

MONETARY POLICY REPORT

September 2018



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*/ 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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*/ The statistical cutoff date of the *Monetary Policy Report* was 28 August 2018. The *Report* also includes the publication of the pre-meeting September Financial Brokers Survey and the monetary policy meeting held on 04 September.

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 information that can help shape market participants' expectations on future inflation and output trends. In accordance with Article 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, aggregate demand and output, and recent price and cost developments. The last chapter summarizes the results of this analysis in terms of the outlook and risks for inflation and economic growth over the next eight quarters. 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 session on 04 September 2018 for presentation to the Senate on 05 September 2018.

The Board

SUMMARY

The data gathered so far this year show higher-than-expected economic growth and consolidated prospects of inflation converging to the target, in a context of positive surprises in various industries, an upward revision of potential growth and the activity gap closing faster. Regarding inflation, the CPI rose to 2.7% annually, but CPIPE inflation is still below 2%, both in line with forecasts. The risks of the external scenario have become more present. The U.S.-China trade conflict has intensified which, together with the cyclical stage of the U.S. economy and its difference with other developed economies has led to a global appreciation of the dollar and a fall in commodity prices. All this has hit those emerging economies perceived as most vulnerable the hardest. For now, global growth projections have seen limited changes. In this context, the Board has kept the MPR at 2.5% and has announced that, should the projected scenario prevail, it should begin withdrawing the monetary stimulus in the coming months.

In the second quarter, activity grew 5.3% annually, surprisingly high compared with the June forecast. By sectors, the greatest differences were observed in non-mining activity, particularly in trade—especially wholesale—, business services and manufacturing. Domestic demand also grew above expectations, reflecting a greater expansion of private consumption—mainly of durable goods—, an increase in inventory accumulation and more dynamic investment in machinery and equipment.

The Board has revised its estimation of potential growth upwards, as could be expected in a context of stronger economic growth and contained core inflation. For 2018, potential growth of non-mining GDP stands at 3.1%, which compares with the 2.7% estimate of a year ago. For 2019, potential growth of non-mining GDP is 3.2% (2.9% a year ago). Trend growth has not been revised and is still estimated between 3% and 3.5%^{1/}. Accordingly, potential and trend GDP growth will converge sooner than expected (box V.1).

^{1/} Trend growth is defined as GDP growth in the absence of transitory productivity shocks and with inputs used at their normal capacity. It is a concept whose application is relevant at long terms (i.e., ten years' time), when accumulated transitory positive and negative shocks tend to cancel one another out, so they can be deleted from the analysis. On the other hand, potential GDP refers to the current level of productive capacity, including the various transitory productivity shocks and resource misallocation problems that describe the economy at a given moment. This concept is factored into the measurement of inflationary pressures that could divert inflation from its 3% target. Given these characteristics, it is natural for potential GDP to be revised on a regular basis, while trend GDP is re-estimated less often.

**ECONOMIC GROWTH AND CURRENT ACCOUNT**

	2017	2018 (f)	2019 (f)	2020 (f)
	(annual change, percent)			
GDP	1.5	4.0-4.5	3.25-4.25	2.75-3.75
National income	2.8	3.9	3.4	3.3
Domestic demand	3.1	4.6	3.7	3.3
Domestic demand (w/o inventory change)	1.8	4.1	3.7	3.7
Gross fixed capital formation	-1.1	5.0	4.5	3.9
Total consumption	2.7	3.8	3.4	3.6
Goods and services exports	-0.9	4.9	4.2	2.8
Goods and services imports	4.7	6.2	4.4	2.8
Current account (% of GDP)	-1.5	-2.2	-2.6	-2.7
Gross national saving (% of GDP)	20.6	20.3	20.5	20.5
Gross national investment (% of GDP)	22.1	22.5	23.0	23.2
GFCF (% of nominal GDP)	21.6	21.7	22.1	22.4
GFCF (% of real GDP)	21.6	21.7	21.9	22.0
	(US\$ million)			
Current account	-4,146	-6,400	-7,800	-8,500
Trade balance	7,922	7,400	5,800	4,600
Exports	69,230	76,100	79,200	81,500
Imports	-61,308	-68,700	-73,400	-76,900
Services	-3,059	-4,000	-4,200	-4,000
Rent	-10,802	-12,300	-11,100	-11,000
Current transfers	1,793	2,500	1,700	1,900

(f) Forecast.

Source: Central Bank of Chile.

Growth accumulated up to the second quarter of this year—even considering the higher potential growth—has meant a narrower activity gap than was foreseen, and its absolute level—a variable not directly observable—is estimated at near zero^{2/}. However, other data used to evaluate the state of output gaps suggest that these still persist. Indicators of installed capacity utilization continue to show some slack, and core inflation—which has performed as expected—has remained below 2% over the past year. The labor market maintains a certain lag with respect to activity and may contain additional degrees of slack due to migrant inflows. In any case, employment growth shows greater dynamism lately, and is expected to improve further in the coming quarters. Considering all these antecedents, the Board estimates that inflationary pressures are consistent with inflation converging to the target.

The behavior of activity in the first half of the year and the economy growing around its higher potential estimate result in an upward revision of the GDP estimate for 2018. In the baseline scenario of this *Report*, GDP increases between 4.0% and 4.5% (between 3.25% and 4% in June). With this, in the second half the economy will post lower annual variation rates than in the first, responding to several factors, including a higher comparison base. For 2019 and 2020, the projected ranges considered are similar to those of June. Thus, estimated ranges for GDP growth span from 3.25% to 4.25% next year and from 2.75% to 3.75% in 2020. This assumes a somewhat less favorable external scenario than in the previous *Report*, the MPR remaining below neutral several more quarters, investment outgrowing GDP, absence of important macroeconomic imbalances and the economy growing around its trend in 2020. As a working assumption, in 2018 the economy will receive a fiscal impulse consistent with the current budget. From then on, it is assumed that the structural deficit will follow the path of gradual descent defined by the authority.

The external impulse will be somewhat lower than estimated in June, particularly because of lower terms of trade. Copper has approached its long-term prices faster than expected, and is forecast to trade at US\$2.95 per pound in 2018, US\$2.85 in 2019 and US\$2.80 in 2020 (US\$3.1, 2.95 and 2.85 in June). The oil price has moved erratically and remains above its levels of the beginning of the year. Going forward, the baseline scenario continues to assume a downwards sloping trajectory, in line with market price futures. With this, the terms of trade should decrease by 1.2% this year, disproving the slight rise expected in June. In 2019 and 2020, they would decline further.

Regarding financial conditions, the divergence of monetary policies in the developed world persists because of the different evaluations of each country's output gaps and inflationary pressures. While the Federal Reserve raised the fed funds rate by 25 basis points in June and has signaled two more increases this year and three in 2019—and at the same time continues to downsize its balance sheet—the European Central Bank extended its asset purchasing program and

^{2/} Chapter V presents a more extensive discussion on the current and forecast size of the gap and associated degrees of uncertainty.

signaled that the policy rates will not be moved for a while. Meanwhile, the trade conflict between the U.S. and China has escalated further. So far, the United States' actions and China's reprisals have been limited, but tensions have not abated and the measures adopted are already having an impact. Fears have been heightened by the further moderation of China's economic activity figures. China has taken measures to boost its economy and announced other ones, raising new fears about the imbalances that are still present.

In this context, global financial conditions remain favorable from a historical perspective, but have tightened for emerging economies, particularly those perceived as having weaker macroeconomic fundamentals. Recent developments in Argentina and Turkey are good examples that illustrate the markets' sensitivity.

In Chile, the strongest reaction has come from the nominal exchange rate—which plays a stabilizing role in the policy framework—but long-term interest rates have been spared. At the statistical cutoff of this *Report*, the peso/dollar parity was slightly above \$660, equivalent to a 5.5% increase from the closing of the June *Report*. In multilateral terms, the depreciation was smaller, even with an appreciation against the currencies of other emerging and commodity-exporting economies, reflecting Chile's greater relative strength. The real depreciation of the peso has been smaller (near 1% from the closing of the last *Report*) and is still below its long-term levels. As a working assumption, it is considered that, over the course of the policy horizon, the MPR will again approach its averages of the last fifteen to twenty years.

For the time being, the greater risk perception has resulted in a limited revision of the global growth outlook, with gradually declining expansion rates over 2019 and 2020. By economic zones, the projection for developed countries is unchanged from the June *Report*, while there are downward adjustments in Latin America, particularly in Argentina and Brazil, plus a downward revision of China's estimated growth.

The annual variation of the CPIPEF has remained below 2%, with the goods component still negative in annual terms and services inflation still near 3%. Headline CPI inflation has come close to 3%, driven mainly by more volatile prices. The depreciation of the peso affects our short-term inflation projections, so our estimate for December of this year is revised upwards. Once the 3% target is reached, both inflation indicators will stay in the vicinity until the end of the projection horizon.

Regarding monetary policy, the Board estimates that the evolution of macroeconomic conditions make it less necessary to maintain the current monetary stimulus. The working assumption for the MPR contemplates that it will begin to rise in the coming months and by 2020 it will be approaching neutrality—between 4% and 4.5%.

INTERNATIONAL BASELINE SCENARIO ASSUMPTIONS

	Avg. 00 - 07	Avg. 10-16	2017	2018 (f)	2019 (f)	2020 (f)
	(annual change, percent)					
Terms of trade	8.2	1.1	9.0	-1.2	-1.5	-1.0
Trading partners GDP (*)	3.6	4.0	3.7	3.6	3.5	3.4
World GDP at PPP (*)	4.5	3.9	3.7	3.8	3.6	3.4
World GDP at market exchange rate (*)	3.2	3.1	3.2	3.1	2.9	2.8
Developed economies' GDP at PPP (*)	2.4	1.8	2.2	2.3	2.0	1.7
Emerging economies' GDP at PPP (*)	6.5	5.2	5.1	5.0	4.9	4.7
External prices (in US\$) (*)	4.6	0.4	3.6	3.9	1.6	2.2
	(levels)					
LME copper price (US\$/lb)	154	316	280	295	285	280
WTI oil price (US\$/barrel)	44	79	51	66	64	61
Brent oil price (US\$/barrel)	42	87	54	72	73	70
Gasoline parity price (US\$/m ³) (*)	366	657	466	558	553	538
Libor US\$ (nominal, 90 days)	3.6	0.4	1.3	2.3	3.4	3.9

(*) For definition, see glossary,

(f) Forecast.

Source: Central Bank of Chile.

INFLATION

	2017	2018 (f)	2019 (f)	2020 (f)
	(annual change, percent)			
Average CPI inflation	2.2	2.6	3.1	3.0
December CPI inflation	2.3	3.1	3.0	3.0
CPI inflation in around 2 years (*)				3.0
Average CPIPEF inflation	2.0	2.0	3.0	3.0
December CPIPEF inflation	1.9	2.7	3.1	3.0
CPIPEF inflation in around 2 years (*)				3.0

(f) Forecast.

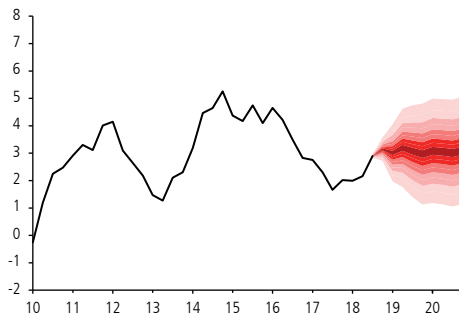
(*) Corresponds to inflation forecast for the third quarter of 2020.

Source: Central Bank of Chile.



CPI INFLATION FORECAST (*)

(annual change, percent)

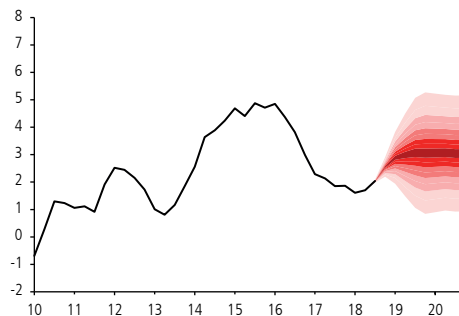


(*) The figure shows the confidence interval of the baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. These intervals are calculated using the RMSE of the MAS-MEP models for the 2009-2017 average and summarize the risks on future inflation as assessed by the Board. The working assumption for the MPR contemplates that it will begin to rise in the coming months and by 2020 it will be approaching neutrality—between 4% and 4.5%.

Source: Central Bank of Chile.

CPIEFE INFLATION FORECAST (*)

(annual change, percent)



(*) The figure shows the confidence interval of the baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. These intervals are calculated using the RMSE of the MAS-MEP models for the 2009-2017 average and summarize the risks on future inflation as assessed by the Board. The working assumption for the MPR contemplates that it will begin to rise in the coming months and by 2020 it will be approaching neutrality—between 4% and 4.5%.

Source: Central Bank of Chile.

As usual, there are internal and external elements that could alter these projections. From the point of view of its impact on local activity, the balance of risks in the external scenario remains biased downwards. The main risk continues to be an abrupt deterioration of financial conditions for emerging economies, especially because markets seem to be reacting more to negative news. On this matter, events in the United States are still relevant, in terms of both the inflation outlook and evolution, and how the trade conflict will unfold. This situation has revived the fears about China, especially because of the risks from persistent imbalances in several of its markets. In Europe, Brexit-related uncertainty stands out, among other issues.

In the context of international financial conditions normalization, investors have drawn a line between emerging economies that are perceived as more vulnerable and those with stronger fundamentals. Chile faces the current conditions with good macroeconomic indicators in terms of growth, inflation and the balance sheets of its fiscal and external accounts. In addition, the floating exchange rate helps to absorb external shocks and the monetary policy framework makes it possible to act countercyclically. This is feasible thanks to the low exposure of the main economic agents to interest rate and foreign exchange risks. In any case, the bias and likelihood of external risk scenarios reinforce the need for a small and open economy such as Chile to maintain solid macroeconomic fundamentals, namely a path of fiscal consolidation, sustainable levels of indebtedness and the proper capitalization of the country's banking system.

About the domestic economy, the Board estimates that the risks for activity are unbiased. Activity has outperformed projections and it may continue to do so if, for example, big-sized investment projects begin to build up more strongly. Conversely, the labor market could post a weaker than expected recovery, affecting the dynamism of consumption.

As for inflation, the Board estimates that the risks are also unbiased. Although the risks concerning the international scenario and their negative implications have increased, the economy has been more dynamic than previously thought and the short-term outlook for headline inflation has been revised upwards—due mainly to the exchange rate increase.

In this context, the Board estimates that the current monetary stimulus is less necessary and that, should the projected scenario prevail, it will begin reducing it in the coming months. Accordingly, it reiterates its commitment to conduct monetary policy with flexibility, so that projected inflation stands at 3% over the two-year horizon.

MONETARY POLICY DECISIONS IN THE LAST THREE MONTHS

JUNE MEETING

The June *Monetary Policy Report* indicated that output had grown somewhat more than expected, due to surprises in supply sectors (which were probably temporary) and more dynamic investment and consumer durables. However, several indicators, including the evolution of the labor market, core inflation, and measures of capacity utilization, suggested that the output gap persisted, despite some narrowing. In the baseline scenario, the output gap was expected to close in line with the rate projected in March. For this year, the Board estimated that GDP would grow between 3.25 and 4.0% (versus 3.0 to 4.0% in March). The estimate was based on lower annual growth rates in the second half than in the first, a more dynamic performance of investment-related sectors, and a slowdown in domestic spending. For 2019 and 2020, the forecast ranges were maintained at 3.25–4.25% and 3.0–4.0%, respectively. The economic recovery continued to be underpinned by a favorable external scenario, an expansionary monetary policy, the end of the adjustment in mining and residential investment, and the absence of significant macroeconomic imbalances.

The external stimulus for the Chilean economy would be slightly lower than estimated in the last *Monetary Policy Report*, due to somewhat less favorable financial conditions and lower terms of trade, given the higher oil price. Output and inflation data had confirmed the ongoing discrepancy between the cyclical position of the United States and the rest of the developed economies, amplifying the differences in monetary policy expectations in the different economic blocs. This triggered movements in interest rates and appreciated the dollar at the global level. World growth forecasts for 2018–2020 were still higher than in recent years, although they were down in some Latin American countries.

Annual CPI and CPIEFE inflation remained around or just below 2%, largely in line with expectations. The evolution of the macroeconomic scenario had reduced the risks for inflation convergence to 3% within the policy horizon. Inflation expectations two years ahead remained at 3%, while they had risen at shorter horizons due to the higher oil price. In the baseline scenario, the core inflation forecast had not changed and was still expected to reach 3% in late 2019. Headline inflation would reach that target sooner.

In this context, since the publication of the March *Monetary Policy Report*, the Board had held the monetary policy rate (MPR) at 2.5%, stating that it would begin to withdraw the monetary stimulus insofar as macroeconomic conditions continued driving the convergence of inflation to 3%. At the June meeting, the monetary policy options analyzed were (i) to hold the MPR at 2.5%; (ii) to increase the MPR by 25 basis points (bp); and (iii) to decrease the MPR by 25 bp.

All the Board Members agreed that the first option was consistent with the baseline scenario in the June *Report*. This was reinforced by the fact that medium-term inflation expectations were anchored on the policy target, and it was in line with market expectations for the monetary policy decision at that time. It also left space for a timely reaction in the event of the materialization of a risk scenario. The risks for inflation were balanced, and the costs of a deviation of inflation up or down from its convergence path were symmetrical.

With regard to the option of raising the MPR, several Board Members said that it depended on whether it was considered necessary to bring forward the monetary policy normalization process. This seemed premature, however, since the baseline scenario of the *Report* indicated that investment was only just starting to pick up. Given the impact on the economy, it was necessary to wait for the cycle to evolve before making that decision. This option could be justified if the economic recovery was clearly strengthening, becoming more secure and more persistent, and pushing up inflation. It was still very early to be certain that the process had solidified, and more quarters of data were needed to put the question to rest. The economy's performance was better than projected, but there was no sign of higher cost and price pressures, which could be consistent with a looser economy than estimated. At the same time, the labor market had not improved, and capacity use indicators were at low levels. In addition, raising the MPR would be an unexpected move and would give erroneous signals that the Board was concerned about an upward deviation of inflation.

All the Board Members felt that the option of increasing the monetary stimulus was no longer applicable. In the debate, it was easy to discard this option since the economic recover was



clearly solidifying. Given that this choice had been passed over in previous quarters, it would be harder to justify making the move now. Nevertheless, some Board Members mentioned that the option could still be relevant to the extent that external risks were coalescing. One Board Member held that lowering the MPR should still be considered as one of the options, since both CPI and CPIEFE inflation were at the edge of or outside the target range. The Board voted unanimously to hold the MPR at 2.5%.

JULY MEETING

At the July meeting, the economy's performance had improved somewhat more than projected in the baseline scenario of the June *Report*, although some risks had increased, in particular external risks.

The risks associated with an international trade war had intensified, triggering movements in the global financial markets. The discrepancy in the economic performance of developed countries, in terms of inflation and monetary policy, was sharper. This had led to a generalized depreciation of currencies against the dollar. Several participants highlighted the changes in commodity prices. At the same time, the risks surrounding the monetary policy normalization process had increased, considering that the markets were more sensitive to changes in the perception of how monetary policy would be calibrated over time and, in addition, some economies had seen an increase in vulnerability and/or their exposure to some degree of contagion. Several participants mentioned the flattening of the U.S. yield curve, emphasizing that an inversion of the yield curve is normally taken as an early sign of recession in that economy. Although this contrasted with other sources of information, such as the stock market, it signaled that the U.S. economy was probably at a turning point in its cycle, and it was difficult for it to continue to see such positive figures going forward. Nevertheless, this did not imply that the U.S. Federal Reserve would abstain from proceeding with its monetary policy normalization process in the case of a sharper increase in inflation.

With regard to local issues, the discussion touched on the size of the output gap. There was consensus among the participants that the most recent data confirmed higher-than-forecast growth in 2018. They emphasized, however, that there were still doubts regarding the effect on inflationary pressures. It would be a challenge to verify whether the surprise was concentrated solely in some tradables sectors, as suggested by some sources of information. If so, the expected impact on the rest of the economy would be lower. Additionally, the frequent revisions to the growth forecasts could be pointing rather to the economic,

cycle process occurring sooner while the higher expected inflation mainly reflected the exchange rate trend. The evolution of the labor market, in turn, suggested that there were still gaps in the economy. Annual headline inflation had risen, largely due to the more volatile components. In this context, inflation expectations had not changed significantly.

All the Board Members considered that the macroeconomic scenario was in line with the baseline scenario of the June *Report*, which projected that the MPR would begin to return to a more neutral level late this year or early next year. All the Board Members agreed that the option of increasing the monetary stimulus was no longer applicable, since the downside risks for inflation convergence had weakened. Nor was it justified by the changes in the external scenario. Thus, all the Board Members agreed that the relevant options were (i) to hold the MPR at 2.5% or (ii) to begin the MPR normalization process at that meeting.

With regard to the first option, all the Board Members felt that it was consistent with the baseline scenario of the June *Report* and with the monetary policy strategy therein. It was argued that although short-term inflation was higher than expected, this was mainly due to the exchange rate depreciation and the higher fuel prices, which in turn could be associated with a worse outlook for the external scenario. Additionally, the increase in local output derived mainly from transitory factors, and the labor market continued to point to excess capacity. It would therefore not be surprising to see lower-than-expected growth rates in the second half, reducing the probability of a more systematic acceleration of growth led by investment. Furthermore, the external risks could have different effects on the local economy in the short and long terms. An intensification of the trade conflicts and imbalances in the developed world could put pressure on inflation in the short term through the exchange rate, but it could have a contractionary impact on output and inflationary pressures in the medium term.

With regard to the second option, all the Board Members mentioned that it was only consistent if it was deemed necessary to start the monetary policy normalization process sooner than projected in the last *Report*. While there was little evidence in favor of this possibility, the main argument was that the more dynamic economy could cause the output gap to close more quickly, generating additional inflationary pressures. The evidence on the state of the output gap was contradictory. The data mostly indicated that the economy was moving out of the weak phase of the cycle and into a period of more self-sustaining growth, while the risks of persistently low inflation were lifting. Another point was that while holding the MPR at its current level was the most appropriate decision at that meeting, the probability of a more vigorous recovery of investment had been increasing, which could affect the way the MPR normalization process unfolded. Thus, the Board voted unanimously to hold the MPR at 2.5%.

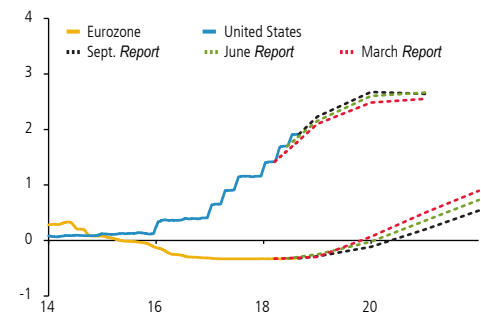
I. INTERNATIONAL SCENARIO

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.

Over the course of the year, the changes in the external scenario have affected financial conditions and the terms of trade. The former, while still favorable from a historical perspective, have tightened for emerging economies, especially those that are perceived as having weaker macroeconomic fundamentals. The latter have deteriorated considerably in recent months, as the copper price has dropped significantly, reaching its long-term level much faster than expected. Thus far, the world growth outlook has changed only moderately, and growth rates are expected to decline in 2019 and 2020. The adjustments come within the context of the usual revisions and are in line with the evolution of the global economic cycle. At the same time, the risks of the external scenario continue to be skewed to the downside in terms of their impact on local activity, and on the whole they are somewhat more probable. Within the range of risks, the biggest concern continues to be an abrupt deterioration in financial conditions for the emerging world, whether because the U.S. Federal Reserve (Fed) implements its monetary normalization faster than projected, because the escalation of the U.S.-China trade conflict generates more tension in the financial markets, or because the global markets increase their risk perception for the emerging world as a whole.

