

IPoM 2010

2010  
DECEMBER

# Monetary Policy Report



BANCO CENTRAL DE CHILE

# Monetary Policy Report

DECEMBER 2010



BANCO CENTRAL  
DE CHILE



Preface	5
Summary	7
Monetary policy decisions in the last three months	11
I. International scenario	13
II. Financial markets	19
III. Demand and activity	25
IV. Prices and costs	29
V. Inflation scenarios	33
Index de tables and figures	37
Glossary and abbreviations	39
References	40
Boxes	
What is behind the slow recovery of the developed economies?	17
The exchange rate in Chile: determinants and sectoral differences	23
The food price hike and the international acceleration of inflation	32

---

<sup>\*/</sup> The statistical closing date of the *Monetary Policy Report* was 16 December 2010.

# 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 Section 80 of the Bank's Basic Constitutional Act, the Board is required to submit this report to the Senate and the Minister of Finance.

The *Monetary Policy Report* is published four times a year, in March, June, September, and December. It analyzes the main factors influencing inflation, which include the international environment, financial conditions, 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. A number of 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 17 December 2010 for presentation to the Senate on 20 December 2010.

**The Board**



# Summary

The Chilean economy has remained on a growth trend, at a pace similar to the forecasts in September's *Monetary Policy Report*, narrowing output gaps. Inflation has been below expectations, owing to lower imported inflation and some specific factors. Meanwhile, the external scenario shows an unusual configuration, characterized by high commodity prices, low interest rates and prospects of moderate growth in developed economies. Financial difficulties in Europe have increased again, painting a picture of uncertainty and risk. Within this context, the Board has continued to gradually normalize the monetary policy interest rate (MPR), placing it at 3.25% in the meeting of December. In the most likely scenario, the monetary stimulus will be gradually withdrawn, in accordance with unfolding macroeconomic conditions, both domestically and abroad.

Internationally, world economic growth exceeded expectations in the third quarter, albeit at a lower rate than in the previous quarter. Unemployment is still high in developed countries, while core and headline inflation remains contained. Additional monetary measures have been implemented. In the United States, new measures of fiscal stimulus have been taken. Recently, increases in long-term interest rates have been observed in these economies, together with higher valuations for risky assets and a depreciation of the U.S. dollar in international markets. However, these developments have been tinged by deeper concerns regarding fiscal and/or financial fragility in some European economies. The reach of this situation is still uncertain and puts a note of caution in world economic projections.

Commodity prices remain high by historic standards, reflecting the strength of emerging economies, specific supply factors and the depreciation of the U.S. dollar. Worth highlighting is the sharp rise—again—of international prices of some foodstuffs and the new peak of the copper price. In line with these higher prices and the exhaustion of output gaps, some signs of inflation have appeared in a number of emerging markets which, combined with strong domestic demands, have called for the adoption of measures to moderate the monetary stimulus.

Consensus forecasts for global growth in the two-year period 2011-2012 post a milder recovery compared with September. Prospects of a slow recovery of advanced economies remain, most of them growing below trend, while

## International baseline scenario assumptions

	2009	2010 (f)	2011 (f)	2012 (f)
(annual change, percent)				
Terms of trade	4.1	20.0	-2.0	1.4
Trading partners' GDP (*)	-0.2	5.1	3.6	4.2
World GDP at PPP (*)	-0.6	4.9	3.8	4.5
World GDP at market exchange rate (*)	-2.0	3.7	2.9	3.7
External prices (in US\$)	-6.2	5.6	6.1	3.1
(levels)				
LME copper price (US\$/lb)	234	340	330	320
WTI oil price (US\$/barrel)	62	79	89	89
Gasoline parity price (US\$/m <sup>3</sup> ) (*)	471	598	681	675
Libor US\$ (nominal, 90 days, %)	0.7	0.3	0.5	1.0

(\*) For definition, see glossary.

(f) Forecast.

Source: Central Bank of Chile. Banco Central de Chile.

near trend growth is expected for emerging economies. Similarly to last September, the baseline scenario depicted by the Board assumes world economic growth for 2011-2012 below market consensus, by around 0.3 percentage points on average. This, because of the negative consequences of financial turbulences in Europe, stricter fiscal adjustment plans being implemented there, and the absence of a vigorous recovery of demand in developed economies. In addition, some emerging markets facing inflationary pressures are applying adjustment measures to slow economic growth down to trend levels. Also, the Board believes that the risk of the world economy being even weaker is still latent and assigns to it more probability than to a more optimistic scenario.

Differences in growth forecasts, risk perceptions and interest rates have generated conditions that favor capital flows toward emerging economies. The widespread depreciation of the U.S. dollar has created tensions in world currency markets. Some countries have adopted administrative measures, capital controls or exchange rate interventions with the intention of attenuating the strengthening of their currencies.

## Economic growth and current account

	2008	2009	2010 (f)	2011 (f)
(annual change, percent)				
GDP	3.7	-1.5	5.2	5.5 - 6.5
National income	4.1	-1.2	12.9	5.3
Domestic demand	7.6	-5.9	16.1	6.6
Domestic demand (w/o inventory change)	7.5	-2.8	11.2	8.0
Gross fixed capital formation	18.6	-15.3	18.9	14.6
Total consumption	4.0	1.8	8.9	5.8
Goods and services export	3.1	-5.6	1.5	4.9
Goods and services import	12.2	-14.3	28.5	6.9
Current account (percent of GDP)	-1.5	2.6	0.3	-1.4
(US\$ million)				
Current account	-2,513	4,217	600	-3,200
Trade balance	8,848	13,982	13,900	12,200
Exports	66,464	53,735	68,100	73,000
Imports	-57,617	-39,754	-54,200	-60,800
Services	-871	-1,074	-1,400	-1,400
Rent	-13,423	-10,306	-15,900	-17,600
Current transfers	2,934	1,616	4,000	3,600

(f) Forecast.

Source: Central Bank of Chile.

The Chilean peso has been no exception and has continued to gain value against the dollar, although less than it did between June and September. In multilateral terms, the appreciation has been smaller. However, and considering the level of the nominal exchange rate and the currency parities prevailing at the statistical closing date of this *Report*, the real exchange rate (RER) stands at 87 (index, 1986=100), fairly close to the minimum levels considered consistent with its long-term fundamentals. The baseline scenario of this *Report* uses as a working assumption that toward the long term the peso will post a moderate depreciation in real terms.

