1.77	-0.35
2011	2.43	2.41	1.22	1.20	0.02
2010	2.10	2.19	-0.15	-0.06	-0.09
2009	2.15	1.65	3.34	2.85	0.50

(1) 2019 data correspond to the first half of the year.
(2) Excluding monetary gold, special drawing rights, IMF reserve position, reciprocal credit agreements, and other reserve assets.
(3) Starting in 2014, the Bank reports the return measured in local currency, which does not incorporate the appreciation or depreciation of the currencies in the portfolio. From 2009 to 2013, an approximation of the return in local currency was used (called the foreign currency return), where the return was expressed in the benchmark currency basket and thus was equivalent to the return in local currency to the extent that the investments tracked the benchmark allocation.
(4) The 2019 differential return considers the period of convergence to the new benchmark. The 2012 differential return considers the period of convergence to a new benchmark.

Source: Central Bank of Chile.

FIGURE B.1
Change in reference rates on 10-year government bonds (1) (2)
(basis points)



(1) Rate change in the first half of 2019.
(2) A negative change in interest rates implies an increase in the value of fixed-income instruments.

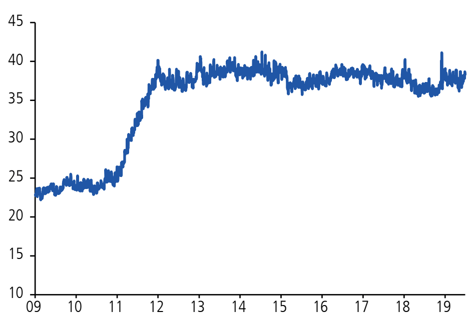
Source: Bloomberg.

On 30 June 2019, the total value of the international reserves was US$ 344.31 million less than at year-end 2018. This reflects a decrease in the cash portfolio (US$1.8027 billion), due to changes in the stock of deposits and account balances held at the Central Bank by the financial system,[3]/ which was partially offset by an increase in the investment portfolio (US$1.4483 billion) relative to year-end 2018, mainly explained by capital gains associated with an increase in the value of fixed-income assets. Additionally, in the period there was an increase of US$10.1 million in other assets, due in part to operations with the International Monetary Fund (IMF) (table B.4).

With regard to the exposure of the investment portfolio by type of risk and country, on the cutoff date of this Report, there was an appropriate degree of diversification of the different types of risk in which the international reserves are invested. On 30 June 2019, investment in sovereign risk represented 98.4% of the investment portfolio, and it was concentrated in the United States (50.4%), Canada (8.2%), Australia (8.2%), and China (8.0%). At the end of the period, investment in supranational risk represented 1.5% of the total investment portfolio; agency risk, 0.1%; and bank risk, 0.03% (tables B.5 and B.7).[4]/ The portfolio was also exposed to a BIS Investment Pool (BISIP) denominated in renminbi (equivalent to US$108.5 million), which is managed directly by the Bank for International Settlements (BIS) [5]/. This instrument provides exposure to the Chinese onshore fixed-income market.

On 30 June 2019, the currency allocation of the investment portfolio was as follows: 51.6% in U.S. dollars, 11.0% in euros, 9.1% in Canadian dollars, and 9.1% in Australian dollars. The remaining 19.2% was invested in pounds sterling, Chinese renminbi, and South Korean won (table B.6).

FIGURE B.2
International reserves (*)
(stock, billions of US$)



(*) Includes the investment portfolio and the cash portfolio; excludes other assets.
Source: Central Bank of Chile.