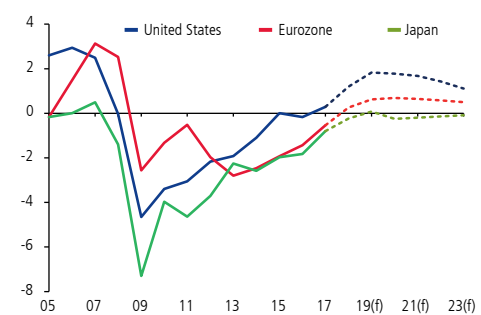
Global financial conditions remain favorable retrospectively speaking, but they have tightened for some emerging countries that are perceived as more vulnerable. In the developed world, monetary policy has continued to diverge, as countries face different scenarios in terms of the output gap and inflationary pressures (figure I.1). The Fed raised the federal funds rate by 25 basis points in June and has signaled two more hikes this year and three next year, while continuing to reduce the size of its balance sheet. The market also expects two more hikes this year and incorporates the possibility of one or two in 2019. In contrast, the European Central Bank extended its asset purchase program, which is scheduled to be cut in half beginning in September and should end this year. The ECB also signaled that its reference rates will not move at least until the second half of 2019. Japan, in turn, did not change its monetary policy in the period, and the monetary authority maintains its asset purchase program.

FIGURE I.1
Market expectations for the MPR (*)
(December of each year, percent)



(*) United States: federal funds rate; Eurozone: Euribor.
Source: Bloomberg.

FIGURE I.2
Real and expected output gap
(percent of potential GDP)



(f) Forecast.
Source: IMF.

Commodity prices also suffered in the period (figure I.6), with a sharper drop for metal prices. The copper price, in particular, fell nearly 15% comparing the average of the ten business days prior to the cutoff date of this and the last *Report*. Going forward, the price forecast is US\$2.95, \$2.85, and \$2.80 a pound for 2018, 2019, and 2020, respectively (versus US\$3.10, \$2.95, and \$2.85 in the June *Report*). The average of the Brent and WTI oil prices declined around 1% based on the average of the ten business days prior to the cutoff date of this and the last *Report*. The two prices moved in opposite directions, with the Brent falling and the WTI rising since the last *Report*. This reflects the previously mentioned trends, which have put downward pressure on the price, and supply factors that have pushed prices up. The latter include concerns for how Iranian crude oil production will react to sanctions from the United States and lower-than-expected inventories that surprised the market. The price elasticity of supply continues to point to a downward price trend, in line with market futures prices.

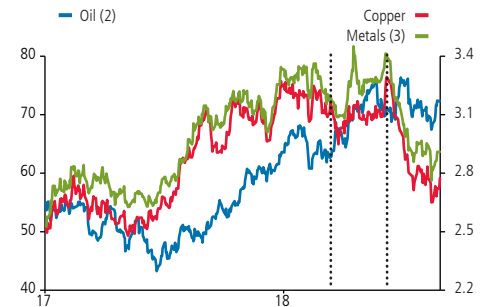
In this context, over the course of the year, the dollar has appreciated significantly against most currencies, with some easing at the margin. In the emerging world, spreads increased in the period, and capital outflows continued (figures I.7 and I.8). Two-year interest rates have generally increased in the developed world, although longer rates declined on aggregate. The stock markets, while fluctuating, generally fell in the emerging bloc and rose in the developed.

The increased risk perception has translated into a small revision of the world growth outlook. Thus, the growth forecast for the 2019–2020 two-year period is lower than for 2017–2018: 3.5% versus 3.7%, respectively (table I.1). By bloc, the forecast for developed countries has not changed since the June *Report*. In contrast, the forecast for emerging countries was revised downward, due to the lower growth estimate for China in 2019 and significant adjustments in Latin America in 2018 and 2019, especially in Argentina and Brazil (figure I.9). In Argentina, the strong currency depreciation, a clearly contractionary monetary policy, and fiscal adjustment measures have combined with the drought affecting the agricultural sector, resulting in a strong economic contraction in June (–6.7% annually) and a drop in industrial production in July in annual terms. Toward the cutoff date of this *Report*, the Argentine peso depreciated sharply due to market fears over the weak economy. In Brazil, the adjustment is largely due to idiosyncratic factors, such as the effects of the truck drivers’ strike, the political uncertainty, the drop in business confidence, and the effect of low real wage growth on consumption.

In sum, as described above, the risks of the external scenario continue to be skewed to the downside in terms of the impact on domestic output. The biggest risk continues to be an abrupt deterioration in financial conditions for the emerging economies, possibly deriving from a sharp hike in the federal funds rate in the United States, with negative consequences for world growth. In recent months, the trade conflict between the United States and China has escalated, which represents a risk for financial conditions, commodity prices, world trade,

FIGURE I.6

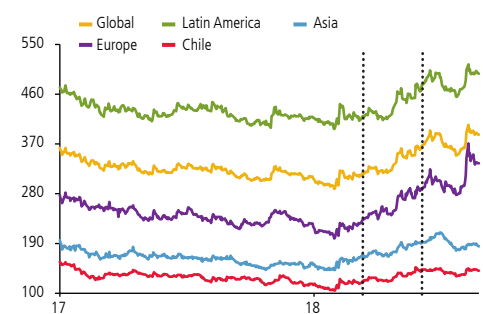
Commodity prices (1)
(US\$/barrel; US\$/lb; index: 2017–18 avg.=3.00)



(1) Vertical dotted lines mark the cutoff dates for the March and June 2018 *Monetary Policy Reports*.
(2) Simple average of the Brent and WTI oil prices.
(3) The metals sector of the Standard & Poor’s GSCI.
Source: Bloomberg.

FIGURE I.7

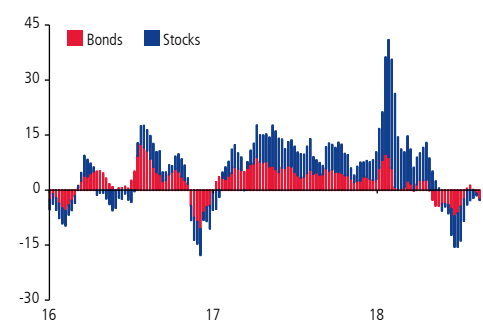
Sovereign spreads (*)
(basis points)



(*) Measured by EMBI spreads. Vertical dotted lines mark the cutoff dates for the March and June 2018 *Monetary Policy Reports*.
Source: Bloomberg.

FIGURE I.8

Capital flows to emerging countries
(US\$ billion, moving month)



Source: Emerging Portfolio Fund Research.



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

	Ave. 00-07	Ave. 10-16	2017 (e)	2018 (f)	2019 (f)	2020 (f)
World at PPP	4.5	3.9	3.7	3.8	3.6	3.4
World at market FX	3.2	3.1	3.2	3.1	2.9	2.8
Trading partners	3.6	4.0	3.7	3.6	3.5	3.4
United States	2.7	2.2	2.2	2.9	2.3	1.9
Eurozone	2.2	1.1	2.4	2.1	1.9	1.7
Japan	1.5	1.5	1.7	1.0	0.8	0.5
China	10.5	8.1	6.9	6.6	6.2	6.1
India	7.1	7.4	6.7	7.3	7.6	7.6
Rest of Asia	5.2	4.6	4.4	4.2	4.1	4.2
Latin America (excl. Chile)	3.4	2.3	1.1	1.3	2.1	2.6
Commodity exporters	3.1	2.5	2.7	2.3	2.2	2.2

(*) See glossary for definitions.

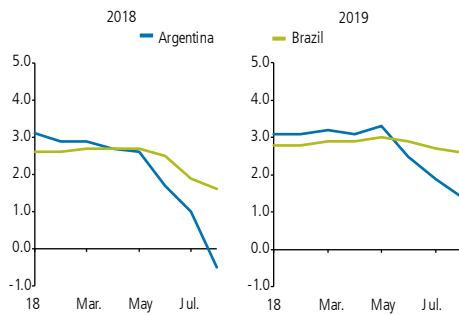
(e) Estimate.

(f) Forecast.

Sources: Central Bank of Chile, IMF, and the statistics offices of each country.

and global trend growth. Additionally, the measures taken by China to boost demand have given rise to a resurgence of fears over market imbalances in that economy. In this context, the emerging economies in general—and in particular those perceived as having weak macroeconomic fundamentals and little room for applying countercyclical measures—could see a further decline in their growth outlook and additional currency depreciations. In a context of lower risk appetite, emerging economies with more solid fundamentals could also be affected should a higher-stress scenario materialize. With regard to commodities, the copper price could decline steadily to below its long-term level, with negative consequences for the local terms of trade. In Europe, the United Kingdom's exit from the European Union continues to be a critical issue.

FIGURE I.9
Market growth forecasts
(annual change, percent)



Source: Consensus Forecasts.

BOX I.1**TRADE CONFLICT: EVOLUTION AND EFFECTS ON THE WORLD ECONOMY AND CHILE**

Over the past few months, the risk of a trade war has risen, with the deterioration of trade relations between the United States and its main trading partners, in particular China. The situation has escalated rapidly, and it is one of the key sources of concern captured in surveys of various stakeholders, including businesses, households, and financial market participants. Despite this sensation of a more present risk, thus far the actions adopted are limited and their macroeconomic impact would be small. Nevertheless, the threats have intensified, and should they materialize, they would accentuate the possible negative effects of a trade war. These fears have already motivated policy reactions from the economies that are directly involved. For example, China loosened its monetary policy at the margin and could increase the dose of its fiscal stimulus. While these measures would cushion the effects in the short term, they would do so at the expense of amplifying the significant risks that have been identified in that economy. This box, which complements box I.1 in the last *Financial Stability Report*, describes the recent developments in this area, together with the mechanisms through which the Chilean economy could be affected.

Background

In the second half of the twentieth century, global trade doubled as a percent of GDP, bolstered by the development of an institutional structure that improved conflict resolution. This had a significant impact on growth and well-being at the global level, through a direct effect on the efficient allocation of resources^{1/}. The United States was one of the pioneering economies in trade openness, mainly through unilateral measures. In the early 1990s, the average tariff was approximately 3%, far below the global average of 12% in the period. However, the current U.S. administration has deemed that part of the deterioration in certain sectors of the economy—such as the car and metal industries—is related to the world trade regime, which is potentially disadvantageous to them. Based on this assessment, the government decided to take action to reverse the situation. Thus, in January, the United States increased tariffs on imported washing machine and solar panel; in March, tariffs were announced on steel and aluminum—which were fully applied

in June—citing national security reasons to get around World Trade Organization (WTO) restrictions. It later announced and implemented specific tariffs against China, for what it considered to be intellectual property theft. The administration then requested an investigation into whether the retaliation adopted by the Chinese government merited the imposition of additional sanctions totaling US\$200 billion, which could enter into force in the coming months—stating that it could potentially apply the tariffs to all imports from China, which were nearly US\$500 billion in 2017. Extending the scope of the tariffs could become increasingly complex to the extent that it involves a larger share of consumer goods and/or goods for which there are no easy substitutes. Furthermore, the report is still pending on the investigation into imposing tariffs on cars and parts, which is expected to be released in the first quarter of 2019. Thus far, the measures that have been implemented affect a small share of U.S. imports (a little less than 5%), but the implementation of all the announced measures could potentially affect around 30% of total U.S. imports.

While several trading partners have responded to the measures with proportional retaliations, in the case of China, the difference in the volume of trade with the United States limits the government's ability to respond. Nevertheless, it is not clear whether they would be willing to extend the conflict to other areas, considering that around 20% of all foreign direct investment in China comes from the United States and that China currently accounts for the largest nonresident holding of U.S. Treasury bonds. This could be very costly for the Asian economy itself. The recent U.S. announcement on an agreement with Mexico and the negotiations between the United States and the European Union could point to a scenario in which the conflict narrows to just the U.S.-China relationship.

Implications

The potential effects of these measures on the global economy are difficult to quantify, as they depend on the number of countries that are directly and indirectly involved, the amounts subject to the tariffs, the sectors affected, and the period in which the largest tariffs would be applied^{2/}.

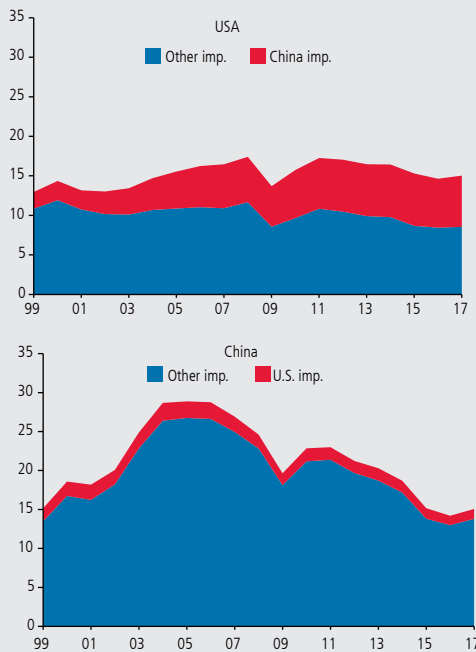
^{1/} See, for example, Ahmed (2016), Ahn et al. (2016), and Cerdeiro and Komaromi (2017).

^{2/} The International Monetary Fund (IMF) estimated the impact of the current measures on world growth at a half of a percentage point, accumulated through 2020. See the *Financial Stability Report*, First Half 2018, box I.1.



Nevertheless, there are some qualitative dimensions and some common transmission channels for the different possible scenarios that can provide some indication. For economies that are directly involved, there would be a negative impact due to the lower external demand and greater uncertainty, which would affect local consumption and investment decisions. The size of the impact is related to the degree of trade between the directly involved parties and their ability to redirect it to other economies. In the case of China, for example, since 2005 the share of exports to the United States in terms of its total economic growth has been cut in half (figure I.10). In addition, there are some automatic stabilizers that have to be taken into account. For example, lower external demand causes a depreciation of the currency of the economy facing higher tariffs, making its production relatively more accessible. In contrast, the economy that is imposing the tariffs should see a currency appreciation. Unless this appreciation offsets the hike in the tariffs, the higher prices on imported goods should temporarily push up inflation. In the case of the United States, this higher imported cost pressure would exacerbate the currently tight economy, potentially generating larger current account imbalances and additional pressure to speed up the rate of monetary policy normalization. Both results are things the U.S. government would like to avoid.

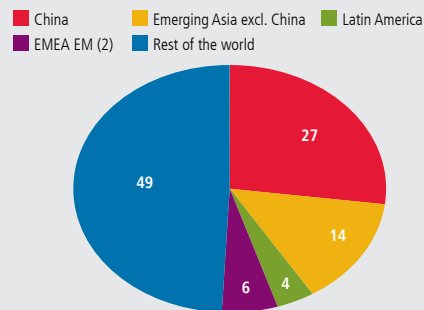
FIGURE I.10
Trade between the United States and China
(percent of GDP of each country)



Source: Bloomberg.

For economies that are not directly involved, the impact depends on whether their export sector produces goods that are complements or substitutes for the tariffed goods. The former would be negatively affected, whereas the latter could benefit if they replace production in other economies. From a macroeconomic perspective, the direct impact would depend on each economy's degree of integration in global production processes. Estimates by JP Morgan suggest that a third of China's exports to the United States generate value added outside of China^{3/}. The east Asian economies could be particularly affected, through both the volume of trade with directly involved economies and their location in the final links of the value chain (figure I.11).

FIGURE I.11
United States: Value-added trade balance (1)
(percent of total)



(1) Data published in the report, "China Trade in Value Added Terms," 18 March 2018.
(2) Europe, Middle East, and Africa.
Source: J.P. Morgan.

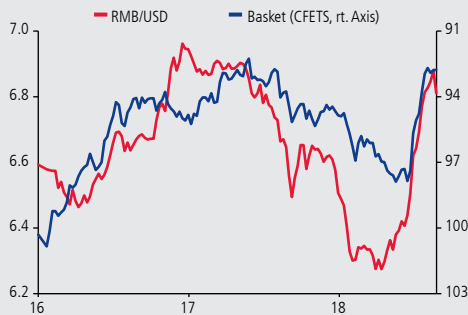
Special attention should be paid to the effects on the financial markets and asset prices, especially given that the U.S. Federal Reserve continues to move forward with its monetary policy normalization process. The uncertainty surrounding the trade tensions could reduce the appetite for risk, generating capital outflows from the emerging economies. Thus far, this adjustment has been selective, with significant effects confined to some vulnerable economies, such as Argentina and Turkey. For an economy with strong fundamentals, like Chile, one possible risk is a synchronized adjustment in asset prices in emerging economies, as occurred in the late 1990s or during the global financial crisis. In this sense, a scenario characterized by heightened uncertainty, tight financial conditions, and an appreciated dollar is particularly negative for commodity prices, especially copper.

^{3/} Data published in the report, "China Trade in Value Added Terms," 18 March 2018.

China's response and latent risks

In the most recent period, China's economic authorities have been under pressure on two fronts: threats of a trade war with the United States and a sharper-than-expected slowdown in economic growth. In this context, stimulus measures have been reintroduced, reversing some of the measures adopted in 2017 that sought to limit the risks of over-indebtedness and promote more balanced, cleaner growth. With regard to monetary policy, the People's Bank of China has guided interest rates down and injected liquidity in the banking sector by cutting reserve requirements on two occasions in 2018. At the same time, it has allowed the currency to depreciate—close to 10% since March—without intervening, which has partially offset the higher tariffs on Chinese goods (figure I.12). On the fiscal front, debt limits have been eased for local governments, allowing them to issue debt at lower interest rates and raising restrictions on public-private partnerships in order to stimulate investment in infrastructure. In addition, business and household taxes have been reduced for a total of approximately 1.3% of GDP, and environmental restrictions have been eased, which has already contributed to a temporary uptick in industrial production.

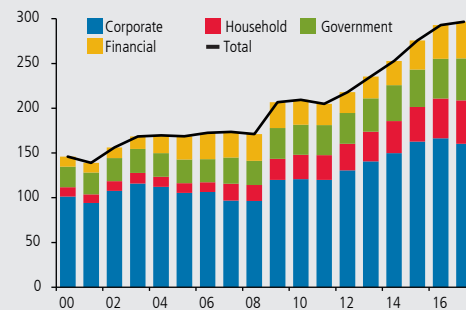
FIGURE I.12
China: Nominal exchange rate (*)
(original series; index: 31 Dec 14=100)



(*) An increase indicates depreciation.
Source: Bloomberg.

How much room do the Chinese authorities have to increase the demand stimulus? The biggest issue has to do with the level of some imbalances. First, the overall debt level of the economy is approaching three times its GDP, which is very high, especially for an emerging economy (figure I.13). While this debt is primarily denominated in local currency, a large share originated in an informal or scarcely regulated industry. Second, although the fiscal deficit was officially around 4% of GDP in 2017, it could exceed 10% of GDP if local government balance sheets are included in the calculation, according to IMF estimates. Third, expectations of a larger currency depreciation could trigger capital outflows, which in the past have led to significant losses in international reserves. Reserves have shrunk from 37% of GDP in 2014 to 25% in 2017, providing a much less comfortable starting point. While some of these risks seem less urgent than a couple of years ago, the application of an additional dose of stimulus to an economy that has been accumulating imbalances, in a context of greater uncertainty and tighter financial conditions for emerging economies, amplifies the risks in the medium term.

FIGURE I.13
China: Total debt
(percent of GDP)



Source: Institute of International Finance.

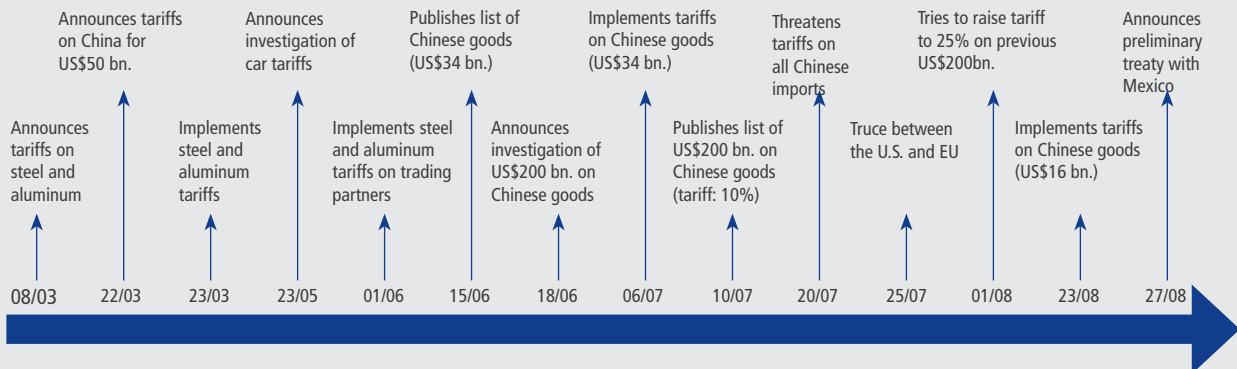
Considerations for Chile

The trade conflict could affect Chile through several channels. An escalation of the conflict would certainly cause a reduction in the growth of Chile’s trading partners, particularly China, and/or an increase in the medium-term risks, over and above the particular effects on specific export sectors of our economy—depending on whether they produce goods that are complements or substitutes for the tariffed products. It could also generate a significant deterioration in financial conditions for the emerging world, as well as a steady reduction in the copper price to below its long-term level. This external scenario could generate worse terms of trade, a depreciation of the peso (which works as an

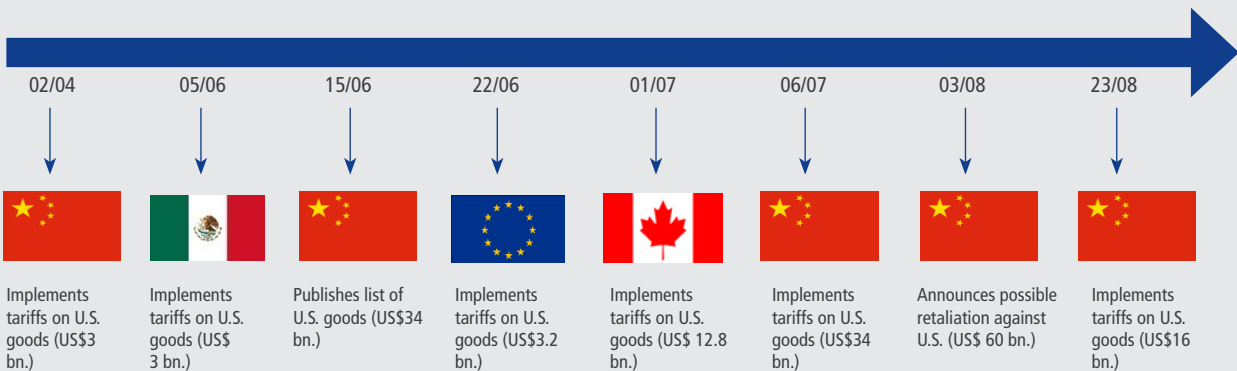
automatic stabilizer), and a lower growth outlook, especially due to a downward adjustment in investment. The effects on inflation are not entirely clear. The depreciation would generate upward pressure in the short term, while the lower growth would widen the output gap, generating disinflationary pressure in the medium term. The appropriate monetary policy response in this scenario largely depends on the relative magnitude and persistence of these shocks and their impact on inflation expectations. Chile has an economic policy framework that allows it to absorb external shocks and reduce their negative effects, in particular a flexible exchange rate and a monetary policy based on a two-year inflation target.



United States: Key announcements (*)



Trading partners: Key announcements



(*) Billions (bn.): a thousand million.