The recent evolution of inflation, more moderate than foreseen and than could be inferred from the narrowing output gaps, has been determined primarily by reduced pressures from imported goods—relating with the exchange rate appreciation and lower international inflation of manufactured goods—and some specific factors. Thus, CPI inflation has remained in the lower area of the tolerance range, while the core measure CPIX1 has persisted in negative territory. Part of the decline in inflation has been offset by rising food prices, perishable and other, and lately, by higher prices for fuels.

Real sector figures confirm the September *Report's* baseline scenario for growth, although with some changes in composition on both the output side and the expenditure side. In fact, in the third quarter the contribution of the supply sectors was low, but the rest of the sectors surprised for their renewed dynamism. Worth singling out was again the services sector, particularly retail. On the expenditure side, the durable components of demand—inventory accumulation, purchases of durable consumption goods and investment in machinery and equipment—were moderated with respect to the first half of the year. Non-durable private consumption, however, exceeded earlier projections.

Although at a slower pace, investment continued to expand during the third quarter, driven by its imported machinery and equipment component. Housing sales have increased, reducing the number of months necessary to deplete existing stocks. This, combined with the favorable evolution of employment and financial conditions suggest that, going forward, the sector



## Inflation

	2009	2010 (f)	2011 (f)	2012 (f)
(annual change, percent)				
Average CPI inflation	1.6	1.4	3.0	3.0
December CPI inflation	-1.4	2.8	3.3	
CPI inflation in around 2 years (*)				3.0
Average CPIX inflation	2.8	0.5	2.7	3.1
December CPIX inflation	-1.8	2.3	3.1	
CPIX inflation in around 2 years (*)				3.0
Average CPIX1 inflation	2.8	-0.7	2.0	3.0
December CPIX1 inflation	-1.1	-0.1	3.0	
CPIX1 inflation in around 2 years (*)				3.0

(f) Forecast.

(\*) Inflation forecast at the fourth quarter of 2012.

Source: Central Bank of Chile.

will post a stronger recovery. Gross fixed capital formation will end this year with an increase of 18.9%, placing the investment to GDP ratio at 28.4%, measured in prices of 2003.

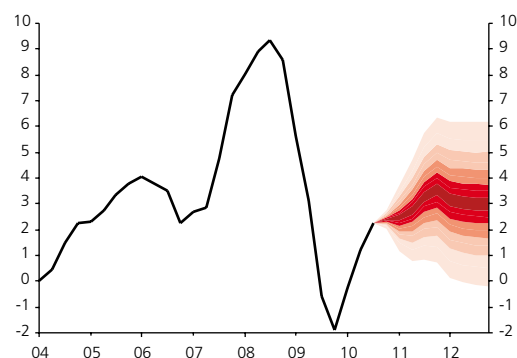
The behavior of expenditure is grounded on consumer and business confidence, whose indicators are in the optimistic zone. This reflects the favorable performance of the labor market. Various sources of information show that employment has increased strongly and unemployment continues to diminish. Annual growth rates in nominal and real wages have risen gradually. Monetary conditions are still expansionary and the Banking Credit Survey suggests that credit access standards are more flexible. The stock of credit is still recovering, while most of the interest rates are below their historic averages.

The baseline scenario of this *Report* assumes that the Chilean economy will grow 5.2% this year. For 2011, dynamic growth in expenditure is forecast, still milder than this year due to normalized growth in durable goods consumption, stock accumulation and investment in machinery and equipment. All these factors shaped a transitory swelling of expenditure during this year, but also showed incipient signs of moderation in the third quarter. Investment growth will be stronger in construction, in line with public plans for reconstruction investment and private projects. Hence, GDP growth will stand between 5.5 and 6.5% during 2011. Economic growth projections assume that output gaps are near exhaustion and will stay thus over the whole policy horizon. The GDP for supply sectors—fishing; electricity, gas and water; and mining—will make a smaller contribution than was thought in the last *Report*. The GDP for the rest of the sectors will converge to trend growth as the monetary and external impulses are normalized. In the case of the public sector, projections in this *Report* are consistent with the fiscal scenario depicted in the Budget Law. Prospects for trend growth are unchanged from the last *Report*, that is, around 5%.

In this scenario, where also the terms of trade have improved, the current account of the balance of payments will post a surplus of 0.3% of GDP in 2010, instead of the deficit forecast in September, mainly because of higher export prices. However, it is estimated that in 2011 the current account balance will again show a deficit of 1.4% of GDP at current prices. Measured at trend prices<sup>1/</sup>, during 2010 and 2011 there will be current account deficits between 6% and 7% of GDP.

<sup>1/</sup> This computation considers corrections in prices, not in volumes. Long-term prices assumed for copper and oil are US\$2.0 per pound and US\$75 per barrel, respectively.

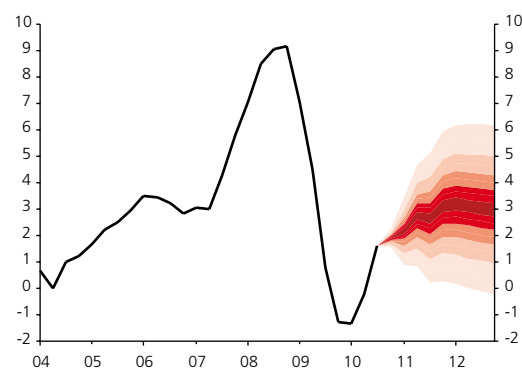
CPI inflation forecast (\*)  
(annual change, percent)



(\*) 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 inflation as assessed by the Board. The baseline scenario uses as a working assumption that the monetary stimulus will continue to be gradually reduced, at a pace comparable to the one that can be derived from the various expectations surveys.

Source: Central Bank of Chile.

CPIX 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 inflation as assessed by the Board. The baseline scenario uses as a working assumption that the monetary stimulus will continue to be gradually reduced, at a pace comparable to the one that can be derived from the various expectations surveys.

Source: Central Bank of Chile.

The CPI will end this year with a variation of 2.8%. Going forward, output gap absorption and higher food prices—due to limited transmission of world prices—and the assumption that the process of margin compression in some specific prices has been completed allow projecting that inflation will remain around 3% until the end of the projection horizon, this time the fourth quarter of 2012. The CPI will follow a faster path than its core counterparts. Thus, CPIX and CPIX1 inflation will converge to the target only toward the end of next year, to stay there for the remaining part of the policy horizon. Market inflation expectations, in line with this scenario, remain at 3% over the medium term. Nonetheless, for the coming few months low inflation rates are expected.

These projections use as a working assumption that the monetary stimulus will continue to be gradually reduced, at a pace comparable to the one that can be derived from the various expectations surveys. The Board states that this will depend, in any case, on the evolution of internal and external macroeconomic conditions.