TABLE B.4
Composition of international reserves
(millions of US$)

Portfolio	Currency	2018 Dec.	2018 %	2019 Jun.	2019 %
Investment portfolio		**34,866.9**	**87.5**	**36,315.2**	**91.9**
Currencies and deposits	U.S. dollar	10.1	0.0	18.1	0.0
	Euro	0.7	0.0	1.1	0.0
	Canadian dollar	0.1	0.0	0.1	0.0
	Australian dollar	0.5	0.0	0.1	0.0
	Other currencies	762.0	1.9	3.9	0.0
Securities	U.S. dollar	22,140.6	55.5	18,969.0	48.0
	Euro	6,000.3	15.1	4,005.6	10.1
	Canadian dollar	1,630.4	4.1	3,126.0	7.9
	Australian dollar	1,434.6	3.6	3,264.6	8.3
	Other currencies	2,887.6	7.2	6,926.6	17.5
Totales	U.S. dollar	22,150.7	55.6	18,987.1	48.0
	Euro	6,001.0	15.1	4,006.7	10.1
	Canadian dollar	1,630.5	4.1	3,126.1	7.9
	Australian dollar	1,435.1	3.6	3,264.6	8.3
	Other currencies	3,649.6	9.2	6,930.6	17.5
Cash portfolio		**3,864.2**	**9.7**	**2,061.5**	**5.2**
Currencies and deposits	U.S. dollar	3,864.2	9.7	2,061.5	5.2
Other assets		**1,129.5**	**2.8**	**1,139.6**	**2.9**
Monetary gold	Other currencies	10.1	0.0	11.2	0.0
IMF SDRs	Other currencies	751.0	1.9	750.3	1.9
IMF reserve position	Other currencies	366.6	0.9	376.5	1.0
Currencies and deposits	U.S. dollar	1.8	0.0	1.6	0.0
Total international reserves		**39,860.6**	**100.0**	**39.516,3**	**100.0**
	U.S. dollar	26,016.7	65.3	21,050.3	53.3
	Euro	6,001.0	15.1	4,006.7	10.1
	Canadian dollar	1,630.5	4.1	3,126.1	7.9
	Australian dollar	1,435.1	3.6	3,264.6	8.3
	Other currencies	4,777.4	12.0	8,068.5	20.4

Source: Central Bank of Chile.

[3]/ The reduction in the cash portfolio is due to the lower incentive for local commercial banks to comply with their technical reserve requirements in foreign currency.
[4]/ Tables B.5 and B.7 present the breakdown of the investment portfolio by internal and external management.

[5]/ *Bank for International Settlement.*

At the end of June, the two external portfolio managers, Amundi and BlackRock, managed a total of US$1.0918 billion, allocated to the diversification portfolio.

TABLE B.5
Internally managed portfolio: Investments by country and type of risk (1) (2) (3) (4)
(millions of US$)

Country	Sovereign	Bank	Agency	Supranational	Total
USA	17,755				17,755
China	2,907				2,907
Australia	2,889				2,889
Canada	2,879				2,879
United Kingdom	2,632				2,632
France	1,642				1,642
South Korea	1,068				1,068
Germany	1,023		24		1,047
Spain	622				622
Japan	441				441
Austria	221				221
Netherlands	180				180
Belgium	168				168
Ireland	152				152
Poland	119				119
Finland	5				5
Supranational				494	494
Other		3			3
TOTAL	**34,703**	**3**	**24**	**494**	**35,223**

(1) Sovereign exposure includes the following institutions with an explicit sovereign guarantee: Kreditanstalt für Wiederaufbau (KFW/Germany, 385.9 million), Export Development Canada (EDC/Canada, 89.0 million), Oesterreichische Kontrollbank (OKB/Austria, 88.8 million), and Japan Bank for International Cooperation (JBIC/Japan, 440.8 million). Sovereign risk also includes China (US$108.5 million in the BISIP-CNY), which is directly managed by the BIS.
(2) Exposure to German agency risk corresponds to Landwirtschaftliche Rentenbank (USD 24.1 million).
(3) Exposure to supranational risk includes the following eligible issuers: European Bank for Reconstruction & Development (EBRD, USD 10.1 million), Inter-American Development Bank (IDB, USD 119.4 million), International Bank for Reconstruction and Development (IBRD, USD 103.2 million), European Investment Bank (EIB, USD 186.2 million), International Finance Corporation (IFC, USD 61.5 million), Asian Development Bank (ADB, USD 12.4 million), and African Development Bank (USD 0.8 million).
World Bank (International Bank for Reconstruction and Development: IBRD), Eurofima, Council of Europe Development Bank, Inter-American Development Bank, European Investment Bank.
(4) The category Other corresponds to current account balances and accounts due/receivable flows.