Sources: Peterson Institute for International Economics (PIIE) and Central Bank of Chile.

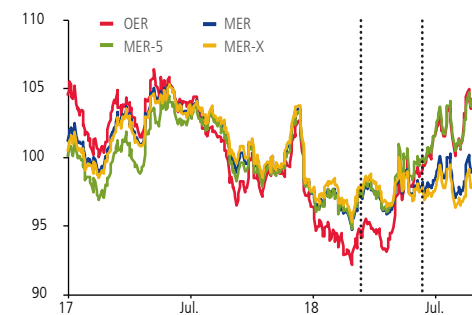
II. FINANCIAL CONDITIONS

This chapter reviews local and external financial conditions.

External financial conditions remain favorable from a historical perspective, but they have tightened for the emerging economies, especially those perceived as having weaker macroeconomic fundamentals. This reflects a combination of several factors, including the intensification of the U.S.-China trade conflict, the divergence of monetary policy in the developed world, and geopolitical conflicts. Chilean interest rates and spreads have remained at the margin of these effects, thanks to the shock-absorbing role of the floating exchange rate, the perception of a stronger business cycle than other emerging economies, and solid macroeconomic fundamentals. Thus, local financial conditions remain favorable, characterized by low lending rates and moderate credit growth, with qualitative indicators pointing to higher demand and somewhat slack supply.

As indicated, external financial conditions remain favorable from a historical perspective, but they have tightened for the emerging economies, especially those perceived as having weaker macroeconomic fundamentals. Several factors explain this adjustment over the past six months, including the decisions and announcements by monetary authorities in the developed world, motivated by output and inflation data indicating higher inflationary pressures in the United States and lower or stable pressures in most other developed economies. In this context, market expectations point to a greater divergence between monetary policy in the United States and the rest of the developed world. Additionally, the intensification of the U.S.-China trade conflict and the emergence of new geopolitical tensions have heightened the perception of risk in the financial markets, translated into a strengthening of the U.S. dollar, and reduced long-term interest rates in several countries. There have also been adjustments in commodity prices, stock markets, exchange rates, and capital flows in emerging economies. Spreads have risen slightly, but they remain low from a historical perspective (figure I.1).

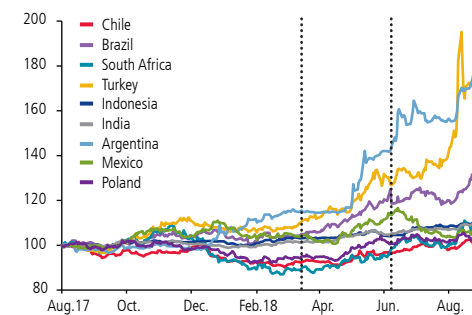
FIGURE II.1
Nominal exchange rate and multilateral measures (*)
(index: 2017–2018=100)



(*) Vertical dotted lines mark the cutoff dates for the March and June 2018 *Monetary Policy Reports*.

Source: Central Bank of Chile.

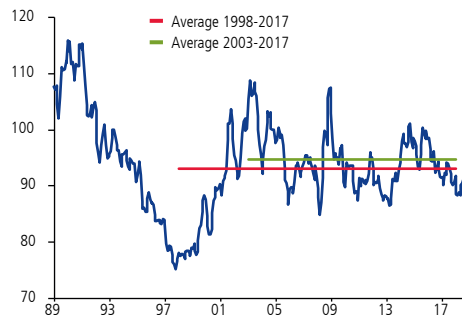
FIGURE II.2
Parities (*)
(index: 01. Aug. 17=100)



(*) Vertical dotted lines mark the cutoff dates for the March and June 2018 *Monetary Policy Reports*.

Sources: Central Bank of Chile and Bloomberg.

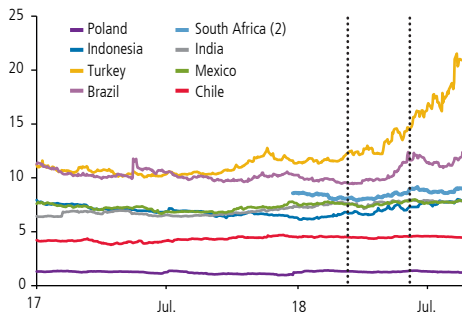
FIGURE II.3
Real exchange rate (*)
(index: 1986=100)



(*) for August 2018, data are through the 28th.

Source: Central Bank of Chile.

FIGURE II.4
Long-term interest rates (1)
(percent)

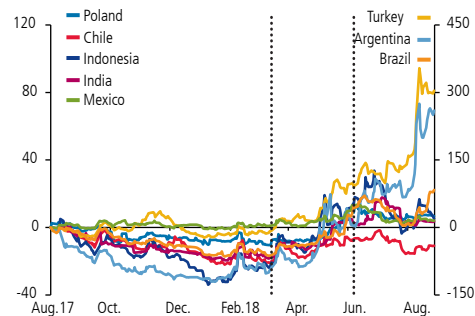


(1) Interest rates on ten-year government bonds. Vertical dotted lines mark the cutoff dates for the March and June 2018 *Monetary Policy Reports*.

(2) The nine-year rate is used as a proxy.

Sources: Central Bank of Chile and Bloomberg.

FIGURE II.5
Spreads (*)
(basis points)



(*) Deviations from 01 August 2017. Measured by 5-year CDSs. Vertical dotted lines mark the cutoff dates for the March and June 2018 *Monetary Policy Reports*.

Source: Bloomberg.

The consequences of the adjustment in global financial conditions have been most notable in emerging economies that are perceived as having weaker macroeconomic fundamentals; that have a higher trade or financial exposure to trade tensions; and/or that are seen as being adversely affected by idiosyncratic factors. The cases of Argentina and Turkey stand out. Chile, in turn, is facing the current climate with better macroeconomic conditions in terms of growth, inflation, and the balance of its fiscal and external accounts.

One financial issue that receives attention during this type of situation is external debt. A close examination requires assessing not only the level of external liabilities, but also their nature, counterparty assets, and exposure to changes in interest rates and the exchange rate. Thus, although Chile's external debt seems high in comparison with its peers, a detailed analysis of the specific characteristics shows that it does not reflect a vulnerability to sharper currency depreciation. Moreover, the economy has a favorable net international investment position relative to other economies, both emerging and developed (box II.1). In any case, a small open economy like Chile is not immune to new episodes of financial stress in which, unlike the events of the past few months, the market stops differentiating between emerging economies with strong versus weak fundamentals, such that the adjustments end up permeating the economy. The risks of the external scenario highlight the need for the country to maintain solid macroeconomic fundamentals, in particular a fiscal consolidation path, sustainable debt levels, and adequate bank capitalization.

The mild reaction of the Chilean market to episodes of global financial shocks largely reflects the stabilizing role of the floating exchange rate in the policy framework^{1/}. Thus, the greater change in the domestic market in response to the recent turbulence was reflected in the depreciation of the peso against the U.S. dollar, consistent with the strengthening of U.S. currency at the world level and the decrease in the copper price. In multilateral terms, the peso depreciated less, and it even appreciated against other emerging economies and commodity exporters, demonstrating the greater relative strength of the Chilean economy. Thus, on the cutoff date of this *Report*, the nominal exchange rate was just over Ch\$660 to the dollar (+5.4% in the period), while the MER, MER-X, and MER-5 increased 1.6%, 0.7, and 4.5%, respectively (figures II.1 and II.2 and table II.1). The real depreciation of the peso was also lower (around 1% relative to the cutoff date of the last *Report*), and it remains below its long-term levels (figure II.3). As a working assumption, the RER is expected to return to values near its fifteen- to twenty year averages over the course of the policy horizon.

With regard to long-term interest rates, in 2018 ten-year rates (BCP-10) have stayed close to the levels of the last quarter of last year, in contrast to the adjustments in other economies (figure II.4). A similar trend was recorded for different local risk measures, which, unlike similar economies, have been relatively stable or undergone smaller, more gradual adjustments (figure II.5).

^{1/} See the *Monetary Policy Report*, March 2018, box II.1.

Bond placements—accumulated in 12 months—continued to grow, mainly due to the issue of bank securities, especially in the local market. Corporate debt issues continued to follow an upward trend, in both the domestic market and the external sector.

TABLE II.1
U.S. dollar exchange rates (1)
(percent)

	Change in NER, September 2018 Report			
	Jun.18 Report	Mar.18 Report	Dec.17 Report	Sept.17 Report
Latin America (excl. Chile) (2)	1.4	11.5	10.5	14.9
Brazil	6.7	23.6	23.4	27.3
Chile	5.4	10.4	4.8	3.4
Colombia	4.5	4.8	-0.2	0.9
Mexico	-5.6	1.4	0.5	6.9
Peru	1.0	1.4	1.8	1.9
Commodity exporters (2)	4.2	7.0	2.9	6.6
Australia	3.8	6.9	3.8	8.3
Canada	0.7	1.0	2.3	3.9
New Zealand	5.2	9.5	3.2	9.3
South Africa	13.3	21.7	2.5	9.6
Developed economies (2)	7.1	12.1	7.0	7.4
Eurozone	8.9	15.0	10.0	10.1
Japan	1.2	4.2	-1.2	1.2
United Kingdom	13.7	18.3	12.9	9.6
Other emerging economies				
China	7.0	8.3	3.6	3.0
South Korea	4.4	4.7	2.2	-1.0
India	4.0	7.7	7.7	9.2
Indonesia	4.9	6.1	8.0	9.4
Poland	1.3	9.4	4.0	3.1

(1) Positive (negative) sign indicates depreciation (appreciation) of the currency against the U.S. dollar. The comparison is based on the last ten business days before the cutoff date of each *Monetary Policy Report*.

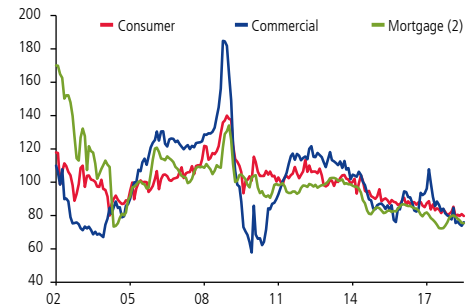
(2) Includes the currencies of the economies included in this table, using the weights in the April 2018 WEO.

Sources: Central Bank of Chile, Bloomberg, and International Monetary Fund.

The stock exchanges have been marked by higher returns in the developed economies, in particular in the United States, and declines in several emerging economies relative to the start of the year. In this context, the local stock exchange (IPSA) has also fallen—somewhat more sharply in recent months, consistent with the greater exposure of Chilean firms to Brazil and Argentina. The recent movements were, on average, in line with trends in Latin America and somewhat larger than other emerging economies.

With regard to domestic credit, local financial conditions are still favorable, in line with the expansionary monetary policy. Thus, interest rates remain low in most segments, with no significant changes since the last *Report* (figure II.6). In loans, the most notable trend was the increase in the real annual growth rate of the commercial portfolio, which was just below the average of the last ten years, due to a larger contribution from the exchange rate. The consumer segment did not change significantly, while residential mortgages continued to slow, although the growth rate was still higher than in the other portfolios (figure II.7). Foreign trade loans—denominated in dollars—have been marked

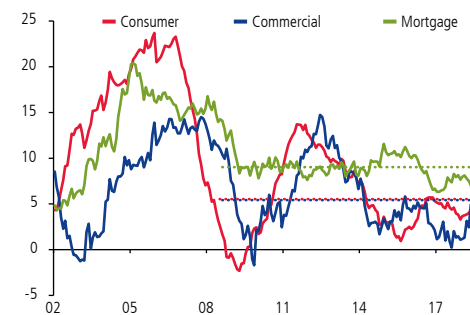
FIGURE II.6
Interest rates by type of loan (1)
(index: 2002–2018=100)



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

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

FIGURE II.7
Real loans (1) (2)
(annual change, percent)

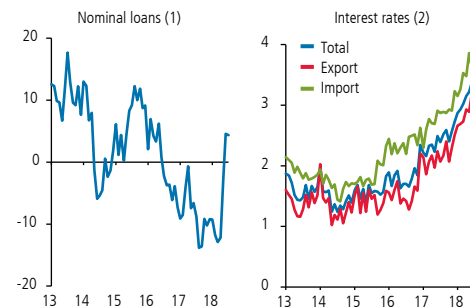


(1) Real data constructed by splicing the 2013 base year CPI.

(2) Horizontal dotted lines indicate the average of the last 10 years for each series.

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

FIGURE II.8
Foreign trade
(percent)

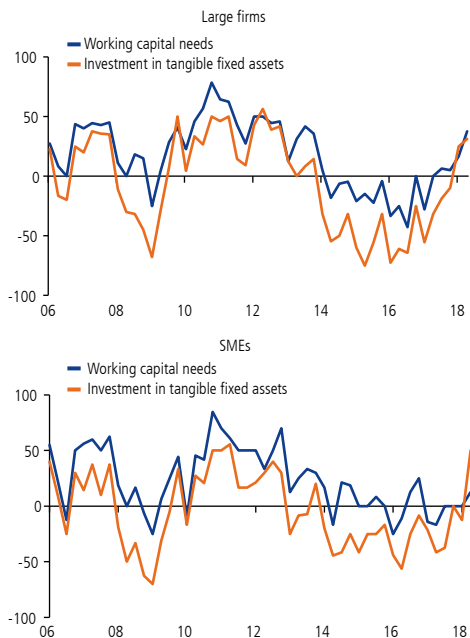


(1) Annual change.

(2) Annual rates in U.S. dollars.

Source: Central Bank of Chile.

FIGURE II.9
Factors behind the changes in credit demand (1) (2)
(average response, percent)

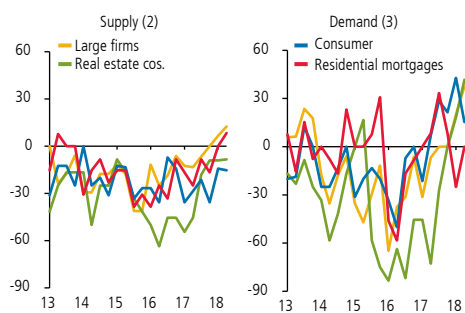


(1) Average of all survey responses in the quarter.
(2) Negative (positive) values indicate weaker (stronger) demand than in the immediately prior quarter.
Source: Central Bank of Chile.

by an upward trend in interest rates since mid-2016, in line with the rise in the LIBOR. The higher annual growth rate of loans in this portfolio is mainly explained by contingent and import loans, while export-related loans had a negative contribution (figure II.8).

Qualitative measures of local financial conditions show some improvement. The Bank Lending Survey (BLS) for the second quarter of 2018 reported somewhat stronger demand in consumer segments and in real estate companies, large corporations, and small-and medium-sized enterprises (SMEs). In the latter two cases, the factors that explain the changes in the demand for credit include the need for working capital and investment in fixed assets (figure II.9). On the supply side, the BLS revealed slightly looser lending standards for mortgage loans and for large firms (figure II.10). In the August *Business Perceptions Report* (BPR), the interviewees maintained their assessment that interest rates are low and favorable for taking on debt. Additionally, the banks surveyed mentioned improvements both on the supply side and in the demand for funds, although this has not yet translated into a significant increase in actual loans. By sector, car loans remain particularly dynamic; rebates were mentioned as the main determinant of the increased vehicle sales.

FIGURE II.10
Bank lending survey (1)
(Average response, percent)



(1) Average of all survey responses in the quarter.
(2) Negative (positive) values indicate weaker (stronger) demand than in the immediately prior quarter.
(3) Negative (positive) values indicate tighter (looser) lending conditions than in the immediately prior quarter.
Source: Central Bank of Chile.

BOX II.1

FINANCIAL VOLATILITY AND EXTERNAL DEBT

For the past few months, the international scenario has seen a deterioration in financial conditions for emerging economies. This reflects, on the one hand, the gradual normalization of the monetary stimulus in the developed economies, in particular the United States, and, on the other, a lower risk appetite in the context of heightened uncertainty regarding the scope of the global trade conflict. In this type of scenario, emerging economies face a risk scenario in which external financial conditions can change abruptly, with rising interest rates, capital outflows, and sharp currency depreciation.

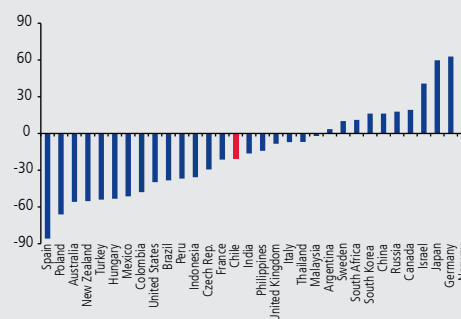
The Chilean economy is facing this climate with solid macroeconomic indicators. Growth rates are on the rise again, inflation is just below the 3% target, and there are no significant imbalances in the fiscal or external accounts^{1/}.

In this type of situation, one financial issue that receives a lot of attention is external debt. A close examination requires assessing not only the level of external liabilities, but also their exposure to changes in interest rates and the exchange rate. Thus, although Chile's external debt seems high in comparison with its peers, a detailed analysis of the specific characteristics shows that it does not reflect a vulnerability to sharper currency depreciation. Moreover, the economy has a favorable net international investment position relative to other emerging and developed economies^{2/} (figure II.11).

At year-end 2017, the total external debt of the Chilean economy was just over 60% of GDP. This level is around the median of a broad group of emerging and developed countries. Of the total Chilean debt, around 7% of GDP corresponds to the

central government. Here, it is important to point out that the government has a net credit position, as its dollar-denominated assets are more than double its liabilities and are held in highly liquid instruments^{3/} (figure II.12). About 9% of GDP corresponds to external bank debt, which is low compared with other emerging economies. Households, in turn, have a large stock of savings overseas in the form of pension fund investments. In July 2018, these were equivalent to about 32% of GDP, and a large share is held in highly liquid assets. Finally, the remaining 45% of Chile's external debt is held by the nonbank corporate sector^{4/}.

FIGURE II.11
Net international investment positions (*)
(percent of GDP)



(*) 2017 data, except for Malaysia, Mexico, Brazil, Indonesia, Philippines, and China, which use 2016 data.

Source: International Monetary Fund.

^{1/} The current account deficit in 2017 was 1.7% of GDP, and the projection for 2018 is 2.2%. The real fiscal deficit was 2.8% of GDP in 2017. For 2018, the Finance Ministry estimates that it will be 1.7% of GDP.

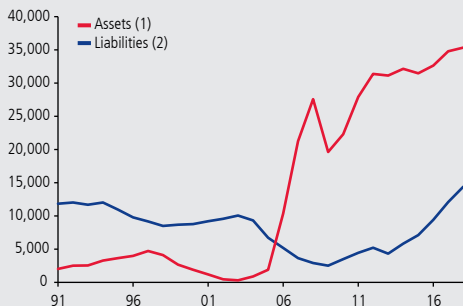
^{2/} For the purpose of international comparison, the figure uses data reported by the International Monetary Fund. The official Chilean data, from the national accounts, show a situation closer to equilibrium.

^{3/} Furthermore, the Central Bank has international reserves on the order of US\$38 billion, which are also invested in highly liquid assets.

^{4/} The evolution of corporate debt is analyzed in past *Financial Stability Reports*. The regular analysis in the *Report* reviews the evolution of total and sectoral debt, default indicators, and mismatches. In addition, several boxes address issues related to corporate debt and the risks associated with exchange rate fluctuations. See, for example, "Currency Mismatch in Currencies Other Than the Dollar," FSR 2016:2; "Currency Mismatch in the Nonfinancial Corporate Sector," FSR 2014:2; "Recent Dynamics of Corporate Debt," FSR 2017:1.



FIGURE II.12
Dollar-denominated assets and liabilities of the central government (US\$ millions, end of each period)



(1) Includes the Economic and Social Stabilization Fund, the Pension Reserve Fund, the Oil Stabilization Fund, the Infrastructure Fund, and the central government’s foreign currency investments.

(2) Includes debt issued in U.S. dollars and euros.

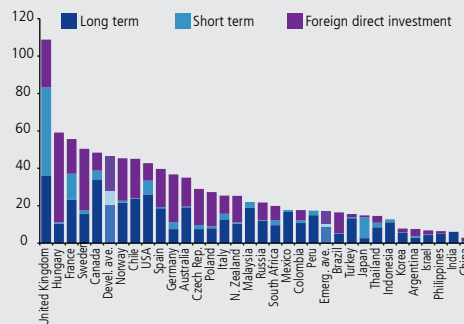
Source: Ministry of Finance.

From an international perspective, the level of external corporate debt in Chile is relatively high in comparison with the average of the emerging countries shown in figure II.13 (17% of GDP). In fact, Chile’s external debt is closer to the average of the developed economies in the same figure (46% of GDP). For a proper assessment of the potential vulnerabilities behind these figures, we need to take a more detailed look at the composition of the external corporate debt^{5/}. First, almost half the debt—21% of GDP—corresponds to liabilities associated with foreign direct investment (FDI)—that is, loans between related companies (parent-subsidiary). Given the nature of this relationship, the refinancing risk is lower than in the case of bank debt or publicly traded debt securities (bonds). The rest of external corporate debt is, for the most part, long term—24% of GDP—and it is largely held by firms that report their financial statements to the Financial Market Commission (FMC).

Considering all the external debt of corporations that report to the FMC, we can undertake a detailed analysis by disaggregating the debt by type of issuer (figure II.14). First, under this disaggregation, the amount of debt issued by publicly traded companies is equivalent to a little over 6% of GDP. Second, a similar share corresponds to firms that carry their books in dollars, which means that this is the relevant currency for their business. In this case, the issue of foreign-currency-denominated debt is the appropriate hedge for isolating the exchange rate

effect on their financial performance. Third, a percentage of the debt equivalent to around 4 points of GDP pertains to debtors that do their accounting in pesos. As mentioned in past *Financial Stability Reports*, these firms have a limited currency mismatch, both on average and at the extremes of the distribution. Thus, the external debt of firms with a mismatch of over 10% of their assets represents just 0.3% of GDP. This is explained by the fact that firms that choose to partially finance their operations in foreign currency have implemented policies to mitigate their currency risk through the use of derivative contracts.

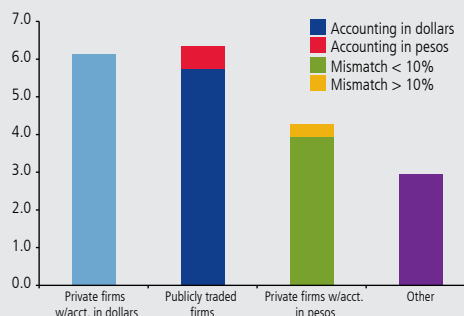
FIGURE II.13
External corporate debt (*) (percent of GDP)



(*) 2017 data. Excludes government debt and bank debt. Simple averages for the groups of developed and emerging countries.

Sources: Central Bank of Chile and World Bank.

FIGURE II.14
Characteristics of debt issued by firms that report to the FMC (*) (percent of GDP)



(*) 2017 data.

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

^{5/} For more detail on the analysis, see Fernández and Vasquez (2018).

Conclusions

External corporate debt in Chile is above the average for a sample of emerging economies, which is explained, in part, by the higher level of development of the local financial market. A more detailed review of the main issuers of external corporate debt reveals that the risks associated with refinancing and currency volatility are limited, either because of the type of creditor or due to the absence of significant currency mismatches. Additionally, within the set of corporations that report to the FMC, a large fraction has financed their overseas investments by taking out debt in Chile. Therefore, an analysis of Chile's external debt as a share of GDP may overstate the refinancing risk, since some of the value added is produced outside the country. The use of financial indicators such as assets and equity would appear to be a better option.

This facilitates the role of the flexible exchange rate regime in absorbing external shocks, in contrast with other emerging countries, precisely because both the corporate and financial sectors have adequate hedging, which is continuously monitored by the respective regulators. In fact, part of the effect of exchange rate exposure is reported in the financial statements of these issuers, both real and prospective.

