# MONETARY POLICY REPORT

**March** 2017

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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.

# CONTENTS*/



*/The statistical cutoff date of the *Monetary Policy Report* was 27 March 2017.

# 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, the outlook for aggregate demand, output, and employment, and recent price and cost developments. The last chapter summarizes the results of this analysis in terms of the prospects and risks affecting 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 30 March 2017 for presentation to the Senate on 3 April 2017.

**The Board**

# SUMMARY

Annual CPI inflation has continued to decline, in line with what had been anticipated in December's *Monetary Policy Report*. CPIEFE-goods inflation remains highly determined by the evolution of the exchange rate, while CPIEFE-services inflation has continued to gradually decline, driven both by usual indexation and the cyclical position of the economy. Performance by sectors unrelated to natural resources (other GDP) has been weaker than expected and recent data suggest the speed of recovery will be slightly weaker than anticipated in December. Moreover, recent events that have considerably reduced mining output will reduce annual GDP growth in 2017. However, several elements will support the economy as it recovers higher growth rates in the forecast horizon, including the absence of observable and relevant macroeconomic imbalances, a smaller negative impact from the adjustment in mining-related investment, an improvement in the global outlook, and monetary policy that will clearly remain expansionary. However, the expected output gap of the next two years will be somewhat greater than anticipated in December, reducing medium-term inflationary pressures. In this context, the Board reduced the monetary policy rate (MPR) by 50 basis points (bp) during the first months of the year, anticipating rate cuts with respect to what was expected in December. Along these lines, relative to what was expected in December, the Board considers that a slightly greater monetary policy impulse is required to ensure convergence of inflation to the target. As a result, a MPR trajectory similar to the one implied by financial asset prices during the ten days prior to the statistical closing of this *Report* is used as a working assumption. ,

In February, annual CPI inflation reached 2.7%, with core inflation –CPIEFE– that stood at 2.2%. The decline in the latter remains driven by the goods component of the index, which annual increase fell to 0.4% in February, consistent with the behavior of the nominal exchange rate that has declined almost 10% with respect to its level one year ago. As would be expected by greater inertia of the series, the services component of the CPIEFE increased by 3.4% in annual terms in February, decelerating considerably less than the goods component. Although headline inflation is expected to continue declining in the coming months, it is expected to return to 3% by the end of 2017 and fluctuate close to 3% towards the end of the forecast horizon in the first quarter of 2019. This trajectory of inflation rests on two assumptions. First, a relatively stable real exchange rate (RER) close to the current levels, which is considered consistent with fundamentals. Second, while the output gap is expected to remain larger than what was expected in December, it is expected to gradually close by the end of this year, due to the aforementioned factors.

**INFLATION**

| | 2015 | 2016 | 2017 (f) | 2018 (f) |
|---|---|---|---|---|
| | (annual change, percent) | | | |
| Average CPI inflation | 4.3 | 3.8 | 2.7 | 2.9 |
| December CPI inflation | 4.4 | 2.7 | 2.9 | 3.0 |
| CPI inflation in around 2 years (*) | | | | 3.0 |
| Average CPIEFE inflation | 4.7 | 4.0 | 2.1 | 2.5 |
| December CPIEFE inflation | 4.7 | 2.8 | 2.3 | 2.7 |
| CPIEFE inflation in around 2 years (*) | | | | 2.8 |

(f) Forecast.
(*) Corresponds to inflation forecast for the first quarter of 2019.
Source: Central Bank of Chile.

**ECONOMIC GROWTH AND CURRENT ACCOUNT**

| | 2015 | 2016 | 2017 (f) | 2018 (f) |
|---|---|---|---|---|
| | (annual change. percent) | | | |
| GDP | 2.3 | 1.6 | 1.0-2.0 | 2.25-3.25 |
| National income | 1.8 | 1.7 | 2.2 | 2.9 |
| Domestic demand | 2.0 | 1.1 | 2.3 | 4.1 |
| Domestic demand (w/o inventory change) | 1.7 | 2.0 | 1.9 | 2.8 |
| Gross fixed capital formation | -0.8 | -0.8 | 0.2 | 3.0 |
| Total consumption | 2.4 | 2.8 | 2.5 | 2.8 |
| Goods and services exports | -1.8 | -0.1 | 1.6 | 2.7 |
| Goods and services imports | -2.7 | -1.6 | 4.3 | 7.2 |
| Current account (% of GDP) | -2.0 | -1.4 | -0.9 | -2.1 |
| Gross national saving (% of GDP) | 21.4 | 20.2 | 20.3 | 20.5 |
| Gross national investment (% of GDP) | 23.3 | 21.6 | 21.2 | 22.6 |
| GFCF (% of nominal GDP) | 23.6 | 23.2 | 22.5 | 22.6 |
| GFCF (% of real GDP) | 22.5 | 21.9 | 21.7 | 21.7 |
| | (US$ million) | | | |
| Current account | -4,670 | -3,574 | -2,400 | -5,700 |
| Trade balance | 3,465 | 5,256 | 8,500 | 4,900 |
| Exports | 62,183 | 60,597 | 67,100 | 69,200 |
| Imports | -58,718 | -55,341 | -58,600 | -64,300 |
| Services | -3,418 | -3,137 | -3,400 | -3,600 |
| Rent | -6,576 | -7,117 | -9,400 | -8,700 |
| Current transfers | 1,858 | 1,424 | 1,900 | 1,700 |

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

Regarding activity, annual growth in 2016 was essentially in line with what was expected in December. However, the deceleration was more pronounced throughout the year, which is expected to persist in to the start of 2017. The weakness of sectors linked to investment in construction and related services, which tend to be more persistent, stood out within Other GDP. Slower growth was also apparent in personal services, although this was partly due to the impact of the public sector strike towards the end of last year. The prolonged strike in the *Escondida* mine will have a material impact on the economy's first quarter GDP print and sheds about 0.2 percentage points of the overall 2017 growth forecast. In any case, this event is not expected to generate significant spillovers on activity elsewhere in the economy, nor on inflation. As a result, in the baseline scenario, the Board estimates that the economy will grow between 1-2%, a lower range than estimated in December (1.5-2.5%).

On the expenditure side, domestic demand—excluding changes in inventories– also tended to decelerate throughout the year. Weakness was most evident in investment in construction and other works, which contracted by 4.9% in annual terms during the fourth quarter (average growth of 0.5% between the first and third quarters). Private consumption, in line with its behavior in the previous years, supported the economy, growing by more than 2% annually throughout 2016. Private consumption growth has been supported by wage growth and an unemployment rate that is low from a historical perspective. It must be noted that while consumption of non-durables and services has remained relatively stable, durable goods consumption has recovered, partly due to the appreciation of the peso during the last year, and the necessary replenishment of inventories following several years of weak growth and even contraction. Something similar is observed with gross fixed capital formation in machinery and equipment. Excluding the purchase of non-regular transport machinery, this component of investment has improved in recent months.

The labor market continues to gradually adjust. Wage employment declined by 1.2% annually in the moving quarter that ended in January, and annual wage growth moderated. In addition, the number of hours worked declined, at a time when an increasing number of workers suggest their workdays are shorter than desired. In any case, despite being more precarious, self-employment has acted as a significant buffer to the loss of dynamism in wage employment.

Domestic financial conditions remain favorable, particularly in terms of interest rates. Notwithstanding, credit volumes have decelerated with respect to previous years, a fact that has been noted by the *Business Perceptions Report* (IPN). Results of the Bank Lending Survey (BLS) suggest slowing credit volumes are a result of overall subdued demand.

For 2018, the baseline scenario considers economic activity will improve with respect to this year, growing between 2.25 and 3.25%. This will allow for a gradual narrowing of the output gap during the following year, considering the Board still estimates the economy's potential growth in the range of 2.5 and 3%, and trend growth between 3 and 3.5%. As mentioned earlier, greater growth is expected to originate from an economy that does not appear to show any relevant imbalances, while certain factors that were constraining growth in the recent past have receded—such as the important decline in mining-related investment in

the past four years—an expansionary monetary policy, and a more favorable global outlook. Fiscal policy is assumed to follow the fiscal consolidation path announced by the Government.

On the external front, recent months suggest the global outlook appears more favorable. On one hand, activity data and expectations in advanced economies have been more upbeat, marked by better than expected performance by the manufacturing sector and a more positive outlook following years of stagnation. As a result, deflationary risks have dissipated, as inflation is expected to return to more normal levels. The Federal Reserve (Fed) has continued to normalize monetary policy and monetary authorities in Europe and Japan appear to have set aside the possibility of additional stimulus measures. Markets have incorporated these changes in their expectations avoiding any serious disruptions. Notwithstanding the volatility during recent months, the U.S. dollar has generally remained strong relative to currencies of advanced and emerging economies. With respect to the U.S. dollar, the peso has depreciated by slightly more than 30% relative to its average of 2013, showing a similar pattern as the currencies of most trading partners. As a result, the multilateral variation has been contained; the RER (indexed at 1986=100) is currently close to 93, slightly more than 3% above its 2013 average. Along with better signs in advanced economies, activity in China has remained relatively stable, which contrasts with what had been observed one year ago.

In this context, there has been a generalized increase in willingness to take on risk in financial markets, increasing stock market indices, reducing sovereign risk premiums and increasing capital flows to emerging markets. Commodity prices have also benefitted. At the statistical close of this *Report*, the copper price was close to US$2.6, and average prices for 2017 and 2018 were estimated at US$2.55 and 2.50 respectively (US$2.35 and 2.40 in December). On oil, supply factors have become more relevant in recent weeks, exerting some downward pressure on prices on the average expected price for the year, and the next year, both close to US$50.

In the baseline scenario, monetary policy will provide a somewhat greater impulse than what was expected in December. As a working assumption, the MPR is considered to follow a trajectory similar to the one implied by financial asset prices during the ten days prior to the statistical closing of this *Report*. As a result, monetary policy will remain expansionary throughout the entire policy horizon. As always, the implementation of monetary policy and any possible adjustments to the MPR will depend on the effect of incoming information about projected inflation dynamics.

The baseline scenario reflects those events that are believed to be the most likely to occur with the information at hand at the closing of this *Report*. There are risks, however, which, if materialized, may reshape the macroeconomic outlook and, therefore, may alter the course of monetary policy.

On the external front, some sources of uncertainty are especially relevant, yet given their nature, are difficult to quantify. These include political-economic uncertainty in several election outcomes in Europe, the realization of Brexit, and the eventual shift towards protectionist policies in several advanced economies. The impact

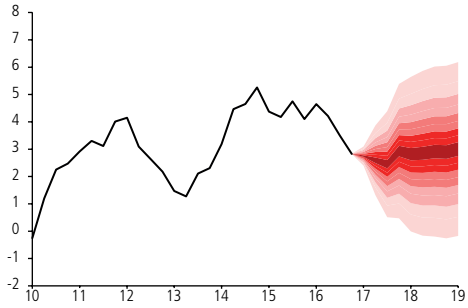
**INTERNATIONAL BASELINE SCENARIO ASSUMPTIONS**

| | Avg. 00 - 07 | Avg. 10 -14 | 2015 | 2016 | 2017 (f) | 2018 (f) |
|---|---|---|---|---|---|---|
| | (annual change. percent) | | | | | |
| Terms of trade | 8,2 | 1,3 | -4,2 | 1,9 | 4,6 | -0,5 |
| Trading partners GDP (*) | 3,6 | 4,2 | 3,2 | 2,8 | 3,3 | 3,5 |
| World GDP at PPP (*) | 4,2 | 4,0 | 3,2 | 3,0 | 3,4 | 3,5 |
| World GDP at market exchange rate (*) | 3,2 | 3,1 | 2,6 | 2,3 | 2,8 | 2,9 |
| Developed economies' GDP at PPP (*) | 2,6 | 1,6 | 2,2 | 1,6 | 2,0 | 2,0 |
| Emerging economies' GDP at PPP (*) | 7,4 | 5,7 | 4,2 | 4,0 | 4,6 | 4,8 |
| External prices (in US$) | 4,6 | 3,0 | -9,8 | -2,7 | 2,1 | 1,3 |
| | | | (levels) | | | |
| LME copper price (US¢/lb) | 154 | 349 | 249 | 221 | 255 | 250 |
| WTI oil price (US$/barrel) | 44 | 92 | 49 | 43 | 50 | 50 |
| Brent oil price (US$/barrel) | 42 | 102 | 52 | 44 | 52 | 52 |
| Gasoline parity price (U.S.$/m$^3$) (*) | 366 | 748 | 467 | 389 | 457 | 444 |
| Libor US$ (nominal, 90 days) | 3,6 | 0,3 | 0,3 | 0,7 | 1,5 | 2,4 |

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

Source: Central Bank of Chile.

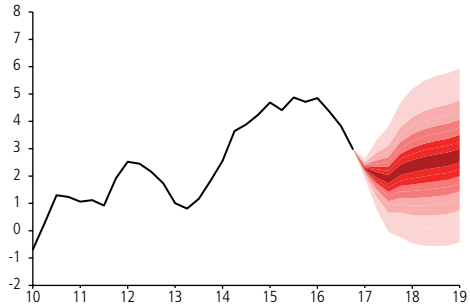
**CPI INFLATION FORECAST (*)**
(annual change, percent)




(*) 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 summarize the risks on future inflation as assessed by the Board. The baseline scenario uses as a working assumption that the MPR will follow a trajectory similar to the one implied by financial asset prices during the ten days prior to the statistical closing of this *Report*.

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 summarize the risks on future inflation as assessed by the Board. The baseline scenario uses as a working assumption that the MPR will follow a trajectory similar to the one implied by financial asset prices during the ten days prior to the statistical closing of this *Report*.
Source: Central Bank of Chile.

associated with other risks of the external front has varied considerably over time. The U.S. economy has performed favorably, reducing the risk of a new recession in the short-term, moreover, the expected fiscal impulse could support slightly higher growth in the coming years. However, the expected fiscal package is in itself a source of risk, not only due to the uncertainty regarding its materialization, but also due to possible inflationary side-effects, and a potentially tighter than expected monetary policy response, in turn associated with potential disruptions in financial markets. China remains a source of concern although its authorities appear to have successfully managed a gradual deceleration without a major disruption thus far. In this context, recent favorable trends in the global outlook may improve, leading to a better than expected global tailwind, either due to a stronger global economic recovery and/or better commodity prices. This improved outlook appears to have permeated financial markets, where riskier asset prices have increased. Even though it is still too soon to validate this optimism, it is evident that market sentiment has improved during the year, even in domestic markets, which have performed better than their peers.

On the domestic front, after several years of subdued growth, we cannot rule out that a more persistent phenomenon may be affecting the economy's ability to grow, in which case it would be necessary to revise the public and private expenditure plans. Moreover, while the labor market has gradually adjusted without generating a significant increase in unemployment, we cannot rule out the possibility that after several years of low growth, firms require larger personnel adjustments, especially if the expected growth recovery towards the end of the year stalls. In contrast, in the context of the absence of observable macroeconomic imbalances that hinder growth, a scenario in which the global outlook improves, combined with the end of the adjustment of mining-related investment, and a rebound in sentiment, may lead to a more dynamic recovery.

In this context, the Board believes that the risk balance is unbiased for both inflation and activity.

Inflation has been consistent with what was expected in December. However, economic performance has been weaker, widening the output gap by more than what was anticipated in December, thereby reducing inflationary pressures. As a result, the Board believed it was appropriate to increase the monetary impulse between January and March. Looking ahead, the Board believes a slightly more expansionary monetary policy than what was anticipated in December is needed. As a result, the baseline scenario uses a working assumption that the MPR will follow a trajectory similar to that of financial asset prices during the ten days prior to the statistical closing of this *Report*. As always, the Board reiterates its commitment to conduct monetary policy with flexibility, so that projected inflation stands at 3% in the policy horizon.

# MONETARY POLICY DECISIONS IN THE LAST THREE MONTHS

## BACKGROUND: DECEMBER 2016 *MONETARY POLICY REPORT*

The December *Monetary Policy Report* indicated that annual CPI inflation had continued to decline, albeit faster than anticipated. This was mainly due to the price trend of goods that are most affected by the exchange rate and some foods. In the CPIEFE, goods inflation fell from 3.7% in July to 1.6% in November, while services eased more gradually, in line with the moderate widening of the output gap and their higher degree of indexation. Output data for the third quarter continued to be slightly dynamic. The October Imacec recorded a surprise to the downside, with a negative annual rate, which strongly reflected the trend in some industrial sectors and mining. Domestic demand, excluding inventories, had grown at around the rate of other GDP, driven by private and government consumption. Investment performance was better than expected, though still weak, with an ongoing deterioration in construction and other works.

Externally, the main news was the U.S. election result and its effect on the world economic outlook. For emerging economies, financial conditions initially tightened, but they reverted after a few days. Output and inflation continued to improve in the developed world and to stabilize in the emerging. The external stimulus for the Chilean economy was expected to be in line with September projections, although the risks had increased. Financial conditions would be less favorable, but the terms of trade would be better.