However, important risks persist that must be monitored, especially because of their monetary policy implications. Internationally, the main concern is global recovery being slower than forecast in the baseline scenario, resulting in a reduced external impulse to the domestic economy. One of the reasons tilting the risk balance toward negative territory are the constraints to macroeconomic policies—fiscal and monetary—applied in the main advanced economies to reduce potential negative trends in private confidence. These facts could originate in the persistence and intensification of financial turbulences associated to European economies, or in the adoption of tighter policies in some emerging economies to prevent a resurgence of inflation and/or an overheating of the economy. This entails the risk of the emerging world having to make a more drastic adjustment, and therefore, being unable to sustain world growth. In addition, this will have a negative impact on commodity prices. Barriers to exchange rate adjustments only amplify those effects on international activity.

On the inflation side, the main risks are related to pressures coming from higher prices of food and/or other commodities, which could continue rising internationally and be transmitted faster and with more intensity to local prices. It is also possible that the strength of domestic demand and output continues in 2011 beyond projections, generating stronger than expected inflationary pressures. Finally, labor cost pressures are still latent as conditions in the labor market are tighter.

The materialization of these risks could have direct implications on the inflation and growth rates considered most likely by the Board. Accordingly, after considering all the elements described, the Board estimates that the risk balance for inflation is unbiased, and downward biased for output.

The Board reiterates that it will continue to use its policies with flexibility so that projected inflation stands at 3% in the policy horizon.

# Monetary policy decisions in the last three months

## Background: September 2010 *Monetary Policy Report*

---

In a context of growing uncertainty about the performance of the global economy, Chile's output had continued to post significant growth rates, the output gap had shrunk faster than forecast in the June *Monetary Policy Report*, and the nation was steadily recovering from the damage caused by the earthquake and tsunami in late February. Inflation had returned to the tolerance range, and it was moving toward a 3% level in the coming months. Externally, the most recent news had served to intensify uncertainty about the world growth rate. The financial markets continued to be highly volatile, although to a lesser extent than in the second quarter. Market consensus forecasts still had not fully incorporated this scenario, so the baseline scenario in the June *Report* considered that world growth would be lower in 2010 and 2011 than the current market consensus. In this context, the Board had gradually adjusted monetary policy, to ensure that inflation would reach around 3% in the policy horizon. The process of normalizing the monetary policy rate (MPR) had started in June and continued in the July and August meetings—with increases of 50 basis points on each occasion—which put the MPR at 2.0% in annual terms. The baseline scenario, the Board estimated that the pace of MPR normalization would be similar to the one that can be deduced from various expectations surveys. Nevertheless, the withdrawal of the monetary stimulus would depend on the evolution of internal and external macroeconomic conditions.

The GDP growth forecast was between 5.0 and 5.5% for this year and between 5.5 and 6.5% for 2011. The range for 2010 was higher than forecast in June, based both on higher real data and on more dynamic demand and output in the available data for the third quarter. The expansion velocity was expected to be lower in the second half of the year and the first half of 2011 than it had been in recent quarters, but still above trend growth. This would produce a closing of the output gap in the first half of 2011. The lower inflationary pressures associated with the strengthening of the peso partially offset the impact on prices of the rapid closing of the gap. Thus, forecasts for the remainder of the year indicated that the annual CPI change would return to numbers in the order of 3% and then stand in

the upper part of the inflation tolerance range for some months. This short-term trajectory was influenced by one-time effects, which, once reversed, would allow inflation to fluctuate around the target over all 2011 and until the end of the relevant forecast horizon, this time the third quarter of 2012. Annual CPIX1 inflation would converge more gradually to 3%, in part due to specific factors in some prices and the effect of low imported inflationary pressures (with the exception of food).

## Meetings between September and November

---

In September, the external economic situation remained uncertain, but the latest data were somewhat more optimistic than a month earlier. The news from Europe was encouraging, with upward revisions in the forecasts, while in the United States, pessimism had eased a bit. The global economic growth rate was not insignificant, although there were marked differences between regions. Long-term interest rates were very low in the main economic zones, and they were likely to stay at those levels for some time. In Chile, output and demand had continued to be very dynamic, and the outlook was favorable. In addition, the labor market had posted a positive performance. Inflation continued to record downward surprises, due to specific factors such as the seasonality of clothing. Given the possibility of inflation lags, it would be natural to see greater price pressures going forward, although there could also be effects in the opposite direction as a result of the peso appreciation or a larger output gap than projected. Possible reasons for the appreciation of the peso included the economy's strength relative to the developed world, the high copper price, and strong capital inflows. Thus, the most plausible options for September were to increase the MPR by either 25 or 50 basis points. On one hand, the monetary policy strategy of the September *Report* recognized that the MPR level was still significantly expansive and that the normalization process would need to continue until it reached a more neutral range. At some point, however, the rate of normalization would have to slow, to the extent that monetary policy became less expansive. On the other hand, certain circumstances could justify a slight rise in the MPR, most notably the drop in short-term inflation expectations following the publication of the August CPI. This expectations response could be related to the evolution of some specific prices, but it might also

reflect a perception of lower inflationary pressures. Finally, following the publication of the September *Report*, private expectations almost unanimously predicted that the MPR would be increased by 50 basis points at that meeting. In this context, the Board decided to increase the MPR by 50 basis points, to 2.5%.

For the October meeting, it was possible that additional monetary expansion measures could be promoted externally, especially after statements by U.S. Federal Reserve officials. Commodity prices continued to be high, especially for copper. The developed economies continued to post a weaker recovery than the emerging economies. This represented a risk factor for the latter, not only because of the implications for global demand, but also for the resulting ongoing financial and exchange rate tensions, even for countries with a favorable financial position like Chile. Domestically, recent data showed that demand and output were becoming somewhat less dynamic, confirming the *Report's* baseline scenario for these variables. With regard to inflation, the latest data revealed a more restrained performance than projected in the *Report*. The appreciation of the peso had contributed to reduce inflationary pressures. The exchange rate had decreased in nominal terms and, to a lesser extent, in real terms. This was similar to the trend recorded in other countries with similar cyclical and structural conditions, and it thus reflected the economy's strength relative to the developed world, the high copper price, and strong capital inflows. Consequently, the options proposed for the monetary policy decision were to increase the MPR by either 25 or 50 basis points. Most analysts expected an increase of 25 basis points, although there was less of a consensus on the decision, in contrast to previous meetings. Under either of these options, however, monetary policy would continue to be expansive, so it would be necessary to continue withdrawing the monetary stimulus. Considering international developments, the modest inflationary pressures, and the exchange rate appreciation, it seemed appropriate to rein in the monetary policy normalization process. The Board therefore decided to increase the MPR by 25 basis points, to 2.75%.