This helps explain how, since the adoption of the flexible exchange rate in 1999, the Chilean economy has undergone several periods of significant peso depreciation, as in 2008, 2013, and 2015, without experiencing major problems in the corporate sector with dollar-denominated debt. This combination of a floating exchange rate, a monetary policy framework based on flexible inflation targets, and deep financial markets are fundamental pillars of the country's macroeconomic design.

III. OUTPUT AND DEMAND

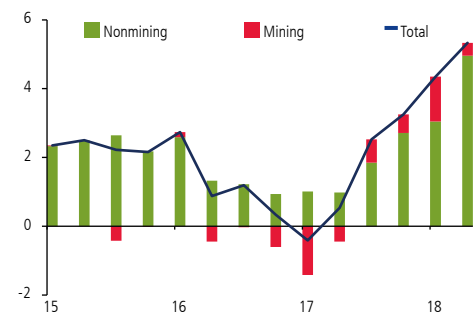
This chapter reviews the recent evolution of output and demand and their short-term outlook, in order to examine possible inflationary pressures.

In the second quarter of the year, the economy grew above the forecast in the June Report, with a positive surprise that spanned a range of sectors, including consumption-related lines, the production and sale of tradable goods, and investment-related services. By sector, trade, especially the wholesale segment, and business services led the bump in GDP in the period. Spending, which also surprised to the high side, reflected the better performance of private consumption, investment in machinery and equipment, and significant inventory accumulation.

The Board estimates that the output gap has narrowed faster than expected in June, and its absolute level—which is subject to a large degree of uncertainty (box V.1)—is close to zero. Other elements used in the assessment of inflationary pressures indicate that the economy still has excess capacity. Measures of installed capacity utilization continue to show slack capacity, and core inflation remains low. The labor market has only recently started to recover, and although it is expected to continue strengthening in the coming months, the degree of labor market slack could be larger than estimated due to high immigration and the increased participation of women and older workers.

The GDP estimate for 2018 has been revised upward, based on output in the first half of the year and the estimation of higher potential growth in the economy (box V.1). In the baseline scenario in this Report, GDP is expected to grow between 4.0 and 4.5% (versus 3.25–4.0% in June). Private expectations have also increased in recent months. In the Economic Expectations Survey (EES), expected growth rose from 3.8% in June to 4.0% in August, which is in agreement with most of the analysts considered in the Bloomberg forecast. For 2019 and 2020, the forecast ranges are similar to the June projections: 3.25–4.25 and 2.75–3.75%, respectively.

FIGURE III.1
Annual GDP growth
(contribution, percentage points)



Source: Central Bank of Chile.

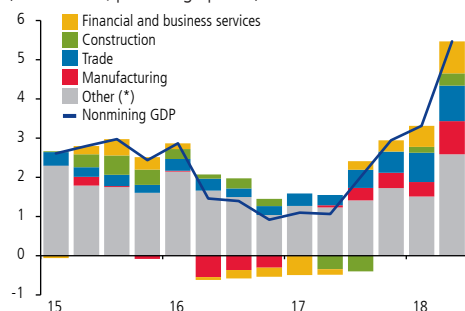
TABLE III.1
Gross domestic product
(share of GDP; real annual change, percent)

	Share.		2017				2018	
	2017	2016	I	II	III	IV	I	II
Agriculture, livestock, and forestry	3.1	3.7	-3.9	-1.5	-2.7	-0.7	1.2	7.8
Fishing	0.7	-12.3	43.6	11.5	23.9	4.6	-6.5	10.5
Mining	10.1	-2.8	-17.4	-5.5	8.3	6.8	19.1	4.8
Industry	10.2	-2.4	0.1	0.5	2.6	3.5	3.2	7.3
EGW and waste management	3.1	2.0	1.0	2.5	3.8	5.4	5.6	5.0
Construction	6.5	2.8	0.1	-4.7	-5.3	-0.1	2.5	4.6
Trade	9.2	2.5	2.9	2.3	4.6	4.7	6.0	8.1
Restaurants and hotels	2.1	0.3	-0.2	1.3	1.5	2.1	4.6	3.7
Transport	5.1	3.3	1.0	1.4	3.3	3.8	5.0	4.8
Communications and information services	2.6	2.6	2.3	3.8	4.6	4.9	4.7	4.0
Financial services	4.5	3.9	2.6	3.8	5.1	3.3	4.2	4.4
Business services	9.7	-2.6	-5.7	-3.0	-0.4	1.2	3.3	5.4
Residential and real estate services	7.8	3.0	3.5	2.7	2.9	2.3	2.3	3.2
Personal services (*)	11.9	4.9	3.3	2.8	2.8	4.1	4.7	4.5
Public administration	4.7	3.1	1.4	2.4	1.9	1.9	1.2	0.9
Total GDP	100.0	1.3	-0.4	0.5	2.5	3.3	4.3	5.3
Nonmining GDP	89.9	1.6	1.1	1.1	2.0	2.9	3.3	5.5
Mining GDP	10.1	-2.8	-17.4	-5.5	8.3	6.8	19.1	4.8

(*) Includes education, health, and other services.

Sources: Central Bank of Chile.

FIGURE III.2
Annual growth of nonmining GDP
(contribution, percentage points)



(*) Includes agriculture, fishing, EGW, transport and communications, residential services, personal service, public administration, VAT, and import duties.

Source: Central Bank of Chile.

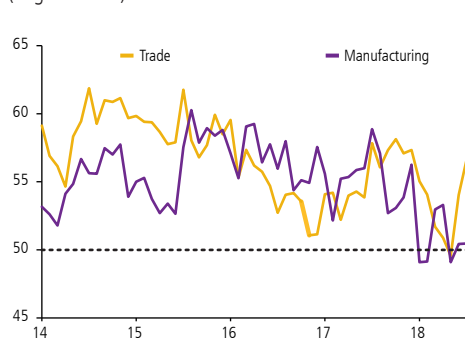
TABLE III.2
Domestic demand
(share of GDP; real annual change, percent)

	Pond.	2017						2018	
		2017	2016	I	II	III	IV	I	II
Domestic demand	98.3	1.3	2.5	3.6	2.2	4.0	4.0	6.0	
Domestic demand (excl. inventory change)	97.8	2.1	1.3	1.1	1.8	3.0	3.3	4.8	
Gross fixed capital formation	21.6	-0.7	-2.3	-4.6	-0.9	2.7	3.1	7.1	
Construction and works	13.7	-0.7	-4.7	-6.7	-5.9	-1.7	1.9	4.0	
Machinery and equipment	7.9	-0.8	1.8	-0.8	8.1	10.8	5.2	12.5	
Total consumption	76.2	2.9	2.4	2.8	2.5	3.1	3.4	4.2	
Private consumption	62.3	2.2	2.0	2.5	2.2	3.0	3.8	4.5	
Durable goods	5.7	4.8	11.5	10.9	12.2	7.8	8.8	13.3	
Nondurable goods	26.3	1.8	2.0	2.3	2.1	2.7	1.6	2.6	
Services	30.3	2.1	0.4	1.1	0.7	2.4	4.8	4.5	
Government consumption	14.0	6.3	5.0	4.3	3.7	3.4	1.5	2.8	
Change in inventories (*)	0.5	-0.7	-0.4	0.2	0.3	0.5	0.7	1.0	
Goods and services exports	28.7	-0.1	-4.4	-4.4	2.7	2.5	7.1	7.5	
Goods and services imports	27.0	0.2	5.6	6.3	2.0	5.2	6.1	10.0	
Total GDP	100.0	1.3	-0.4	0.5	2.5	3.3	4.3	5.3	

(*) Change in inventories as a percent of GDP, at average prices of the previous year, accumulated in the last 12 months.

Source: Central Bank of Chile.

FIGURE III.3
IMCE: perception of current inventories (*)
(original series)



(*) A value over (under) 50 indicates a perception that inventories are too high (low).

Source: Icare/Universidad Adolfo Ibáñez.

OUTPUT AND DOMESTIC DEMAND

In the second quarter of 2018, output grew 5.3% in annual terms. This brought the growth rate to 4.8% in the first half, versus 2.9% in the second half of 2017. As indicated in past *Reports*, the low basis for comparison from the first half of 2017 gave reason to expect higher growth in the first half of 2018. Mining GDP—which was strongly affected by the strike at the *Escondida* mine last year—grew around 11.5% in the half. However, nonmining GDP also grew above the forecast, with surprises in several sectors (table and figure III.1). The better performance was mainly concentrated in sectors tied to consumption, investment in machinery and equipment, and some services (figure III.2). This led to higher growth in some lines of wholesale trade oriented to the sale of machinery and equipment, in particular imports. Car sales also recorded a strong performance. In business services, the most dynamic components included architectural and engineering consulting and machinery rentals. A smaller boost came from other activities related to investment in construction, which increased in annual terms in the second quarter, but at a decreasing rate.

In the manufacturing sector, investment-related branches posted a more favorable performance, and some export-related segments have seen a recent recovery. In particular, the food and wine segments performed strongly, thanks to a better vintage vis-à-vis past years. This, in turn, contributed to higher growth in the agricultural sector as a whole. Fishing also recorded higher growth, backed mainly by aquaculture output.

On the spending side, total domestic demand grew 6% annually in the second quarter of the year (4% in the last quarter), exceeding the June forecast (table III.2). This reflects the aforementioned increase in spending on tradable goods and a large increase in inventories, which recorded an accumulated expansion of 1% of GDP in one year (0.7% in the last quarter). The increased stock derives largely from intermediate and capital goods imports in recent months. There are also higher inventories of exportable items, although this is mainly associated with the aforementioned supply shock in the wine sector. Business perceptions (IMCE) are that current inventory levels are too high in the trade sector and about right in the industrial sector (figure III.3).

When inventories are excluded, domestic spending grew 4.8% annually in the second quarter (3.3% in the first). By component, gross fixed capital formation (GFCF) in machinery and equipment grew above the forecast, in line with the more dynamic behavior of capital goods imports. The greater inventory accumulation of these products should provide an additional boost to this component of investment in the coming months. GFCF in construction and works recorded a higher annual growth rate than in the last quarter, but the growth rate has been declining over the course of the year. Some building

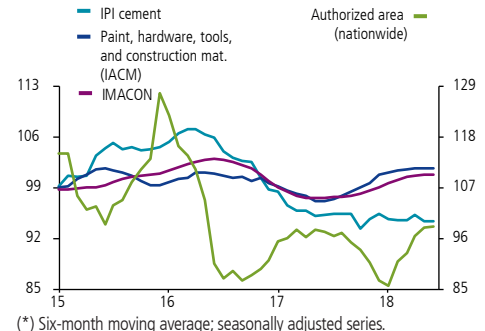
indicators have stabilized in the most recent period (figure III.4). The residential segment continues to normalize, after the spike in advance of the application of the VAT on construction. With regard to large works, the survey by the Capital Goods and Technological Development Corporation (*Corporación de Desarrollo Tecnológico y de Bienes de Capital, CBC*) for the second quarter does not show any major adjustments to projected investment in construction and engineering works for this year. There is, however, an upward revision to the amounts budgeted for the next three-year period, especially for 2021. Business expectations (IMCE) for construction are still in pessimistic territory, in contrast to other sectors. At the same time, there has been a recent uptick in construction employment.

A sectoral analysis shows that the growth of GFCF was concentrated in mining. In the first quarter, mining companies increased their investment in plant and equipment on the order of 40% in annual terms. Machinery imports for mining and construction grew at a similar rate, on average, between May and July, which exceeded total capital goods imports excluding unusual transport vehicles (figures III.5 and III.6). Qualitatively, according to the August *Business Perceptions Report* (BPR), goods and services providers for mining investment indicate that business has been improving over the course of the year, in contrast to other sectors. However, some interviewees added that current machinery purchases correspond to capital replacement necessary for maintaining current operations, as opposed to capacity expansion.

With regard to private goods consumption, routine consumption was driven mainly by spending on textile products and food. The durables segment returned to double-digit growth, as car sales and other items were more dynamic than projected, and these imports have tended to stabilize at high levels in recent months. Private services consumption grew around 4.5% annually in the second quarter (figure III.7).

As for the determinants of consumption, as of the cutoff date consumer confidence (IPEC) remained around the neutral threshold, while the labor market was beginning to pick up. Data from the National Statistics Institute (INE) reveal higher growth of wage jobs in the most recent period, mainly in the private sector. Nevertheless, unemployment increased, due to the larger expansion of the labor force. The annual growth rate of nominal wages is still low from a historical perspective, but the month-on-month change has tended to normalize after recording unusually low rates in late 2017 and early 2018. Data from other quantitative sources are somewhat more positive than the INE data, with a bigger jobs boost and a more modest slowdown in wages (figure III.8). The opinions collected in the last BPR point to low labor cost pressures, possibly due to process optimization on the part of firms, low job turnover, and an increase in the labor supply in some sectors. A number of events in the past few quarters make it difficult to assess the real degree of slack in the labor market, in particular the effect of immigration in recent years on both the labor force and wage pressures. This significant economic

FIGURE III.4
Building indicators (*)
(index: 2015–2018=100)



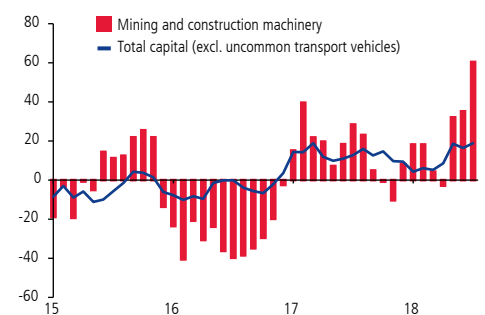
(*) Six-month moving average; seasonally adjusted series.
Sources: Central Bank of Chile, Chilean Chamber of Construction (CChC), and National Statistics Institute (INE).

FIGURE III.5
Mining: Investment in plant and equipment (*)
(annual change, percent)



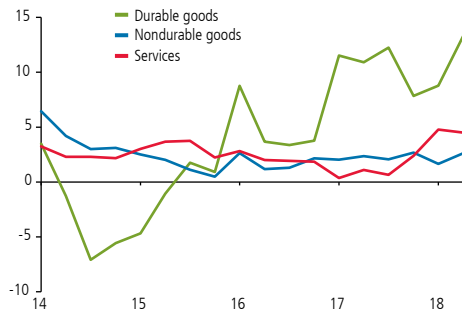
(*) Data from financial statements reported by the mining companies to the Superintendencia de Securities and Insurance, pursuant to Law 20,026 on the Taxation of Mining Activity. In particular, investment expense is explained in the note on “Property, plant, and equipment,” where “fixed asset additions” are recorded primarily under “plant and equipment” and “works in progress.”
Source: Central Bank of Chile.

FIGURE III.6
Nominal capital goods imports
(annual change in the moving quarter average, percent)



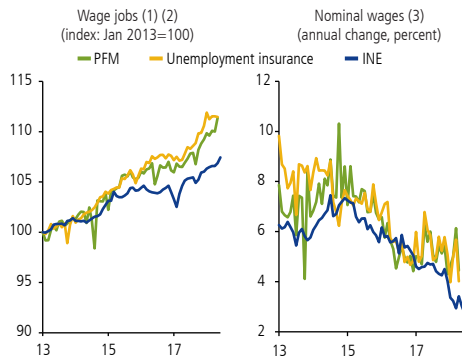
Source: Central Bank of Chile.

FIGURE III.7
Private consumption
(annual change, percent)



Source: Central Bank of Chile.

FIGURE III.8
Labor market



(1) Seasonally adjusted series. (2) PFM: the total number of mandatory contributions on wages paid to the worker in the previous month. Unemployment insurance: number of insured employees. (3) PFM: average taxable income. Unemployment insurance: average taxable income of insured employees. INE: simple average of the labor cost index and the wage index.

Sources: Central Bank of Chile, National Statistics Institute, Ministry of Labor, and Superintendence of Pensions.

FIGURE III.9
Volume of foreign trade (*)
(annual change, percent)



(*) Quarterly moving averages.

Source: Central Bank of Chile.

phenomenon has taken place over a relatively short horizon. Between January 2015 and December 2017, nearly 700,000 immigrants entered the country, such that the share of the resident population that was born overseas increased from 2.3% to 5.9% in just three years. On average, the immigrants are not very different from Chilean workers of a comparable age on several dimensions (box III.1).

According to the Bank Lending Survey for the second quarter, local lending conditions have loosened in some portfolios, especially mortgages, while demand has strengthened in several segments. At the same time, loan growth and interest rates are low from a historical perspective for the different credit users.

Foreign trade was very dynamic in the second quarter, especially on the import side. The annual growth rate of imports was 10% in the period (6.1% in the first quarter), driven by intermediate and capital goods purchases. In particular, imports of metal products, machinery and equipment, fuels, and chemicals were strong, whereas clothing and footwear imports contracted. The annual growth rate of exports increased slightly to 7.5% (up from 7.1% in the first quarter), led by the mining sector—essentially copper—and manufacturing, which both recorded annual growth of 9% by volume. For the industrial exports, this was the highest growth rate in two years, thanks to a strong contribution from foods such fresh and frozen salmon (figure III.9). The combination of these trends resulted in a slightly less positive trade balance in the second quarter, with practically no change in the current account deficit (1.2% of GDP in the last moving year; 1.1% in the first quarter).

BOX III.1

IMMIGRATION IN CHILE

In the last few years, the Chilean economy has experienced very significant immigration. Recent estimates by the Department of Immigration and Foreign Services (DEM)^{1/} indicate between January 2015 and December 2017, about 700,000 immigrants entered the country. As a result, the share of the resident population that was born overseas increased from 2.3 to 5.9% in just three years^{2/}. Migratory processes can have major economic impacts. As discussed in the Central Bank's report on trend growth in September 2017^{3/}, immigration can be an important motor for growth in the Chilean economy, partially offsetting the aging of the population due to the demographic transition. The recent data reveal that this process has unfolded much more quickly than projected.

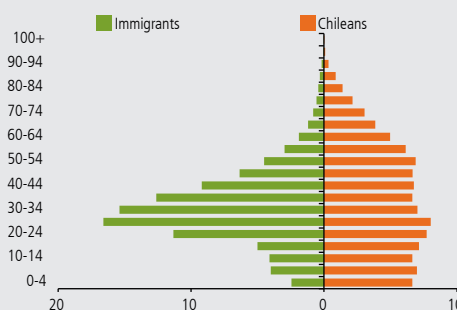
An analysis of microdata from the April 2017 census and the INE employment and income surveys^{4/} produces three main results in terms of the profile and economic insertion of immigrants in Chile^{5/}. First, on average, they are younger than the local population and have a higher labor force participation rate, consistent with the economic motivations behind their decision to migrate. Second, their education level is somewhat higher, on average, than the comparable local population, and there are people at practically all education levels. Third, although immigrants appear to go through an adjustment period after their arrival, they have a similar unemployment rate to Chileans, on average, and their distribution in the different economic sectors is similar to national workers. Some of these characteristics contrast, for example, with the experiences of other countries that have received large flows of immigrants, which are often concentrated at the bottom of the education

and wage distribution and work in just a few economic sectors (Dustmann et al., 2016).

Census data

According to the census, immigrants account for 6.3% of the labor force. The main countries of origin are Peru (25% of total immigrants), Colombia (14%), Venezuela (11%), Bolivia (10%), and Haiti (8%). In contrast with the national population, which is relatively evenly distributed among the different age groups, immigrants are mostly young adults (figure III.10). Thus, 60% of foreigners are 25 to 50 years old, whereas 35% of Chileans fall in this segment. Only 4% of immigrants are over 65 years of age, versus 12% of Chileans.

FIGURE III.10
Population pyramid of Chileans and immigrants
(percent of the population)



Source: Aldunate et al. (2018), based on data from the 2017 census.

Immigrants have a somewhat higher education level than the local population. In the population age 25 to 50 years^{6/}, 36% of immigrants have post-secondary technical or university education, versus 31% of Chileans (figure III.11). There are important differences by nationality. Over 60% of immigrants

^{1/} The DEM estimates that there were 1,119,267 immigrants in Chile in December 2017 (Aldunate, Contreras, de la Huerta, and Tapia, 2018).

^{2/} For more details, see Aldunate et al. (2018). For reference, as a result of the arrival of new residents in the last three years, Chile went from being a country with low immigration by international standards to one in which the share of resident foreigners exceeds the world average—on average, foreigners account for 3.3% of the population in each country—although it is still below the average for resident immigrants in OECD countries (13.1%).

^{3/} Central Bank (2017).

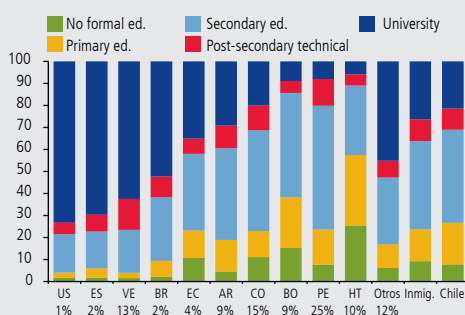
^{4/} For a more detailed analysis including other demographic dimensions, see Aldunate et al. (2018).

^{5/} Aldunate et al. (2018) also show that, on average, more recent migrants are not significantly different from earlier immigrants in terms of their education levels and labor participation rates.

^{6/} To isolate the effect of the differences in the demographic composition, the comparisons of education level are calculated for this age group and not for the total population.

from the United States, Spain, and Venezuela have university education; the figure is less than 10% for Bolivia, Peru, and Haiti.

FIGURE III.11
Education level of immigrants, by nationality (*)
(percent population aged 25–50 years)



(*) Under the countries is the share of each nationality in the group of resident immigrants aged 25–50 years. US: United States; ES: Spain; VE: Venezuela; BR: Brazil; EC: Ecuador; AR: Argentina; CO: Colombia; BO: Bolivia; PE: Peru; and HT: Haiti.

Source: Aldunate et al. (2018), based on data from the 2017 census.

With regard to employment, immigrants have a much higher labor force participation rate than Chileans (80.2% and 61.2%, respectively)^{7/8/} (table III.3). Although immigrants undergo a period of adjustment after their arrival in the country, the unemployment rate is similar for the two groups^{9/}. Both groups also have similar rates of self-employment (around 20%) and informal wage employment (29.4% of Chilean employees versus 25.3% of immigrants)^{10/}.

TABLE III.3
Labor market participation of Chileans and immigrants
(percent)

	Immigrants		Chileans	
	Census	NENE (*)	Census	NENE (*)
Participation rate	80.2	76.8	61.2	59.4
Unemployment rate	7.5	6.6	7.0	7.0

(*) Survey for March–May 2017.

Source: Aldunate et al. (2018), based on data from the 2017 census and the NENE survey.

^{7/} 2017 census data. This is consistent with data from the INE Employment Survey (NENE), although as discussed in Aldunate et al. (2018), the INE surveys must be analyzed with caution as they are not designed to be representative of the immigrant population.

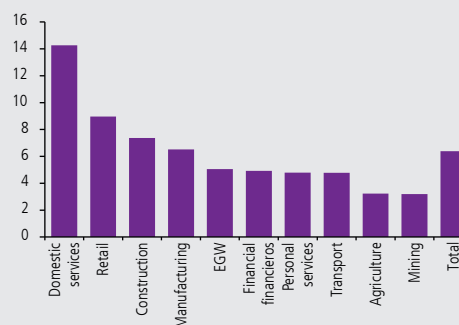
^{8/} Aldunate et al. (2018) show that the higher participation rate of immigrants is not due solely to the fact that they are younger, on average, as the trend is also observed when the comparison is restricted to a specific demographic category.

^{9/} Aldunate et al. (2018).

^{10/} From November 2017 to April 2018.