The baseline scenario estimated that 2016 growth would be in the lower end of the forecast range projected in September (1.5%), mainly due to a weaker mining sector. For 2017, the range was adjusted to 1.75–2.75%, because the lower initial velocity and the greater risks, together with markedly pessimistic confidence levels, suggested that output growth rates would take somewhat longer to return to potential. The higher growth outlook for 2017, relative to 2016, was based on the fact that the economy was balanced, to the extent that the mining sector would not repeat the sharp contractions of previous years and inflation would increase after declining for three years straight. The effect of these changes would be most evident in the second half of the year. The government would continue its fiscal consolidation as announced, and monetary conditions would remain expansionary. In terms of inflation, the annual CPI rate was expected to be in the lower end of the target range for most of 2017 and then start to move toward the center late in the year. This projection incorporated a strong reduction in the CPIEFE, considering that the exchange rate path would continue to contribute to lower inflation on imported goods. Services inflation was also expected to continue its gradual descent, not only because the stamp and duty tax would leave the basis of comparison, but also because the lower annual inflation in 2016 would affect indexed prices. For the monetary policy rate (MPR), the working assumption used in the baseline scenario was in line with the different expectations measures, which projected two cuts of 25 basis points (bp) each within the forecast horizon.

The risks had increased. Externally, there was a lot of uncertainty regarding the impact of the possible fiscal package and protectionist measures of the new U.S. administration. In addition, higher-than-expected inflation could cause the Fed to act more aggressively. In Europe, the risks derived from the United Kingdom's exit from the European Union, presidential elections in several countries, and doubts about the health of the banking system. For the emerging economies, financial conditions could deteriorate further than expected. China continued to present risks, especially in terms of its financial system. In Latin America, a number of economies were still facing important adjustments. Domestically, annual inflation could converge to the 3% target more slowly than projected, especially if the expansion of the output gap increased. The evolution of the peso continued to be subject to a high degree of uncertainty, which could have an effect on short-term inflation. The deterioration of external conditions could have a greater impact than expected on output. At the same time, the copper price could increase more than forecast, boosting domestic expenditures and improving confidence. Taking all these elements into account, the Board's balance-of-risk assessment for inflation and output was broadly balanced.

At the December meeting, the Research Division presented two options: lowering the MPR by 25 bp; or holding it at 3.5% while communicating a downside skew. The former was justified to the extent that, as shown by the *Monetary Policy Report's* sensitivity tests, deviations from the baseline scenario were more likely and

could require a stronger monetary stimulus. The latter was consistent with the baseline scenario, which considered a more expansionary monetary policy, but not necessarily in December. The Board decided to hold the MPR at 3.5% and changed its communicated assessment from neutral to expansionary.

## JANUARY, FEBRUARY, AND MARCH MEETINGS

In January, the new data confirmed a scenario of lower inflation and somewhat weaker output. Both the November Imacec and inflation recorded a surprise to the downside. Despite the risks identified in the December *Monetary Policy Report,* the outlook for the external stimulus remained positive, with an upward trend in commodity prices, an improvement in financial conditions, and a strengthening of output in the developed economies.

The Research Division considered that the need to reduce the MPR by 50 bp had been confirmed and that given the risks and the evolution of inflation and output, it would be advisable to do so faster than previously projected. In the short term, the exchange rate would continue to be a key factor in the reduction of inflation. In the medium term, inflation would depend strongly on the assumptions that output would recover and that the output gap would not expand significantly, but rather would begin to close within the policy horizon. Thus, the two options analyzed were reducing the MPR by 25 bp, thereby maintaining the expansionary bias; or cutting it by 50 bp, changing the bias to neutral. The difference between the two options was largely communicational. Cutting the rate by 50 bp had the disadvantage of surprising the market, and it could be interpreted as a more fundamental change in the baseline scenario of the last *Monetary Policy Report*. The advantage was that if the economy recovered more slowly than projected, the Bank would be in a better position to increase the stimulus. Reducing the rate by 25 bp had the advantages of being in line with market expectations and providing more flexibility in the implementation of monetary policy. The Board decided to lower the MPR by 25 bp, to 3.25%, and to maintain the expansionary bias.

For the February meeting, the data showed that output had evolved somewhat slower than expected, while inflation was in line with the forecast. This confirmed that moving up the MPR cuts outlined in the December *Report* had been sufficient. The December Imacec, although in line with expectations, confirmed that the fourth quarter had been below projections, particularly in other sectors. Inflation had surprised to the upside in January, largely reversing the negative surprise of December. The data for the month and the exchange rate trend indicated that the short-term inflation path would be somewhat lower than forecast. Convergence to 3% within the policy horizon continued to rest on the assumption that the economy would return to growth levels more in line with its potential toward the end of this year. The output reductions had generated doubts in this respect, but this weakening trend was not as strong in the demand data. Moreover, the external scenario could be better than expected, due to the greater growth of some trading partners and the improvement in financial conditions and the terms of trade since the last *Report*. In March, the results of the new benchmark compilation of the national accounts would be released, which would be an important factor in the forecasts used in the March *Report*.

The Research Division presented two options: lowering the MPR by 25 bp or holding it at the current level. The difference between the two options was largely communicational. The former was consistent with a scenario in which there was a high probability that such a cut would be implemented in the very short term, and it would provide an additional boost if output continued to weaken. The disadvantage was that maintaining the downward communication bias could be interpreted as a sign that the Board was considering a stronger monetary stimulus than expected. Changing the bias to neutral could suggest that the option of additional cuts had been discarded, which was, in the opinion of the Research Division, a reasonably probable scenario. Maintaining the MPR with a downward bias would not require providing details on the level it would reach. Moreover, in March the analysis in the new *Monetary Policy Report* would provide further background for predicting the future MPR path. The Board held the MPR at 3.25%.

For March, both the data and the initial analysis performed for the upcoming *Report* supported completing the expansion of the monetary stimulus in the short term. In the international scenario, the external stimulus continued to recover. Domestically, the new national accounts data had confirmed the weakening of the economy, with a sharper slowdown toward the end of 2016. The Research Division considered that the downturn would carry over into the first part of 2017, resulting in a downward adjustment to the other GDP growth forecast for this year. The strike at the *Escondida* copper mine would have a not inconsiderable negative effect on the year's growth, but given the nature of the mining sector, the impact on the inflation forecast and the MPR path would be limited. Finally, there were no inflation surprises in February.

The Research Division presented two options: cutting the MPR by 25 bp or by 50 bp. The former had the advantage of being consistent with most market expectations. It would also be consistent with a subsequent decision by the Board to implement a more expansionary policy, if merited after the analysis for the March *Report* was completed. On the other hand, a 50 bp cut would be in line with the updated forecast scenario and with the assessment that the monetary stimulus should be increased quickly. The main disadvantage of the latter option was that it could be interpreted as a signal that the Bank had changed its view on the economy and deemed it necessary to implement a stronger monetary stimulus than the *Report's* analysis suggested. The Board reduced the MPR by 25 bp, to 3.0%.

# I. INTERNATIONAL SCENARIO

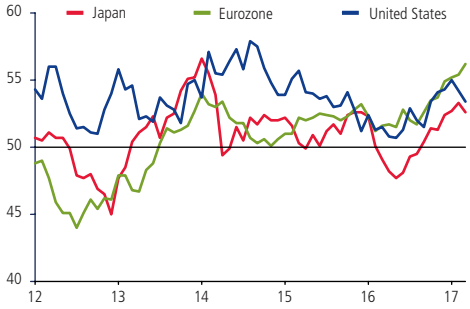
*This chapter analyzes the recent evolution of the world economy and the outlook for the next two years. It also describes the main risks.*

In the past three months, the recovery process has solidified in the developed world, which has contributed to justifying a faster withdrawal of monetary stimulus measures without generating any major disruptions in the markets. World financial conditions have remained favorable in the face of a new increase in the monetary policy rate by the U.S. Federal Reserve (the Fed). Contributing factors include the more stable situation in China and the consolidation of the improved world growth outlook. At the same time, the copper price stayed near its peak of the last two years, and the forecast improved, which contributed to better terms of trade. Thus, the external stimulus for the Chilean economy, in the policy horizon, will be somewhat better than forecast in December. Nevertheless, the world scenario presents a wide range of risks, such that these recent trends could be reinforced or conditions could begin to deteriorate again.

## GLOBAL OUTLOOK

In the developed world, the data for the last three months continue to point to a consolidation of the higher growth scenario. Both consumption and the services sector recorded a relatively good performance, and the outlook improved for the manufacturing sector (figure I.1). In the United States, the GDP data for the fourth quarter of 2016 reveal a strong recovery of private investment. On average, market forecasts for the U.S. growth rate are around 2.3% for the 2017–2018 period, but there is a wide distribution for the coming year (figure I.2). This reflects the uncertainty surrounding the measures that the new administration will ultimately take—including possible tax cuts, infrastructure plans, and protectionist measures—and their effects. In the Eurozone, the recovery was more synchronized among countries, although there are still important differences. Spain was the most dynamic (3% in annual terms in the fourth quarter of 2016), while France and Italy recorded more gradual growth rates (around 1% annual). In the United Kingdom, output has not been strongly affected by the country's imminent exit from the European Union (with an annual growth rate of 2% in the fourth quarter), although investment is beginning to deteriorate more sharply. In both the United Kingdom and Japan, currency depreciation has boosted the external sector. The improvements in Europe and Japan largely explain the forecast revisions contained in the baseline scenario. Thus, in 2017 and 2018, global output and Chile's trading partners are expected to grow at an average rate of almost 3.5%, which is higher than in 2016 (table 1.1).

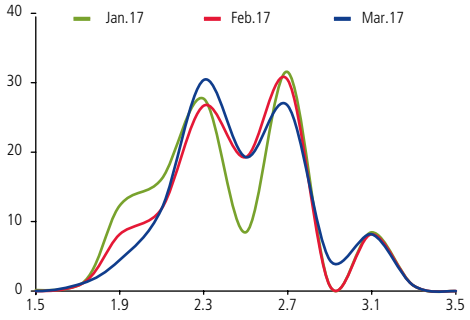
**FIGURE I.1**
Manufacturing outlook (*)
(diffusion index, pivot point=50)




(*) Measured through the Purchasing Managers' Index (PMI). A value over (under) 50 indicates expansion (contraction).

Source: Bloomberg.

**FIGURE I.2**
USA: Distribution of 2018 growth forecasts
(percent of responses)




Source: Consensus Forecasts.

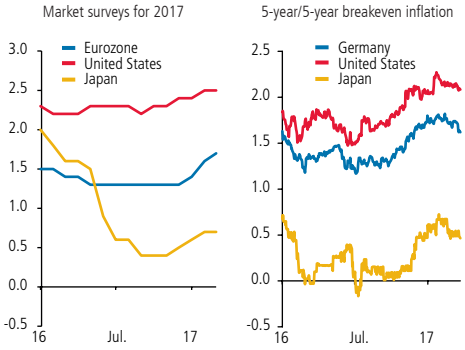
**TABLE I.1**
World growth (*)
(annual change, percent)

| | Avg. 00-07 | Avg. 10-14 | 2015 | 2016 (e) | 2017 (f) | 2018 (f) |
|---|---|---|---|---|---|---|
| World at PPP | 4.2 | 4.0 | 3.2 | 3.0 | 3.4 | 3.5 |
| World at market FX rate | 3.2 | 3.1 | 2.6 | 2.3 | 2.8 | 2.9 |
| Trading partners | 3.6 | 4.2 | 3.2 | 2.8 | 3.3 | 3.5 |
| United States | 2.6 | 2.1 | 2.6 | 1.6 | 2.3 | 2.3 |
| Eurozone | 2.2 | 0.7 | 2.0 | 1.7 | 1.7 | 1.7 |
| Japan | 1.7 | 1.6 | 1.2 | 1.0 | 1.2 | 1.1 |
| China | 10.5 | 8.6 | 6.9 | 6.7 | 6.4 | 6.2 |
| India | 7.1 | 7.3 | 7.6 | 6.8 | 7.3 | 7.4 |
| Rest of Asia | 5.1 | 5.0 | 3.5 | 3.7 | 3.8 | 4.0 |
| Latin America (excl. Chile) | 3.5 | 3.5 | -0.4 | -1.8 | 1.3 | 2.5 |
| Commodity exporters | 3.1 | 2.6 | 1.6 | 1.8 | 2.3 | 2.4 |

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

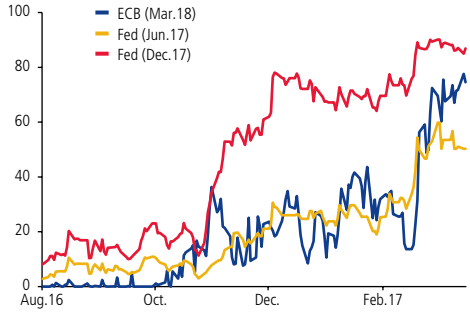
Sources: Central Bank of Chile, based on a sample of investment banks, Consensus Forecasts, IMF, and the statistics offices of each country.

**FIGURE I.3**
Inflation expectations
(percent)




Fuentes: Consensus Forecasts y Bloomberg.

**FIGURE I.4**
Probability of MPR hikes implicit in market assets (*)
(percent)




(*) Fed funds futures contracts and ECB overnight index swaps (OIS). The date in parentheses indicates the month in which the rate hike is expected.

Source: Bloomberg.

Inflation has shown clearer signs of recovery in the developed world. It continued its upward trend in the United States, while the risk of deflation subsided in Europe and Japan (figure I.3). The inflation increase was partially reflected in higher energy prices in the last year. The core components recorded disparate trends. Thus, while there was sustained growth in the United States, core inflation remains below the medium-term target in the Eurozone and Japan.

In the United States in particular, annual CPI inflation rose from 1.6% in October to 2.7% in February, while core inflation was stable at around 2.2% annual. The personal consumption expenditures (PCE) price deflator—the primary measure used by the Fed—reached 1.9% annual in January (versus 1.4% in October). The labor market remained dynamic over the past few months, with nominal wages growing around 3% annual. This has added inflationary pressures in a context of very high capacity utilization, as reflected in the low unemployment rate.

In Europe, total annual inflation rose to 2% in February (0.5% in October), while the core measure held at 0.9% in the same period. In contrast to the United States, the output recovery has translated into only a marginal improvement in the labor market, with a heterogeneous performance among countries. Thus, while unemployment remains in the double digits in France and Spain, it has dropped to its lowest levels of the last few years in Germany (near 4%). This has determined the evolution of labor costs, which continued to grow at around 1.5% on aggregate in the Eurozone.

The better inflation outlook led the Fed to implement another increase in its reference rate at its March meeting. The Fed further signaled that it will continue this process with two more hikes in 2017 and three in 2018, which will bring the rate to between 2.00 and 2.25% by the end of next year. While this is not significantly different from the path presented at the December meeting, market expectations are now converging to this scenario, reinforcing a faster withdrawal of the monetary stimulus. In Europe, the market has gradually discarded the possibility of continued expansion of the size of the quantitative stimulus measures and has moved up projections of the first rate increases to around March 2018, which were expected toward the end of that year just a few months ago (figure I.4). At the same time, the European Central Bank (ECB) continued its bond purchase program in the period, which is expected to end in December 2017.

The view that the recovery has taken hold in these economies has had an effect on the financial markets. The ten-year U.S. Treasury bond rate has fluctuated between 2.3 and 2.6% in recent months—the highest level since 2015 (figure I.5). In Europe and Japan, ten-year rates continued fluctuating around their peak since late 2016 in the same period, although they remain low relative to 2015. This wide gap in rates reflects both cyclical and monetary policy differences. This has translated into a notable strengthening of the dollar, which remains strongly appreciated relative to the last fifteen years despite the fluctuations of the past few months.

For the emerging economies, external financial conditions remain favorable, notwithstanding the change in the outlook on the monetary policy cycle. On one hand, the central banks of both Japan and Europe continue to make sizable asset purchases, giving the markets a lot of liquidity (figure I.6). On the other, the past rate hikes by the Fed have occurred in a context of complex economic-financial events in some economies. At this time, conditions are very different on both sides, and they continue to represent an element of risk (box I.1).

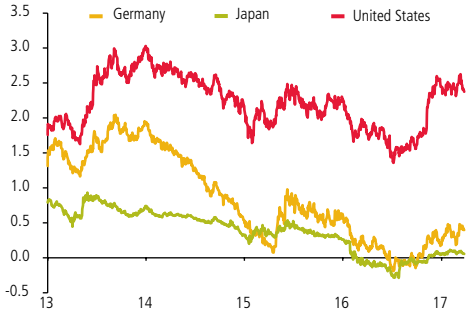
The turnaround in the market mood also contributed to keeping financial conditions lenient. The higher risk appetite continued, in conjunction with the better performance of the global economy. As a result, the stock markets rose, sovereign spreads declined, and capital inflows improved. In Latin America, the growth of capital inflows and the drop in corporate and sovereign spreads were sharper than in other emerging regions (figure I.7). Stock markets rose in general, while the U.S. exchange reached historical peaks.

In China, both financial and output indicators were more stable, which helped calm the markets. The currency continued to follow a gradual depreciation trend. Reserves and capital flows fluctuated, but they have not deteriorated as in 2016. Fourth-quarter GDP grew 6.8% in annual terms, with an ongoing gradual rebalancing among economic sectors. Higher-frequency indicators, such as imports or industrial production, have also been more stable, as has the growth outlook in general. The government has supported these growth expectations, setting the 2017 target at around 6.5%. Taken together, these trends contributed to an upward revision in the baseline scenario of this *Report*. Nevertheless, the short-term focus for China is still on its high debt levels, especially corporate debt, and the evolution of the real estate sector.