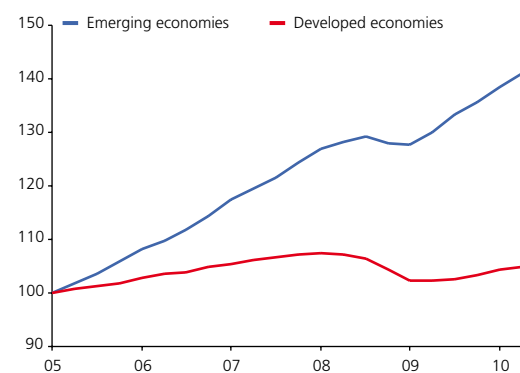
At the time of the November meeting, the global panorama continued to feature a slow recovery in the advanced economies, with spots of financial turbulence, while the emerging economies continued to grow strongly. Although there were some positive signs for the United States, they were offset by weaker indicators for Europe. The United States began the second phase of quantitative easing, and while the dollar had not depreciated further in international markets in the last month, there was increasing discussion of the appreciation of local currencies in the emerging economies and possible measures for curbing it. A number of emerging economies showed signs of greater inflationary pressures, associated with a dynamic economy and high prices for basic goods, especially food. Some countries even posted higher inflation records than expected. On the domestic front, the

economy remained strongly dynamic. The available data were within expectations, but they suggested that the easing in the growth rate of demand would be slower than previously thought, which presented a risk in terms of the pace at which the output gap was closing. With regard to prices, inflation records continued to be moderate and lower than forecast. Core measures remained below the tolerance range, and the CPIX1 was even negative in twelve months. Nevertheless, the economy's fundamentals pointed to potential inflationary pressures, due to the narrowing of the gap and the gradual increase in labor cost indices, consistent with a dynamic labor market. The factors that had contained inflation thus far were unlikely to continue contributing to reducing the pressure on local prices. The rise in food prices could add to inflation in the coming months, and although this increase was tied to changes in relative prices, it could still pass through to other prices. Thus, the most plausible options at the meeting were to increase the MPR by 25 basis points or to temporarily hold off. The current monetary policy strategy considered a gradual normalization of the MPR, aimed at balancing the inflationary pressures coming from dynamic domestic demand and the closing of the gap with the effects of the exchange rate appreciation and the as yet uncertain external environment. This strategy had been sufficiently incorporated into private expectations. In any case, the MPR was still expansive. In this context, monetary policy should provide less expansive financial conditions in order to allow economic growth to converge toward sustainable rates and avoid the incubation of inflationary pressures or a divergence of private expectations. Given this set of circumstances, the Board decided to increase the monetary policy interest rate by 25 basis points, to 3.0%.

# I. International scenario

**Figure I.1**

World output (\*)  
(index, Q1 2005=100)



(\*) PPP-weighted regions. Developed economies include Australia, Canada, Eurozone, Japan, Sweden, Switzerland, United Kingdom, and United States. Emerging economies include Argentina, Brazil, Chile, China, Colombia, Philippines, Hong Kong, India, Indonesia, Israel, Malaysia, Mexico, South Korea, Russia, Saudi Arabia, Singapore, Taiwan, Thailand, and Venezuela.

Source: U.S. Federal Reserve.

**Table I.1**

World growth (\*)  
(annual change, percent)

	Ave. 90-99	Ave. 00-07	2009 (e)	2010 (f)	2011 (f)	2012 (f)
World at PPP	3.0	4.2	-0.6	4.9	3.8	4.5
World at market exchange rate	2.8	3.2	-2.0	3.7	2.9	3.7
United States	3.2	2.6	-2.6	2.7	2.3	3.3
Eurozone	2.2	2.1	-4.0	1.6	0.8	1.4
Japan	1.5	1.7	-5.2	3.5	0.8	1.9
China	10.0	10.5	9.1	10.1	8.5	8.8
Rest of Asia	5.6	5.1	0.1	7.1	4.2	5.1
Latin America (excl. Chile)	2.7	3.6	-2.2	6.0	3.7	4.3
Commodity exporters	2.7	3.1	-1.0	3.1	2.7	3.1
Trading partners	3.1	3.6	-0.2	5.1	3.6	4.2

(e) Estimate.

(f) Forecast.

(\*) See glossary for definitions.

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

This chapter analyzes the recent evolution of the world economy and the outlook for the next two years. It also describes the most likely external scenario relevant to the Chilean economy, as well as the main risks.

## World growth

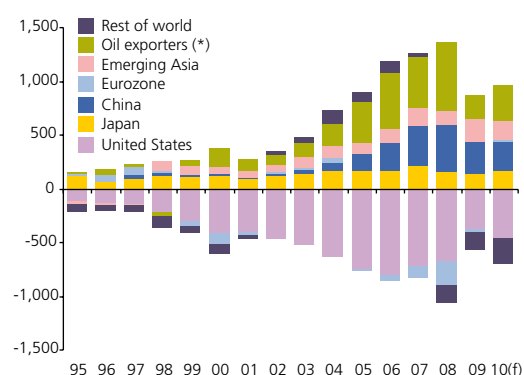
The world recovery has unfolded at different rates, with the emerging economies growing faster than the developed economies. The former have already far exceeded their pre-crisis GDP levels, and several have closed the output gap accumulated during the international recession. The developed economies, in contrast, have high unemployment levels. It is unclear how long this differentiation between the two groups can be sustained (figure I.1).

The factors explaining the relatively slow recovery in the developed economies include the financial fragility of consumers, financial institutions, and governments. Households have suffered significant losses in financial and real estate worth as a result of the crisis, which has been exacerbated by the weak recovery of employment and the deleveraging process currently underway. Consequently, the outlook for the growth of private consumption is modest. In a series of countries, the fiscal stimulus applied in previous years is coming to an end, and some governments are even implementing fiscal adjustment measures. In the United States, the programs to boost housing and car purchases have ended, although the tax cuts and unemployment benefits were extended. In the Eurozone, the fiscal consolidation plans seek to bring the public debt to a sustainable long-run level. The performance of the economies in this region has been heterogeneous, with some countries lagging behind others. In addition, the financial market tension stemming from the fiscal and/or financial fragility of some of the members will undermine the performance of the real economy.

The situation is quite different in the emerging economies. Their high growth rates stem not only from strong domestic demand, but also from thriving trade with some Asian economies. In emerging Asia, the private sector is generating a larger share of growth, which was previously led by the public sector. In Latin America, the monetary and fiscal stimulus applied during the crisis and favorable terms of trade are behind the 6% expansion projected for this year; this level far exceeds the average growth rate of the last 20 years. In both regions, dynamic demand has generated concerns of overheating and led to the application of tight or less stimulating policy measures.