The distribution of immigrants by economic sector is comparable to the local population, although they have a higher prevalence in domestic services (14% of total employment in this sector) and retail (9%) and a relatively lower participation in agriculture and mining (around 3%) (figure III.12). The Supplementary Income Survey (NESI) also shows few differences in terms of diversification, with similar medians, on average, between 2015 and 2017.

FIGURE III.12
Immigrants by economic sector
(percent of employees by sector)



Source: Aldunate et al. (2018), based on data from the 2017 Census.

This evidence points to areas for further research, on issues that could be relevant for the Chilean economy's growth path. For example, the international literature suggests that immigrants may initially take jobs below their skill level and later converge to jobs more in line with their abilities (Lubotsky, 2007). This transition could contribute to increasing productivity. Quantifying this phenomenon could be an important step toward better understanding the dynamics of trend growth.

Conclusions

The recent wave of immigration to Chile is a significant economic phenomenon that has taken place in a relatively short horizon. This box has provided evidence that in many ways, these immigrants are not very different from Chileans of the same age, and, on average, they have integrated fairly fluidly into the labor market.

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.

RECENT EVOLUTION OF INFLATION

In July, annual CPI inflation was 2.7% (up from 2.0% in May), in line with the forecast in the June *Monetary Policy Report*. Most of this increase derived from a recovery in the annual inflation of the most volatile prices. CPIPEF inflation was lower than headline inflation, rising from 1.6 to 1.9% in annual terms between May and July, also in line with the forecast. By group, annual goods CPIPEF inflation remained slightly negative (–0.2% in July), while services CPIPEF inflation was just over 3% (3.1% in July) (figures IV.1 and IV.2 and table IV.1). In the baseline scenario, annual inflation was revised upward in the short term relative to the June forecast, mainly due to the peso depreciation and its impact on tradable goods. Thus, annual CPI and CPIPEF inflation are both expected to reach 3% somewhat sooner than previously projected.

TABLE IV.1

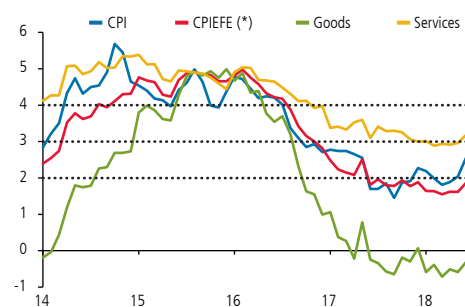
Inflation indicators
(annual change, percent)

	CPI	CPIPEF (*)	Goods	Services	Food	Energy
2014 Avg.	4.4	3.6	1.6	4.9	6.9	5.5
2015 Avg.	4.3	4.7	4.4	4.9	7.2	-4.5
2016 Avg.	3.8	4.0	3.2	4.5	3.8	1.8
2017 Jan.	2.8	2.5	1.1	3.4	2.5	6.4
Feb.	2.7	2.2	0.4	3.4	3.5	5.6
Mar.	2.7	2.2	0.3	3.3	3.7	5.7
Apr.	2.7	2.1	-0.2	3.5	4.2	4.1
May	2.6	2.5	0.8	3.6	2.6	2.8
Jun.	1.7	1.8	-0.2	3.1	1.3	1.6
Jul.	1.7	2.0	-0.3	3.4	1.0	1.1
Aug.	1.9	1.8	-0.6	3.3	1.2	4.1
Sept.	1.5	1.8	-0.6	3.3	-0.4	3.4
Oct.	1.9	1.9	-0.2	3.3	0.8	4.1
Nov.	1.9	1.8	-0.3	3.1	1.6	3.9
Dec.	2.3	1.9	0.1	3.0	2.5	5.3
2018 Jan.	2.2	1.6	-0.6	3.0	3.9	3.0
Feb.	2.0	1.6	-0.4	2.9	2.8	3.2
Mar.	1.8	1.6	-0.7	2.9	2.4	2.6
Apr.	1.9	1.6	-0.5	2.9	2.3	3.2
May	2.0	1.6	-0.6	3.0	2.6	4.6
Jun.	2.5	1.9	-0.3	3.2	3.6	6.1
Jul.	2.7	1.9	-0.2	3.1	3.2	8.4

(*) See glossary for definitions.

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

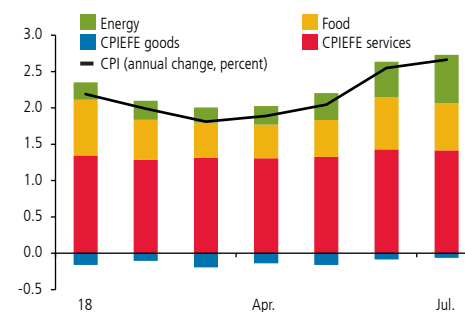
FIGURE IV.1
Inflation indicators
(annual change, percent)



(*) See glossary for definitions.

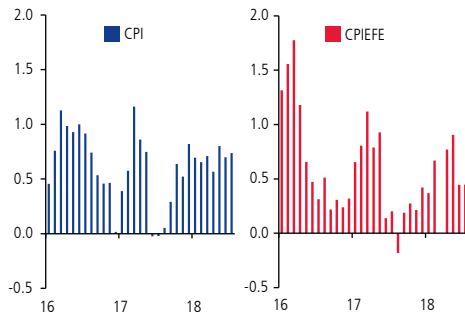
Sources: Central Bank of Chile and National Statistics Institute (INE).

FIGURE IV.2
Contribution to annual inflation
(percentage points)



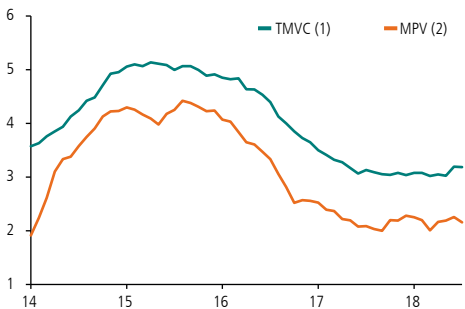
Sources: Central Bank of Chile and National Statistics Institute (INE).

FIGURE IV.3
Monthly inflation
(accumulated in three moving months, percent)



Source: National Statistics Institute (INE).

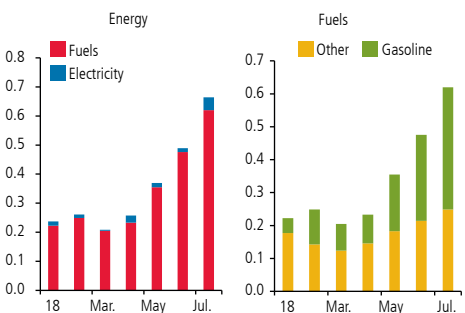
FIGURE IV.4
Inflation trend measures
(annual change, percent)



(1) Trim of most volatile components: A trimmed measure of CPI inflation that excludes the most volatile subclasses.
(2) Minimum price variation: A trimmed measure of CPI inflation that excludes subclasses with higher or lower monthly variations.

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

FIGURE IV.5
Annual contribution of energy prices to headline inflation
(percentage points)



Source: National Statistics Institute (INE).

Beyond the increase in annual headline inflation, different measures of the inflation trend have been stable in recent months. This can be seen in the evolution of monthly inflation accumulated in three months—for both the CPI and CPIPEF—and measures of the inflation trend that exclude items with high or low monthly inflation or the more volatile items (figures IV.3 and IV.4).

As expected, the more volatile components of the CPI basket explain most of the increase in annual inflation. In the case of fuels, this was due to the rise at the international level; in fresh fruits and vegetables, to the low basis of comparison stemming from the unusual behavior in the same period of 2017. The larger contribution of the energy component mainly reflected the increase in the fuel price in pesos (figure IV.5). This derives from a combination of the price hike at the international level—in particular gasoline, which is a little more than 25% higher than a year ago—and the depreciation of the peso in the same period (around 3% in annual terms on the cutoff date of this Report). Going forward, fuel inflation will continue to make a positive contribution to headline inflation, assuming that external prices will remain higher than last year and the real exchange rate (RER) will follow a depreciation trend in the forecast horizon, returning to levels around the average of the last fifteen or twenty years. Electricity rates also made a larger contribution to headline inflation, especially in July. According to the INE, this was due to a change in the rate formulas used by the power companies and other legal changes in the applied charges.

The contribution of foods to annual headline inflation also increased, mainly due to fresh fruits and vegetables. As mentioned, this reflects the low basis of comparison deriving from the unusual behavior of several prices in this category over the course of 2017, which has also occurred in some months of 2018. In the coming months, this factor will continue to have a significant impact on annual inflation—particularly in September, given that this component recorded a monthly decrease that deviated from its normal seasonal pattern in September 2017 (figure IV.6). The contribution of other foods to annual inflation was similar to the last Report (around 0.4 percentage points).

Annual CPIPEF inflation was lower than headline inflation, in line with projections in the last Report. This is consistent with the existence of excess capacity in the economy. The increase in total CPIPEF is mainly explained by a smaller decline in annual terms in the goods component (−0.2% in July; −0.6% in May), which coincides with the peso depreciation. As mentioned in June, some of these prices have fallen more than can be explained by the evolution of the exchange rate. A notable example is the drop in new car prices (4% of the CPI basket; around −5% annual in July). Annual services CPIPEF inflation, in turn, increased slightly, to 3.1% in July.

The calculation of the annual growth of nominal unit labor costs (ULC), using wage data from both INE and the pension fund managers (PFMs), shows a decline over the past few years, in line with the increase in average productivity (figure IV.7). The people interviewed for the *Business Perceptions Report* (BPR) have consistently mentioned improvements in efficiency for several quarters. Among the factors underlying this assessment, the interviewees cited investments leading to efficiency improvements and/or process automation and the search for versatile employees. With regard to recent cost trends, the interviewees for the August 2018 BPR agree that wage pressures are low, reflecting lower job turnover and/or the increase in the labor supply, which has reduced wages in some sectors. According to the interviewees, there were no major changes in other costs. With regard to the peso depreciation, the majority indicated that although output has picked up in some sectors, the strong competition in the markets makes it difficult to pass through the increases from the exchange rate to prices.

Inflationary pressures from external prices are somewhat lower than in the last *Report*, mainly due to the reduction in the level and annual growth of the external price index (EPI) in dollars (6.7% in April 2018 versus 3.1% in June). Imported consumer goods in dollars (IVUM) have been relatively stable in levels, with an average annual growth rate of 1.5% annual in the first two quarters of this year.

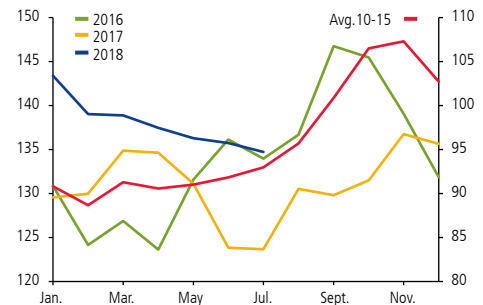
INFLATION OUTLOOK

In the baseline scenario, the inflation forecast has been revised upward in the short term, mainly due to the peso depreciation. For December of this year, annual CPI inflation is projected at 3.1%, three tenths of a point higher than expected. There could be a spike in annual CPI inflation in September, driven mainly by one-off factors, in particular the low basis of comparison for some foods in 2017. Annual CPIPE inflation is expected to reach 2.7% in December of this year (2.3% in June) and then continue rising to 3% in the first half of 2019 (versus late 2019 in the June *Report*). Once both inflation measures reach 3%, they are expected to fluctuate around that level through the end of the forecast horizon.

Private inflation expectations increased slightly in the short term. In December of this year, annual CPI inflation is expected to be between 2.9 and 3.0% (2.8 to 2.9% in the June *Report*). One year ahead, the different measures of expectations are between 3.0 and 3.1% as of the cutoff date for this *Report* (2.9% in June). Two years ahead, expectations are still 3% (figure IV.8).

FIGURE IV.6

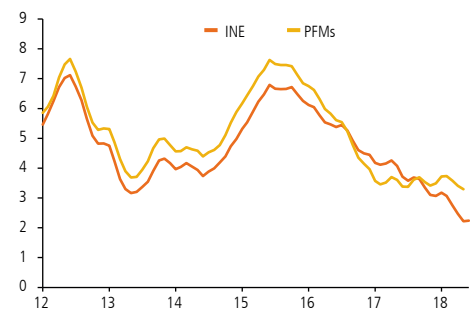
CPI: Fruits and vegetables
(Index: 2013=100)



Source: National Statistics Institute (INE).

FIGURE IV.7

Nominal unit labor costs (*)
(annual change, percent)

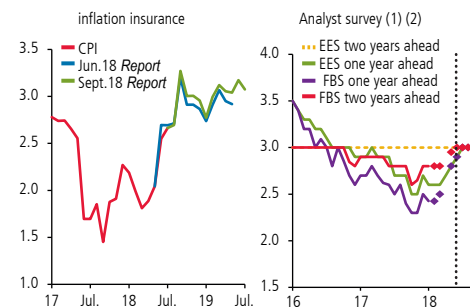


(*) Twelve-month moving average.

Sources: National Statistics Institute (INE) and Superintendencia of Pensions.

FIGURE IV.8

Inflation expectations
(annual change, percent)



(1) The FBS is for the first half of each month through January 2018. From February on (marked with diamonds), the data are from the survey published after each monetary policy meeting, except for the last datum, which is from the survey published before the September 2018 meeting.

(2) The vertical dotted line indicates the cutoff date of the June 2018 *Monetary Policy Report*.

Source: Central Bank of Chile.

V. FUTURE MONETARY POLICY EVOLUTION

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 sensitivity scenarios, which show how the monetary policy response could change if faced with various changes in the baseline scenario.

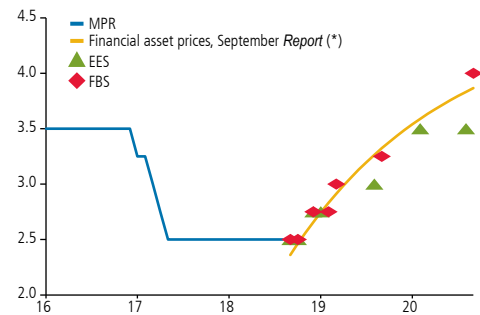
MONETARY POLICY STRATEGY

The Board estimates that the evolution of macroeconomic conditions that make it less necessary to maintain the current monetary stimulus. In particular, higher than expected growth plus an incipient rebound in the labor market suggest that the economy is stronger than previously estimated, which is consistent with a faster-closing activity gap and inflation converging to 3% sooner than forecast. This, in a context where the international baseline scenario has limited downward revisions, despite increased risks associated with it.

The baseline scenario of this *Report* uses as a working assumption that the monetary policy rate (MPR) will begin to rise in the coming months. For the medium term, the Board continues to estimate that in 2020 the MPR will stand near its neutral level —between 4% and 4.5%. Consistently, in its September monetary policy meeting, the Board decided to keep the MPR at 2.5% and announce that it will begin to withdraw the monetary stimulus in the coming months. As always, this trajectory means no commitment, but is contingent on the compliance with the baseline scenario outlined here. Any new information modifying the projected inflation trajectory will imply changes in monetary policy implementation.

The different measures of market expectations about the future trajectory of the MPR (i.e., surveys to specialists and financial asset prices) suggest that the monetary stimulus withdrawal would begin by the end of this year. One year ahead, projections place it between 3.0% and 3.25%; at twenty-four months, between 3.5% and 4%, which for the Financial Brokers Survey means a 50bp increase from the June *Report* (figure V.1 and table V.1).

FIGURE V.1
MPR and expectations
(percent)



(*) Constructed using interest rates on swap contracts up to 10 years.
Source: Central Bank of Chile.

TABLE V. 1
MPR expectations
(percent)

	One year ahead		Two years ahead	
	June Report	September Report	June Report	September Report
EES (1)	3.00	3.00	3.50	3.50
FBS (2)	3.00	3.25	3.50	4.00
Financial asset prices (3)	3.19	3.32	3.80	3.87

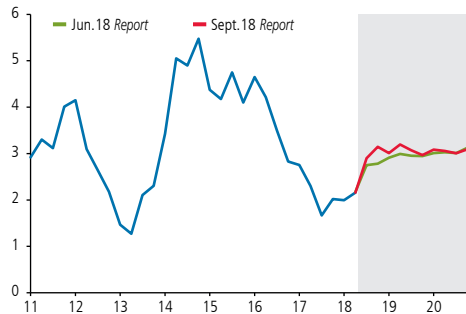
(1) June and August 2018 surveys

(2) Surveys prior to the June and September 2018 monetary policy meetings.

(3) The June and September *Monetary Policy Reports* use the average of the last ten business days as of 08 June 2018 and 28 August 2018, respectively.

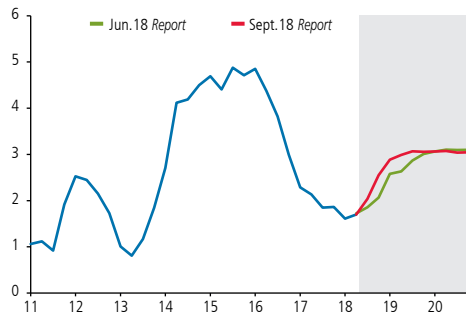
Source: Central Bank of Chile.

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



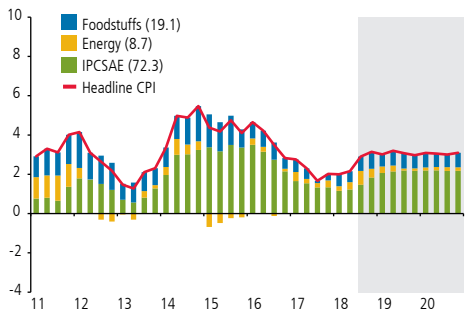
(*) Gray area, as from the third quarter of 2018, shows forecast.
Sources: Central Bank of Chile and National Statistics Institute (INE).

FIGURE V.3
CPIEFE inflation forecast (*)
(annual change, percent)



(*) Gray area, as from the third quarter of 2018, shows forecast.
Sources: Central Bank of Chile and National Statistics Institute (INE).

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



(*) Starting in January 2014, calculations are based on the new indices with base year 2013=100, so they may not be strictly comparable with earlier figures. Gray area, as from third quarter of 2018, shows forecast.
Sources: Central Bank of Chile and National Statistics Institute (INE).

THE CONVERGENCE OF INFLATION

Inflation has consolidated perspectives of an earlier convergence to the target, given a higher economic growth that has narrowed the activity gap faster than expected. In the short-term, the baseline scenario of this *Monetary Policy Report* assumes higher inflation than in June, mainly due to the depreciation of the peso. The nominal exchange rate showed an increase of around 5.5% since the closing of the last *Report*^{1/}. In real terms, the peso has depreciated less (nearly 1% since June) and remains below its long-term levels. As a working assumption, the RER is expected to return to values near its fifteen- to twenty-year averages over the course of the policy horizon.

Accordingly, annual CPI and CPIEFE inflation are revised upwards for the end of 2018, and the 3% mark is assumed to come sooner. This considers that in September the annual CPI inflation level will post a significant leap above 3%, because of the low base of comparison left by the unusual behavior of some food prices in 2017. Towards 2019, the baseline scenario projects that once the 3% target is reached, both inflation indicators will stay in the vicinity until the end of the projection horizon.

EVALUATION OF CURRENT CAPACITY GAPS

The expected inflation trajectory is consistent with a near-zero activity gap and capacity gaps that will close completely within the projection horizon. The surprises of recent quarters have accelerated the process of closing the activity gap, so the Board estimates that at the second quarter of 2018 the gap is close to zero (figure V.5). The significant uncertainty surrounding the measurement of the gap level must be emphasized, either because of its unobservable nature, or because the data that feed its estimation and the estimation methods themselves are modified as time passes. For example, using the standard deviation of historical gap revisions to measure uncertainty, the range that includes the 50% confidence level of the estimation covers ± 1 percentage point (figure V.6).

The degree of uncertainty surrounding the current estimation of the gap reinforces the importance of considering other indicators that will help assess the capacity gaps. These point to the fact that the economy still has them. For example, beyond a recent recovery in employment, the labor market still shows some lag with respect to the cycle of activity, especially considering the faster closing of the gap (figure V.7). However, in recent years, it has been able to absorb an important migratory shock, with implications on the output gaps in the medium-term that will be monitored constantly.

^{1/} Calculated using the parity averaged over the ten days prior to the statistical cutoff date (28 August).

In general, alternative measures point to a gradual closure of the gaps still present in the economy. The IMCE shows that installed capacity used in the manufacturing industry is slightly below 69%, less than its historical average of nearly 72% (figure V.8). Qualitative information collected under the Business Perceptions Report also points to the existence of idle capacity, especially in the north of the country and in some specific sectors.

The low level of core inflation is also a reflection of persistent gaps in the economy. Measured with the CPIPEF, it has been below 2% annually for a full year. Along the same line, services CPIPEF which is usually estimated to be more closely linked to the state of the capacity gap, has remained around 3% since the end of 2017. In terms of velocities, this latter component has shown higher values most recently, although still below its historical near-4% average. This responds to one-off increases in some items of transportation and indexed services, which the baseline scenario assumes will moderate in the near future.

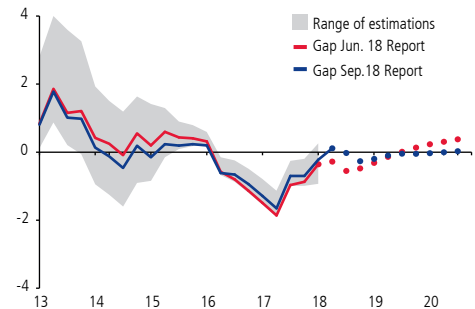
POTENTIAL GDP

As is usual in every September Monetary Policy Report, the Board has updated its estimates of potential non-mining GDP. Potential GDP refers to the current level of productive capacity, including the various transitory productivity shocks and problems of resource allocation that describe the economy at any given time. This is the relevant concept used to measure the inflationary pressures that could push inflation away from its 3% target. The Board also evaluates trend growth, assuming no transitory productivity shocks, and inputs being used at their normal capacity. It is a concept whose application is relevant for long terms, when the accumulation of positive and negative transitory shocks tend to cancel out, which makes it possible to leave them out of the analysis. Given its characteristics, it is natural for potential GDP to be revised on a regular basis, while trend GDP would be modified less often. On this occasion, the Board continues to estimate that the economy's trend growth will be in the 3% to 3.5% range for the next ten years^{2/}.

Regarding potential GDP, the review to historical National Accounts, 2018 data and a re-estimation of the respective models, drive an upward correction to non-mining potential GDP growth in 2018 and 2019. For this year, potential non-mining GDP growth stands at 3.1%, which compares with the 2.7% estimated a year ago. For next year, potential growth of non-mining GDP is 3.2% (2.9% a year ago). Thus, it is projected that potential and trend growth will converge sooner than previously thought.

^{2/} This figure will be revised as soon as the updated population projections based on the 2017 Census are released.

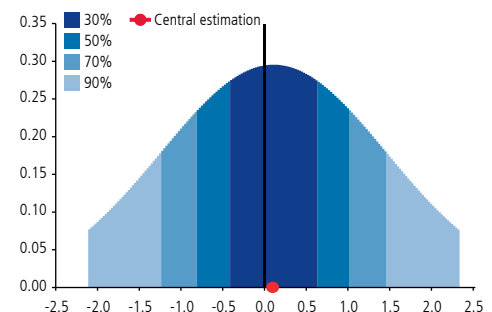
FIGURE V.5
Output gap (1) (2)
(percentage points)



(1) The gray area indicates the minimum and maximum range of the gap estimations, using different estimation methods for potential GDP (trivariate filter, HP, SVAR, MEP, and SSA). See Fornero and Zúñiga (2017).
(2) Dotted lines represent forecasts.

Source: Central Bank of Chile.