In Latin America, the main economies in the region are still in the midst of an adjustment process. In Brazil, this involves weak consumption and investment; in Colombia, industrial production. Argentina is also undergoing a difficult adjustment, but there are signs that the output contraction is slowing, in particular its industrial production. In Mexico, the economy recorded strong growth and a favorable labor market performance until the markets began to incorporate the potential effects of the U.S. election on trade and migration. Consequently, investment remains weak, which has contributed to the lower growth outlook for the year. The authorities have responded by taking measures to strengthen the country's macroeconomic fundamentals. In general, inflation has improved in Latin America, opening space for a stronger monetary stimulus (figure I.8). Furthermore, the external imbalances have lessened, and progress continues to be made in terms of fiscal consolidation. The terms of trade have also improved since the second half of 2016 (figure I.9).

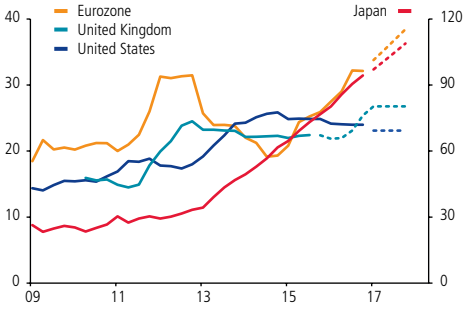
Commodity prices, on the whole, have been stable or risen over the past few months. This reflects improvements in the global scenario and supply factors. In the case of copper, the price increased to nearly US$2.70 per pound in February before dropping to around US$2.60 in the days leading up to the statistical cutoff of this *Report*. In part, the higher price is explained by the better outlook for the manufacturing sector, but lower supply is also a factor, driven by disruptions in copper production in Indonesia, Peru, and Chile. Going

**FIGURE I.5**
Interest rates on 10-year nominal government bonds
(percent)




Source: Bloomberg.

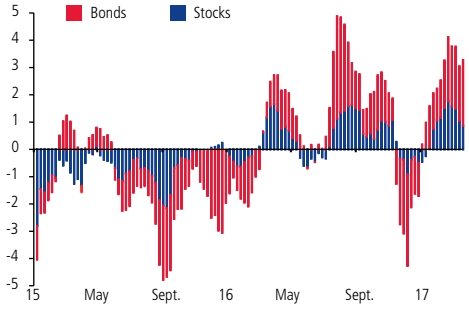
**FIGURE I.6**
Total central bank assets (*)
(percent of GDP)




(*)The dotted lines indicate forecasts through the fourth quarter of 2017.

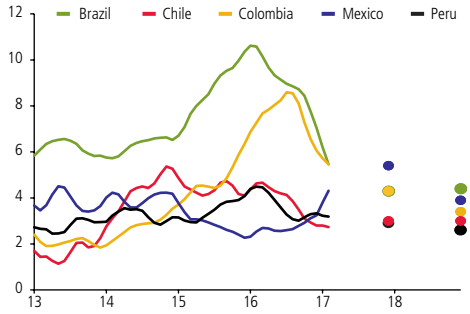
Source: Central Bank of Chile, based on data from other central banks and the IMF.

**FIGURE I.7**
Net capital inflows to Latin America
(US$ billion, moving month)



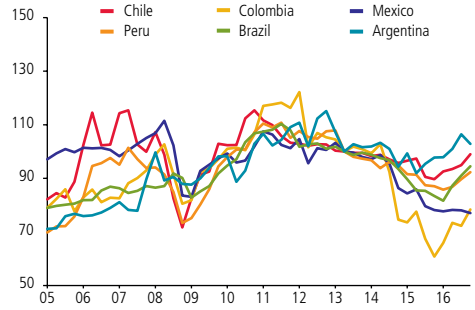

Source: Emerging Portfolio Fund Research.

**FIGURE I.8**
Inflation scenario in Latin America (*)
(annual change, percent)



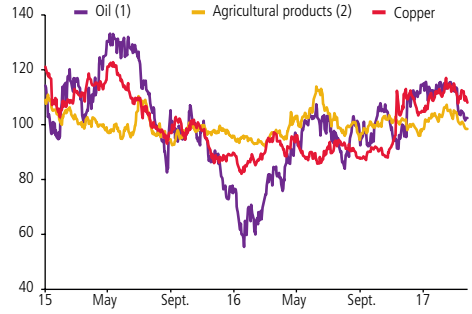

(*) Dots indicate the Consensus Forecasts for 2017 and 2018.
Sources: Bloomberg and Consensus Forecasts.

**FIGURE I.9**
Terms of trade
(index, 2013:Q2=10)




Sources: Central banks and statistics offices.

**FIGURE I.10**
Commodity prices
(index, average 2015–2017=100)




(1) Average WTI and Brent crude oil price.
(2) Goldman Sachs aggregate index.
Source: Bloomberg.

forward, the copper price is likely to decline somewhat once supply conditions normalize, although the current market shortage establishes a floor. Given the higher prices at present, the baseline scenario was revised to US$2.55 per pound in 2017 and US$2.50 in 2018. Market expectations for the copper price have also been adjusted upward, although projections vary. At the same time, the oil price increased in response to lower supply from the OPEC countries early in the year, with the average of WTI and Brent prices reaching US$55 a barrel. As of the cutoff date of this *Report*, the average had declined to less than US$50 per barrel. This coincided with an increase in supply from the United States, where the market can quickly adjust to price changes due to the ease of entry and exit of producers. Based on futures contract prices, the baseline scenario projects an average WTI and Brent price of about US$50 in both 2017 and 2018 (versus US$55 previously) (figure I.10).

## RISKS

As described above, the world scenario contains a wide range of risks. There are also other sources of uncertainty that could have significant effects, but given their nature, they are very difficult to quantify. Examples include the political-economic uncertainty surrounding the series of election processes in Europe, Brexit, and the shift toward a more protectionist stance in a number of developed economies. At the same time, some of the risks that have been present in the external scenario for a while now have eased. For example, the more favorable evolution of the U.S. economy has reduced the possibility of a new recession. The expected fiscal stimulus could contribute to supporting somewhat higher growth in the coming years, although this is also a source of risk to the extent that its implementation could give rise to problems and possible inflationary effects, which in turn could trigger a faster withdrawal of the monetary stimulus and generate disruptions in the financial markets. China remains a source of concern, although the Chinese authorities have managed the gradual slowdown of the economy relatively smoothly, which is reflected in the market's assessment. In this context, if the recent trends in the global scenario are amplified, then the external stimulus could be greater than expected, due to a faster recovery of world output and/or higher commodity prices.

# BOX I.1
# WHAT CAN BE EXPECTED FROM THE CURRENT RATE HIKE CYCLE IN THE UNITED STATES?

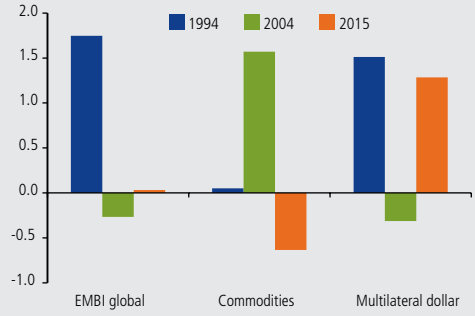
The good economic data recorded in the United States, together with the outlook for a more expansionary fiscal policy in that country, have reinforced the idea that the U.S. Federal Reserve (the Fed) will move forward more decisively in normalizing its monetary policy. In the past, rate hike cycles in the United States have often been associated with significant tension in emerging economies, especially in Latin America. This situation thus represents a risk scenario that needs to be taken into account[1]/. This box concludes that while there are important risks for the emerging economies and the region deriving from this process, they are now more limited than in previous episodes.

## Episodes in the 1980s, 1990s and 2000s

The rate hike cycles in the United States in the early 1980s and, to a lesser extent, the 1990s are good examples of the problems that can be associated with these events and are undoubtedly the basis for their reputation as being problematic. In both cases, the Fed's rate hikes occurred in a context where several countries in the region had a fixed exchange rate and dollar-denominated sovereign debt, in addition to a fragile financial sector. Consequently, the rate hikes and the dollar appreciation put pressure on reserves, which had to be used simultaneously to contain runs on the currency, the public debt, and bank deposits. In the 1980s, the effects were clearly disastrous, culminating in the so-called debt crisis. In the 1990s, the effects on the region were more limited than in the previous decade and were largely restricted to a few specific economies.

In contrast, in the mid–2000, the region's economies did not experience any major disruptions, due to at least two factors. First, many countries had "learned a lesson" from the earlier episodes and had implemented key reforms, including exchange rate flexibility; de-dollarization of sovereign debt and the banking system; less procyclical fiscal policy; and higher reserve levels. Second, there were a number of factors during the 2004 rate hike cycle that contained the effects on emerging economies: commodity prices stayed on an upward trend; the multilateral dollar did not appreciate; long rates in the United States were kept in check; and the world economy remained dynamic. All these trends took pressure off the usual transmission channels (figure I.11).

**FIGURE I.11**
Effects of U.S. interest rate hike cycles on the EMBI, commodity prices, and the dollar (*)
(standard deviation change)




(*) Percent change (in basis points in the case of the EMBI) accumulated between 6 months before and 12 months after the start of the hike cycle, divided by the standard deviation for the same period calculated from July 1993 to November 2016.

Sources: Central Bank of Chile and Bloomberg.

Underlying these trends were developments in the Chinese economy, which already had sufficient weight in world markets to put upward pressure on commodity prices and other assets, as a result of the country's growth model based on investment and high savings rates. Moreover, global financial markets continued to display a strong appetite for risk, which compressed term spreads in what became known as the Greenspan conundrum. This limited the increase in long rates at the global level[2]/.

[1]/ Some aspects of the problem are analyzed in *Monetary Policy Report,* December 2015, box I.1 ; and *Monetary Policy Report*, December 2014, box II.1.

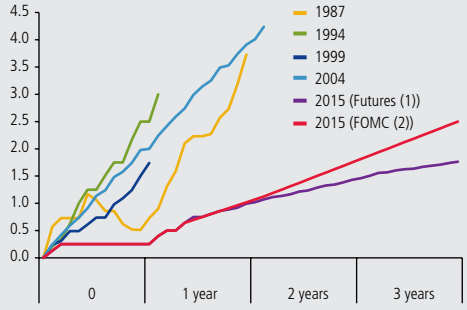
[2]/ Although the direct effects on emerging economies were limited from 2004 to 2007, the interaction between the Fed's hike and systemic risks (in this case the U.S. mortgage market) unleashed the biggest global recession since the 1930s.

## The current cycle

There are a number of reasons for arguing that the risks associated with the monetary policy normalization process in the United States are more limited this time around. First, according to the FOMC, and corroborated by the markets, the current rate hike cycle will be more gradual. The previous cycles lasted between one and two years. The longest adjustment was in 2004, when the rate increased 425 basis points (bp) in two years. In contrast, the current cycle contemplates an accumulated hike of 250 to 300 bp over four years (figure I.12).

Second, never before have central bankers in the developed economies been so explicit about their possible course of action. The use of forward guidance to anchor policy rate expectations is an important tool for limiting disruptive adjustments in the financial markets. Moreover, other developed economies continue to apply substantial monetary stimulus measures in the form of asset purchase programs, and the Fed itself has maintained its policy of not reducing the size of its balance sheet. This should limit the effect of the rate hike in the United States on asset prices, particularly in emerging markets.

**FIGURE I.12**
Fed funds rate hike cycles
(percent)




(1) Market futures in the ten days prior to the cutoff date.
(2) FOMC forecasts in March 2017.

Source: Bloomberg and the U.S. Federal Reserve.

Third, because the world is more interconnected than in the past, the Fed now appears to be more mindful of its effects on global markets. This, in part, reflects the fact that the relative size of economies like the Eurozone or China implies that any scenario of weakening or crisis will, in turn, affect the U.S. economy. Episodes like the so-called taper tantrum or the sharp volatility in China after the August 2015 devaluation have undoubtedly affected the Fed's risk analysis. Furthermore, the Chairman of the Fed has openly communicated that she is comfortable with some degree of overshooting inflation. At the same time, the medium-term inflation risks are less evident than in previous cycles. The majority of past episodes originated in a need to cool the economy, which was generating strong inflationary pressures. In contrast, at this time inflation has been below the target in the United States for several years, while the economic recovery has been slow and gradual from a historical perspective. These factors may have generated more tolerance for a temporary positive deviation of inflation, which would give the Fed more room for maneuver.

Another key contrast with previous cycles has to do with the structural characteristics of the economies in the region. As indicated, dollarization and the resulting imbalances on corporate and household balance sheets have decreased. To varying degrees, the region's main economies have floating exchange rates, which operate as a shock absorber for nominal shocks such as external rate hikes. These reforms were already in place to an extent in 2004, but they have been consolidated in the intervening years, and advances have been made on other fronts as well. In particular, several economies in the region have some sort of fiscal rule, which reduces the procyclicality of spending during expansionary cycles, and much progress has been made in establishing the institutional structure for controlling financial stability through the creation of specific committees and the adoption of modern regulatory and supervisory standards.

## Risks

While the emerging economies in general and Latin America in particular are better prepared than in the past, it is important to bear in mind that crises are always difficult to predict or anticipate. Past experience with rate hikes shows that these are dangerous not only for their direct effects, but also for the way they can interact with systemic risks, given that emerging economies have become significantly more financially integrated. There are at least two potential factors that could interact with the rate hikes to generate systemic effects. First, the term spread in the U.S. yield curve is at very low levels. A decompression could intensify the tightening of financial conditions[3]/. The second risk, which is potentially more complex for economies like Chile, has to do with the ability of the Chinese government to manage capital outflows while preserving the value of the currency and without toughening local financial conditions. This version of the Trilemma has been a source of concern for some time[4]/, and it is becoming increasingly evident as the monetary cycle in the developed economies begins to revert.

[3]/ See *Monetary Policy Report,* December 2015, box I.1 ; and *Monetary Policy Report,* December 2014, box II.1.
[4]/ See *Monetary Policy Report,* March 2016, box I.1.

# II. FINANCIAL MARKETS

*This chapter reviews the evolution of local financial markets in connection with the transmission of monetary policy.*

## MONETARY POLICY

The data released since the last *Report* reveal a gradual decline in inflation, in line with expectations, and a somewhat weaker economy than projected. The external scenario has become more favorable, with a better growth outlook for our trading partners, looser financial conditions, and better-than-projected terms of trade. In this context, the Board reduced the monetary policy rate (MPR) by 50 basis points (bp) in the first months of the year, moving up the cuts projected in December and settling it at 3%.

As of the statistical cutoff of this *Monetary Policy Report*, the market outlook for the MPR points to an additional reduction of 25 bp this year. Specifically, financial asset prices and the Financial Brokers Survey (FBS) place the MPR at 2.75% around midyear. The Economic Expectations Survey (EES) shows the rate holding at 3.0%[1/]. All three measures indicate an increase in the MPR within the forecast horizon, to around 3.25% (asset prices and FBS) or 3.5% (EES) toward the end of the period (figure y table II.1).

**TABLE II.1**
MPR expectations
(percent)

| | One year ahead | | Two years ahead | |
|---|---|---|---|---|
| | December *Report* | March *Report* | December *Report* | March *Report* |
| EES (1) | 3.00 | 3.00 | 3.50 | 3.50 |
| FBS (2) | 3.00 | 2.75 | 3.50 | 3.25 |
| Financial asset prices (3) | 3.05 | 2.83 | 3.50 | 3.36 |

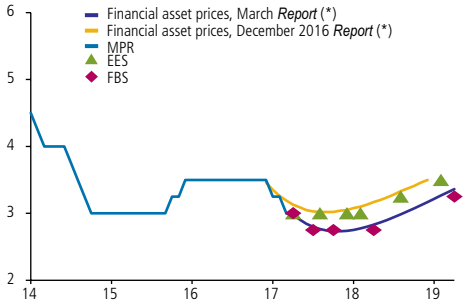
(1) December 2016 and March 2017 surveys.
(2) Survey for the first half of December 2016 and the second half of March 2017.
(3) The December and March *Monetary Policy Reports* use the average of the last ten business days as of 13 December 2016 and 27 March 2017, respectively.

Source: Central Bank of Chile.

In real terms, the MPR remains expansionary, at around 100 to 150 bp below the neutral real interest rate. As a working assumptions, the baseline scenario assumes that the MPR will remain expansionary, following a path in line with expectations implicit in financial asset prices in the ten days prior to the statistical cutoff date. As always, the implementation of monetary policy and possible adjustments to the MPR are contingent on the effects of new information on the expected inflation dynamics.

[1/] The cutoff date of the EES was before the *Monetary Policy Meeting* in March.