**Figure I.2**

World current account balance  
(US\$ billion)



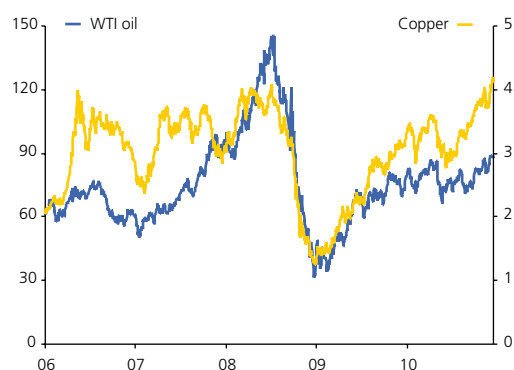
(\*) See glossary for definition.

(f) Forecast.

Source: International Monetary Fund.

**Figure I.3**

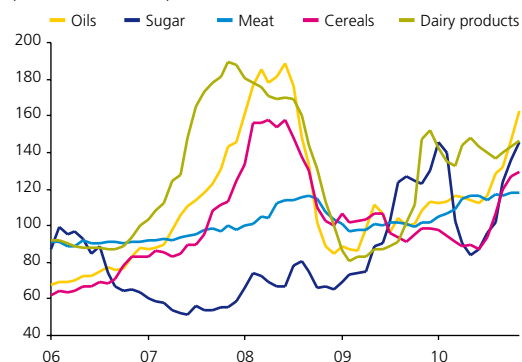
Oil and copper prices  
(US\$/barrel; US\$/lb)



Source: Bloomberg.

**Figure I.4**

Food prices (\*)  
(index 2009=100)



(\*) Based on data from FAO, which uses the average prices traded in the main markets.

Source: Bloomberg.

However, recent data have been higher than expected, and world growth forecasts for this year have thus been adjusted upward (table I.1). This is considered temporary, however, since the higher figures for the developed economies correspond, in part, to a process of inventory replacement and to the fiscal stimulus that just ended. The factors behind the relatively slow recovery in these economies will be reflected more strongly in 2011–2012, with the emerging economies being affected through the trade channel. In some emerging economies, growth will have to ease up in the coming year, due to the adjustment measures that are being applied to prevent an overheating of their economies and a resurgence of inflation. Therefore, the baseline scenario of this *Report* uses world growth forecasts for the next two years that are lower than the market consensus.

In the past few months, there has been renewed interest in recomposing world demand and reducing global imbalances. Consequently, countries with current account deficits, such as the United States, must save more and boost their exports. To do this, their currencies should depreciate and correspondingly others should appreciate, in particular countries with a current account surplus, such as China and Germany. The reluctance of some of these countries to let their currencies appreciate—which would reduce their competitiveness—has led them to apply measures with the intention of attenuating the strengthening of their currencies. This lack of adjustment represents a latent risk that could hinder and slow the world recovery and could even force emergency landings (figure I.2) (box I.1).

## Commodities

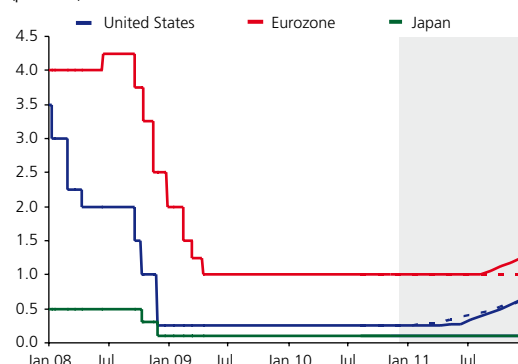
Commodity prices have continued to generally rise in the past few months, in part because of the depreciation of the dollar in international markets. There has also been an increase in non-commercial positions in this type of assets, which could indicate that the investment funds are becoming more active in these markets. In addition to these financial factors, commodity prices have been affected by real supply and demand developments, related to the strength of the Asian economies and the emerging economies in general.

WTI oil is currently trading at nearly US\$90 a barrel as of the statistical closing date of this *Report*. This implies a price increase of around 20% since the close of the September *Report*. Most recently, the seasonal increase in demand for heating oil has affected price dynamics. The WTI oil price forecast is for an average of US\$89 a barrel for the next two years, based on average futures curves in the last ten business days; this is higher than was forecast in September (figure I.3).

Copper recorded a similar hike. The price currently exceeds US\$4.00 a pound, reaching a new historical peak in nominal terms more recently. This has occurred in a context in which copper inventories have fallen over the course of the year, China's copper imports have remained high, and some mines have been paralyzed by labor conflicts. Finally, the absence of new projects has led several private organizations to adjust their price forecasts

**Figure I.5**

MPR and forward curve  
(percent)



(\*) Gray area indicates the forward curve. Dotted line shows the forecast in the September Monetary Policy Report.

Source: Central Bank of Chile.

**Table I.2**

World inflation (\*)

(annual average change in local currency, percent)

	Ave. 1990-99	Ave. 2000-07	2010 (f)	2011 (f)	2012 (f)
United States	3.0	2.8	1.6	1.4	2.0
Eurozone	2.3	2.2	1.5	1.6	1.5
Japan	1.2	-0.3	-0.9	-0.3	0.1
China	7.8	1.7	2.9	3.1	3.1
Australia	2.5	3.2	3.0	3.1	2.8
New Zealand	2.1	2.6	2.5	4.1	2.6
Argentina	253.7	8.9	10.4	11.3	13.8
Brazil	854.8	7.3	5.0	4.9	4.8
Mexico	20.4	5.2	4.1	3.6	4.2
EPI (*)	1.8	4.6	5.6	6.1	3.1
LPI (*)	27.2	5.2	4.6	4.1	3.0

(\*) See glossary for definition.

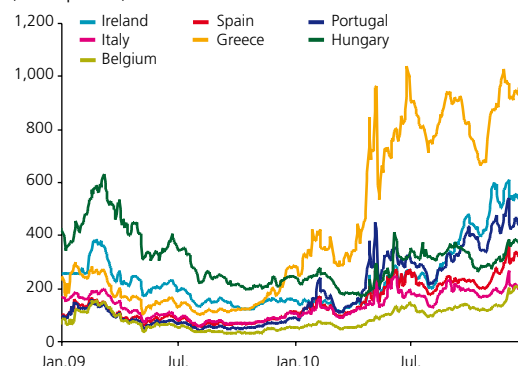
(f) Forecast.

Sources: Central Bank of Chile, based on sample of investment banks, Bloomberg, Consensus Forecasts, and International Monetary Fund.