FIGURE V.6
Uncertainty ranges for the estimation of the activity gap for the second quarter of 2018 (*)
(probability density)



(*) X-axis represents the level of the gap in percent. Colored areas indicate confidence intervals of 30, 50, 70 and 90%.

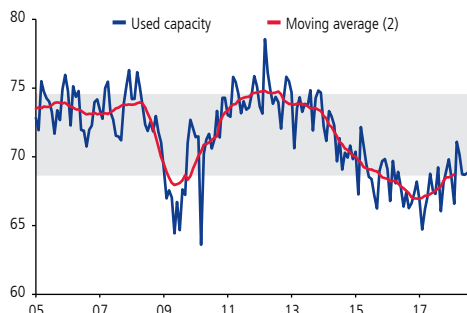
Source: Central Bank of Chile.

FIGURE V.7
Creation of salaried private employment
(annual change, percent)



Source: National Statistics Institute.

FIGURE V.8
IMCE Industry: used installed capacity (1)
(percentage of used installed capacity)

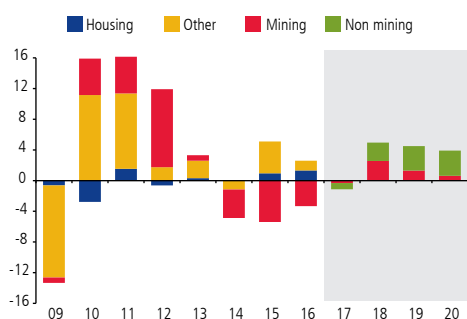


(1) Gray area corresponds to the mean (71.6) +/- two standard deviations.

(2) Moving average centered in +/- 6 months.

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

FIGURE V.9
Real annual contributions to GFCF (*)
(percentage points)



(*) For 2017 mining investment is estimated using FECU information. Housing investment uses household investment data taken from the national accounts by institutional sector. The other GFCF component is a residue. Reported projections for the years 2018, 2019 and 2020 are used forecasting models of the Central Bank and sectoral sources, including the Capital Goods Corporation (CBC)'s investment plans and cadastral surveys.

Source: Central Bank of Chile.

GAPS AND ACTIVITY IN THE BASELINE SCENARIO

In the baseline scenario, the Board estimates that during the next two years non-mining activity will grow according to its potential, so the activity gap will fluctuate around neutral values (figure V.5). By 2020, the convergence between potential and trend growth will occur. Accordingly, it projects growth ranges of 4%-4.5% this year, 3.25%-4.25% in 2019 and 2.75%-3.75% in 2020.

These ranges consider the already known information of 2018, its upward surprises and the more difficult to exceed comparison bases in the second half of the year. In addition, they assume a not-so-favorable external scenario depicted in the previous Report, the policy rate remaining below its neutral level for several more quarters, investment outpacing GDP growth and no significant macroeconomic imbalances. Regarding the labor market, as said above, a gradual recovery is expected. As a working assumption, it is still considered that in 2018 the economy will receive a fiscal impulse consistent with the current budget. From then on, it is assumed that the structural deficit will follow descending path defined by the authority.

On the expenditure side, compared to the June Report, the baseline scenario has adjusted the gross fixed capital formation of 2018 upwards, but maintains the same gradual deceleration over the rest of the projection horizon. By industries, the biggest contribution projected for mining investment stands out (figure V.9), in accordance with the near-40% shown by investment of mining companies at the first quarter of this year. The new five-year plan announced by Codelco is added as background. In terms of components, the recent data showed stronger than expected behavior of machinery and equipment, although it is expected to moderate in response to the exchange rate depreciation observed and projected in the baseline scenario. This couples with the fact that, according to qualitative information collected for the Business Perceptions Report, an important part of the increase in machinery and equipment investment corresponds to inventory replenishment and does not reflect any large-scale investment projects. On the construction side, the sector's activity shows limited dynamism, but with some boost to job creation in the margin. In this way, GFCF as a percentage of GDP—in both nominal and real terms—will reach 21.7% this year and will border 22% in 2019.

About consumption, the baseline scenario foresees that private consumption will grow at a similar pace as GDP in 2018, 2019 and 2020. This projection considers that the durable component—mainly imported—will decelerate from the first half of the year, affected by the depreciation of the peso. The support that household spending will receive from the labor market recovery foreseen in the baseline scenario will help to offset this effect.

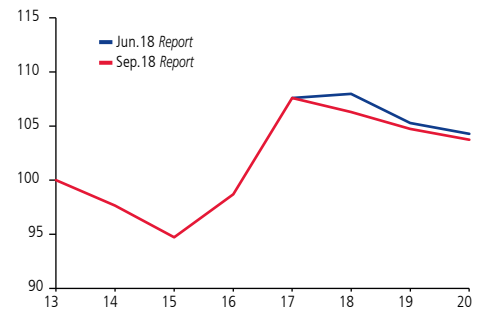
Thus, in the baseline scenario, final domestic demand will grow 4.1% this year and 3.7% in 2019 and again in 2020. This year's figure assumes that the significant inventory build-up seen in the second quarter will be reversed through increased spending, not higher GDP, given companies' evaluation of their inventories (IMCE) and the type of goods they stocked up on.

The impulse received from abroad by the Chilean economy in the baseline scenario will be less than assumed in the June Report, because of lower terms of trade resulting from the fall in copper prices implicit in said scenario. On the side of trading partners' activity, revisions are also down, but limited. Financial conditions are expected to tighten further.

The copper price has adjusted much faster than expected to near its long-term level. This has caused the terms of trade (ToT) to also reduce their level more quickly than expected. Thus, if until June the ToT decline was expected to occur gradually between 2019 and 2020, in the current baseline scenario it is concentrated in 2018 and will continue —although with less intensity— into 2019 and 2020 (figure V.10). The copper price fall is mainly explained by fears about the strength of the Chinese economy and the escalation of the trade dispute with the United States. Thus, the baseline scenario assumes that it will reach an average price of US\$2.95 per pound in 2018 and will have descending average prices in the following years, below the June forecast. The oil price has moved erratically, and remains above those its levels of early in the year. Going forward, the baseline scenario continues to consider a downward trajectory, incorporating the response of supply to the current price levels and as implicit crude futures contracts.

On the activity side, the growth projections of Chile's trading partners show limited declines and continue to point to expansion rates that will be reduced in 2019 and 2020. However, the baseline scenario makes adjustments in opposite directions in some economies. For 2018, the slower growth forecast for Latin America stands out, particularly in Argentina and Brazil. The former has shown a significant economic contraction most recently, with a sharp depreciation of its currency —with particularly noticeable effects on manufacturing activity—, the consequent contraction of monetary policy and the significant agricultural depletions caused by a severe drought. The latter, hurt by a lengthy truckers' strike and a complex political situation, shows lower than expected output numbers. The baseline scenario foresees that the difficulties in these two economies will be echoed in the figures for this and next year, triggering a downward adjustment for the Latin American growth outlook of 8 and 4

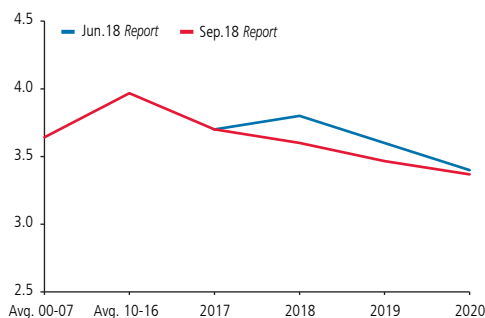
FIGURE V.10
Terms of trade
(index, 2013=100)



Source: Central Bank of Chile.



FIGURE V.11
Trading partners' growth
(annual change, percent)



Source: Central Bank of Chile.

tenths of a point in 2018 and 2019^{3/}, respectively. The projections for China also have corrections, albeit more marginal, in the projection horizon —one tenth of a point in both 2019 and 2020—, with the consequent effects in other Asian economies that have strong commercial links with China. In the developed world, conversely, the better performance of the US, hand in hand with, among other factors, an important fiscal impulse, persistently optimistic consumer expectations and a tight labor market. Thus, the projections for the US are adjusted upwards this year by 2 tenths of a point, to 2.9%, while for the Eurozone the adjustment is downward, reflecting incoming actual figures. With this, our trading partners will post growth rates of 3.6%, 3.5% and 3.4% in 2018, 2019 and 2020, respectively (figure V.11).

Global financial conditions remain good from a historical perspective, but have tightened for emerging economies, especially those perceived as having weaker macroeconomic fundamentals. The dollar has appreciated in world markets, responding to the cyclical divergence observed between the US and other developed economies, and the ever growing concern over the escalating trade conflict between the US and China. The baseline scenario of this Report estimates that financial conditions will continue to tighten gradually and that, in this context, investors will continue to draw a line between emerging economies with stronger fundamentals and those perceived to be the most vulnerable. In particular, the Chilean economy faces the current situation with good macroeconomic indicators in terms of growth, inflation and the balance of its fiscal and external accounts. The Chilean corporate external debt, somewhat higher than the average of emerging economies, is the result of a more internationalized corporate sector and does not represent a vulnerability in facing more pronounced depreciation scenarios. Moreover, the economy has a favorable international net investment position compared to other economies, emerging and developed.

Considering the changes in the internal and external scenario, the current account is projected to be near what was expected in June, with a moderate increase in its deficit: -2.2% in 2018, -2.6 in 2019 and -2.7% in 2020. This mainly reflects the aforementioned deterioration of the terms of trade. At trend prices^{4/} the current account deficit is estimated around 3% of GDP.

^{3/} Argentina and Brazil account for 45% Latin America's GDP (10% Argentina, 35% Brazil), hence the importance of changes in their forecasts on the region's aggregate growth.

^{4/} This measure adjusts the value of mining exports or fuel imports considering the deviations of the prices of copper and oil from their long-term values. The same for revenues and transfers associated with copper exports. Other exports and imports are valued using current prices. Furthermore, it does not correct possible changes in the quantities exported or imported because of movements in copper and oil prices. The calculation considers a long-term price of US\$2.7 per pound of copper and US\$70 per barrel of oil (box V.2 in the September 2012 MP Report and box V.1 in the December 2015 MP Report).

SENSITIVITY SCENARIOS

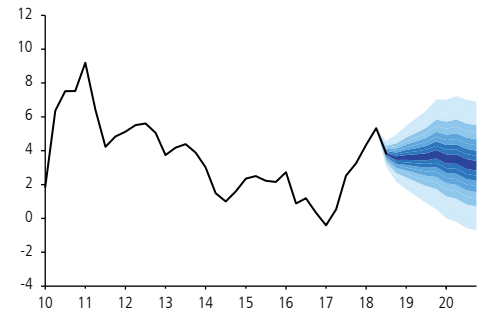
The monetary policy strategy that is consistent with inflation converging to the target is contingent on compliance with the baseline scenario outlined here. As always, there are internal and external elements that could modify these projections. On the one hand, from the standpoint of its impact on local activity, the balance of risks in the external scenario remains biased downward. At the same time, the Board considers that the risk balance for both activity and inflation is unbiased. The materialization of these risks —detailed extensively in the Summary of this Report— would modify the baseline scenario and therefore the trajectory of the monetary policy rate (figures V.12, V.13, and V.14).

Although any change in the baseline scenario must be assessed thoroughly, it is possible to quantify some potential deviations away from the baseline scenario and their effects on the main macroeconomic variables.

One of the main risks of the external scenario is an abrupt deterioration of financial conditions facing the emerging world. One event that can trigger this scenario is an increase in inflationary pressures in the US that leads the Federal Reserve to accelerate the increase in its policy rate, taking it to 4% during 2019. This would cause a hike in sovereign premiums and a widespread depreciation of emerging currencies, including the Chilean peso. The effects on monetary policy are not evident. On the one hand the increase of the exchange rate leads to a higher short-term inflation, that affects medium –term inflation partly through indexation mechanisms. On the other hand, the lower external impulse tends to widen the activity gap and leads to lower inflation pressures. The adequate monetary policy response will depend on which of these effects dominates the inflation dynamics towards the end of the policy horizon.

Another source of external risk is an escalation of the trade conflict. There is an array of possible scenarios. First, if its effects are concentrated in the US-China trade, it would have no major impact on Chile’s monetary policy. Second, there is the different case if it affects significantly China’s economic growth, commodity prices and the risk perception emerging countries. For example, if trading partners’ growth were reduced by around 1 percentage point in 2019 and 2020 and the copper price were closer to US\$2.5 for some time. This, together with an increase in external risk, would lead to a significant depreciation of the peso and a slowdown in domestic growth. The monetary policy response would ultimately depend on how the combination of these shocks impacts inflation towards the end of the policy horizon. Third, it may happen that the broader effects of the trade conflict are compounded by a deterioration in domestic expectations, adding a negative impact on investment in Chile. In this scenario, the initial depreciation of the peso is higher than that

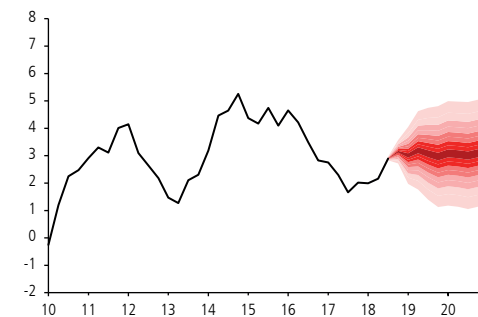
FIGURE V.12
Quarterly GDP growth scenarios (*)
(annual change, percent)



(*) The figure shows the confidence interval of the baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. These intervals are calculated using the RMSE of the MAS-MEP models for the 2009-2017 average and summarize the risks on future growth as assessed by the Board. The working assumption for the MPR contemplates that it will begin to rise in the coming months and by 2020 it will be approaching neutrality— between 4% and 4.5%.

Source: Central Bank of Chile.

FIGURE V.13
CPI inflation forecast (*)
(annual change, percent)

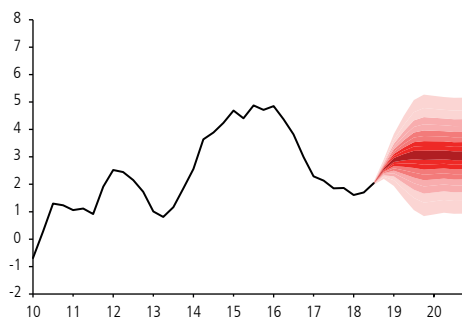


(*) The figure shows the confidence interval of the baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. These intervals are calculated using the RMSE of the MAS-MEP models for the 2009-2017 average and summarize the risks on future inflation as assessed by the Board. The working assumption for the MPR contemplates that it will begin to rise in the coming months and by 2020 it will be approaching neutrality— between 4% and 4.5%.

Source: Central Bank of Chile.



FIGURE V.14
CPIEFE inflation forecast (*)
(annual change, percent)



(*) The figure shows the confidence interval of the baseline projection over the respective horizon (colored area). Confidence intervals of 10%, 30%, 50%, 70% and 90% around the baseline scenario are included. These intervals are calculated using the RMSE of the MAS-MEP models for the 2009-2017 average and summarize the risks on future inflation as assessed by the Board. The working assumption for the MPR contemplates that it will begin to rise in the coming months and by 2020 it will be approaching neutrality—between 4% and 4.5%.

Source: Central Bank of Chile.

of the events just described, but the deterioration of activity is also bigger and its medium-term effects on inflation dominate in the policy horizon. Therefore, monetary policy must hold on to its expansionary position for longer than considered in the baseline scenario.

Internally, investment was unexpectedly high and it may bring new surprises going forward. One source of this would be investment increasing more and sooner in large-scale projects and/or that investment reaps the benefits of the stimulus measures proposed by the Government. In a scenario where 2018 and 2019 GFCF would grow roughly one percentage point more than expected, activity could grow more than 4% annually in 2019. Such an event would lead to an increase in inflationary pressures—through its effect on the gap, at least in the short term—and would require a faster withdrawal of the current monetary stimulus.

Each one of the events just described is a rough approximation to a specific event. A more complete analysis would examine their effects on more variables than those described here, without neglecting the possibility of scenarios in which these events would combine. As always, the Board reiterates that it will review any possible deviations from the baseline scenario that could jeopardize the convergence of inflation to the target in the forecast horizon and therefore require adjusting the trajectory of the MPR. Thus, it reaffirms its commitment to conduct monetary policy with flexibility, so that projected inflation stands at 3% over the two-year horizon.

BOX V.1 POTENTIAL GROWTH AND THE OUTPUT GAP

Each year, the Board reviews its estimates of potential growth in the September Monetary Policy Report^{1/}. Potential GDP is the GDP level consistent with stable inflation, and it is therefore used to measure the output gap associated with short-term inflationary pressures. The Board also regularly estimates trend growth, which is related to the economy's growth capacity in the medium term. For this Report, the trend growth estimate has not been revised, remaining at 3.0 to 3.5% for the next ten years^{2/}. In the long term, potential growth converges to trend growth. However, transitory productivity shocks or temporary limitations on factor use can alter productive capacity in the short term, generating differences in the two measures.

The main results of this update are as follows. First, the body of available evidence supports a revision of potential nonmining GDP growth for 2018 and 2019, to 3.1 and 3.2%, respectively. This represents an increase over the 2017 estimate of potential growth (2.5%), as well as the estimates for 2018 and 2019 published in the September 2017 Report (2.7 and 2.9%, respectively; see table V.2)^{3/}. Second, despite the increase in potential growth, the strong growth rate in the first part of the year has been closing the output gap faster than projected. Thus, in the second quarter of 2018, the output gap is close to zero (figure V.5).

Potential growth and the output gap

Potential GDP and the output gap are calculated using a series of statistical models. Most of these models are based on the so-called Phillips curve, which describes the relationship between inflation and the output gap^{4/}. In the last year, core inflation has systematically been under 2%, without straying far from the

forecast^{5/}. Given that the output gap is the difference between real nonmining GDP and its potential level, low inflation in a context of high economic growth suggests that part of this higher growth derives from an increase in potential GDP. This is exactly what we find using a range of methodologies for estimating this unobservable variable, which further indicates that the convergence of potential growth to trend growth is occurring faster than expected.

Finally, as mentioned, the output gap is estimated to be close to zero in the second quarter of 2018. For 2019 and 2020, the growth forecast for nonmining output is in line with its potential, and thus the output gap is expected to fluctuate around the neutral level (figure V.5).

TABLE V.2
Estimates of potential growth and the output gap for nonmining GDP

	Nonmining GDP (1)(2)		Potential (2)		Output gap (2)(3)	
	Sept. 2017	Sept. 2018	Sept. 2017	Sept. 2018	Sept. 2017	Sept. 2018
2016	2.1	1.6	2.4	2.2	-0.3	-0.5
2017	1.3	1.9	2.5	2.5	-1.2	-1.1
2018	2.6	4.1	2.7	3.1	-1.5	-0.1
2019	3.6	3.2	2.9	3.2	-0.9	-0.1

(1) Forecasts contained in the Monetary Policy Report for each year. Takes the midpoint of the forecast range when the bias is neutral and the first quarter when the bias is to the downside. For 2017, the estimates are for other GDP.

(2) Average for the year.

(3) The difference (in percentage points) between the real and potential GDP level.

Source: Central Bank of Chile.

Uncertainty in the output gap measure

Like potential GDP, the output gap is an unobservable variable, so the calculation can change over time. The re-estimation can sometimes differ widely with previous estimates, including in the reading of the level and direction^{6/}. There are three sources contributing to the revision of the gap estimate. First, real data are

^{1/} Through 2017, potential growth was estimated for other (non-natural-resources) GDP, which excludes mining, fishing, and electricity, gas, and water. In December 2017, the Board decided to change benchmark to nonmining GDP (Monetary Policy Report, December 2017, box III.1). Consequently, the estimates presented herein are for nonmining GDP. This change does not affect either the results or the analysis.

^{2/} For a detailed explanation of the methodology used to calculate these two variables, see the Monetary Policy Report for September 2015 (boxes V.1 and V.2), the associated minutes, and the report on the medium-term forecast and determinants of trend growth (Central Bank of Chile, 2017).

^{3/} See the Monetary Policy Report, September 2017, box V.1.

^{4/} The calculation involves the re-estimation of the potential growth models described in the Monetary Policy Report for September 2015 and in Albagli et al. (2015).

^{5/} This is even more evident in CPIEFE services inflation, which is less affected by exchange rate fluctuations.

^{6/} Orphanides and Van Norden (2002); Chumacero and Gallego (2002).



revised over time. Nonmining GDP is subject to a review process covering several years—in fact, the methodology used for the Chilean national accounts implies that GDP could be revised up to three years after the original publication, consistent with international practices in this area. This means that the figure for 2018 GDP will only be definitive in 2021, and thus the estimate of the gap could be revised if the observed data change. Second, with the passage of time, new data are incorporated into the time series used in the estimation models, which can cause a change in the reading of potential growth and the gap—the so-called real-time error in model estimation. These revisions originate in the fact that increasing the number of observations provides a better view of the economy’s trend growth and thus of its potential growth level at different points in time. According to the literature, this second factor is even more important than the first^{7/}. Third, the estimation methods themselves are subject to revision, as researchers continually incorporate best practices. All of this means that the estimation of the gap in real time is subject to revision in the future and, in addition to the implications for understanding inflationary pressures, highlights the need for caution in reading the resulting changes in level and direction.

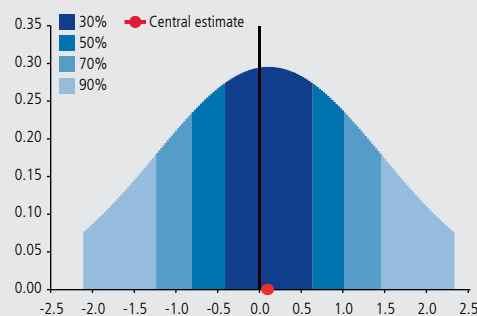
Bullano, Fornero, and Zúñiga (2018) estimate the gap for Chile taking into account the historical uncertainty in the measure—the second factor described above. To quantify the expected size of the revision, they carry out a recursive estimation exercise, in which they progressively incorporate the available data and compare the estimated gap for a given date (for example, for 2015) at different points in time (in the Monetary Policy Report for September 2015, 2016, etc.). The results of this exercise show that, with 50% confidence, the gap estimate has a range of about ± 1 percentage point. That is, the gap estimated for the second quarter of 2018—which is zero according to the currently available data—has a 50% probability of being one percentage point higher or lower in subsequent revisions over the course of the next three years with, (figure V.6). The uncertainty in the most recent estimate is higher than in new estimates of the size of the gap in the past. This does not mean that the current scenario is especially uncertain, but rather that the real-time error involved in the estimation dissipates as new data are incorporated (figure V.15).

Because of the uncertainty inherent in the analysis in real time, the Board considers a broad set of indicators when analyzing the evolution of inflationary pressures and the degree of capacity utilization^{8/}. In particular, although the labor market has seen a recovery at the margin, it is still slack in comparison with the more dynamic growth of the economy in recent quarters^{9/}. At the same time, indicators of installed capacity utilization continue to point to spare capacity, and core inflation has been below 2% for over a year (figures IV.1, V.6, and V.7).

Conclusions

The economy has recorded higher growth in recent quarters, which is good news. This faster recovery has led to a revision in the GDP growth forecast to a range of 4.0 to 4.5% for this year, and it has contributed to a faster closing of the output gap than projected in past Reports. For the medium term, the outlook is consistent with growth rates near the long-term trend, reflecting the fact that the higher growth has accelerated the convergence between potential and trend growth. Although there is a degree of uncertainty regarding the absolute level of the gap in real time—highlighting the importance of using complementary indicators to inform the assessment of the remaining gaps in the economy—the good news on growth indicates that the gap has been narrowing. This provides further evidence that the current monetary stimulus is becoming less necessary.