Source: Central Bank of Chile.

TABLE B.6
Investment portfolio by currency (*)
(percent)

Currency	Share
U.S. dollar	51.6
Euro	11.0
Canadian dollar	9.1
Australian dollar	9.1
Chinese renminbi	8.3
Pound sterling	7.8
South Korean won	3.0
Other currencies	0.1
TOTAL	**100.0**

(*) Includes currency forward positions.

Source: Central Bank of Chile.

TABLE B.7
Externally managed portfolio: Investments by country and type of risk (1) (2) (3)
(millions of US$)

Country	Sovereign	k	Agency	Supranational	Total
USA	562	9	13		585
Canada	114				114
United Kingdom	92				92
Australia	77				77
Japan	47				47
South Korea	37				37
France	30				30
Poland	15				15
Spain	12				12
Italy	12				12
Germany	11				11
Belgium	3				3
Netherlands	2				2
Austria	1				1
Ireland	1				1
Finland	0				0
Supranational	0			49	49
Germany	0		4		4
TOTAL	**1,016**	**9**	**17**	**49**	**1,092**

(1) Sovereign exposure includes the following institutions with an explicit sovereign guarantee: Kreditanstalt für Wiederaufbau (KFW/Germany, USD 9.6 million) and Japan Bank for International Cooperation (JBIC/Japan, 47.0 million).
(2) Exposure to German agency risk corresponds to Landwirtschaftliche Rentenbank (USD 3.9 million); exposure to U.S. agency risks corresponds to Federal Home Loan Mortgage Corporation (USD 13.5 million).
(3) Exposure to supranational risk includes the following eligible issuers: European Investment Bank (EIB, USD 16.3 million), Inter-American Development Bank (IDB, USD 21.9 million) and Nordic Investment Bank (NIB USD–10,8 million).

Source: Central Bank of Chile.

Appendix C: Main Measures Taken by the Central Bank of Chile in 2019

JANUARY

16. Through Resolution N°2203-03-190116, the Board of the Central Bank of Chile accepted the changes communicated by the Finance Minister, via Letter N° 68, dated 11 January 2019, with regard to the management guidelines for the Economic and Social Stabilization Fund. It was further stated for the record that the aforementioned modifications do not require any adjustment to the fund management fees established for 2019.

16. Through Resolution N°2203-02-190116, the Board of the Central Bank of Chile accepted the changes communicated by the Finance Minister, via Letter N° 69, dated 14 January 2019, with regard to the Custody Guidelines and other matters related to the Pension Reserve Fund, the Economic and Social Stabilization Fund, and other fiscal resources deriving from the sale of assets or seasonal surpluses in the Sole Revenue Account. It was further stated for the record that the aforementioned modifications to the Custody Guidelines do not require any adjustment to the fund management fees established for 2019.

30. At its Monetary Policy Meeting, the Board of the Central Bank of Chile voted to increase the monetary policy interest rate by 25 bp, to 3.0% in annual terms.

FEBRUARY

12. Through Resolution N°2208-01-190212, the Board of the Central Bank of Chile approved the document entitled General Guidelines for the Management of the Central Bank of Chile's International Reserves.

21. Through Resolution N°2209-02-190221, the Board of the Central Bank of Chile approved a new investment policy applicable to the management of the international reserves. In addition to maintaining the liquidity and capital preservation objectives, the new investment policy takes into account its impact on the earnings and risk in the Central Bank's financial balance sheet. The most significant elements of the new policy include the creation of two sub-portfolios: (i) the liquidity portfolio (45%), whose objective is to ensure that at any given time the Board will, with some degree of confidence, have access to the necessary resources for fulfilling the Central Bank of Chile's objectives, in a short time and at a reasonable cost.; and (ii) the diversification portfolio (55%), whose main objectives are to diversify financial risks and contribute to returns.