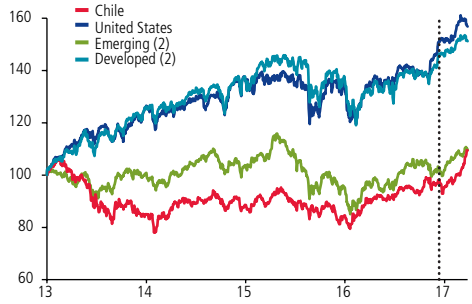
**FIGURE II.1**
MPR and expectations
(percent)




(*) Constructed using interest rates on swap contracts up to 10 years.

Source: Central Bank of Chile

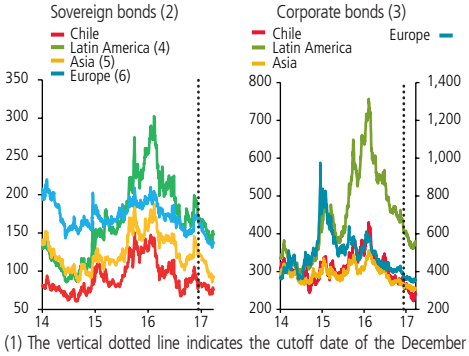
**FIGURE II.2**
Stock markets (1)
(fixed-base index: 01.Jan.13=100)




(1) The vertical dotted line indicates the cutoff date of the December 2016 *Monetary Policy Report*.
(2) MSCI regional stock indices, in local currency.

Source: Bloomberg

**FIGURE II.3**
Emerging market spreads (1)
(basis points)

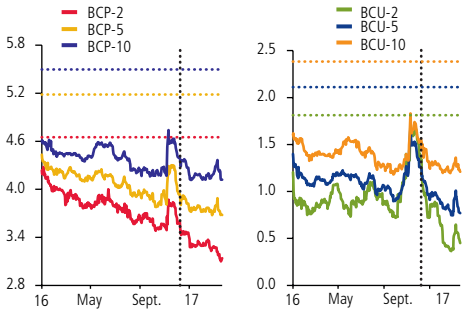



(1) The vertical dotted line indicates the cutoff date of the December 2016 *Monetary Policy Report.* (2) Measured by five-year CDS spreads. Simple average of the countries in each region. (3) Measured by the CEMBI. (4) Includes Brazil, Colombia, Mexico, Panama, and Peru. (5) Includes China, Indonesia, Malaysia, Philippines, and Thailand. (6) Includes Bulgaria, Croatia, Hungary, Czech Republic, and Turkey.
Source: Bloomberg.

**FIGURE II.4**
Price-earnings ratio per share (1) (2)
(ratio)


(1) Ratio between the price of a share and the firm's earnings per share. (2) The dotted line indicates the average of the last 20 years for the series.
Sources: Central Bank of Chile and Bloomberg.

**FIGURE II.5**
Interest rates on Central Bank of Chile bonds (1) (2)
(percent)




(1) The vertical dotted line indicates the cutoff date of the December 2016 *Monetary Policy Report.*
(2) The horizontal dotted lines indicate the average of the last ten years of each series.
Source: Central Bank of Chile.

## FINANCIAL CONDITIONS

Financial conditions have remained favorable over the past few months. Externally, ample global liquidity and the consolidation of world growth have increased the appetite for risk. Capital inflows to emerging economies have recovered, and most of the stock markets rose (figure II.2). As of the cutoff, long-term interest rates in the majority of the developed economies were very similar to the last *Report*, albeit with fluctuations in the interval. In the emerging economies, performance was mixed, although risk spreads generally fell (figure II.3). The dollar has fluctuated, but it remains appreciated relative to the last fifteen years.

The global financial scenario will be affected in the coming months by how the doubts regarding the new U.S. administration are resolved (especially in the fiscal area), the evolution of China, the political-economic developments surrounding a series of electoral processes in Europe, Brexit, and the possible shift toward more protectionist policies in several developed economies.

Locally, the stock market has displayed greater optimism this year, performing better than several of its peers. The IPSA increased around 10% since the last *Monetary Policy Report,* in both pesos and dollars, whereas other Latin America stock exchanges, such as Brazil, Mexico, and Colombia, grew around 7, 6, and 2%, respectively, measured in local currency. The rise in the IPSA reflects a positive contribution from all sectors. The price-earnings ratio per share has also increased in recent months, although it is still below the peak of the past few years (figure II.4). Corporate spreads (CEMBI) fell around 40 bp; and sovereign spreads (five-year CDS), about 10 bp. Another credit rating agency lowered Chile's credit rating, arguing that the low growth of the local economy could lead to an increase in the fiscal deficit and, therefore, in government debt, which would worsen the country's financial profile.

Interest rates fell in the secondary market for sovereign bonds, especially at the shortest terms (figure II.5). In particular, two-year indexed bonds recorded the biggest drop in yields (–95 bp since the December *Report*), hitting historic lows after rising in the last quarter of 2016. This occurred in a context in which agents have been lowering their local growth outlook, monetary policy projections loosened, and inflation expectations remain well anchored.

With regard to domestic credit, the low growth scenario intensified, despite low interest rates from a historical perspective. Both the *February Business Perceptions Report* and the Bank Lending Survey (BLS) largely attribute this lending performance to weak demand. Thus, even though the interest rates on different types of loans are historically low, real loan growth is currently below the average of the last fifteen years (figures II.6 and II.7). Nevertheless, the

average rate on commercial loans has increased in the last three months due to changes in composition[2]/. The BLS also shows that lending supply conditions continue to weaken, albeit to a lesser extent than in previous quarters for a large share of the portfolio. The slowdown in mortgage lending eased relative to previous quarters. At any rate, the evolution of credit aggregates is consistent with the economic cycle and weak investment. As a share of GDP, loans have been stable at around 85% in the last three years. Other sources of financing for firms, such as bond issues, have been less dynamic thus far in the year. Even so, bank issues in the local market have been stronger in the first quarter.

The nominal monetary aggregates recorded lower annual growth, posting the lowest rates of the last several years, consistent with the current phase of the economic cycle. In M1 (2.9% in February; 4.5% in November), the slowdown was mainly due to the basis of comparison in the current account component in January and February. M2 (4.4% in February; 6.8% in November) was dominated by the impact of the slowdown in time deposits. The lower growth of M2, in turn, contributed to reduced growth in M3 (7.6% in November; 7.1% in February) (figure II.8).

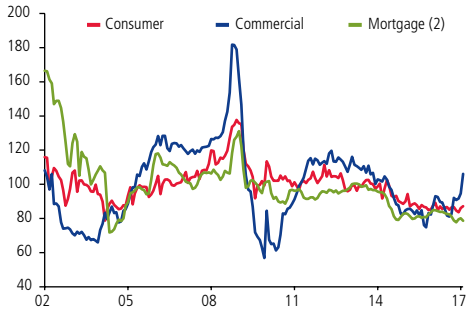
## EXCHANGE RATE

The exchange rate was essentially the same on the cutoff dates of this and the last *Monetary Policy Reports* (taking the average of the ten business days prior to the respective dates), at around $665 pesos to the dollar in both periods. There were, however, substantial fluctuations in the intervening period. Toward the beginning of March, the peso appreciated sharply, briefly trading below $640 pesos to the dollar for the first time in over a year and a half. This strengthening coincided with the evolution of the copper price and the depreciation of the U.S. dollar at the global level, which at any rate remains strong in historical terms relative to most currencies.

Thus, while the peso appreciated 0.3% against the dollar between the cutoff dates of this and the last *Report*, it depreciated 1.4% in multilateral terms (MER). This difference mainly stems from the loss in value of the peso against other emerging countries, in particular the Brazilian real and the Mexican peso (figure II.9 and table II.2).

[2]/ The average rate increased in the commercial portfolio between November and February (+127 bp), which in part reflects a change in composition stemming from an increase in the relative share of smaller loans in the overdraft product line.

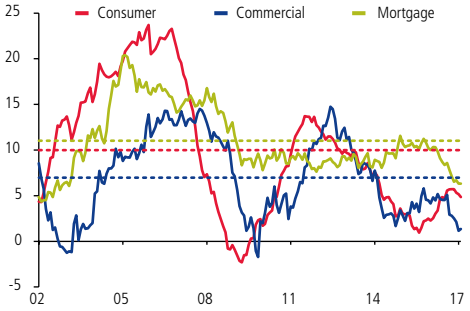
**FIGURE II.6**
Lending rates by type of loan (1)
(fixed-base index 2011–2017=100)




(1) Weighted average rates of all operations in the month.
(2) Mortgage rates are in UF.

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

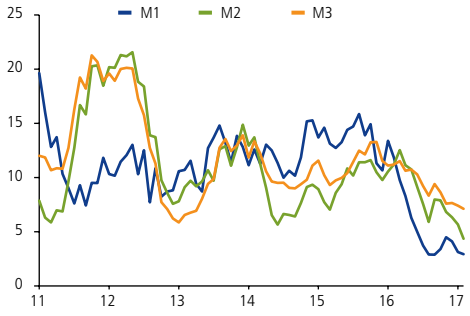
**FIGURE II.7**
Real loans, by credit type (*)
(annual change, percent)




(*) Horizontal slashed lines indicate the average of the last 15 years of each series.

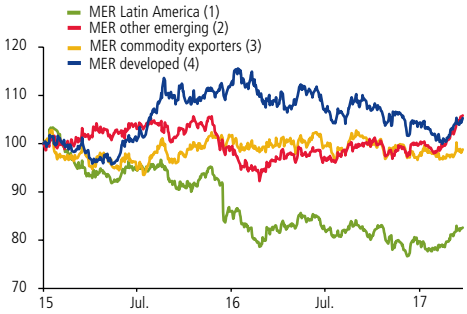
Source: Central Bank of Chile, based on data from SBIF.

**FIGURE II.8**
Monetary aggregates
(annual change, percent)




Source: Central Bank of Chile.

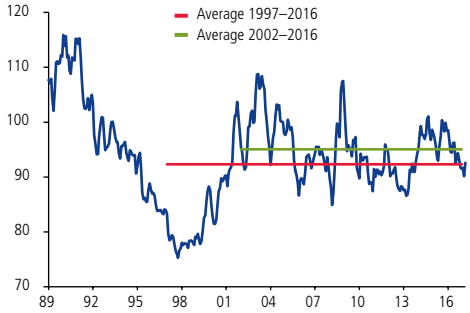
**FIGURE II.9**
Multilateral exchange rate
(fixed-base index: 02.Jan.15=100)




(1) Includes Argentina, Brazil, Colombia, Mexico, and Peru. (2) Includes India, South Korea, Russia, and South Africa. (3) Includes Australia, Canada, and New Zealand. (4) Includes Japan, Eurozone, and United Kingdom.

Source: Central Bank of Chile.

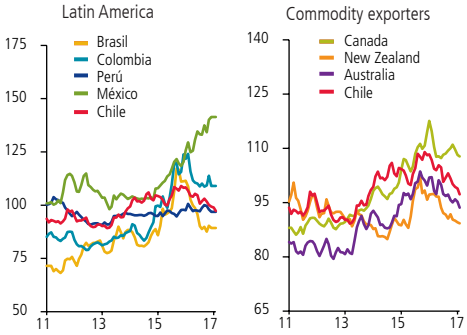
**FIGURE II.10**
Real exchange rate (*)
(fixed-base index: 1986=100)




(*) Data for March 2017 are a preliminary estimate based on data through the cutoff date.

Source: Central Bank of Chile.

**FIGURE II.11**
Real exchange rate (*)
(fixed-base index: 2001–2015=100)




(*) Aumento significa depreciación. Último dato disponible febrero del 2017.

Fuente: Banco de Pagos Internacionales.

**TABLE II.2**
Exchange rates against the U.S. dollar (1)
(percent)

| | Change in NER | | |
|---|---|---|---|
| | Mar.17/Dec.16 *Reports* | In one year | Spot/Minimum, 2013 |
| Turkey | 4.9 | 26.9 | 106.8 |
| Russia | -8.5 | -15.9 | 90.5 |
| Colombia | -3.2 | -5.0 | 65.9 |
| Brazil | -8.5 | -15.0 | 60.8 |
| Mexico | -6.6 | 9.0 | 57.7 |
| Norway | 0.8 | 0.7 | 55.6 |
| Latin America (2)(5) | -7.1 | -5.7 | 54.8 |
| South Africa | -7.7 | -17.7 | 50.6 |
| Comparable currencies (3)(5) | -4.2 | 0.4 | 44.3 |
| **Chile** | **-0.3** | **-2.4** | **41.8** |
| Australia | -2.7 | -1.4 | 39.1 |
| Indonesia | -0.5 | 1.0 | 38.4 |
| Canada | 0.9 | 1.6 | 36.0 |
| Commodity currencies (4)(5) | -1.9 | -3.7 | 35.0 |
| Czech Republic | -1.1 | 4.0 | 33.5 |
| Peru | -4.6 | -3.8 | 27.9 |
| New Zealand | 1.8 | -4.1 | 22.6 |
| India | -3.6 | -2.0 | 22.4 |
| Thailand | -2.5 | -0.9 | 19.9 |
| South Korea | -3.5 | -3.6 | 6.0 |

(1) A positive (negative) sign indicates a depreciation (appreciation) of the currency against the U.S. dollar. Spot rate is on the cutoff date. For the one-year comparison, the calculation uses the last ten business days as of 28 March 2016; for the rest, the average of the last ten business days prior to the cutoff of the indicated *Report*.
(2) Includes Brazil, Colombia, Mexico, and Peru.
(3) Includes Brazil, Colombia, Czech Republic, Israel, Mexico, Philippines, Poland, South Korea, and Turkey.
(4) Includes Australia, Canada, New Zealand, and South Africa.
(5) Constructed using the weights in the WEO, October 2016.

Sources: Central Bank of Chile and Bloomberg.

The real exchange rate (RER) rose slightly after the cutoff of the December *Report*. As of the cutoff date of this *Report*, the RER was fluctuating around 93 (fixed-base index, 1986=100), which is consistent with its short-term fundamentals (figure II.10). From a comparative perspective, and using a common methodology for this indicator (Bank for International Settlements), the behavior of the Chilean peso is not very different from that of other commodity exporters and other countries in the region (figure II.11). As a working assumption, the baseline scenario considers that the RER will be relatively stable around its current level throughout the forecast horizon.

# 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.*

Output and domestic demand remain weak. The most recent national accounts data show that the economy grew 1.6% in 2016, in line with the December estimate. This reflects a reduction of almost 2% in the natural resource sectors and a weak performance of other sectors (other GDP), which grew slightly more than 2%. The distinguishing feature of this cycle is weak investment, which has contracted for three straight years, and its effect on the performance of related productive sectors. Consumption has been stable, growing more than 2% annual, while the labor market has gradually adjusted. The new national accounts data point to a somewhat sharper slowdown in the year (table and box III.1), which is expected to carry over into early 2017. This reflects the poor performance of some non-natural-resource sectors that are usually more persistent, as well as some recent events. In particular, the strike at the *Escondida* copper mine is expected to lower 2017 growth by 0.2 pp. The Board thus estimates GDP growth of 1 to 2% this year and 2.25 to 3.25% in 2018.

## OUTPUT AND EMPLOYMENT

In the fourth quarter of 2016, the non-natural-resource sectors that make up other GDP grew 1% in annual terms, largely as a result of the anemic performance of investment-related sectors, such as construction and some business services, as well as personal services, which were affected by the public sector strike late last year. Consequently, the growth rate of other GDP was lower than projected in December, which accentuated the downward trend of 2016. Even so, annual growth for the year as a whole was in line with the forecast, due to upward revisions in the first and third quarters. Consumption-related sectors continue to underpin output. Of the export sectors, agriculture, livestock, and forestry were the most dynamic, due to an early harvest in some fruit crops. The industrial sector saw an accentuation of the reduction in its annual growth rate, due to lower food production and fuel extraction.

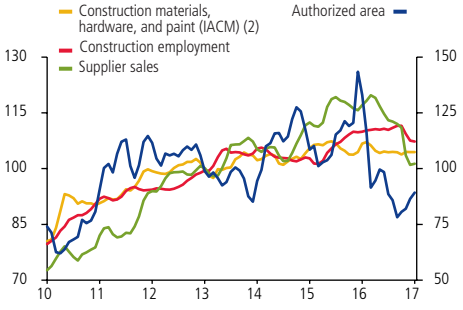
Natural resources GDP contracted 3.6% annual in the final quarter of 2016. This primarily reflects the poor performance of copper mining, due to production

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

| | Share | 2015 | 2016 | | | | |
|---|---|---|---|---|---|---|---|
| | 2016 | Total | I | II | III | IV | Total |
| Agriculture, livestock, and forestry | 3.2 | 9.8 | 6.3 | -1.4 | 2.0 | 8.3 | 4.5 |
| Fishing | 0.7 | -8.3 | -6.9 | 0.1 | 0.8 | 1.6 | -1.1 |
| Mining | 8.1 | 0.0 | -1.4 | -6.1 | -0.8 | -3.3 | -2.9 |
| Manufacturing | 11.0 | 0.2 | 0.2 | -0.9 | -0.8 | -2.2 | -0.9 |
| EGW and waste management | 3.0 | 3.5 | 9.6 | 10.0 | -2.8 | -7.6 | 1.6 |
| Construction | 6.6 | 3.9 | 5.7 | 3.3 | 2.2 | -0.2 | 2.5 |
| Trade | 9.1 | 2.3 | 2.9 | 4.3 | 3.4 | 3.0 | 3.4 |
| Restaurants and hotels | 2.1 | 2.9 | 1.8 | -0.8 | -1.4 | 0.2 | 0.0 |
| Transport | 5.2 | 3.7 | 3.3 | 3.7 | 4.2 | 2.0 | 3.3 |
| Communications and info. services | 2.9 | 6.1 | 4.1 | 4.0 | 2.6 | 1.7 | 3.1 |
| Financial services | 4.9 | 5.4 | 5.6 | 3.7 | 2.7 | 2.9 | 3.7 |
| Business services | 10.4 | 1.2 | 0.0 | -1.4 | -2.1 | -3.5 | -1.8 |
| Residential and real estate services | 7.7 | 2.2 | 2.3 | 4.1 | 2.2 | 2.1 | 2.7 |
| Personal services (1) | 11.8 | 1.8 | 5.0 | 6.2 | 6.4 | 3.0 | 5.2 |
| Public administration | 4.8 | 3.9 | 3.2 | 3.5 | 2.9 | 2.5 | 3.0 |
| **Total GDP** | **100.0** | **2.3** | **2.5** | **1.7** | **1.8** | **0.5** | **1.6** |
| **Other GDP (2)** | **79.7** | **2.7** | **3.0** | **2.5** | **2.1** | **1.0** | **2.1** |
| **Nat. res. GDP (2)** | **11.8** | **0.1** | **0.6** | **-3.2** | **-0.9** | **-3.6** | **-1.8** |

(1) Includes education, health, and other services.
(2) See glossary for definitions.
Source: Central Bank of Chile.