FIGURE V.15
Uncertainty ranges in the gap estimate (*)
(probability density)



(*) The horizontal axis is the gap level in percent. The bands of color indicate 30, 50, 70, and 90% confidence intervals.

Source: Central Bank of Chile.

^{7/} Orphanides and Van Norden (2002).

^{8/} Recuadro V.3. IPoM septiembre 2015.

^{9/} The unemployment rate is very close to the level of a year ago, and it has even increased for men in the 25- to 54-year-old age bracket. Because labor supply is more inelastic in this group than in other labor market segments, their unemployment rate tends to more closely reflect changes in labor demand.

BOX V.2 CHANGES IN THE BASELINE FORECAST SCENARIO IN THE PAST YEAR

Over the course of the past year, the Central Bank has maintained an expansionary monetary policy, holding the MPR at 2.5% since May 2017. The solid performance of the Chilean economy in recent quarters has led the Board to reevaluate its assessment of the strength of the economy. In particular, the Board holds that there is a high probability of a lasting recovery, consistent with the closing of the output gap. Consequently, monetary policy will gradually need to become less expansionary. In the last revision, key factors were a reassessment of the degree of slack in the labor market and an upward adjustment in potential growth. Thus, for this year, the growth forecast is 4.0 to 4.5%, and inflation is expected to converge to 3% sooner than projected in June (figure V.16).

Additionally, the better output data, together with some positive shocks to inflation, have substantially reduced the risks for inflation convergence identified in past Reports, which were the reason behind the cautious approach to monetary policy normalization.

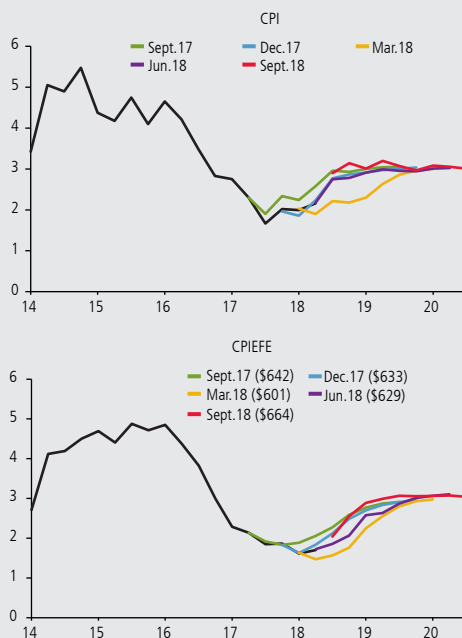
Between the cutoff dates for the Monetary Policy Report in September 2017 and 2018, headline inflation rose from just under 2% to close to 3%. Almost all of the increase was generated by higher inflation in the most volatile prices—which are excluded from the CPIPEF. This reflected two major trends: the higher fuel price, due to a combination of international prices and peso depreciation; and the disappearance of the low basis of comparison caused by the unusual behavior of some fresh fruit and vegetable prices in 2017. Thus, annual energy price inflation—which represents approximately 8.7% of the CPI—rose from 1.1% in July 2017 to 8.4% in July 2018, while fresh fruit and vegetable prices—approximately 3.6% of the CPI—went from -7.7 to 8.9% in the same period.

Throughout the past year, core inflation—the CPIPEF—has stayed under 2%, and the baseline scenarios in each Report projected a slow convergence to 3% toward the end of monetary policy horizon of two years. The possibility that some new shock, for example, an exchange rate appreciation or weaker economic growth, would push back convergence of core and headline inflation even further was the main risk that continued to justify consideration of the option of increasing the monetary stimulus. In any event, the increase would be small.

The assessment of the risks to inflation has been adjusted as the data for the past for months confirmed the consolidation of higher economic growth, causing the output gap to close more quickly than projected. In particular, for 2018, the growth forecast range in the baseline scenarios of each report was successively revised upward. Thus, in September 2017, the forecast for this year had the economy growing between 2.5 and 3.5%, whereas the baseline scenario in the current Report considers a range of 4.0 to 4.5%. By spending component, the biggest change in the

GRAFICO V.16

Evolution of the inflation forecast (*)
(annual change, percent)



(*) In the graph of CPIPEF, 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 Report.

Source: Central Bank of Chile.



forecast was in gross fixed capital formation, where the forecast for this year rose from 3.2% to 5.0%. This adjustment is based on more dynamic investment in machinery and equipment and a somewhat faster recovery of investment in construction and engineering works. The revision to the consumption forecast was smaller, from 2.8% to 3.8%, but it represents a large share in the total. The uptick is largely due to dynamic durables consumption (table V.3).

TABLE V.3
Economic growth and the current account in 2018

	Sept. 17	Dec. 17	Mar. 18	Jun. 18	Sept. 18
	(annual change, percent)				
GDP	2.5-3.5	2.5-3.5	3.0-4.0	3.25-4.0	4.0-4.5
balance of risks to output	unbiased	unbiased	upwards biased	upwards biased	unbiased
Domestic demand	3.9	3.7	4.0	4.1	4.6
Domestic demand (excl./change in inventories)	2.9	3.0	3.5	3.7	4.1
-Total consumption	2.8	3.0	3.5	3.6	3.8
-Gross fixed capital formation	3.2	3.1	3.6	4.5	5.0
	(percent of GDP)				
Current account	-1.8	-1.2	-1.4	-2.1	-2.2

Fuente: Banco Central de Chile.

Another important factor is the nominal depreciation of the peso. Starting early in the year, international financial conditions began to normalize more quickly, primarily because of the ongoing divergence of monetary policy in the developed world, due to differences in the assessment of the output gap and inflationary pressures in the different countries. In this climate, the perception of risk for emerging economies has increased over the course of 2018—including periods of sharp volatility—which has had a bigger impact on economies that are perceived as having weaker fundamentals. In addition, the trade war between the United States and China has escalated, in the midst of an economic slowdown in the latter country. This has had an effect on commodity prices, especially copper. In the immediate term, the main effect of these events has been a faster reversal in the terms of trade. The growth of Chile's trading partners has been revised only slightly (table V.4).

TABLE V.4
International scenario for 2018

	Sept. 17	Dec. 17	Mar. 18	Jun. 18	Sept. 18
	(annual change, percent)				
GDP trading partners (*)	3.5	3.6	3.8	3.8	3.6
World GDP at PPP (*)	3.6	3.7	3.9	3.9	3.8
Terms of trade	0.0	1.7	2.5	0.4	-1.2
	(levels)				
LME copper price (US cents/lb)	275	295	305	310	295
WTI oil price (US\$/barrel)	49	56	61	66	66
Brent oil price (US\$/barrel)	52	61	64	73	72

(*) Para un detalle de su definición ver Glosario.

Fuente: Banco Central de Chile.

Because of its floating currency regime, Chile has been able to absorb these shocks through movements in the exchange rate, with very little change in interest rates or risk indicators. Thus, between year-end 2017 and the cutoff data of this Report, the peso depreciated on the order of 10% in nominal terms. The real peso depreciation was much lower, given the relative strength of the Chilean economy.

The nominal depreciation of the peso affects the short-term inflation forecast. First, there is a direct effect through the usual channels of fuel prices and some tradable goods included in the CPIEFE. Second, the higher short-term inflation passes through to the rest of inflation, in particular services, through the usual indexation mechanisms.

As the evolution of the macroeconomic scenario reduced the risks for inflation convergence, the Board discarded the option of an increase in the monetary stimulus. For the June 2018 Report, this possibility received only a brief discussion, and for the July monetary policy meeting, the monetary policy options no longer included a reduction in the MPR. In the baseline scenario of this Report, the working assumption is that the MPR will begin to rise in the coming months.

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. It starts with a brief review of the evolution of the balance sheet in the first half of 2018 and then presents asset and liability forecasts for year-end 2018 and 2019.

The movements in any balance sheet account can be explained by (a) flows, which are related to settled liabilities and new transactions; (b) profits, which correspond to interest earned; and (c) adjustments, earnings, and losses associated with accounts indexed to movements in the exchange rate or inflation. Because around 97% of its assets are international reserves and 52% of its liabilities are policy instruments and promissory notes (debt), the Central Bank is a net debtor in domestic currency and a net creditor in foreign 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. Currently, the currency benchmark primarily comprises U.S. dollars (63.6%) and euros (16.8%), as well as other currencies such as the pound sterling, yen, Swiss franc, Chinese renminbi, South Korean won, Australian dollar, New Zealand dollar, and Canadian dollar.

EVOLUTION IN THE FIRST HALF OF 2018

Relative to year-end 2017, the size of the Central Bank's assets, liabilities, and equity deficit as a percent of GDP decreased in the first half of this year (table A.1).

Between 31 December 2017 and 30 June 2018, the size of the balance sheet shrank Ch\$402 billion, from 13.9% to 13.2% of GDP. On the asset side, international reserves decreased Ch\$17 billion, mainly due to a reduction in foreign correspondent accounts (\$699 billion) and increases in the value of the foreign currency portfolio (\$620 billion), IMF reserves (\$43 billion), and

IMF special drawing rights (SDRs) (\$19 billion). In other asset accounts, there was a reduction in lending to financial institutions due to the closure of repos (\$302 billion) and subordinated debt (\$146 billion). On the liability side, PDBC debt increased by Ch\$2.179 trillion, while long-term debt contracted Ch\$1.513 trillion. The use of the standing deposit facility decreased by Ch\$93 billion and other liabilities by Ch\$793 billion, mainly foreign currency deposits by commercial banks.

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

	2015	2016	2017	Jun.18	2018 (f)	2019 (f)
ASSETS	17.7	16.5	13.9	13.2	13.1	12.5
International reserves	17.1	16.0	13.3	12.8	12.7	12.2
Fiscal promissory notes and other gov. credit	0.2	0.2	0.2	0.2	0.2	0.2
Monetary policy instruments	0.0	0.0	0.2	0.0	0.0	0.0
Other assets	0.4	0.3	0.2	0.2	0.2	0.1
LIABILITIES	19.0	19.0	17.1	16.0	15.7	15.1
Promissory notes with secondary market	8.5	8.9	8.3	8.3	7.6	6.7
Bank policy instruments	3.5	2.3	1.8	1.2	1.3	1.3
Other bank liabilities	0.4	0.7	0.2	0.3	0.3	0.3
Other liabilities excl. monetary base	0.8	1.0	0.6	0.5	0.5	0.5
Monetary base	5.7	6.1	6.2	5.6	6.1	6.3
EQUITY (A+B+C)	-1.2	-2.5	-3.2	-2.8	-2.7	-2.6
A. Initial equity	-2.2	-1.2	-2.3	-3.1	-3.0	-2.5
B. Net income	1.0	-1.3	-0.9	0.3	0.3	-0.1
Nonfinancial	0.0	0.0	0.0	0.0	0.0	-0.1
Net interest	-0.4	-0.3	-0.3	-0.1	-0.2	-0.1
Effect of exchange rates and UF	1.4	-1.0	-0.5	0.5	0.6	0.0
C. Capital contributions	0.0	0.0	0.0	0.0	0.0	0.0
Position payable in foreign currency (*)	14,9	13,3	12,9	13,0	12,8	12,3

(*) Foreign currency assets minus foreign currency liabilities.

(f) Forecast.

Source: Central Bank of Chile.

In terms of flows, the balance sheet changes described above explained the reductions in the monetary base of Ch\$592 billion in the first half (table A.2).



TABLE A.2

Balance sheet flows of the Central Bank of Chile (1)
(billions of pesos)

	2015	2016	2017	Jun.18	2018 (f)	2019 (f)
1. Net international reserves	-120	878	-2.155	-793	-793	0
2. Policy instruments in domestic currency	135	1.382	330	-495	658	1.122
3. Central Bank promissory notes in dollars	0	0	0	0	0	0
4. Other domestic currency operations, excl. monetary base (2)	777	-230	433	-97	-42	35
5. Other foreign currency operations (3)	177	-839	2.155	793	793	0
Monetary base (change = 1+2+3+4+5)	969	1.191	763	-592	617	1.156
Position payable in foreign currency (forex operations=1+3+5) (4)	56	39	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.

The Bank's equity position went from $-\$5.7833$ trillion on 31 December 2017 (equivalent to -3.2% of GDP) to $-\$5.171,6$ trillion on 30 June 2018 (-2.8% of GDP). This is mainly explained by earnings associated with the depreciation of the peso against the reserve currencies, of Ch\$844 billion. The rest is due to losses deriving from the interest rate differential between the interest paid on debt and the interest earned on international reserves ($\$202$ billion), administrative expenses ($\$24$ billion), and the costs of issuing and distributing banknotes and coins ($\$5$ billion).

BALANCE SHEET PROJECTIONS FOR 2018 AND 2019

The main working assumptions underlying the forecast are the following: (i) there will be no foreign exchange operations during the forecast period; (ii) the balance of monetary policy instruments, mainly repos and liquidity deposits, will remain unused; (iii) the evolution of the monetary base will be consistent with the growth of the economy and inflation; and (iv) in the remainder of 2018, there will be no issues of long-term debt, in accordance with the debt plan published in January 2018. For 2018 and 2019, 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.

The baseline forecast scenario assumes that over the remainder of 2018 and into 2019, the differential between local and international interest rates will decrease slightly relative to the close of the first half of the year. Based on these assumptions, equity losses are expected from net interest, of approximately 0.2% of GDP in 2018 and 0.1% of GDP in 2019.

The balance sheet projections assume that exchange rates will move in accordance with forward values on the cutoff date of this Report.

The inflation forecast in the baseline scenario is 3.0% in December 2018 and 2019.

Based on these assumptions, projected losses from valuation changes are equivalent to 0.6% of GDP in 2018 and 0.03% of GDP in 2019.

Given the assumptions described in this appendix, the size of the balance sheet is projected to be 13.1% of GDP at year-end 2018. For 2019, the size of the balance sheet is expected to decrease to 12.5% of GDP. The equity deficit will reach 2.7 and 2.6% of GDP in 2018 and 2019, respectively.

Appendix B: International Reserve Management

International reserves are liquid assets in foreign currency that are held by the Central Bank of Chile to support its monetary and financial stability policies. Reserves are managed so as to provide efficient and secure access to international liquidity and to safeguard the financial equity of the Bank. Reserve management is based on the legal framework defined in Article 38, Title III, of the Basic Constitutional Act of the Central Bank.

The management objectives for the international reserves are as follows: (i) to hold foreign exchange reserves in highly liquid instruments, which can be called in the briefest period possible without incurring significant transaction costs; (ii) to invest in instruments that present limited financial risks, in order to limit the risk of generating capital losses and ensure the preservation of capital; (iii) to minimize the volatility of the value of the Bank's equity as a result of changes in the exchange rates of the investment currencies vis-à-vis the peso; and (iv) to reduce the cost of holding reserves at the margin.

In carrying 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 of its international reserve management, 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, custody, accounting, and generation of all payment instructions and/or fund movements to ensure compliance with all contractual liabilities.

The daily monitoring of compliance with the investment guidelines and parameters defined by the Board is carried out by the Financial Risk Assessment and Management Area, which is independent of the two areas cited above. The Financial Markets Division submits proposals to the Board regarding changes in investment policy and supervises the investment process.

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.

TABLE B.1
Benchmark structure of the international reserve investment portfolio, by type of risk and benchmark

Structure	Credit risk	Share	Benchmark
Short-term liquidity portfolio	Sovereign	24%	<i>ICE BofA Merrill Lynch Index: Treasury Bills Index (unhedged) 0–1 year duration (100%) (USD)</i>
Medium-term liquidity portfolio	Sovereign	61%	<i>Bloomberg Barclays Capital Global Aggregate Index: Treasury Bond Index (unhedged) 1–3 year duration (90%) 3–5 year duration (10%) (USD, EUR, CAD, AUD)</i>
Diversification portfolio	Sovereign and bank	15%	<i>Bloomberg Barclays Capital Global Aggregate Index: Treasury Bond Index (unhedged) 5–7 year duration (70.6%) 7–10 year duration (9.4%) (USD, EUR, JPY, KRW, CHF, NZD, GBP) Bloomberg CGDRC Index: Customized for deposits in CNH (20%)</i>
Total portfolio		100%	

Source: Central Bank of Chile.

To achieve the management objectives, the benchmark structure defines three investment portfolios: (a) the short-term liquidity portfolio (24%); (b) the medium-term liquidity portfolio (61%); and (c) the diversification portfolio (15%). Together, these three funds make up the foreign exchange investment portfolio (table B.1). The international reserves portfolio further comprises the cash portfolio (transaction account balances held by the Treasury, public companies, and banks) and the other assets portfolio (IMF special drawing rights, certified gold, and other assets).

The benchmark structure of the investment portfolio includes a total of ten currencies: U.S. dollars (63.60%), euros (16.75%), Canadian dollars (4.575%), Australian dollars (4.575%), Japanese yen (0.45%), Swiss francs (0.75%), pounds sterling (1.50%), South Korean won (3.00%), New Zealand dollars (1.80%), and Chinese renminbi (3.00%).

With regard to credit risk, the benchmark considers 97% in sovereign risk and 3% in bank risk, with the latter limited exclusively to deposits denominated in Chinese renminbi. The total interest rate risk of the investment portfolio, measured through modified duration, is approximately 23 months (table B.2).

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 2018, a share of the investment portfolio (2.99%) 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.

In the first half of 2018, the annualized return from the internal international reserve management program was 1.00% measured in local currency, which does not take into account the appreciation or depreciation of the currencies in the portfolio. Expressed in pesos, the annualized return was 11.3%; the difference is explained by the depreciation of the local currency against the currencies in which the reserves are invested. Expressed in dollars, the annualized return was -1.41% (table B.3), which represents the sum of the yield on assets in local currency and the exchange rate effect on those

assets. In this case, the return from interest rates was positive, while the return from exchange rate movements was negative, given that the basket of currencies in which the international reserves are invested depreciated against the U.S. dollar, with the exception of the Japanese yen (figure B.1). The annualized differential return attributable to reserve management was 11 basis points over the benchmark.

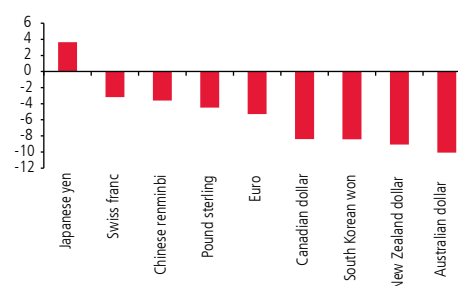
TABLE B.3
Absolute and differential returns on internal international reserve management (1) (2) (3)
(percent)

Period	In local currency		In dollars		
	Int.Res.	BMK	Int.Res.	Period	Int.Res.
2018	1.00	0.80	-1.41	-1.52	0.11
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) 2018 data are annualized returns for 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.

Source: Central Bank of Chile.

FIGURE B.1
Changes in U.S. dollar exchange rates (1) (2)
(percent)



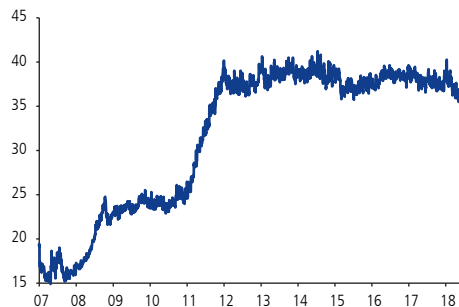
- (1) Annualized change in the first half.
- (2) Negative (positive) sign indicates an appreciation (depreciation) of the U.S. dollar against the respective currency.

Source: Bloomberg.

On 30 June 2018, the international reserves totaled US\$36.9869 billion (figure B.2). Of the total, US\$34.7596 billion were allocated to the investment portfolio, US\$1.1523 billion to the cash portfolio, and US\$1.0749 billion to other assets. With regard to the currency allocation, 62.8% of the total is invested in U.S. dollars, 15.9% in euros, and 21.4% in other currencies.

On 30 June 2018, the total value of the international reserves was US\$1.9957 billion less than at year-end 2017. This reflects a decrease in the cash portfolio (US\$1.7246 billion), due to changes in the stock of deposits and account balances held at the Central Bank by the financial system, together with an decrease in the investment portfolio (US\$311.4 million) relative to year-end 2017, mainly explained by the depreciation of the basket of reserve currencies against the U.S. dollar, which was partially offset by capital gains associated with an increase in the value of fixed-income assets. Additionally, in the period there was an increase of US\$40.3 million in other assets, due in part to operations with the International Monetary Fund (IMF) (table B.4).

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	2017		2018	
		Dec.	%	Jun.	%
Investment portfolio		35,071.0	90.0	34,759.6	94.0
Currencies and deposits	U.S. dollar	23.3	0.1	15.9	0.0
	Euro	0.3	0.0	4.2	0.0
	Canadian dollar	0.2	0.0	0.3	0.0
	Australian dollar	1.2	0.0	0.1	0.0
	Other currencies	810.7	2.1	772.3	2.1
Securities	U.S. dollar	22,260.3	57.1	22,055.6	59.6
	Euro	5,832.8	15.0	5,860.1	15.8
	Canadian dollar	1,662.1	4.3	1,661.4	4.5
	Australian dollar	1,679.9	4.3	1,497.3	4.0
	Other currencies	2,800.2	7.2	2,892.5	7.8
Total	U.S. dollar	22,283.6	57.2	22,071.5	59.7
	Euro	5,833.2	15.0	5,864.3	15.9
	Canadian dollar	1,662.2	4.3	1,661.7	4.5
	Australian dollar	1,681.0	4.3	1,497.4	4.0
	Other currencies	3,610.9	9.3	3,664.8	9.9
Cash portfolio		2,877.0	7.4	1,152.3	3.1
Currencies and deposits	U.S. dollar	2,877.0	7.4	1,152.3	3.1
Other assets		1,034.6	2.7	1,074.9	2.9
Monetary gold	Other currencies	10.2	0.0	9.9	0.0
IMF SDRs	Other currencies	770.3	2.0	760.2	2.1
IMF reserve position	Other currencies	251.1	0.6	304.8	0.8
Reciprocal credit agreements	U.S. dollar	2.1	0.0	0.0	0.0
Currencies and deposits	U.S. dollar	0.9	0.0	0.0	0.0
Total international reserves		38,982.6	100.0	36,986.9	100.0
	U.S. dollar	25,163.6	64.6	23,223.8	62.8
	Euro	5,833.2	15.0	5,864.3	15.9
	Canadian dollar	1,662.2	4.3	1,661.7	4.5
	Australian dollar	1,681.0	4.3	1,497.4	4.0
	Other currencies	4,642.6	11.9	4,739.7	12.8

Source: Central Bank of Chile.

With regard to the exposure of the investment portfolio by type of risk and country, at the close of this Report, there was an appropriate degree of diversification of the different types of risk in which the international reserves are invested. At the end of June 2018, investment in sovereign risk represented 88.4% of the investment portfolio, and it was concentrated in the United States (59.7%) and Germany (16.5%). At the end of the period, Investment in supranational risk represented 9.1% and agency risk, 0.3%. Bank risk, which represented 2.3% of the total investment portfolio, included banks in China, France, Germany, Netherlands, Singapore, and Sweden (tables B.5 and B.7^{1/}). The portfolio was also exposed to a BIS Investment Pool (BISIP) dominated in renminbi (equivalent to US\$107.8 million), which is managed directly by the Bank for International Settlements (BIS). This instrument provides exposure to the Chinese onshore fixed-income market.

^{1/} Table B.5 and B.7 present breakdown of the investment portfolio internal an external management.