**Figure I.6**

Sovereign risk premiums (\*)

(basis points)



(\*) Measured through five-year CDS premiums. See glossary for definition.

Source: Bloomberg.

upward. The baseline scenario of this Report considers that the price will average US\$3.40 a pound this year, US\$3.30 a pound in 2011, and US\$3.20 a pound in 2012. While these figures are higher than the values used in the last Report, they are conservative compared with the forecasts of other market agents.

Several food prices have also risen substantially in the last few months. These include not only grains and cereals, such as rice and corn, but also sugar and meat. In some cases, the price is approaching the peaks recorded in the first half of 2008. This trend has been a cause of concern for many economies, due to the possible effects on inflation. In the case of corn, there are signs of a tight market similar to 2007–2008, which, together with the increase in the medium-term price outlook derived from futures contracts, poses caution for its evolution (figure I.4) (box IV.1).

## World inflation and monetary policy

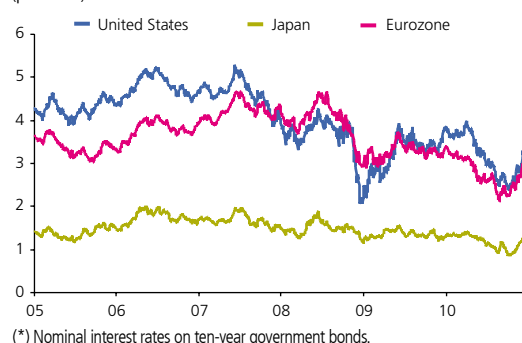
The path of world inflation has been consistent with the higher commodity prices and the level of the output gap in each economy. Inflation remains well contained in the developed countries that experienced problems in their financial systems during the crisis. The authorities in these countries are thus concerned with avoiding episodes of deflation, considering that core inflation has continued to fall or has stabilized at low levels (table I.2). This is consistent with the persistence of a large output gap and with the slow recovery in these economies. As a result, the process of normalizing monetary policy is expected to be postponed (figure I.5). In the face of this scenario, the monetary authorities in Japan and the United States announced a second round of quantitative easing measures (called QE2). The United States announced the purchase of US\$600 billion in Treasury bonds, via monthly purchases of US\$75 billion through the end of the second quarter of 2011. This program will be reassessed as new data are received. The announcement of these measures, especially in the United States, is consistent with an increase in inflation expectations derived from financial asset prices.

A second group of economies, comprising those that did not experience financial problems and that display strong growth in domestic demand, has registered increases in inflationary pressures and/or in the real data. In these countries, the monetary authorities have raised the monetary policy interest rates or implemented alternative measures to rein in the monetary stimulus to some degree. This group includes Brazil, China, South Korea, India, Sweden, and Thailand. In China, annual inflation rose from 1.9% in December 2009 to 5.1% in November of this year. The Chinese authorities not only increased the monetary policy rate and reserve requirements, but also adopted administrative measures including food price controls, with the aim of slowing the economy's strong expansion and curbing rising price levels.



**Figure I.7**

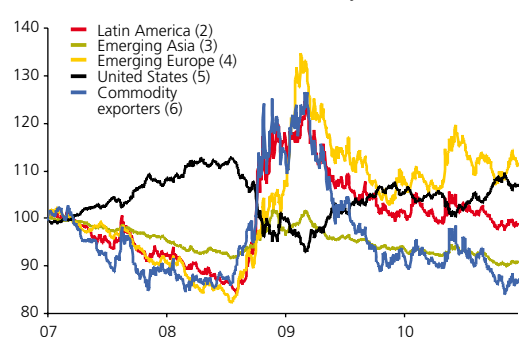
Long-term interest rates in developed economies (\*)  
(percent)



Source: Bloomberg.

**Figure I.8**

Currency parities (1)  
(index 01.Jan.2007=100, local currency to the U.S. dollar)

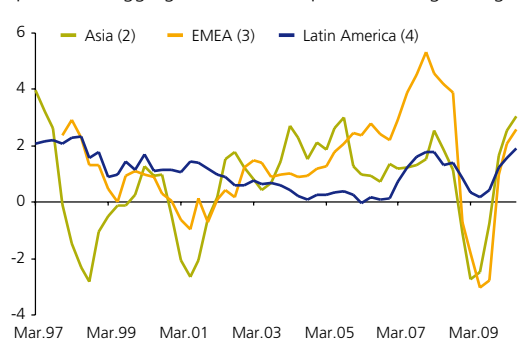


- (1) PPP-weighted average for each region. An increase indicates depreciation.  
(2) Includes Argentina, Brazil, Chile, and Mexico.  
(3) Includes China, Hong Kong, Indonesia, Malaysia, South Korea, and Thailand.  
(4) Includes Hungary, Poland, Czech Republic, and Russia.  
(5) The U.S. dollar against a basket of currencies of the main trading partners of the U.S. An increase indicates depreciation of the U.S. dollar.  
(6) Includes Australia, Canada, and New Zealand.

Sources: Bloomberg and International Monetary Fund.

**Figure I.9**

Net capital inflows to emerging economies (1)  
(percent of aggregate GDP, four-quarter moving average)



- (1) Data through the second quarter of 2010.  
(2) Includes India, Indonesia, Malaysia, South Korea, Taiwan, and Thailand.  
(3) Includes Hungary, Israel, Poland, Russia, South Africa, and Turkey.  
(4) Includes Argentina, Brazil, Chile, Colombia and Mexico.

Source: International Monetary Fund.

A third group of economies, including Canada, Israel, and Norway, has eased off on the monetary policy normalization process. In some cases, this has come together with expectations that the monetary stimulus will be withdrawn more slowly going forward. In several economies, the continuance of low inflation rates is associated with local currency appreciation. In Latin America, inflation has followed an upward trend, but the core measures continue to be contained.

In the baseline scenario, the external prices relevant to the Chilean economy, measured in dollars (EPI), are projected to increase in 2011 more than was forecast in September. Although the local inflation forecasts of Chile's trading partners have increased since the last *Report*, the adjustment in the EPI for next year mainly reflects the depreciation of the dollar.

## Financial markets

Ireland has undergone a significant deterioration of its fiscal situation—with an estimated fiscal deficit on the order of 18% of GDP this year, without counting the cost of the bank rescue—while its banking system is facing a deposit run and difficult access to financing. As a result, in mid-November the country requested an aid package from the IMF and the European Union for €85 billion. The Irish situation and fears of contagion to other European countries have resulted in a generalized increase in the risk measures of these economies and of individual financial institutions, in some cases exceeding the peaks of last May. For the moment, the volatility and risk indicators of the global markets have not been affected, although the extent of the situation is not yet clear (figure I.6).