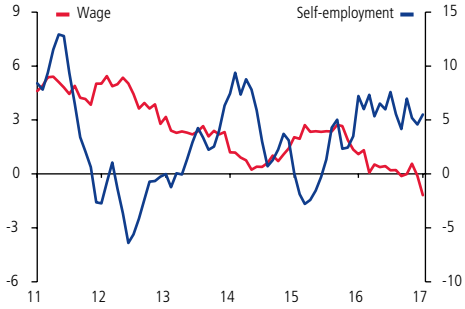
**FIGURE III.1**
Building and construction indicators (1)
(Quarterly moving average of fixed-base index: 2010–2017=100)




(1) Seasonally adjusted series.
(2) Spliced series with the equivalent item in the IVCM.

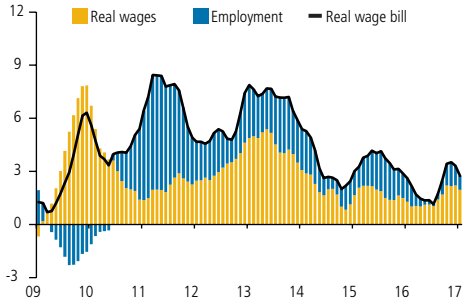
Sources: Central Bank of Chile, Chilean Chamber of Construction, and National Statistics Institute (INE).

**FIGURE III.2**
Job creation by occupation category
(annual change, percent)



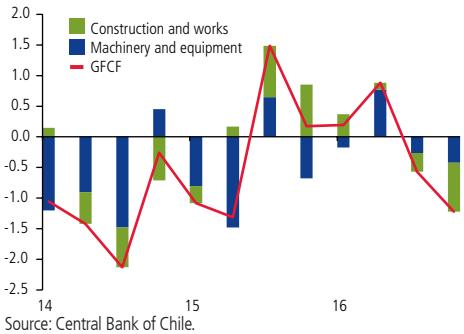

Source: National Statistics Institute (INE).

**FIGURE III.3**
Contribution to the annual growth of the real wage bill
(quarterly moving average, percentage points)




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

**FIGURE III.4**
Contribution of GFCF components to annual GDP growth
(percentage points)




Source: Central Bank of Chile.

disruptions and the declining ore grade. The annualized contraction of the energy, gas, water, and waste management sector relative to the beginning of the year deepened, largely due to lower hydroelectric generation and the use of more costly sources. The annual growth rate of fishing increased, but this largely reflects the low basis of comparison, as the sector continues to be affected by the decline in extractive fishing.

The earliest data for 2017 suggest that output remains weak. The January Imacec reports 1.6% growth in nonmining sectors, driven by trade and some services. Partial indicators on building and construction continue to weaken, as is also the case for supplier sales and employment (figure III.1).

The labor market has continued its adjustment, in line with the slowdown of activity. Wage employment contracted 1.2% in the moving quarter ending in January (INE). By sector, mining and construction had a negative effect on wage job creation in the most recent period, which was partially offset by trade. Self-employment, which is more precarious, continued to act as a shock absorber for the loss of wage jobs (figure III.2). This helped keep the national unemployment rate low from a historical perspective, at 6.2% in the moving quarter ending in January.

The labor market adjustment can also be seen in the increase of part-time wage work, the reduction in hours worked, and the large share of people who want to work more hours. The wage trend is another factor: the annual growth rate of nominal wages has fallen in recent months, as the low inflation has passed through via indexation clauses. Most recently, the effect of the higher volatility of the series in the first quarter of last year is affecting month-on-month annualized changes. Real wages, adjusted for the usual indexation structure, are below their historical averages. At the same time, studies show that in periods of low growth, individual workers' wages tend to adjust more than aggregate wages in the economy, insofar as they are more sensitive to the economic cycle (box III.2). In January, the growth of labor income—measured as the quarterly moving average of the real wage bill—fell, after growing over 3% in annual terms in the last quarter of 2016 (figure III.3).

## DEMAND

As in the case of GDP, the publication of the new national accounts did not have much impact on the annual growth rate of domestic and final demand (excluding changes in inventories) in 2016: domestic demand grew 1.1%; final demand, 2.0% (box III.1). There was, however, a revision to private consumption, which grew faster in 2016 than in 2015 (2.4 versus 2.0% annual). This was also the case for government consumption, but with a sharp slowdown in the fourth quarter. Gross fixed capital formation (GFCF) contracted 0.8% annual, the same as estimated in 2015, but the composition changed, with a greater reduction in the construction and works component (1.1% annual) and a smaller contraction in machinery and equipment (–0.3% annual).

Data for the fourth quarter of 2016 were somewhat lower than estimated in December and confirmed the decreasing trend exhibited by final demand in the year. This was influenced by the faster-than-projected deceleration of investment in construction and works (figure III.4), which exceeded the greater dynamism of private consumption, especially the durable component. Thus, GFCF fell 5% annual in the last quarter (table III.2). According to preliminary data, the latter appears to be tied to a worse result in mining investment. The poor performance of mining and residential investment was partially offset by an increase in other investment (figure V.5). Over and above some revisions at the margin, the December 2016 survey carried out by the Capital Goods and Technological Development Corporation (Corporación de Desarrollo Tecnológico y de Bienes de Capital, CBC) continues to incorporate an annual reduction in the amount of private investment in construction and works contemplated for the three-year period 2017–2019. This reflects the sluggish indicators for residential building and construction mentioned above, the large stock of existing homes available for sale in Greater Santiago (CChC), and pessimistic expectations in the sector.

Machinery and equipment contracted 5.2% annual in the first quarter. The change in inventories was stable, with a continuation of the large drawdown recorded in previous quarters. Excluding uncommon transport vehicles, the monthly data released in the first quarter of the year indicate a gradual recovery of nominal capital goods imports (figure III.5). This is consistent with the better performance of the stock market (figure III.6). Business expectations (IMCE, excluding mining) remain pessimistic, especially in construction, but they have bounced back a bit relative to December, especially in the industrial sector.

Private consumption grew over 2% annual in the fourth quarter of 2016, continuing the trend of previous quarters. This largely reflects the stability of routine consumption, driven by health services and transportation, and the strong sales performance of certain nondurable goods, such as agricultural products and textiles. Durable consumption was also strong, mainly car sales, as shown in indicators maintained by the ANAC and INE. Nominal consumer goods imports continued to grow, a trend that was particularly evident in the second part of 2016 (figure III.7).

Private consumption has thus continued to support economic activity, consistent with a dynamic trade sector, especially retail sales. Nevertheless, after several years of low growth, there are a number of risks going forward, in particular in the labor market. This reflects not only the recent evolution, but also the possibility of a sharper adjustment in the event the economic recovery does not materialize as expected.

One factor that has been present for several quarters is consumer pessimism (IPEC), despite a slight uptick that was reversed in the most recent data. Among the questions that make up the indicator, the high note was the improved perception on the timing of household purchases, whereas opinions on the current state of the country and its stability over the next five years are markedly pessimistic, as are perceptions on the unemployment level.

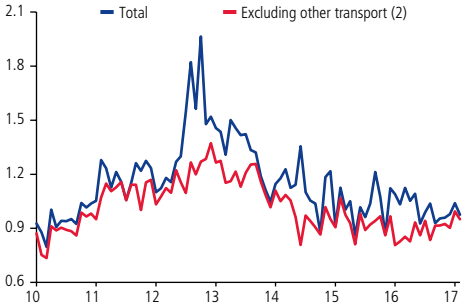
**TABLE III.2**
Domestic demand
(share of GDP; real annual change, percent)

| | Share | 2015 | 2016 | | | | |
|---|---|---|---|---|---|---|---|
| | 2016 | Total | I | II | III | IV | Total |
| **Domestic demand** | **99.2** | **2.0** | **1.4** | **1.2** | **0.9** | **1.1** | **1.1** |
| Domestic demand (excl. change in inventories) | 100.7 | 1.7 | 2.5 | 3.3 | 1.8 | 0.5 | 2.0 |
| Gross fixed capital formation | 23.2 | -0.8 | 1.1 | 4.1 | -2.4 | -5.0 | -0.8 |
| Construction and works | 14.8 | 2.7 | 2.7 | 0.8 | -2.0 | -4.9 | -1.1 |
| Machinery and equipment | 8.4 | -6.6 | -1.8 | 10.9 | -3.1 | -5.2 | -0.3 |
| Total consumption | 77.6 | 2.4 | 3.0 | 3.1 | 3.1 | 2.3 | 2.8 |
| Private consumption | 64.0 | 2.0 | 2.7 | 2.1 | 2.3 | 2.4 | 2.4 |
| Durable goods | 5.5 | -0.8 | 4.3 | 2.8 | 4.9 | 5.5 | 4.4 |
| Nondurable goods | 27.0 | 1.8 | 2.3 | 1.4 | 1.5 | 1.9 | 1.8 |
| Services | 31.6 | 2.7 | 2.7 | 2.6 | 2.4 | 2.3 | 2.5 |
| Government consumption | 13.5 | 4.5 | 4.7 | 7.4 | 7.1 | 1.7 | 5.1 |
| Change in inventories (*) | -1.6 | -0.3 | -0.5 | -1.0 | -1.2 | -1.1 | -1.1 |
| Goods and services exports | 28.5 | -1.8 | 0.8 | 0.6 | 0.1 | -2.0 | -0.1 |
| Goods and services imports | 27.6 | -2.7 | -3.4 | -1.1 | -2.0 | 0.0 | -1.6 |
| **Total GDP** | **100.0** | **2.3** | **2.5** | **1.7** | **1.8** | **0.5** | **1.6** |

(*) Ratio of inventory change to GDP, at average prices of the previous year, accumulated in the last 12 months.

Source: Central Bank of Chile.

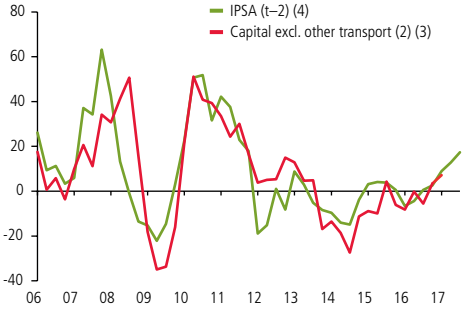
**FIGURE III.5**
Nominal capital goods imports (1)
(US$ billion)




(1) Seasonally adjusted monthly series.
(2) Excluding uncommon transport vehicles (planes, trains, helicopters, and ships).

Source: Central Bank of Chile.

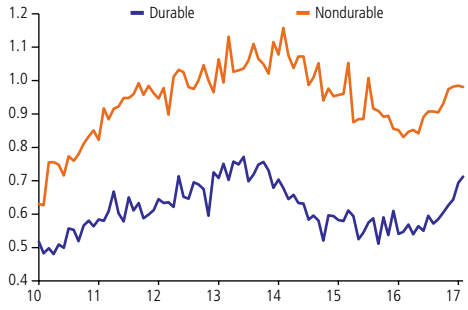
**FIGURE III.6**
Nominal capital goods imports and IPSA (1)
(annual change, percent)




(1) Quarterly series.
(2) Excluding uncommon transport vehicles (planes, trains, helicopters, and ships).
(3) The IPSA takes the last value at the close of February 2017; imports take the sum of January and February 2017.
(4) Presented with a time lag.

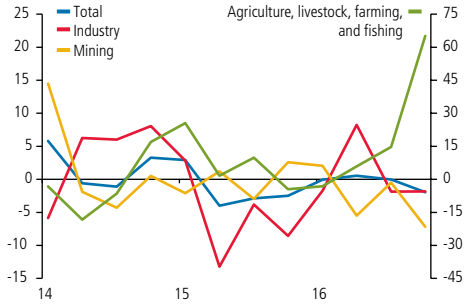
Sources: Central Bank of Chile and Bloomberg.

**FIGURE III.7**
Nominal consumer goods imports (*)
(US$ billion)




(*) Seasonally adjusted monthly series.
Source: Central Bank of Chile.

**FIGURE III.8**
Volume of goods exports
(annual change, percent)




Source: Central Bank of Chile.

Financial conditions remain favorable in terms of interest rates. However, the real annual growth rate of loans has continued to slacken relative to previous years. According to the people interviewed for the *Business Perceptions Report* and the Bank Lending Survey, this can largely be explained by weak demand.

## EXTERNAL SECTOR

In 2016, the current account deficit was 1.4% of GDP (US$3.574 billion). The annual reduction in the value of imports exceeded that of exports, resulting in a larger trade surplus than in 2015. In exports, the trend is mainly explained by the contraction of copper prices and industrial products. The volume of exports recorded a less negative annual change than in the previous year (–0.4%), largely because industrial shipments did not fall on the same magnitude as in 2015. The strong growth of fruit shipments in late 2016 was mainly associated with an early harvest (figure III.8). In imports, the data reflect a generalized reduction in prices, with a sharper drop in the first quarter that was gradually reversed over the course of the year, turning positive in the last quarter. The volume of imports contracted less in annual terms, driven in large part by increased capital and consumer goods imports. This is consistent with the appreciation of the peso in the last year and the need to renew stocks after several years of low durable consumption and GFCF in machinery and equipment.

## OUTLOOK

Private expectations for GDP growth in the first quarter of 2017, as captured in the Economic Expectations Survey (EES), have been revised downward, to 0.9% in March (1.4% in January). This is mainly due to the projected impact of the strike at the *Escondida* copper mine on growth in February and March. However, the EES results, published in early March, probably do not fully incorporate this effect, nor the weaker economy in late 2016 reported in the new national accounts, nor the higher basis of comparison that will come into effect in the first quarter of this year. The baseline scenario used in this *Report* projects that GDP will grow between 1 and 2% this year. This forecast includes 0% growth in the first quarter, where the strike at the *Escondida* copper mine is expected to lower output by one pp in that period.

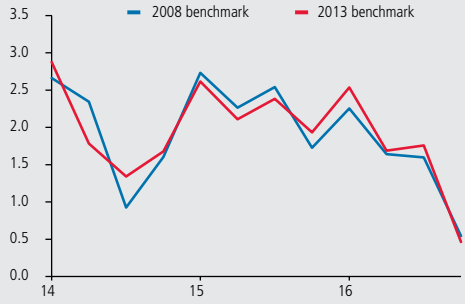
# BOX III.1
# RECENT EVOLUTION OF THE ECONOMY UNDER THE NEW NATIONAL ACCOUNTS

The first national accounts estimates using the 2013 benchmark compilation were published on 20 March. The new benchmark—which replaces the 2008 benchmark—was compiled under the national accounts revision policy and incorporates recent changes in international methodological standards, as well as new data sources and methods that were not previously available[1]/. The main innovations include the incorporation of research and development (R&D) expense, machinery maintenance and repair, and real estate transactions in gross fixed capital formation (GFCF); and methodological changes in the construction measure. The latter is now measured using direct information from firms (tax records and the Quarterly Construction Survey), whereas the previous methodology was based on theoretical models, which have been retained as a complementary measure[2]/

With regard to previously published statistics, annual GDP growth for 2014 and 2015 underwent marginal adjustments, to 1.9 and 2.3%, respectively. The 2016 estimate shows growth of 1.6%, which is slightly higher than the Imacec estimate of 1.5% based on the 2008 benchmark. By sector, the main upward revisions were in construction, residential and real estate services, and communications and information services; while the main downward revisions were in business services and personal services. In the case of construction, the adjustment is explained by the use of the new estimation methodology. In communications and information services, the industry group was reclassified to combine communication services with information technology, production, and distribution, which were previously included in manufacturing, business services, and personal services. This reclassification partially explains the downward revision in the latter two sectors.