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

Country	Sovereign (1)	Bank	Agency (2)	Supranational (3)	Total
Germany	4,921	189	60		5,170
Australia	1,243				1,243
Austria	137				137
Canada	1,629				1,629
China	176	94			270
South Korea	812				812
Spain	281				281
United States	18,078				18,078
France	258	188			446
Netherlands	0	94			94
Ireland	182				182
Italy	2				2
Japan	530				530
Malaysia	30				30
Norway	15				15
New Zealand	424				424
Poland	558				558
United Kingdom	280				280
Singapore	48	94			142
Sweden	1	94			95
Switzerland	220				220
Supranational	0			3,070	3,070
Other	0	13			13
TOTAL	29,823	767	60	3,070	33,721

(1) Sovereign exposure includes the following institutions with an explicit sovereign guarantee: Kreditanstalt für Wiederaufbau (KfW / Germany, US\$462.3 million), Export Development Canada (EDC / Canada, US\$87.5 million), Oesterreichische Kontrollbank (OKB / Austria, US\$137.3 million), Japan Bank for International Cooperation (JBIC / Japan, US\$404.8 million), and Instituto de Crédito Oficial (ICO / Spain, US\$13.4 million). Sovereign exposure in the United States includes a total of US\$1.9 million held at the New York Federal Reserve (US\$0.4 million in overnight deposits and US\$1.5 million in transaction accounts). Sovereign risk also includes China (US\$107.8 million in the BISIP-CNY), which is directly managed by the BIS.

(2) Exposure to German agency risk corresponds to Landwirtschaftliche Rentenbank (US\$60.3 million).

(3) Exposure to supranational risk includes the following eligible issuers: European Bank for Reconstruction & Development (EBRD, US\$9.9 million), Inter-American Development Bank (IDB, US\$64.8 million), International Bank for Reconstruction and Development (IBRD – US\$59.6 million), European Investment Bank (EIB, US\$590.3 million), Eurofima (US\$11.1 million), Asian Development Bank (ADB, US\$26.4 million), and Bank for International Settlements (BIS, US\$2.3163 billion).

Source: Central Bank of Chile.

On 30 June 2018, the currency allocation of the investment portfolio was as follows: 63.0% in U.S. dollars, 16.8% in euros, 4.7% in Canadian dollars, and 4.3% in Australian dollars. The remaining 11.2% was invested in pounds sterling, Swiss francs, New Zealand dollars, Chinese renminbi, South Korean won, and Japanese yen, as well as 0.5% diversified in other eligible (table B.6).

TABLE B.6
Internally managed portfolio: Investments by currency
(percent)

Currency	Share (1)
U.S. dollar	63.0
Euro	16.8
Canadian dollar	4.7
Australian dollar	4.3
Pound sterling	1.5
South Korean won	2.9
Japanese yen	0.5
Chinese renminbi	3.3
New Zealand dollar	1.7
Swiss franc	0.8
Other (2)	0.5
TOTAL	100.0

(1) Includes currency forward positions.

(2) Includes CZK, DKK, NOK, SEK, MYR, SGD, and PLN.

Source: Central Bank of Chile

At the end of June, the two external managers, Amundi and BlackRock, managed a total of US\$1.038 billion, allocated to the diversification portfolio (table B.7).

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

Country	sovereign (1)	Bank	Agency (2)	Supranational (3)	Total
Germany	141		14		155
South Korea	226				226
Spain	8				8
United States	255		14		269
France	9				9
Italy	8				8
Japan	36				36
New Zealand	123				123
Poland	7				7
United Kingdom	64				64
Switzerland	28				28
Supranational	0			84	84
Other	0	21			21
TOTAL	905	21	28	84	1,038

(1) Sovereign exposure includes the following institutions with an explicit sovereign guarantee: Kreditanstalt für Wiederaufbau (KfW / Germany, US\$24.8 million) and Japan Bank for International Cooperation (JBIC, US\$31.6 million).

(2) Exposure to German agency risk corresponds to Landwirtschaftliche Rentenbank (US\$14.1 million); exposure to U.S. agency risk corresponds to the Federal Home Loan Mortgage Corporation (US\$14.5 million).

(3) Exposure to supranational risk includes the following eligible issuers: Eurofima (Eurofima, US\$5.3 million), European Investment Bank (EIB, US\$12.6 million), Inter-American Development Bank (IDB, US\$15.2 million), International Bank for Reconstruction and Development (IBRD, US\$6.1 million), International Finance Corporation (IFC, US\$29.9 million), Asian Development Bank (ADB, US\$4.5 million), and Nordic Investment Bank (NIB, US\$11.2 million).

Source: Central Bank of Chile.

TABLA B.2
Benchmark currency, maturity, and duration structure of the internally managed portfolio (as of 30 June 2018)

		USD		EUR		AUD		CAD		CHF		GBP	
		Share	Duration (months)	Share	Duration (months)	Share	Duration (months)	Share	Duration (months)	Share	Duration (months)	Share	Duration (months)
Short-term liquidity portfolio (SLP)	Sovereign 0–1 year												
	Subtotal SLP	24.7%	3.2										
Medium-term liquidity portfolio (MLP)	Sovereign												
	Duration:												
	1–3 years	33.9%	22.8	14.1%	22.0	4.2%	23.7	4.2%	20.8				
	3–5 years	3.8%	45.6	1.6%	46.3	0.5%	43.1	0.5%	44.2				
	Subtotal MLP	37.7%	25.1	15.7%	24.3	4.7%	27.5	4.7%	23.2				
Diversification portfolio (DP)	Sovereign												
	Duration:												
	5–7 years	2.22%	66.9	1.1%	67.7					0.6%	68.6	1.1%	66.7
	7–10 years	0.30%	90.9	0.2%	99.2					0.1%	94.5	0.2%	92.1
	Bank 0–1 year												
	Subtotal DP	2.51%	69.8	1.3%	71.8					0.6%	73.3	1.3%	68.7
Total portfolio		64.9%	18.5	17.0%	27.8	4.7%	27.5	4.7%	23.2	0.6%	73.3	1.3%	66.0
		JPY		KRW		NZD		CNY		Total			
		Share	Duration (months)	Share	Duration (months)	Share	Duration (months)	Share	Duration (months)	Share	Duration (months)	Share	Duration (months)
Short-term liquidity portfolio (SLP)	Sovereign 0–1 year												
	Subtotal SLP									24.7%	3.2		
Medium-term liquidity portfolio (MLP)	Sovereign												
	Duration:												
	1–3 years												
	3–5 years												
	Subtotal MLP									62.7%	24.5		
Diversification portfolio (DP)	Sovereign												
	Duration:												
	5–7 years	0.3%	69.8	2.2%	63.5	1.3%	74.8						
	7–10 years	0.0%	98.6	0.3%	89.1	0.2%	89.3						
	Bank 0–1 year									2.5%	1.5		
	Subtotal DP	0.4%	72.3	2.5%	65.6	1.5%	76.5	2.5%	1.5	12.6%	54.6		
Total portfolio		0.4%	72,3	2,5%	65,6	1,5%	76,5	2,5%	1,5	100,0%	23,0		

Source: Central Bank of Chile.



Appendix C: Main Measures Taken by the Central Bank of Chile in 2018

JANUARY

4. The Central Bank of Chile announced that at the Board meeting held on 4 January 2018, the Board approved the 2018 Debt Plan, which considered no new bond issues in the year.

4. Through Resolution N°2119E-01-171228, published in the Official Gazette on 4 January 2018, the Central Bank of Chile modified the Compendium of Financial Regulations to incorporate a new Chapter III.H, on the observance of the Principles for Financial Market Infrastructures (PFMIs) in large-value payment systems (LVPS).

Without replacing the corresponding specific regulations, this new regulatory framework expressly requires the application of the PFMIs in the real-time gross settlement system, managed by the Central Bank of Chile, and the local-currency large-value clearing houses, one of which is currently managed by Combanc S.A.

Through the new regulation, the Bank reinforces its dedication to following and safeguarding a set of internationally accepted standards.

This measure fulfills the public commitment to gradually implement the PFMIs, which was assumed in January 2017.

The new regulation was open for public consultation prior to adoption. It was also reviewed by the SBIF, as required under Article 35 of the Central Bank's Basic Constitutional Act, which issued a favorable report in which the supervisor reiterated its commitment to applying the PFMIs and ensuring compliance by the market infrastructures subject to its supervision.

The regulation specifies that the requirement will only be applied to banks or financial institutions supervised by the SBIF in terms of their participation in the LVPS, and it will not be extended to other areas, such as contracts, products, and customer relations.

4. Through Resolution N° 2120-03-180104, the Board discontinued the daily the calculation and publication of the reference exchange rate (dólar acuerdo) and the associated currency basket, effective 10 January. Both indexes were also removed from the statistics compiled and published by the Bank under Article 53 of its Basic Constitutional Act.

The decision was based on the fact that the indicators do not constitute an authorized CBC adjustment or valuation system and, in particular, the exchange rate is no longer used in CBC operations, its balance sheet, or other financial statements.

10. Through Resolution N° 2121E-01-180110, measures were adopted to comply with Law N° 21,065, which declared Tuesday, 16 January 2018, a business holiday for the Santiago Metropolitan Area.

11. Through Resolution N° 2122-01-180111, the Board's Operating Rules were modified, in order to update the special rules and procedures governing a monetary policy meetings.

25. Through Resolution N° 2125-01-180125, the Board established the terms and conditions for a public call for nominees for the appointment of two Judges on the Competition Tribunal (TDLC), in the context of the scheduled partial turnover of the committee.

FEBRUARY

1. At its monthly 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.

2. Through Resolution N° 2128E-01-180202, the Board created the Institutional Affairs Division, effective on this date.

6. The Board announced that starting in February 2018, the Financial Brokers Survey (FBS) would be modified in terms of the questions asked and the frequency of the publication, in order to bring the survey in line with the new scheme of monetary policy meetings while also incorporating international best practices and suggestions from the survey participants.

The new questions include the inflation outlook for the next three months, in addition to the existing questions on the 12- and 24-month forecasts; expectations for the MPR at the next five monetary policy meetings; estimates for the MPR in 12 and 24 months; and estimates of the exchange rate in 7 and 28 days.

With regard to frequency, the FBS is currently published every fifteen days. The new publication schedule, effective in February, is as follows: two business days after the publication of the monetary policy meeting minutes and three business days before the monetary policy meeting.

15. Through Resolution de the Board N° 2130-01-180215, the Board acknowledged the new strategic asset composition of the Pension Reserve Fund (PRF), communicated to the Bank by the Ministry of Finance in Letter N° 207, dated 7 February 2018, which is to be implemented gradually. At the same time, the CBC, as fiscal agent, accepted the designated responsibility of preparing the implementation process for the new PRF investment policy.

In the same role, the CBC will carry out a selection process for contracting an international consultant to provide support for the implementation of the new PRF investment policy.

This does not imply a change in the fiscal agency fees accepted through Resolution N° 2102-01, dated 19 October 2017.

MARCH

15. Through Resolution N° 2136-02-180315, the Board appointed Mr. Nicolás Gonzalo Álvarez Hernández as an alternate member of the Technical Investment Council, in accordance with Executive Decree N° 3,500, of 1980, effective 15 March 2018, for a term ending on 10 June 2020.

20. At its monthly 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.

22. The Central Bank of Chile announced that on 3 April, it will publish the record of the monetary policy meetings held from 2000 to 2007, as announced by the Board in September of last year in the context of the implementation of the new institutional transparency measures in the area of monetary policy, which include the release of the full content of the meetings after a period of 10 years.

The aim of this initiative is to strengthen the accountability of the Board, in its role as the governing body responsible for monetary policy decisionmaking, and to increase the transparency of the adopted resolutions.

26. Through Resolution N° 2140E-01-180326, the Board—on considering the agreements adopted by the Board of Shareholders of the Banco de Chile on 22 March 2018, with regard to the distribution of dividends and the increase in the bank's capital through the issue of fully paid-in shares equal to 40% of 2017 net income—mandated that the total amount of profits or surpluses which are due to the Central Bank as holder of subordinated debt, including the share of earnings proportional to the capitalization, shall be paid in cash, in accordance with the provisions of paragraph (b) of Article 31 of Law N° 19,396.

29. Through Resolution N° 2141-01-180329, the Board appointed Mr. Joaquín Vial Ruiz-Tagle to the position of Deputy Governor of the Board and of the Central Bank of Chile, effective 29 March 2018 through 28 December 2019.

APRIL

5. Through Resolution N° 2143-02-180405, the Board approved the modification of the Compendium of Financial Regulations to incorporate a new Chapter III.D.2 on the Recognition and Regulation of Master Agreements for Derivative Contracts for the Purposes Identified Therein. The main objective of the new regulation is to improve the regulatory framework so as to move toward the greatest possible convergence with international recommendations and practices, without jeopardizing the Central Bank's financial stability objectives, especially in event that one of the counterparties to the agreements is a bank or other institutional investor.



The new regulation, which was submitted for a public consultation in 2017, establishes that the counterparties to these agreements, who opt for the new scheme under the new regulatory guidelines, can freely enter an agreement on the acceleration (early calling) and corresponding close-out netting of the respective contracts in the event of specific crisis situations, prior to forced liquidation, affecting a bank or other institutional investor (for example, intervention by the supervisory authority). This mechanism is possible only when the aforementioned process is executed at the express request of the counterparty that is not affected by the situations identified in the regulation, such that it cannot be an automatic acceleration, and only after period of two business days from the date of the respective event.

In these cases, the payment of the balance resulting from the close-out netting will be enforceable only after the crisis has been normalized or a forced liquidation or bankruptcy process initiated.

12. Through Resolutions N° 2144-01-180412 and N° 2144-03-180412, the Board appointed Mr. Ricardo Budinich Diez and Mr. Ramiro Mendoza Zúñiga, respectively, as members of the Central Bank's Audit and Compliance Committee, for a period of three years, effective 12 April 2018.

MAY

3. At its monthly 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.

3. Through Resolution N° 2147-01-180503, the Board mandated the opening of a Request for Comments on the proposed modifications to the regulation on banks' liquidity risk measures and management, contained in Chapter III.B.2.1 of the Compendium of Financial Regulations.

This initiative incorporates a regulatory limit for the liquidity coverage ratio (LCR), to be implemented gradually.

This proposal builds on the regulation on liquidity risk management adopted by the Bank in 2015, following the Basel III guidelines, which included new quantitative short- and long-term liquidity measures—namely, the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR), respectively. At that time, the measures were incorporated solely as a reporting requirement.

4. Operating Rule N° 9 of the Manual of the Central Bank of Chile's Compendium of Monetary and Financial Regulations (CMFR) was dictated, on the constitution of the technical reserve requirement by banks in the form of deposits at the Central Bank of Chile, in accordance with Section III of Chapter 3.1 of the Compendium.

9. Through Resolutions N° 2148E-01-180509 and N° 2148E-02-180509, the Board appointed, respectively, Ms. Daniela Gorab Sabat to the position of Judge / Legal Counsel on the Competition Tribunal; and Ms. María de la Luz Domper Rodríguez to the position of Judge / Economist on the same Tribunal. Both will serve a term of six years, effective on the end date of the legal term of the respective previous appointments.

10. Through Resolution N° 2149-03-180510, the Board approved the updated and revised text of the Regulation on the Use of Electronic Documents and Advanced Electronic Signature for the custody of authorized copies of Board meeting records; and approved the rules applicable to the use of this technology for other documents issued by the Bank.

25. The Central Bank of Chile and the People's Bank of China renewed the Bilateral Renminbi/Pesos Currency Swap Agreement, in effect since 25 May 2015. The agreement has been extended for another three years (through 25 May 2021).

31. Through Resolution N° 2157-02-180621, the Board appointed Mr. Álvaro Andrés Rojas Olmedo to the Technical Investment Council, in accordance with Executive Decree N° 3,500, of 1980, for a term ending on 10 June 2020.

31. Through Resolution N° 2152-03-180531, the Board, in accordance with the provisions of Article 76 of the General Banking Law, authorized the Banco de Crédito e Inversiones (BCI) to acquire up to 100% of the shares of TotalBank (TB), which is established and operates in the State of Florida in the United States of America, through the merger of TB with City National Bank of Florida, a banking subsidiary of BCI that is also established in Florida.

JUNE

13. At its monthly 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.

14. Through Resolution N°2156-01-180614, the Board approved the suspension of the payment, by the Central Bank of Chile, of interest on bank reserves in national currency, starting in 2019. This measure was announced on 21 July.

This initiative was effected through the repeal of 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, applicable to banks and savings and loan associations that are supervised by the SBIF, governing reserve requirements on national currency deposits and other liabilities with a maturity of 30 days or more.

This resolution will allow the Bank to update a regulation that has not been modified since 1992, bringing it in line with the reduction of inflation over the last 25 years and with current international practices, wherein the vast majority of central banks do not pay interest on bank reserves. The elimination of interest payment on reserves will enter into force on 8 January 2019, with the close of the first reserve period in the calendar year.

Bank reserves are used not as an active monetary policy instrument, but rather as a passive financial stability tool. In that sense, the elimination of interest on reserves will not lead to changes in the monetary policy strategy or implementation and will have only a marginal effect on banks’ funding costs.

21. Through Resolution N° 2157-03-180621, the Board mandated the opening of a Request for Comments on the proposed Contingency Protocol for the Large-Value Payment Systems, which will replace the current Chapter III.H.2 of the Compendium of Financial Regulations.

This protocol aims to strengthen the comprehensive risk management framework of the large-value payment systems (LVPS), improving and complementing the operational continuity systems that are currently available and thus providing an additional tool for safeguarding the operation of infrastructures that channel large-value payments between banks, in the face of critical operational events such as human error, cyberattacks, physical security threats, hardware and software failures, and so forth.

JULY

5. Through Resolution N° 2161-01-180705, the Board designated new positions as subject to Law N° 20,730, on Lobbying, and updated the respective guidelines.

5. Through Resolution de the Board N° 2161-02-180705, the Central Bank of Chile, as fiscal agent, accepted the transition guidelines for converging to the new strategic asset allocation of the Pension Reserve Fund (PRF), which were submitted to the Bank by the Finance Ministry via Letter N° 1032, dated 19 June 2018. This does not imply a change in the fiscal agency fees

accepted through Resolution N° 2102-01, dated 19 October 2017.

24. At its monthly 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.

26. Through Resolution N° 2164-01-180726, the Board appointed Mr. Gonzalo Acuña Leiva to the Central Bank of Chile’s Information Technology Advisory Committee, for a term of 3 years, where he will serve as President of the Committee.

AUGUST

2. Through Resolution N° 2166-01-180802, the Board modified Chapter III.B.2.1 of the Compendium of Financial Regulations, which regulates banks’ liquidity risk measures and management, to implement a regulatory limit for the liquidity coverage ratio (LCR), in accordance with international recommendations for the assessment of short-term liquidity risk under Basel III.

The LCR requirements will be raised gradually from 2019 to 2023, following a timeline of 10% increases a year, starting at 60% in 2019.

16. Through Resolution N° 2169-01-180816, in the context of the Organizational Modernization Process, the Board introduced changes to the Bank’s management and administrative structure. The measure, which was adopted in accordance with the Board’s authority to determine the Central Bank’s management structure and in the context of the 2018–2022 strategic planning process, aims to promote more flexible decisionmaking, process optimization, and organizational sustainability.

Under the new structure, the Bank’s management is headed by the General Manager, followed by the seven Division Managers: Monetary Policy, Financial Policy, Financial Markets, Statistics, Administration and Technology, Operations, and Institutional Affairs. The Monetary Policy Division was formerly the Research Division.

The new Administration and Technology Division (ATD) will encompass the Accounting and Planning Area and the Technology Area; the Operations Division includes the Treasury, Security, and Engineering Areas. These units will begin operating on 8 October 2018.

To strengthen strategic risk management, the following positions have been created: Corporate Risk Manager, who will be in charge of identifying the key internal and external strategic risks and will report directly to the General Manager; and Head of



Cybersecurity, who will be responsible for monitoring IT risks and will operate out of the Administration and Technology Division.

23. Through Resolution N° 2170-03-180823, the Board opened a Request for Comments on the proposal to update the regulations on the operation of payment cards contained in Chapter III.J.2 of the Compendium of Financial Regulations.

The modifications published for consultation incorporate suggestions from a range of market participants and other stakeholders, including the following:

(i) Relaxation of the requirements associated with payment card brands with which operators can enter into a contract; and

(ii) Adjustment of the regulations for payment service providers (PSP) that execute settlements and/or payments to affiliated entities, relaxing the following aspects: (a) an increase in the limit on the number of operations that can be executed with affiliated entities without having to register as an Operator, together with a change in the way it is calculated; and (b) the incorporation of a new operating mode for Operators, consisting in acting on the basis of a contract with another Operator.

23. Through Resolution N° 2170-04-180823, the Board replaced Chapter III.H.2 of the Compendium of Financial Regulations, "Inter-financial Operations Clearing House," with the new Chapter III.H.2. "Contingency Protocol for the Large-Value Payment Systems," noting that the content of the old Chapter III.H.2 was updated and integrated into Appendix N°3 of the new chapter.

This Resolution contains the definitive version of the Contingency Protocol for the Large-Value Payment Systems (CPLVPS), which aims to strengthen the comprehensive risk management framework and safeguard the operational continuity of large-value payments between banks, including in the face of critical operational events.

The new regulation was previously published for public consultation, and the comments received were considered in the definitive text approved by the Board. The initiative was previously reviewed by the SBIF, which issued a favorable report.

GLOSSARY

CDS: Credit default swap. A derivative instrument that provides insurance against the credit risk of the issuer of a given underlying sovereign or corporate bond. The premium implicit in the cost of this coverage (the CDS spread) is commonly used as an indicator of sovereign or corporate risk.

Commodity exporters: Australia, Canada, and New Zealand.

CPIEFE: CPI excluding food and energy prices, leaving 72% of the total CPI basket.

DXY: U.S. Dollar Index. An index of the value of the U.S. dollar relative to a basket of currencies, which includes the following countries: Canada, Eurozone, Japan, Sweden, Switzerland, and United Kingdom.

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, 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 moving years. The countries included are the destination for about 94% of total exports, on average, for the 1990–2017 period.

IVUM: Import price index.

Latin America: Argentina, Bolivia, Brazil, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela.

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 2018, the following countries are included: Argentina, Belgium, Bolivia, Brazil, Canada, China, Colombia, France, Germany, India, Italy, Japan, Mexico, Netherlands, Paraguay, Peru, Republic of Korea, Spain, Thailand, United Kingdom, and United States.

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



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

Non-Accelerating Inflation Rate of Unemployment (NAIRU): The rate of unemployment that does not accelerate the inflation 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 nonmining sectors.

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, Malaysia, Philippines, Republic of Korea, Singapore, Thailand, and Taiwan.

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 2018). The sample of countries used in the calculation represent around 90% of world growth. For the remaining 10%, the average of emerging and advanced economies is used for each year.

World growth: Regional growth weighted by its share in world GDP at PPP, published in the IMF World Economic Outlook (WEO, April 2018). World growth forecasts for the period 2018–2020 are calculated from a sample of countries that represent about 85% of world GDP. For the remaining 15%, the average of emerging and advanced economies is used for each year.

ABBREVIATIONS

BCP: Central Bank bonds denominated in pesos

BCU: Indexed Central Bank bonds denominated in UFs

BIS: Bank for International Settlements

BLS: Bank Lending Survey

BPR: Business Perceptions Report

CPIEFE: Consumer price index excluding food and energy

EES: Economic Expectations Survey

FBS: Financial Brokers Survey

IIF: Institute of International Finance

IMCE: Monthly Business Confidence Index

IPEC: Consumer Confidence Index

IPSA: Selective Stock Price Index

LCI: Labor cost index

MPR: Monetary policy rate

MSCI: Morgan Stanley Capital International

PDBC: Central Bank discount promissory notes

SBIF: Superintendence of Bank and Financial Institutions

SDF: Standing deposit facility

SDR: Special drawing rights

SNA: System of National Accounts

UF: Unidad de Fomento (an inflation-indexed unit of account).

WI: Wage index

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