The fiscal and monetary stimulus measures adopted in the United States have also influenced the financial markets in the last few months. In late August, the chairman of the U.S. Federal Reserve suggested the possibility of implementing a second phase of quantitative easing measures, which finally happened in early November. The extension of tax cuts and unemployment benefits was then announced in early December. These events generated increases in the stock market and inflation expectations, as well as a depreciation of the dollar. Nominal interest rates on ten-year U.S. government bonds have risen almost 60 basis points since the close of the September *Report*, while real rates are similar to their September levels (figure I.7). In the same period, the dollar depreciated nearly 3% in multilateral terms (figure I.8).

The contrasting growth prospects of developed and emerging economies and the widening of interest rate differentials have led investors to increase their positions in the second group. Capital inflows to emerging economies have been increasing—to pre-crisis levels in the case of Latin America and Asia (figure I.9). This scenario has also been consistent with increases in the stock markets of these economies and with greater sovereign placements in international markets. Several of these economies have experienced significant exchange rate appreciations.

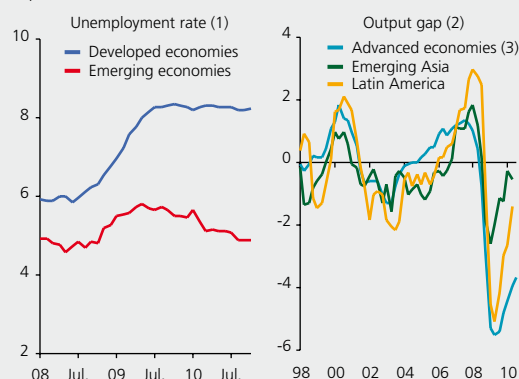


## Box I.1: What is behind the slow recovery of the developed economies?

Following the 2009 global recession, the world recovery has been uneven between developed and emerging economies. The former are growing below trend, especially in the case of countries that had problems in their financial systems during the crisis. Moreover, their recovery has been slower than after past recessions<sup>1/</sup>. The main developed economies thus still have large output gaps and high unemployment levels (figure I.10). This box explores the factors behind the meager performance of the developed economies.

**Figure I.10**

Output gaps  
(percent)



(1) PPP-weighted regions. Developed economies include Canada, Eurozone, Japan, United Kingdom, and United States. Emerging economies include Brazil, Mexico, South Korea, Taiwan, and Thailand.  
(2) Gap obtained with the HP filter, except in advanced economies, where Oecd estimates were used. Emerging Asia: China, Philippines, Hong Kong, India, Indonesia, Malaysia, South Korea, Singapore, Taiwan, and Thailand. Latin America: Argentina, Brazil, Chile, Colombia, Mexico and Peru.  
(3) Includes Germany instead of the Eurozone.

Sources: Central Bank of Chile based on data from Bloomberg, Oecd, and the statistics offices of each country.

The aggressive fiscal and monetary stimulus measures applied after the recession helped jump-start the global recovery. However, private demand is still weak in the advanced world. A key factor in this trend is the difficulty of reactivating domestic demand, in particular private consumption, which fell sharply in the last recession.

Several factors explain the slow consumption. First, household wealth is still depressed. In the United States, nearly 65% of total household assets are financial, and the stock markets remain below their pre-crisis level. In Europe, the share of financial assets of households is lower, but it is also undermining household wealth. Real estate holdings represent another key component of household wealth. Several developed economies experienced a bubble in the real estate market, and when the bubble burst, housing prices plummeted. Some countries are starting to see small increases in housing prices in the most recent period.

Second, the evolution of the labor market affects consumer expectations, and it represents an obstacle to the growth of consumption. Several developed economies still have high unemployment rates—close to 10% in the United States and Europe. In the United States, the high long-term unemployment is especially concerning, given the possibility that it will become structural. This has led to the announcement of new relief measures.

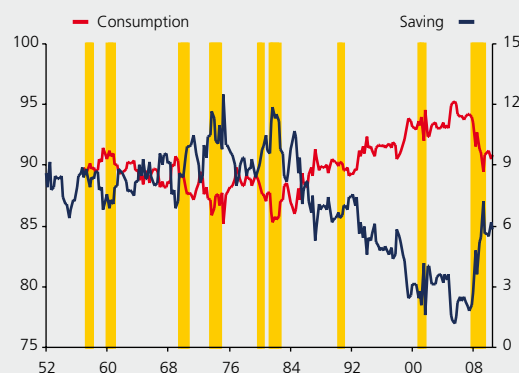
A third factor is related to the debt deleveraging process being carried out by households, firms, and governments in the developed world. The expansion of demand in the years leading up to the crisis was, to a large extent, financed with debt. Therefore, household saving rates are now rising (figure I.11). In addition, the banking system is now generally more reluctant to grant new loans, and in Europe the tension in the financial markets has raised the cost of financing. These factors further limit the growth of consumption and investment. In the case of governments, the implementation of huge stimulus packages after the crisis and the costs of the financial crisis significantly worsened fiscal positions that were not very solid to begin with, which makes the application of new measures difficult.

<sup>1/</sup> See the September 2010 *Monetary Policy Report*, box I.1, pp. 17–18.

**Figure I.11**

United States: Consumption and saving (\*)

(percent of available income)



(\*) Yellow bars represent recession periods, as defined by NBER.

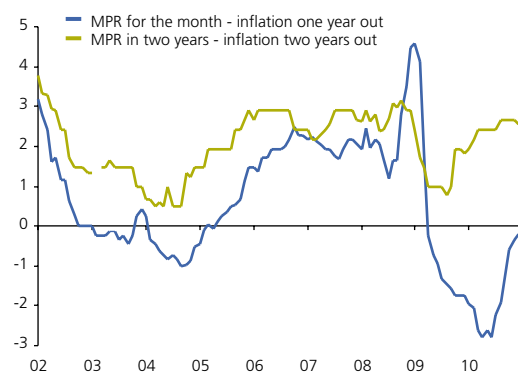
Source: Bloomberg.

Some developed countries accumulated current account deficits before the crisis. Reducing these deficits is essential for a sustainable recovery in these economies (figure I.2). Some, like the United States, must decrease their trade deficits, but the possibility of growth based on the external sector is also limited. In the Eurozone, the rigidity imposed by the common currency hampers the real exchange rate adjustment between the surplus economies with a stronger cyclical position (for example, Germany) and the deficit economies of the periphery (such as Greece, Ireland, Portugal, and Spain). In China and Japan, high saving levels and foreign exchange interventions hinder the currency adjustment. The absence of the exchange rate corrections necessary to stimulate the export sector in economies with a current account deficit and the corresponding increase in domestic expenditures in economies with a surplus holds back and complicates the recovery.