The new data, which include the first estimates for the fourth quarter of 2016, confirm that the economy weakened in the last quarter of the year, especially in sectors tied to investment in construction and the associated services. Additionally, there were revisions to the quarterly growth trends published for 2016. In particular, the economy grew somewhat more than estimated in the first part of the year (figure III.9). By sector, mining posted negative annual growth rates throughout the year (–2.9% annual in 2016). Output in other sectors deteriorated, starting out the year with 3% growth in the first quarter and ending with 1% in the fourth quarter (figure III.10).

**FIGURE III.9**
GDP: 2008 and 2013 benchmarks (*)
(annual change, percent)

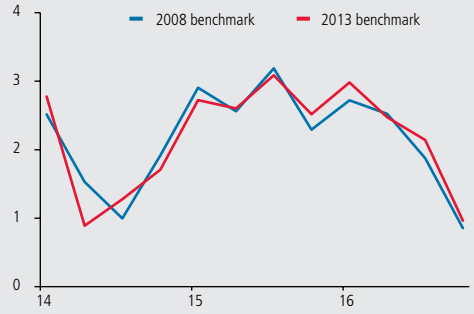



(*) For the 2008 benchmark, the fourth quarter of 2016 is calculated based on the Imacec published using that methodology.

Source: Central Bank of Chile.

[1]/ For more details, see Central Bank (2016; 2017b).
[2]/ For more details, see Central Bank of Chile (2017b, box 2) on the new short-term indicator for construction.

**FIGURE III.10**
Other GDP: 2008 and 2013 benchmarks (*)
(annual change, percent)




(*) For the 2008 benchmark, the fourth quarter of 2016 is calculated based on the Imacec published using that methodology.

Source: Central Bank of Chile.

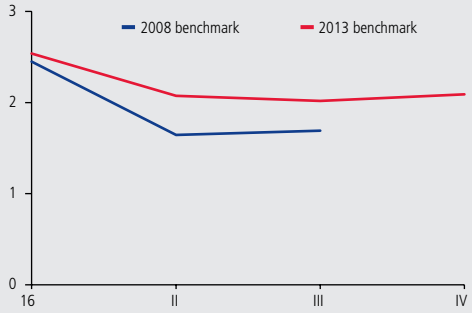
The annual growth rate of domestic demand was revised slightly downward in 2014 and 2015. In both years, consumption and investment were revised in opposite directions, which offset each other in the final result. Thus, consumption was revised up in 2014 and down in 2015, while the reverse occurred for investment.

In 2016, the growth rates of domestic and final demand—excluding changes in inventories—were not very different from the estimates in the December *Monetary Policy Report*: 1.1 and 2.0%, respectively. Two factors stand out. First, the revision of 2016 data indicated that the growth of private consumption was higher than previously considered. This was underpinned by a better performance of routine consumption (nondurables plus services) (figure III.11). For durable consumption, the growth rate and trend were relatively similar to the previously published estimates, with an upward growth trajectory in the second half of the year. Government consumption, in turn, posted low growth in the last quarter (1.7%), after growing on the order of 7%, on average, in the second and third quarters. Second, GFCF in construction and works was more favorable in the first half of 2016 and then deteriorated substantially in the second part of the year (figure III.12).

Under the new benchmark, the change in inventories was negative again in 2016 (–1.6% of nominal GDP). This completes three straight years of inventory drawdowns, something that has not happened in the last ten years.

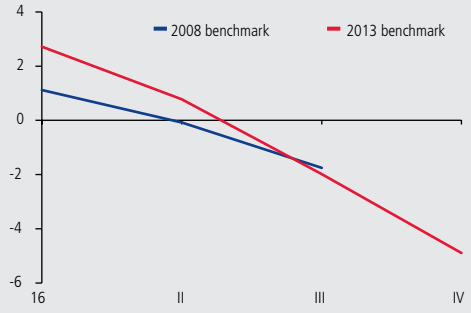
In sum, the data obtained with the 2013 benchmark confirm the weakening of the economy toward the end of the year. This downward trend, which is tied to investment performance, is one of the factors behind the reduction in the growth forecast range for this year. The data also confirm that the growth rate of private consumption has been stable for several quarters, albeit at low levels from a historical perspective. At the same time, there was a significant growth recovery of the imported component of spending over the course of the year, in particular durable consumption and GFCF in machinery and equipment. This partially explains the more stable behavior of domestic demand relative to other GDP.

**FIGURE III.11**
Routine consumption: 2008 and 2013 benchmarks
(annual change, percent)




Source: Central Bank of Chile.

**FIGURE III.12**
GFCF in construction and works: 2008 and 2013 benchmarks
(annual change, percent)




Source: Central Bank of Chile.

# BOX III.2
# A DISAGGREGATED LOOK AT THE EVOLUTION OF NOMINAL WAGES

The labor market's ability to accommodate changes in the economic environment is a key factor for the adequate adjustment of the economy. A wide range of factors, from the relevant legislation to the socio-demographic structure of the population, determine not only employers' options for adjusting their payroll costs, but also workers' alternatives for finding new jobs. One especially important aspect is the degree of wage rigidity: if wages are very rigid, then the cyclical adjustment will take place primarily in employment.

The evidence for Chile suggests that while wage rigidity has declined significantly over the past decades, wages still display a substantial degree of inertia, which is generally attributed to indexation to past inflation[1]/. Much of this evidence is based on aggregate wage data[2]/, which is difficult to interpret for several reasons. First, as with any aggregate, wage aggregates are subject to composition effects. This implies that some of the variation could be reflecting changes in the relative share of groups at different wage levels, rather than a genuine change in individual wages. Second, the aggregate does not support an analysis that distinguishes between the evolution of wages of workers who change jobs and those who stay put. This margin is significant, to the extent that when a worker's wages are not bound by a previously existing contract, any change in wages can reasonably be expected to reflect the cyclical conditions of the economy. It could also be argued that the wage at the new job is more closely associated with the firm's marginal costs and thus with the evolution of inflation[3]/.

Firms report individual wage data to the Chilean Internal Revenue Service (SII) on form 1887, which can be used to identify work histories and the evolution of wages. These data are available for just under 600,000 firms and almost 9,000,000 employees in the period 2006–2015. This covers almost all wage workers in the country[4]/. The results show that, in line with the international literature, the aggregate wage measures underestimate procyclicality. This is because the composition effects associated with employment entry and exit tend to absorb the changes and because the aggregate data hide the markedly procyclical wage pattern of people who change jobs. The analysis thus allows us to infer that the adjustment of wages to changes in the cycle is greater than previously estimated.

### Differences in the evolution of wages between those who change jobs and those who stay put

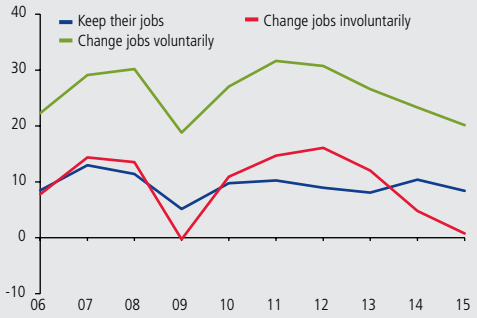
As mentioned, distinguishing between the evolution of wages among workers who stay in the same job and those who change to a different job is important for correctly measuring the labor market adjustment. To do this, the sample was further divided into two additional groups: workers who change voluntarily versus involuntarily[5]/. The pattern of these groups differs substantially (figure III.13). As can be expected, workers who change voluntarily see a much larger change in their average wages in the period 2006–2015 than workers who experience an involuntary change, at almost 25% a year versus 10%. In addition, the wages of workers who do not change jobs are much more stable across the cycle than in the rest of the sample, whose wages are strongly affected by the state of the economy. For example, in the last two years of the sample, which

[1]/ The importance of indexation to past inflation is discussed, for example, in the boxes published in January 2008, September 2013, and June 2015. The importance of wage indexation for the labor market adjustment is analyzed by Cowan et. al. (2004) and Cobb and Opazo (2008), although not all studies agree on the importance of indexation (Marinakis, 2004).
[2]/ The study by Cobb and Opazo (2008) is an exception.
[3]/ See the discussion in Pissarides (2009) and Stuber (2016).

[4]/ In the data provided by the SII, all identification numbers have been altered to protect the identity of both employees and firms. See Albagli et. al. (2017) for a detailed description of the database and the results presented in this box.
[5]/ Since the available data do not indicate the reason for leaving a job, voluntary changes are defined as having no interruption between the old and new jobs, while workers who are without a job for at least a month are defined as leaving involuntarily. The results are robust to other definitions of voluntary and involuntary termination. Additionally, it is important to note that the evolution of aggregate wages computed using this database is very similar to the wage data reported by the INE.

was a period of low growth, the growth rate of nominal wages changed very little for those who kept their jobs, whereas it declined significantly for workers who changed jobs—and was practically null for those who changed involuntarily[6]/. This result is similar to the findings for other countries, and it suggests that when a worker's wages are not bound by a previously existing contract, the wages paid for a new job are more flexible and thus more sensitive to the cyclical conditions of the economy[7]/.

**FIGURE III.13**
Nominal wages
(annual change, percent)




Source: Albagli et al. (2017).

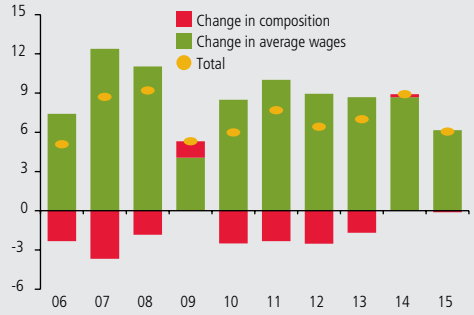
## Effect of employment entry and exit on the evolution of aggregate wages

A second important factor to analyze is how changes in the relative share of different labor categories affect the behavior of aggregate wages. For this exercise, the sample can be divided into different groups. One particularly interesting issue is the effect of employment entry and exit among groups, a process involving thousands of wage workers every year. A positive net entry of workers reduces the share of those who stay at their jobs from one year to the next. Since these new workers tend to earn lower wages, the compositional change reduces the aggregate wage, skewing the data by 1.3% on average.

From the perspective of analyzing labor market adjustment, the important point is that this bias is not stable. In periods of lower activity, net entry tends to decline, which reduces the size of the bias and can even change the sign in years when there are more employment exits than entries. In highly dynamic years, such as 2007, the bias reduced the average wage by 3%, whereas in a recession year, such as 2009, it increased the average (red bars, figure III.14)[8]/.

Thus, the composition bias hides the fact that the growth of individual wages was higher, on average, and more procyclical than shown in the aggregate series. The change in individual wages peaked at around 12% in 2007 and bottomed out at close to 4% in 2009 (green bars), versus 9 and 6%, respectively, according to the aggregate series (yellow dots).

**FIGURE III.14**
Decomposition of annual nominal wage growth
(percentage points)




Source: Albagli et al. (2017).

## Conclusions

In line with the international evidence, this box shows that the use of disaggregated data contributes to a better understanding and interpretation of the behavior of wages in the economy. First, the results show that the wages of workers who change jobs, which is typically a better measure of the wage adjustment, are more sensitive to the cycle than suggested by the aggregate series. Second, due to the composition effect, the aggregate series underestimates both the average growth rate—which was around 8% in nominal terms and 5,5% in real terms from 2006 to 2015—and its procyclicality.

[6]/ Albagli et al. (2017) show that on average, one additional point of unemployment reduces real wages by 1.0% at old jobs, versus 2.1% at new jobs. These results coincide with other studies showing the greater sensitivity of wages to unemployment in new jobs. See, for example, Daly and Hobijn (2012), Martins, Solon, and Thomas (2012) and Stuber (2016).

[7]/ This is especially relevant for countries like Chile, where job rotation is high (see *Monetary Policy Report*, June 2016, box III.1).

[8]/ This finding is similar to results for other countries. For example, Solon, Barsky, and Parker (1994) show that in a contractionary phase, when the wages of workers who remain employed fall at the margin, job destruction is concentrated among low-wage workers. This compositional change increases the average wage of employed workers, offsetting the effect of the wage adjustment for people who keep their jobs and reducing the change in the average wage. For more recent evidence along these lines, see Blundell, Reed and Stoker (2003) and Daly and Hobijn (2016).

# 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

Over the past few months, total and core inflation measures have continued to decline, in line with projections in the last *Monetary Policy Report.* In February, annual CPI inflation was 2.7%, while core inflation (CPIEFE) was 2.2% (figures IV.1 and IV.2). As has been the trend over the past year, the main factor underlying these dynamics was the drop in annual CPIEFE goods inflation, supported by a lower nominal exchange rate than a year ago. The annual CPIEFE services inflation rate also fell, but to a lesser extent (table IV.1). The more gradual decline in this indicator is consistent with the usual indexation and the evolution of the economic cycle. In the coming months, the gradual expansion of excess capacity and a relatively stable exchange rate trend are expected to continue contributing to a slight decline in CPIEFE inflation, which will translate into a reduction in total inflation, given that no major changes are expected in food and energy inflation. Both the baseline forecast and private expectations put inflation around 3% toward the end of the year and also in 12 and 24 months.

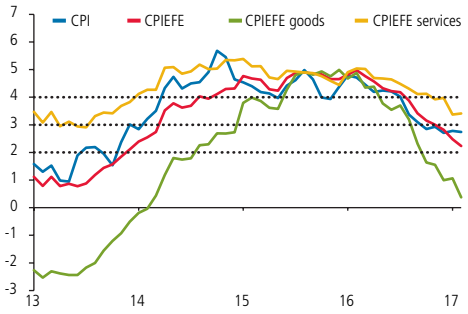
**TABLE IV.1**
Inflation indicators (*)
(annual change, percent)

| | CPI | CPIEFE | 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 Jan. | 4,8 | 4,8 | 4,7 | 4,9 | 4,3 | 5,9 |
| Feb. | 4,7 | 5,0 | 4,9 | 5,0 | 4,0 | 4,2 |
| Mar. | 4,5 | 4,8 | 4,3 | 5,0 | 4,2 | 2,4 |
| Apr. | 4,2 | 4,6 | 4,4 | 4,7 | 3,4 | 2,7 |
| May | 4,2 | 4,3 | 3,8 | 4,7 | 4,2 | 3,5 |
| Jun. | 4,2 | 4,2 | 3,5 | 4,6 | 4,7 | 2,9 |
| Jul. | 4,0 | 4,2 | 3,7 | 4,5 | 4,9 | 0,5 |
| Aug. | 3,4 | 3,9 | 3,2 | 4,3 | 4,2 | -3,0 |
| Sept. | 3,1 | 3,4 | 2,3 | 4,1 | 4,0 | -2,1 |
| Oct. | 2,8 | 3,2 | 1,6 | 4,1 | 2,8 | 0,1 |
| Nov. | 2,9 | 3,0 | 1,6 | 3,9 | 3,1 | 1,9 |
| Dec. | 2,7 | 2,8 | 1,0 | 4,0 | 2,2 | 2,9 |
| 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 |

(*) See glossary for definitions.

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

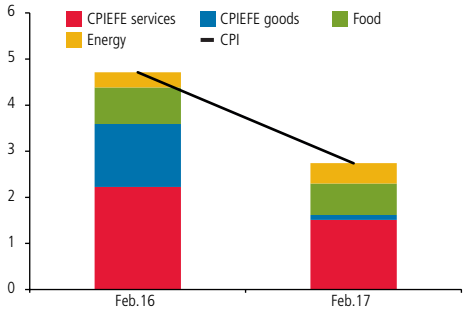
**FIGURE IV.1**
Inflation indicators (1) (2)
(annual change, percent)




(1) See glossary for definitions.
(2) 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.

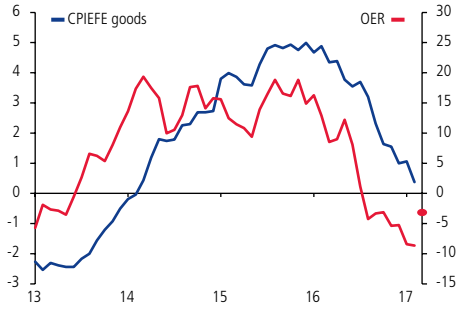
Sources: Central Bank of Chile and National Statistics Institute (INE).

**FIGURE IV.2**
Contribution to annual CPI inflation
(percentage points, percent)



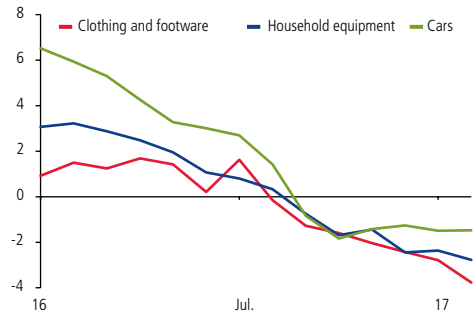

Sources: Central Bank of Chile and National Statistics Institute (INE).

**FIGURE IV.3**
Exchange rate and CPIEFE goods (*)
(annual change, percent)



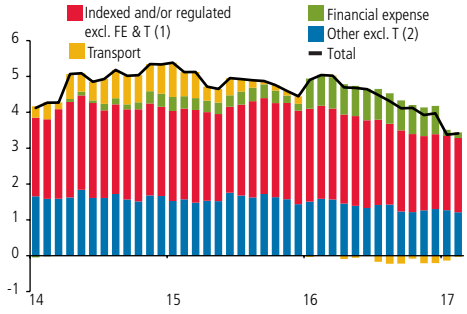

(*) The point includes OER data for March through the cutoff date.
Sources: Central Bank of Chile and National Statistics Institute (INE).