MARCH

29. At its Monetary Policy Meeting, the Board of the Central Bank of Chile voted to hold the monetary policy interest rate at 3.0% in annual terms

APRIL

18. Through Resolution N°2220-01-190418, the administrative structure of the Financial Policy Division was modified, creating the Macrofinancial Modeling Department and the Microfinancial Research Department, both of which report to the Financial Research Area (formerly the Financial Investigation Area); together with the Financial Analysis Department and the Prospective Risk Analysis Department, reporting to the Financial Stability Area.

30. Payment was received extinguishing the subordinated debt originally contracted by the Banco de Chile during the 1982 banking crisis.

MAY

3. Through Resolution N°2223E-01-190503, the Board approved the signing of a new confidentiality and information-sharing agreement with CLS Bank International and CLS Services Ltd. At the same time, the Board agreed to waive jurisdictional immunity, in accordance with the provisions of Article 85 of the Central Bank's Basic Constitutional Act, with the express understanding that this waiver does not extend in any case whatsoever to the Bank's immunity from enforcement or seizure in accordance with the legislation that will govern the aforementioned agreement, such that any court order emanating from a competent foreign court must be carried out in Chile, in accordance with Chilean legislation.

9. At its Monetary Policy Meeting, the Board of the Central Bank of Chile voted to hold the monetary policy interest rate at 3.0%

in annual terms.

16. Through Resolution N°2225-04-190516, the Board of the Central Bank of Chile decided to extend the "Bilateral Borrowing Agreement" with the International Monetary Fund through 31 December 2020, maintaining the original terms of the program, which were approved in 2015 through Resolution N° 2003E-01-160915.

16. Through Resolution N°2225-05-190516, changes were introduced to Resolution N°1602E-01 of 2011, on the provisions for the exchange of degraded Chilean banknotes rendered unusable by deterrent technologies, coming from bank-owned automated teller machines and from security services offered by cash-in-transit companies; and the revised text of Resolution N° 1602E-01 was approved.

JUNE

7. At its Monetary Policy Meeting, the Board of the Central Bank of Chile voted to cut the monetary policy interest rate by 50 bp, to 2.5% in annual terms.

JULY

4.Through Resolution N°2235-01-190704, authorization was granted to Itaú Corpbanca to make an overseas investment consisting in the acquisition of shares of its foreign subsidiary bank Itaú Corpbanca Colombia, in accordance with Article 76 of the General Banking Law. The aforementioned investment will allow Itaú Corpbanca to increase its share of the aforementioned foreign subsidiary bank from 66.28% to 87.1%.

In granting its authorization, the Central Bank of Chile has taken into consideration the information reported by the Superintendence of Banks and Financial Institutions (SBIF) in various communications, indicating the decision of the ex-SBIF —and, therefore, of the Financial Market Commission (FMC), as the legal successor to the SBIF—to authorize the operation in question.

It was stated for the record that the Central Bank of Chile has granted its authorization with particular regard for the fact that the prior approval conferred by the SBIF stipulated that the aforementioned acquisition of shares could only be effected after the International Court of Arbitration had issued a definitive decision on this transaction, which was reported on 1st March 2019.

8. A press release was issued to announce that the Central Bank supports the incorporation of the Chilean peso into the Continuous Linked Settlement (CLS) system, an international settlement system managed by CLS Bank International, and that it is evaluating the recognition of this foreign settlement system, in accordance with the legal framework for settlement systems established in the Bank's Basic Constitutional Act, which was modified in October 2016 to increase convergence with international standards. This recognition will allow guaranteeing the final settlement of payments channeled through the system by banks established in Chile or other financial institutions supervised by the SBIF (now the FMC) that participate in that system.

11. Through Resolution N°2236-01-190711, the new Chapter III.D.3 of the Compendium of Financial Regulations (CFR) was approved, entitled "Integrated Derivatives Information System (IDIS)," together with the respective Operating Rules (III.D.3.1).

This regulatory framework contains the structure and principal components of the IDIS, as well as the instructions and references applicable to disclosure requirements. The IDIS will be managed and operated by the Central Bank, which will allow collecting, storing, and diffusing information on over-the-counter (OTC) derivatives transactions.