**FIGURE IV.4**
Some CPIEFE goods with high exchange rate pass-through
(annual change, percent)




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

**FIGURE IV.5**
Contribution to annual CPIEFE services
(percentage points; annual change, percent)




(1) Excluding financial expense (FE) and transport (T) associated with this component.
(2) Excluding transport associated with this component.
Sources: Central Bank of Chile and National Statistics Institute (INE).

Between December and February, the CPI increased 0.6 percentage points (pp), which is in line with the forecast in the December *Report*. Month on month, there were some surprises. Inflation was lower than expected in December, while January recorded a surprise in the opposite direction. That month, CPIEFE goods inflation was 0.8%, after being null or negative for several months. Almost half the increase was due to higher cigarette prices. In February, CPI growth was in line with expectations, and CPIEFE goods inflation declined again.

Annual CPIEFE goods inflation was 0.4% in February, a fall of 4.5 pp over the past year. As described in past *Reports*, this trend is mainly explained by the exchange rate trend (figure IV.3). The exchange rate has recorded negative annual growth rates for several months, with strong fluctuations. It averaged around –9% annual in January and February 2017, compared with an increase of 15% annual in the same period of 2016. The prices of cars, household equipment, and clothing—items that generally have a high exchange rate pass-through coefficient—all recorded negative annual inflation in the past three months, consistent with the exchange rate trend (figure IV.4). In the short term, the annualized change in the peso/dollar exchange rate is expected to be zero, albeit with volatility. The working assumption used in the baseline scenario is that the RER will be relatively stable around its current levels throughout the forecast horizon, and therefore, as the months pass, it will gradually cease to put downward pressure on inflation.

Annual CPIEFE services inflation was 3.4% in February, a drop of 1.6 pp relative to one year ago (figure IV.5). In January, annual services inflation decreased 0.6 pp relative to the previous month, which is totally explained by the fact that the stamp and duty tax implemented in January 2016 has left the basis of comparison. If this effect is filtered out, the lower inflation over the last year is consistent with the state of the economic cycle. The decomposition of CPIEFE services into controlled and indexed prices and other prices—excluding transport—reveals a larger decrease in the latter, in connection to the evolution of the output gap. In the short term, CPIEFE services inflation is not very sensitive to the gap, but if the latter proves to be more persistent, it could become a determinant of inflationary pressures at longer terms (box IV.1).

The majority of the firms interviewed for the February B*usiness Perceptions Report* stated that they have undertaken major cost-reduction and efficiency efforts, which has translated into lower pressure on prices. However, they also indicated that after applying this strategy for several periods, there is little space to achieve further results. This outlook is consistent with the decrease in real unit labor costs (figure IV.6).

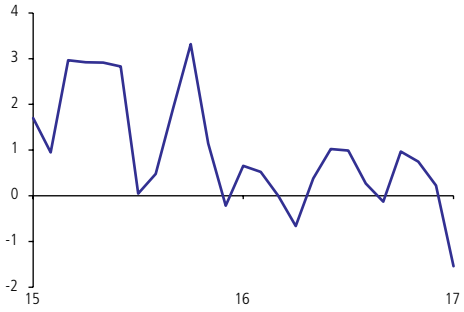
With regard to external inflationary pressures, the import price index for consumer goods (IVUM) measured in dollars recorded almost zero annual change in the last quarter of 2016, at levels that stabilized in the second half

of the year after falling for several quarters. The external price index in dollars has been in negative territory for more than two years, but it began to show positive annual growth rates in the most recent period. Factors contributing to the upswing include exchange rate appreciation among Chile's trading partners, mainly Latin American countries, and the recovery of local inflation in much of the developed world.

In February, the contribution of the more volatile components of the CPI to total inflation was similar to a year ago, although the mix was somewhat different: more energy and less food (figure IV.7). Energy price inflation rose to 5.6% annual (4.2% a year ago), due to an increase in fuel price inflation from –0.2 to 9.5% annual between February of this year and last. In that period, the international oil price went from just over US$30 a barrel to around US$55. In recent weeks, oil has returned to the neighborhood of US$50 a barrel, and crude oil futures indicate that it will stay around that level this year and next. In the other direction, the annual inflation of electricity rates has decreased significantly in the last year, from around 12% to a slight contraction (–0.2%) in February 2017. Going forward, annual inflation of this component is expected to increase as the new tariff decrees incorporate the higher price of liquefied natural gas and coal in the rates.

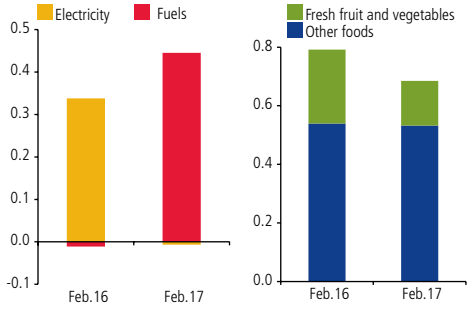
Food inflation decreased in the last year, to 3.5% in February. This was mainly due to the behavior of fresh fruit and vegetable prices (4.7% annual in February 2017 versus 8.0% one year ago), which have deviated from their historical patterns in recent months. According to the INE, this is largely associated with a greater supply of seasonal products (figure IV.8). Going forward, this component is expected to start contributing more to total inflation as it returns to historical averages. Other food inflation was stable at 3.2% annual, the same rate as a year ago, and it is expected to remain stable in the coming months. Although international food prices measured in dollars (FAO) have recorded double-digit inflation in recent months, the trend reflects a recovery from low inflation in the first half of 2016. Moreover, the exchange rate has partially offset external price pressure in the period, and the pass-through to domestic prices is usually very gradual.

**FIGURE IV.6**
Real unit labor costs
(annual change, percent)



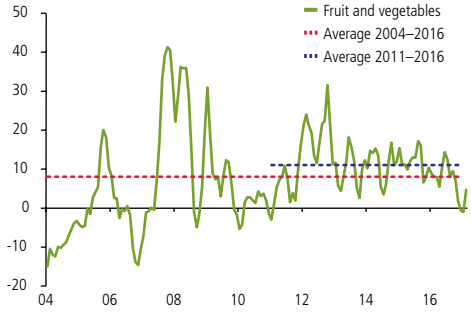

Source: National Statistics Institute (INE).

**FIGURE IV.7**
Contribution of non-CPIEFE to total inflation
(percentage points)



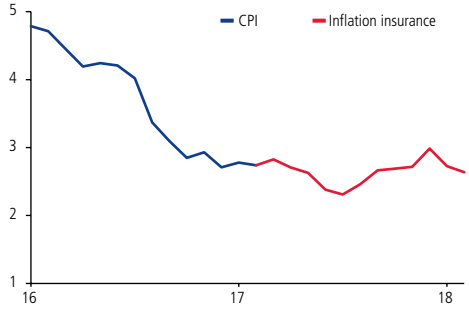

Sources: Central Bank of Chile and National Statistics Institute (INE).

**FIGURE IV.8**
Fresh fruit and vegetable prices
(annual change, percent)



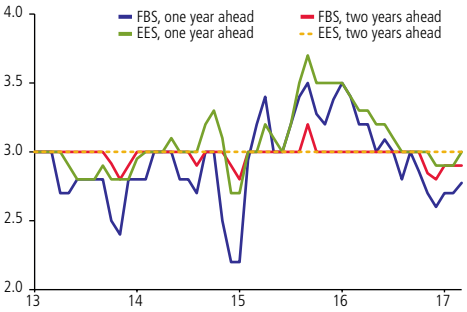

Source: National Statistics Institute (INE).

**FIGURE IV.9**
Inflation and market expectations
(annual change, percent)




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

**FIGURE IV.10**
Survey-based inflation expectations (*)
(percent)




(*)The FBS survey is for the first half of each month, except for March which is for the second half.

Source: Central Bank of Chile.

## INFLATION OUTLOOK

In the coming months, total and core inflation will reach about 2.5 and 2.0% in annual terms, respectively. The CPI will return to 3.0% in late 2017 and then fluctuate around that level though the end of the forecast horizon, while the CPIEFE is expected to take a little longer to reach 3%.

The exchange rate trend and the output gap will continue to be key factors in the CPIEFE trend over the next two years. Going forward, the output gap is expected to narrow, while the real exchange rate should be relatively stable throughout the forecast horizon.

The most volatile prices have not registered any major changes. Food will begin to contribute more to total inflation as prices return to their seasonal patterns, especially in the case of fresh fruit and vegetables. Energy, in turn, is expected to be stable throughout the forecast horizon.

Market expectations point to a similar scenario for total inflation. In the immediate term, inflation insurance signals that it will fall slightly through mid-year and then rise gradually to 3% (figure IV.9). One year out, the March EES, the FBS for the second half of that month, and inflation insurance on the cutoff date estimate inflation at 3.0, 2.8, and 2.6%, respectively, relative to the last *Report* (2.9, 2.6, and 2.4%, respectively, in December). Two years out, the surveys project inflation around the target (figure IV.10).

# BOX IV.1
# REGULATED AND UNREGULATED PRICES IN SERVICES INFLATION

Like all price indices, the CPI is made up of diverse items whose variations follow different trends for long periods. Although the nominal variables generally exhibit comovement in the long term, there are several price formation mechanisms affecting the different products and services, and therefore the impact of economic factors varies.

Consequently, to better understand the inflation process, it is common to construct price subindices that group together homogeneous items. This disaggregation can take different forms, but the most traditional distinction is between core inflation (the CPIEFE) and the more volatile components (food and energy), where the goal is to separate items that are more and less affected by temporary supply shocks. Another common classification is between tradable and nontradable goods, which in Chile are approximated with the CPIEFE goods and the CPIEFE services, respectively. In general, the former is more sensitive to the exchange rate, while the latter is expected to be more closely related to excess capacity. The distinction between tradables and nontradables is especially important for small open economies that have adopted inflation-targeting regimes, like Chile. The implementation of inflation targeting requires the differentiation between transitory and persistent changes in inflation, where exchange rate shocks are typically less persistent than demand shocks[1]/.

CPIEFE services can be further separated into prices whose behavior can be determined, to a greater or lesser extent, by various factors[2]/. In particular, many services prices are controlled and/or, due to their nature, strongly indexed to past inflation. This leads to the assumption that, over and above any second-round effects, the respective price trends could depend less on the state of the output gap, at least in the short run, and more on the inertia of their own price setting mechanisms. Moreover, the fact that some prices are controlled exposes them to discretional decisions, such as changes in specific taxes or subsidies, which further complicates their interpretación[3]/. The question, then, is whether the dynamics of controlled and/or indexed services have differed from other prices over time and, in particular, whether inflation of the latter reflects a greater impact from economic activity.

Approximating an answer requires separating services into two groups: those with controlled or indexed prices (C&I) and the remainder (R). Marcel et al. (2017) reclassify some items in the CPIEFE services into these two groups. The first includes regulated tariffs, such as the drinking water supply, telephone services, and multi-modal service, and prices that are strongly indexed to past inflation, such as health services, education, and rental prices. In addition, these prices are often characterized as changing infrequently over the course of the year. The second group is made up of the remaining CPIEFE services. The two groups represent around 30 and 10% of the total CPI, respectively.

The data show that, on average, the annual variation of these aggregates has been higher than CPI inflation, which borders on 3% on average in the last 15 years. The variation was higher for the R subgroup than for C&I, which is also more volatile (table IV.2). When financial expense and transport prices are removed, there is a significant autocorrelation coefficient of over 0.3, which is somewhat larger for R, although the difference between the two items is not large[4]/. This reveals that the inertia in the services series is a common

[1]/ See Albagli et al. (2016) and *Monetary Policy Report,* March 2016, box IV.1.
[2]/ This situation is not limited to Chile. See, for example, Central Bank of Brazil (2015) and Reserve Bank of Australia (2014).

[3]/ The increase in the stamp and duty tax in early 2016 is an example of discretional changes. In that case, the increase in the tax from 0.4 to 0.8% had an impact of 0.6 percentage points on CPIEFE services inflation in January of that year. The increase continued to be incorporated in annual inflation throughout the year, and the exit of the tax increase from the basis of comparison fully explained the lower annual inflation of that group in January 2017. Something similar would occur with supply subsidies, but not demand subsidies, such as education scholarships. Free education would also fall under this latter category.
[4]/ In both cases, the groups are presented excluding transport and financial expense when appropriate, because these prices are strongly dependent on the oil price and a large contribution of the stamp and duty tax, respectively.

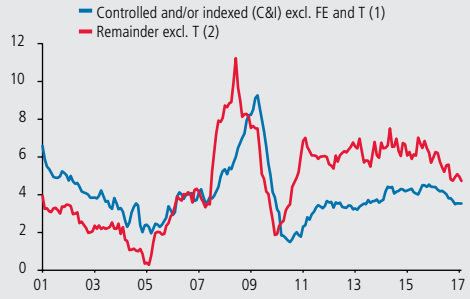
**TABLE IV.2**
Statistics on CPIEFE services and its components (1)
(percent)

| | CPIEFE services | Controlled and/or indexed (C&I) | Remainder (R) | Excl. FE and T (2) Controlled and/or indexed (C&I) | Excl. T (3) Remainder (R) |
|---|---|---|---|---|---|
| Average | 4.22 | 4.05 | 4.67 | 4.03 | 4.70 |
| Standard deviation | 1.42 | 1.35 | 2.32 | 1.42 | 2.22 |
| Minimum | 0.20 | -0.10 | 0.03 | 1.49 | 0.28 |
| Maximum | 8.59 | 8.72 | 12.02 | 9.26 | 11.23 |
| Autocorrelation | 0.12 | 0.09 | -0.02 | 0.31 | 0.36 |

(1) The sample covers 2001 to 2017. The statistics are taken relative to the annual change, except for the autocorrelation coefficient, which is obtained from an AR(1) regression of monthly changes, controlling for seasonality with monthly dummy variables.
(2) Excluding financial expense and transport costs associated with this component.
(3) Excluding transport costs associated with this component.

Source: Bertinatto and Muñoz (2017).

**FIGURE IV.11**
CPIEFE services components
(annual change, percent)




(1) Excluding financial expense and transport costs associated with this component.
(2) Excluding transport costs associated with this component.

Source: Bertinatto and Muñoz (2017).

characteristic of all its components.

With regard to the evolution of these indicators, the trends are similar, although the items contained in R display greater volatility (figure IV.11). In addition, the R series appears to react more quickly and more intensely to changes in the cycle. This is observed in both periods of increasing GDP growth rates (2005–2007 and 2010–2011) and periods of decreasing GDP growth rates (2009, and 2015 on).

This intuition is confirmed by the empirical analysis presented in Marcel et al. (2017) and Bertinatto and Muñoz (2017), who estimate a Phillips Curve series for these and other subsets of inflation. Their estimates also show that the sensitivity of these subsets to the output gap is low, in line with local and international evidence[5]/. They further confirm that inflation expectations and past inflation are important. The combination of these two elements implies that the short-term effect of the gap on services inflation is small, but it increases in the medium term, especially for the group of non-indexed, non-regulated services. This is consistent with the view that, to the extent that they are relatively persistent, output gaps are a relevant determinant of inflationary pressures at longer terms and, therefore, are a key element for the forecast of inflation in the monetary policy horizon.

5/ See Monetary Policy Report, June 2016, box V.1.

# V. INFLATION SCENARIOS

*This chapter presents the Board's assessment on the Chilean economic outlook over the next two years. Projections of the most likely inflation and growth trajectories are included. These trajectories are conditional on the assumptions in the baseline scenario. The Board's assessment of the risk balance for activity and inflation is also provided.*

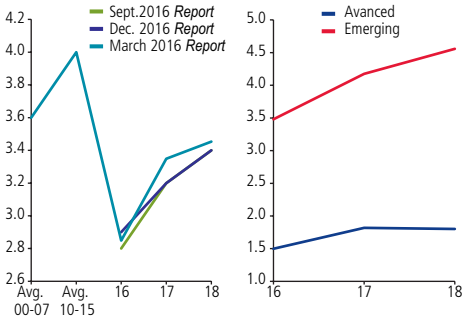
## BASELINE PROJECTION SCENARIO

Recent inflation prints have been consistent with what was expected in December's *Monetary Policy Report,* and inflation is expected to continue falling in the short term to converge back to 3% towards the end of the year. Activity, on the other hand, was somewhat weaker than expected towards the end of 2016, and is expected to remain so during the first quarters of the current year. This, combined with the prolonged strike at the *Escondida* mine, which reduces this year's growth by roughly 0.2 percentage points (pp), have led to a reduction in the annual growth estimate for 2017 to 1-2%. Nevertheless, the economy is expected to recover and reach growth rates closer to potential towards the end of the year. This assessment is supported by the fact that there are no observable relevant macroeconomic imbalances, the mining-related investment adjustment is expected to end, the global outlook appears more positive, and monetary policy will clearly remain expansionary.