The development of this project is significant for the Bank, in that it contributes to achieving one of the fundamental institutional objectives—safeguarding the stability of the financial system—given the critical importance of the derivatives market, which allows participants to adequately manage financial risks.

The banks are the main suppliers of derivative instruments in Chile, representing more than 80% of the market. The market value of these assets exceeded US$ 24 billion in May 2019. The users of the derivatives offered by the banks include, in particular, institutional investors, foreign investors, and foreign trade companies. Information from these markets will be included in the IDIS under homogeneous standards and high validation quality.

Specifically, the IDIS is expected to contribute to achieving the Bank's objective in the following ways:

(i) Promote transparency and good market practices.

(ii) Improve the decision-making capacity of people, investors, and the market in general. To this end, aggregate information on currency, inflation, interest rate, and fixed-income derivatives will be available on the website.

(iii) Contribute to the supervisory processes carried out by the FMC, which will have online access to the IDIS. The public consultation on this regulation was held from 30 October to 28 December 2018. In accordance with the Central Bank of Chile's standards for this type of process, an explanatory note was published with the main comments received and the Central Bank's responses.

The establishment of this regulation launched a development process through which the IDIS will be fully operational starting in November 2020 for banks and their affiliates and in May 2021 for other financial entities and non-financial firms that trade derivatives in overseas markets.

18. At its Monetary Policy Meeting, the Board of the Central Bank of Chile voted to hold the monetary policy interest rate at 2.5% in annual terms.

AUGUST

1. Through Resolution N°2240-01-190801, the administrative structure of the Financial Markets Division was modified, establishing a process scheme with three defined areas: Business and Analysis; Balance Sheet and Financial Analysis; and Clearing and Settlement Systems and Transactions Repository. This adjustment supports the incorporation of the functions that were transferred to the Division from the former Financial Risk Assessment and Management Area.

This new structure was designed in the framework of the 2018–2022 Strategic Plan, which has implied a series of changes in the Bank's management structure and processes, aimed at promoting agile decision-making, optimizing processes, and contributing to institutional sustainability.

22. Through Resolutions adopted at Board Meeting N°2243, held on 22 August 2019, the Board modified the Statutes of the Central Bank's Information Technology Advisory Committee, approving the revised and updated text; and appointed Mr. José Benguria Donoso as a new member of the Committee and Mr. Alejandro Hevia Angulo as President, for term of one year effective 1st August 2019.

The primary role of this Committee is to advise the Board on corporate governance of information technology, as it applies to the fulfillment of the Central Bank's institutional objectives, and especially on the issues indicated in the aforementioned Statutes, which are available on the Bank's website in the Official Transcriptions section.

GLOSSARY

CEMBI: Corporate Emerging Market Bond Index. A measure of corporate risk, calculated by J.P. Morgan as the difference between the interest rate on dollar-denominated bonds issued by banks and corporations in emerging economies, and the interest rate on U.S. Treasury bonds, which are considered risk free.

Commodity exporters: Australia, Canada, and New Zealand, weighted at PPP (using data from the April 2019 WEO).

CPIEFE: CPI excluding food and energy prices, leaving 73.2% of the total CPI basket.

CPIEFE goods: The goods component of the CPIEFE, which represents 27.3% of the total CPI basket. It includes the following categories:

• **Recreation goods:** Digital storage units; games; videogame consoles; sporting goods; camping equipment; musical instruments; school textbooks; books; newspapers; notebooks; craft materials; and office supplies.

• **New automobiles.**

• **Alcoholic beverages:** Pisco; rum; whisky; vodka; wine; sparkling wine; and beer.

• **Health goods**: Antibiotic, antiviral, and antifungal drugs; cardiovascular drugs; hormones and medications for the genitourinary system; nonsteroidal anti-inflammatory drugs, anti-migraine drugs, and musculoskeletal drugs; respiratory drugs; dermatological, disinfectant, and antiseptic drugs; medications for the central nervous system; digestive and metabolic drugs; ophthalmological preparations; cancer drugs, immune system modifiers, and pain relief medications; homeopathic drugs and food supplements; wound-care products; condoms; eyeglasses; health monitoring devices; electric razors and epilators; disposable razors; miscellaneous personal care products; sunblock and tanning lotions; colognes and perfumes; deodorants and antiperspirants; oral hygiene products; toilet paper; soap; disposable diapers; feminine hygiene products; shampoo and conditioner; skin creams; makeup products; and hair dye and hairspray.

• **Cigarettes.**

• **Household electronics:** Cellular telephones; televisions; sound equipment; portable audio and video recorders; cameras; computers; and printers.

• **Other transport goods:** Used automobiles; motorcycles; bicycles; electrical car parts; tires and rims; and mechanical car parts and accessories.

• **Tourism packages.**

• **Other household goods:** beds; mattresses; dining room furniture; kitchen cabinets and furniture; living room furniture; carpets and other floor coverings; decorations; bed linens; bath and kitchen towels; dining and living room textiles; water heaters; ovens, cooktops, and ranges; space heaters; electric toaster ovens and microwaves; washing machines; refrigerators; small kitchen appliances; irons; tableware; cooking utensils; air fresheners and disinfectants; laundry detergent and softeners; dish soap; cleaners; insecticides and other pesticides; cleaning products; paper towels and napkins; lowers; plants; pet food; and pet accessories.

• **Clothing and footwear:** Fabrics for making clothes; men's outerwear; men's trousers and shorts; men's shirts and sweaters; men's underwear and sleepwear; women's outerwear; women's trousers, skirts, and dresses; women's blouses and sweaters; women's sportswear and bathing suits; women's underwear and sleepwear; children's outerwear; children's trousers, skirts, and dresses; children's shirts, blouses, and sweaters; children's sportswear, shorts, Bermuda shorts, and swimwear; children's underwear and sleepwear; baby apparel; school uniforms and tracksuits; clothing repair items; clothing accessories; men's sneakers; men's dress shoes; women's sneakers; women's dress shoes; women's seasonal footwear; children's sneakers; children's shoes; school shoes; jewelry; wristwatches; handbags and purses; baby carriers; and sunglasses.

• **Household:** Home repair items; paints and varnishes; bathroom fittings and accessories; sealants and glues; electrical tools and accessories; other tools and accessories; lighting accessories; locks; electrical accessories; and batteries.

CPIEFE services: The services component of the CPIEFE, which represents 45.9% of the total CPI basket. It includes the following categories:

• **Air transport:** Air transport services.

• **Potable water.**

• **Rent.**

• **Bus transport:** Interurban bus transport services.

• **Education:** Education services, including preschool, kindergarten, primary school (first through fourth grades), middle school (fifth through seventh grades), high school (eighth through twelfth grades), university preparatory school, technical schools, vocational schools, universities, graduate schools, and training courses.

• **Communal expenses.**

• **Financial expenses.**

• **Other services:** Cleaning and clothing repair services; car maintenance and repair services; car wash services; parking services; toll services; driver's license; motor vehicle inspection; insurance; certification services; photocopy services; professional association membership fees; notary services; funeral services; parent association fees; residential services for the elderly; and childcare services.

• **Other transport services:** Shared taxis; taxis; school transport; urban buses; airport transfers; and multimodal transport.

• **Other household services:** Home maintenance and repair services; sanitation services; home alarm services; furniture repair services; home appliance repair services; and veterinary services.

• **Food services:** Foods consumed outside the home; sandwiches and hotdogs consumed outside the home; alcoholic beverages consumed outside the home; nonalcoholic beverages consumed outside the home; ice cream and desserts consumed outside the home; and take-out food.

• **Recreation services:** Services provided by recreational centers; tickets to sporting events; nightclub entry fees; birthday party services; gymnasiums; exercise classes; recreational classes; cinema tickets; tickets to cultural events; photographic developing services; paid residential television services; online subscription services; gambling; and tourist accommodations.

• **Health services:** Medical appointments; outpatient surgical procedures and interventions; dental appointments and treatments; radiology and imaging services; clinical laboratory exams; other professional health services; hospitalization; hair styling services; and beauty treatments.