On the external front, activity data in recent months has improved, especially in advanced economies, led by the manufacturing sector, which follows several quarters of faster growth by the service sector. In the U.S., positive consumption data—supported by a robust labor market—has been followed by a recovery in investment. The growth recovery in the Eurozone appears to be more synchronized across its members. The depreciation of the yen has supported the external sector in Japan. As a result, relative to the December forecast, the trading partner's 2017 growth forecast has increased by 2 decimals to 1.8%, and is expected to maintain the same growth rate in 2018.

Regarding emerging markets, China's growth forecast has improved. China's GDP in the fourth quarter of 2016 grew by 6.8%, leading to an annual expansion of 6.7%. Recent activity data and financial indicators point to a more stable environment, as suggested by industrial production and trade data. Their currency has continued to gradually depreciate, avoiding the bouts of capital outflows and reserve losses that occurred in 2016. Meanwhile, the authorities announced a growth forecast of around 6.5%. As a result, China's baseline scenario growth forecast for 2017-2018 has increased by 2 decimals. In Latin

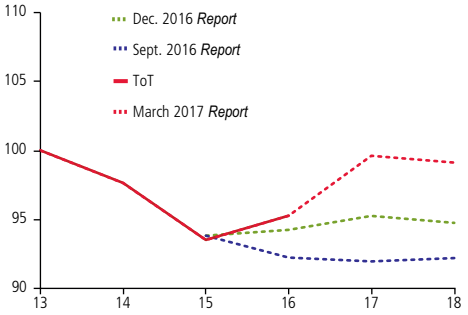
**FIGURE V.1**
Trading partners GDP (*)
(annual change, percent)




(*) On the right hand, forecast of this *Report*

Source: Central Bank of Chile.

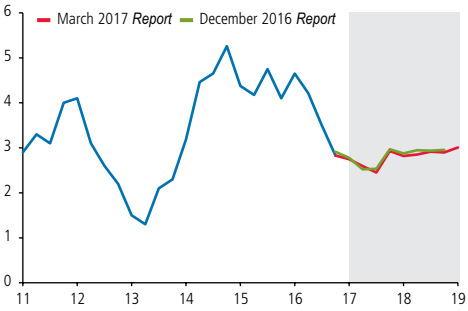
**FIGURE V.2**
Terms of trade (*)
(index 2013=100)




(*) For comparison effects with the new 2013 Benchmark compilation, the ToTs of previous *Reports* are adjusted to 100 for 2013.

Source: Central Bank of Chile.

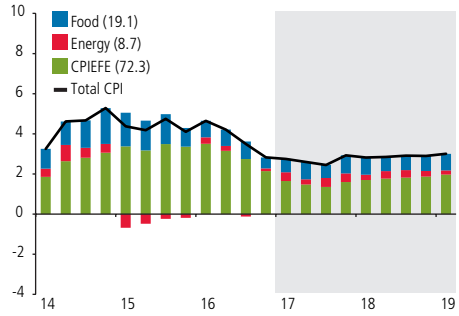
**FIGURE V.3**
CPI inflation forecast (*)
(annual change, percent)




(*) Gray area, as from first quarter of 2017, shows forecast.

Source: Central Bank of Chile.

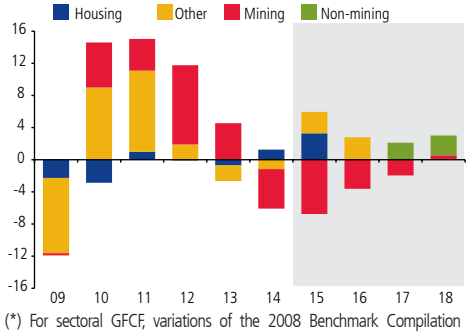
**FIGURE V.4**
Contribution to annual CPI Inflation (*)
(percentage points)




(*) Gray area, as from first quarter 2017, shows forecast. In parentheses, shares in CPI basket.

Source: Central Bank of Chile.

**FIGURE V.5**
Real annual contribution to GFCF (*)
(percentage points)




(*) For sectoral GFCF, variations of the 2008 Benchmark Compilation are used. Since total GFCF is expressed using the 2013 Benchmark Complilation, annual variation of other GFCF is adjusted for consistency purposes. Estimations for 2015 and 2016 based on available information from listed companies (FECU), Capital Goods Corporation surveys, Chilean Chamber of Construction and National Accounts by institutional sector. For 2017 and 2018, Central Bank projection models and sectoral sources are used, including investment plans and Capital Goods Corporation surveys.

Source: Central Bank of Chile.

America, the ongoing adjustment processes of several economies continue, while lower than expected inflation has opened room for additional monetary policy easing. Thus, the growth forecast for emerging market trading partners has been revised up slightly to 4.2 and 4.6% in 2017 and 2018 respectively, from 4.1 and 4.5% in December (figure V.1).

Terms of trade have markedly improved relative to December, mainly due to a combination of higher copper prices and lower oil prices. In addition, prices of other exports have also increased. Copper prices have continued to improve and have remained close to two-year highs, partly due to improved performance by the manufacturing sector and a more positive global economic outlook, but also due to supply disruptions in important producers that have exerted upward price pressures. As a result, the copper price forecast has been revised up to US$2.55 and 2.50 the pound in 2017 and 2018, respectively. Oil prices, on the other hand, have declined after experiencing a slight increase in the immediate aftermath of the agreement to limit output by OPEC members and other producers. The baseline scenario considers oil prices of US$50 per barrel in the forecast horizon. In sum, terms of trade in 2017 and 2018 will improve relative to 2016, and are expected be better than projected in December (figure V.2).

More favorable international financial conditions are also expected to contribute to the external tailwind to be received by the Chilean economy. Even though the U.S. has continued to gradually tighten monetary policy, international financial conditions have remained loose in the past months. Notwithstanding some fluctuations, the dollar remains appreciated from a historical perspective. Risk appetite remains significant, as demonstrated by capital flows to emerging markets and falling risk premiums. However, as is detailed later on, certain risks to the baseline scenario could affect current favorable financial conditions.

On the domestic front, inflation has been consistent with what was expected in the previous *Report*, as the annual variation in the CPI index fell to 2.7% in February. The behavior of the nominal exchange rate, which has appreciated relative to its level one year ago, has been a fundamental driver of inflationary dynamics. The appreciation has had a greater impact in the decline of goods component of the CPIEFE index, while the services component tends to have greater inertia and is in general, less sensitive to exchange rate fluctuations. Looking ahead, annual inflation measured by the CPI index will continue to decline, yet will return to close to 3% by the end of 2017 and fluctuate at this level towards the end of the forecast horizon, in this case, the first quarter of 2019. The CPIEFE index will continue to decline until the second half of 2017, and will take a longer time to return to 3% (figures V.3 and V.4). Exchange rate dynamics and the gradual narrowing of the output gap during the next two years will continue to be key determinants of inflationary dynamics. The baseline scenario assumes a relatively stable RER close to its current level, as it is considered consistent with fundamentals. Regarding activity, growth is expected to recover rates close to potential during the following year.

As was mentioned earlier, activity and domestic demand have been worse than expected. Even though the economy grew by 1.6% in 2016, in line with what was anticipated in December, revised national account data suggest the economy was somewhat stronger towards the beginning of 2016 and weaker

towards the end of the year, leaving a low starting point for 2017 and a higher base of comparison for the beginning of the year (box III.1). The new data also point to weakness in investment-related areas and in sectors that tend to be more persistent, such as business services. In addition, the prolonged strike in the *Escondida* mine—which is estimated to cut 1 percentage point of overall GDP in the quarter—and ongoing weakness in construction, suggest that the economy will experience an expansion close to 0% in the first quarter of the year. Although this estimation is below private forecasts—the March Economic Expectations Survey (EES) estimated a first quarter expansion of 0.9%— these forecasts have been gradually revised down, and due to their release date towards the beginning of March, probably did not entirely include the factors mentioned above. The baseline scenario assumes the economy will recover faster growth rates towards the second half of the year, leaving a 2017 growth forecast range between 1 and 2%, below the December forecast range.

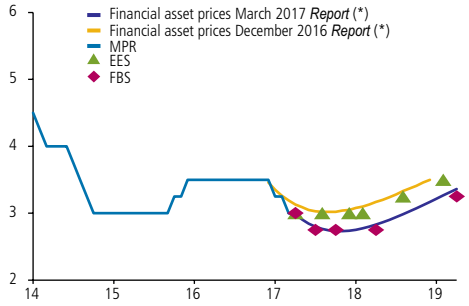
Gross fixed capital formation (GFCF) will experience slightly positive growth in 2017, after three consecutive years of contraction. This result fundamentally relies on an increase in non-mining and non-residential investment (mainly machinery and equipment). While mining investment is expected to eventually return to positive territory during 2018, the gradual adjustment in residential investment is expected to continue during the following quarters, in the aftermath of the boom triggered by the modification of payment norms (figure V.5). As a percentage of GDP, GFCF will reach 21.7 and 22.5% in real and nominal terms, respectively.

Consumption has continued to support activity and domestic expenditure. Non-durable goods and services consumption has remained notably stable, growing between 2 and 2.5% throughout 2016. Durable goods consumption recovered in the second half of last year. The baseline scenario forecasts that total consumption will grow 2.5 and 2.8% in 2017 and 2018, respectively, supported by favorable financial conditions, a gradual adjustment of the labor market, inventory replenishment, and an appreciation of the peso.

In 2018, the economy will grow between 2.25 and 3.25%, above the 2017 forecast. As a result, the output gap, which according to recent data is currently somewhat larger than anticipated in December, will gradually narrow. The Board still estimates the economy's potential growth in the range of 2.5 and 3%, and trend growth at 3.2%. The growth recovery is expected considering that the economy does not appear to show any relevant imbalances, the mining-related investment adjustment is expected to end, and the global outlook appears more favorable. Moreover, monetary policy will remain expansionary throughout the policy horizon: the baseline scenario considers as a working assumption that the MPR will follow a trajectory similar to the one implied by financial asset prices during the ten days prior to the statistical closing of this *Report* (figure V.6). Fiscal policy is assumed to follow the fiscal consolidation path announced by the Government.

In this context, the current account deficit will be less negative than expected in December, and will improve with respect to last year. The improvement is due to the slower growth in domestic demand and better terms of trade. In 2018 the current account deficit will increase again, reflecting the increase in domestic

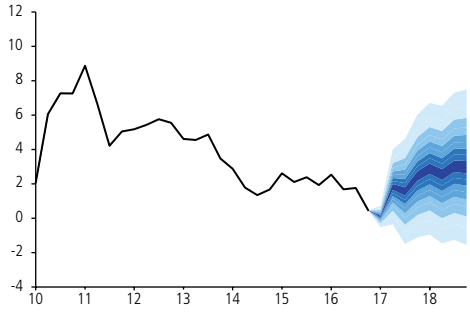
**FIGURE V.6**
MPR and expectations
(percent)




(*) Built using interest rates on swap contracts up to 10 years.

Source: Central Bank of Chile.

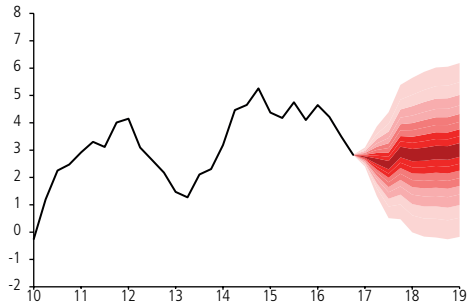
**FIGURE V.7**
Quarterly GDP growth scenarios (*)
(annual change, percent)




(*) 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 summarize the risks on growth as assessed by the Board. The baseline scenario uses as a working assumption that the MPR will follow a trajectory similar to the one implied by financial asset prices during the ten days prior to the statistical closing of this *Report*.

Source: Central Bank of Chile.

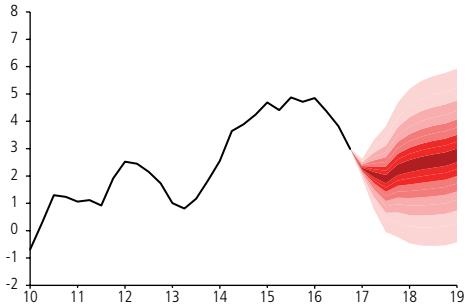
**FIGURE V.8**
CPI inflation forecast (*)
(annual change, percent)




(*) 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 summarize the risks on future inflation as assessed by the Board. The baseline scenario uses as a working assumption that the MPR will follow a trajectory similar to the one implied by financial asset prices during the ten days prior to the statistical closing of this *Report*.

Source: Central Bank of Chile.

**FIGURE V.9**
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 summarize the risks on future inflation as assessed by the Board. The baseline scenario uses as a working assumption that the MPR will follow a trajectory similar to the one implied by financial asset prices during the ten days prior to the statistical closing of this *Report*.

Source: Central Bank of Chile.

expenditure forecasted for the year. At trend prices*/ the current account will average -2.2% of GDP for the 2017-2018 two-year period, somewhat greater than in 2016.

## RISK SCENARIOS

As always, the implementation of monetary policy and any possible adjustments to the MPR will depend on the effects of incoming information on projected inflation dynamics. After assessing these risks, the Board estimates that the risk balance for inflation and activity is unbiased (figures V.7, V.8 and V.9).

As is carefully described in the summary, two types of risks are identified in the external front. Some risks may potentially have a material impact, yet are hard to quantify (such as political-economic uncertainty), and others that have been mentioned as an external risk for quite some time, but which likelihood has varied. One of the latter risks is related to the expected trajectories of fiscal and monetary policy in the U.S. which may potentially generate upside or downside risks. China remains a source of concern although its authorities appear to have successfully managed a gradual deceleration without a major disruption thus far. In this context, recent favorable trends in the global outlook may improve, leading to a better than expected global tailwind, either due to a stronger global economic recovery and/or better commodity prices.

On the domestic front, after several years of subdued growth, we cannot rule out that a more persistent phenomenon may be affecting the economy's ability to grow, or that the economy may be affected by deeper cyclical weakness. On the other hand, a scenario in which the global outlook continues to improve, combined with the end of the adjustment in mining-related investment, and a rebound in sentiment, may lead to a more dynamic recovery.

*/ This measure adjusts the values of mining exports and fuel imports taking into account the deviations of the prices of copper and oil away from their long-term trends. It does the same with the rents and transfers associated with copper exports. Other exports and imports are valued using current prices. It does not correct any possible changes in quantities exported or imported due to movements in the prices of copper or oil. Estimates consider long-term prices of US$2.7 per pound of copper and US$70 per barrel of oil (see box V.2, *Monetary Policy Report,* September 2012; and box V.1, *Monetary Policy Report,* December 2015).

# 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.

**CEMBI:** Corporate Emerging Market Bond Index. A corporate risk index maintained by JP Morgan. Measures the differential return on corporate bonds in dollars issued by banks and corporations in emerging economies markets, relative to U.S. Treasury bonds, which are considered risk-free.

**Commodity exporters:** Australia, Canada, and New Zealand.

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

**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.

**FOMC:** Federal Open Market Committee. Committee of the U.S. Federal Reserve tasked with setting monetary policy in that country.

**GDP, natural resources:** Includes the following sectors: electricity, gas and water (EGW); mining; and fishing.

**GDP, other:** Non-natural resource sectors, including the following: agriculture, livestock and forestry; manufacturing; construction; trade; transport and communications; financial and business services; residential property; personal services; and public administration.

**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 93% of total exports, on average, for the 1990–2015 period.

**IVUM:** Import price index.

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

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

**MER:** Multilateral exchange rate. Multilateral exchange rate. A measure of the nominal value of the peso against a broad basket of currencies, weighted as for the RER. For 2016, the following countries are included: Argentina, Belgium,

Bolivia, Brazil, Canada, China, Colombia, France, Germany, India, Italy, Japan, Mexico, Netherlands, Paraguay, Peru, South Korea, Spain, Thailand, United Kingdom, and United States.

**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 non-natural-resource sectors (other GDP).

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

**Rest of Asia:** Hong Kong, Indonesia, Malaysia, Philippines, South Korea, Singapore, Taiwan, and Thailand

**Routine consumption:** Consumption of services and nondurable goods.

**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.

**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, October 2016). The sample of countries used in the calculation represent around 90% of world growth. For the remaining 10%, average growth is estimated at 1.8% for the period 2016–2018.

**World growth:** Regional growth weighted by its share in world GDP at PPP, published in the IMF World Economic Outlook (WEO, October 2016). World growth forecasts for the period 2016–2018 are calculated from a sample of countries that represent about 86% of world GDP. For the remaining 14%, average growth is estimated at 3.4% for 2016–2018.

# ABBREVIATIONS

**BCP:** Central Bank bonds denominated in pesos

**BCU:** Indexed Central Bank bonds denominated in UFs

**BLS:** Bank Lending Survey

**BPS:** Business Perceptions Survey

**CPIEFE:** Consumer price index excluding food and energy

**EES:** Economic Expectations Survey

**FBS:** Financial Brokers Survey

**IMCE:** Monthly Business Confidence Index

**IPEC:** Consumer Confidence Index

**LCI:** Labor cost index

**MPR:** Monetary policy rate

**SNA:** System of National Accounts

**UF:** *Unidad de fomento,* an inflation-indexed unit of account

**WI:** Wage index

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