• **Telecommunication services:** Internet connection; mobile broadband; telecommunication packages; cellular telephone service; and fixed-line service.

• **Domestic services.**

EMBI: Emerging Market Bond Index. A measure of country risk, calculated by J.P. Morgan as the difference between the interest rate on dollar-denominated bonds issued by emerging economies, and the interest rate on U.S. Treasury bonds, which are considered risk free.

EPI: External price index for Chile, or external inflation, calculated using the wholesale price index (WPI)—or the CPI if the WPI is not available—expressed in dollars, of the main trading partners included in the MER.

Excess capacity: A broader set of indicators for measuring inflationary pressures, which includes not only the output gap, but also labor market conditions, electricity consumption, and installed capacity utilization in firms.

Growth of trading partners: The growth of Chile's main trading partners, weighted by their share in total exports over two rolling years. The countries included are the destination for about 94% of total exports, on average, for the 1990–2018 period.

IVUM: import price index.

Latin America: Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela, weighted at PPP using data from the World Economic Outlook (WEO, April 2019).

MER: Multilateral exchange rate. A measure of the nominal value of the peso against a broad basket of currencies, weighted as for the RER. For 2019, the following countries are included: Argentina, Bolivia, Brazil, Canada, China, Colombia, France, Germany, India, Italy, Japan, Mexico, Netherlands, Paraguay, Peru, Republic of Korea, Spain, Thailand, United Kingdom, United States, and Vietnam.

MER-X: MER excluding the U.S. dollar.

MER-5: MER against the following five currencies: Canada, the Eurozone, Japan, United Kingdom, and United States.

NER: Nominal exchange rate.

Output gap: A key indicator for measuring inflationary pressures, defined as the difference between the economy's actual output and its current production capacity in the non-mining sectors (non-mining GDP).

Potential GDP: The economy's current production capacity. Also called short-term potential GDP.

RER: Real exchange rate. A measure of the real value of the peso against a basket of currencies, which includes the same countries used to calculate the MER.

Rest of Asia: Hong Kong, Indonesia, Rep. Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand, weighted at PPP (using data from the April 2019 WEO).

Trend GDP: The medium-term growth potential of the Chilean economy, where the effect of shocks that usually alter production capacity in the short term have dissipated and the productive factors are thus used normally. In this context, growth depends on the structural characteristics of the economy and the average growth of productivity, variables that, in turn, determine the growth of productive factors.

World growth at market exchange rate: Each country is weighted according to its GDP in dollars, published in the IMF World Economic Outlook (WEO, April 2019). The sample of countries used in the calculation represent around 90% of world growth. For the remaining 10%, an average growth rate of 2.3% is used for the 2019–2021 period.

World growth: Regional growth weighted by share in world GDP at PPP, published in the IMF World Economic Outlook (WEO, April 2019). World growth forecasts for the period 2019–2021 are calculated from a sample of countries that represent about 86% of world GDP. For the remaining 14%, the average growth rate of advanced and emerging economies is used.

ABBREVIATIONS

BCP: Central Bank bonds denominated in pesos
BCU: Indexed Central Bank bonds denominated in UFs
BLS: Bank Lending Survey
BPR: Business Perceptions Report
CBC: Corporación de Desarrollo Tecnológico de Bienes de Capital
CPI: Consumer price index
CPIEFE: Consumer price index excluding food and fuels
EES: Economic Expectations Survey
FBS: Financial Brokers Survey
FFR: Federal funds rate
IMCE: Monthly Business Confidence Index
IMF: International Monetary Fund
INE: National Statistics Institute.
IPEC: Consumer Confidence Index
IPSA: Selective Stock Price Index
LCI: Labor Cost Index
MER: multilateral exchange rate.
MPR: Monetary policy rate
MSCI: Morgan Stanley Capital International
OECD: Organization for Economic Cooperation and Development
OPEC: Organization of the Petroleum Exporting Countries
PDBC: Central Bank discount promissory notes
RER: Real exchange rate.
RPI: Retail price index
SBIF: Superintendence of Banks and Financial Institutions
SNA: System of National Accounts
WI: Wage Index

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