## II. Financial markets

**Figure II.1**

Real monetary policy interest rate based on EES expectations  
(percent)



Source: Central Bank of Chile.

This chapter reviews the recent evolution of the main financial market variables from a monetary policy perspective.

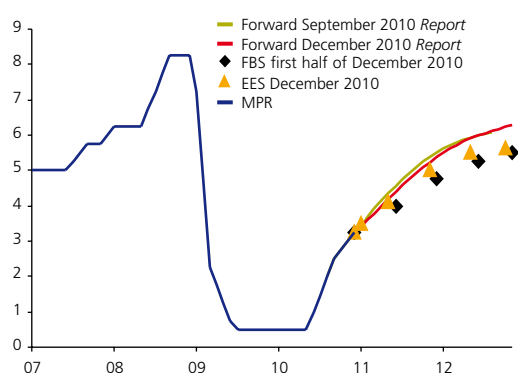
### Monetary policy

The development of the macroeconomic scenario in recent months has been conducive to continuing the gradual withdrawal of the monetary stimulus. Thus, after increases of 50 basis points at the September meeting and 25 basis points at the October, November, and December meetings, the monetary policy rate (MPR) is currently 3.25%. Despite this normalization process, monetary policy continues to be expansive (figure II.1). The baseline scenario of this *Report* uses as a working assumption that the monetary stimulus will continue to be gradually reduced, at a pace comparable to the one that can be derived from the various expectations surveys. The Board stated, however, that the process will depend on the evolution of internal and external macroeconomic conditions.

Over the course of the past few months, the market has been incorporating expectations of a more moderate monetary policy adjustment, especially in the short term. Private expectations thus put the MPR between 4.7 and 5.4% one year out. Toward the end of the forecast horizon, the MPR is expected to be between 5.5 and 6.3% (table II.1 and figure II.2).

**Figure II.2**

MPR and expectations  
(percent)



Source: Central Bank of Chile.

**Table II.1**

Expectations for the MPR  
(percent)

	One year out		Two years out	
	September Report	December Report	September Report	December Report
EES (1)	5.00	5.00	5.75	5.63
FBS (2)	5.00	4.75	5.50	5.50
Forward (3)	5.11	5.38	6.08	6.32
Forward swap (4)	4.51	4.70	5.18	5.61

(1) August and December 2010 surveys.

(2) Surveys for the second half of August 2010 and first half of December 2010.

(3) Constructed using the interest rates on swap contracts up to two years and BCP interest rates afterwards.

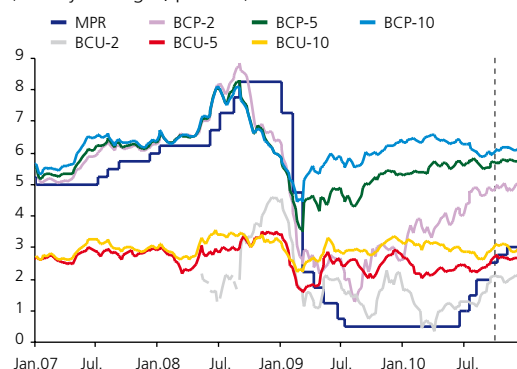
(4) Constructed using only the interest rates on swap contracts up to two years.

Source: Central Bank of Chile.

**Figure II.3**

MPR and interest rates on Central Bank of Chile instruments (\*)

(weekly averages, percent)



(\*) The vertical slashed line represents the publication date of the September 2010 *Monetary Policy Report*.

Source: Central Bank of Chile.

The interest rates on Central Bank of Chile bonds have increased since the publication of the September *Report* (figure II.3). This could be a response to the MPR hikes, the improved short- and medium-term outlook for output, and the increases in international interest rates. In the period between the closing dates of the September *Report* and this *Report*, both UF-indexed and peso-denominated instruments recorded increases of between 20 and 60 basis points, depending on the maturity.

Nominal interest rates on foreign government bonds have moved in the same direction, although most of the movement was concentrated in the last month. This trend has reversed some of the reductions observed following the first signs that the quantitative easing plan would be implemented in the United States. Thus, ten-year bonds in the United States and the Eurozone have risen between 60 and 70 basis points since September, while emerging market bonds posted smaller increases. Consequently, the interest rate gap narrowed on the long end of the curve.

## Exchange rate

The evolution of the international foreign exchange markets has been determined by the contrast between the performances of the advanced and emerging economies in terms of output, inflation, and monetary policy decisions. In this context, the dollar has depreciated markedly against a series of currencies. The peso was no exception, gaining nearly 5% against the dollar since the close of the last *Report*, although this is lower than between June and September (figure II.4). The exchange rate is fluctuating around \$475. It continues to be volatile, although considerably less so than during the financial crisis or even in the third quarter of this year.

Beyond the evolution of the dollar in international markets, the peso's movements have also reflected the evolution of the terms of trade (in particular, the increase in the copper price), the short-term interest rate differential, and the investment decisions of institutional investors, among other factors.

The appreciation of the peso is lower in multilateral terms, on the order of 3%. This is largely explained by the fact that the dollar's loss of value against other currencies has been generalized (table II.2). Some economies have applied administrative measures or intervened directly in their foreign exchange markets with the intention of attenuating the appreciation of their currencies<sup>1/</sup>.

The real exchange rate (RER) has also appreciated in line with the nominal exchange rate, although to a lesser extent (box II.1). Several factors explain the real peso appreciation in this period. The terms of trade are substantially higher, even excluding copper, and the economy's current net external financial position is significantly less negative than in the past. There are also cyclical factors related to the slow recovery of the developed economies relative to Chile.

**Figure II.4**

Nominal exchange rate (1) (2)

(index 02.Jan.2006=100)



(1) See glossary for definition.

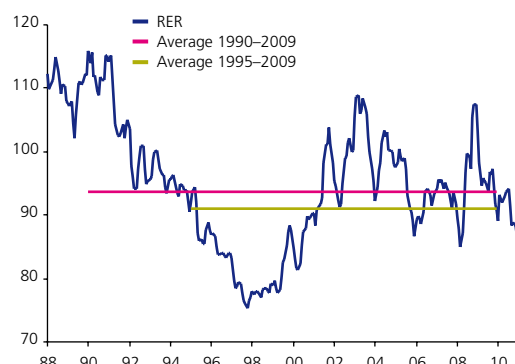
(2) The vertical slashed line represents the publication date of the September 2010 *Monetary Policy Report*.

Source: Central Bank of Chile.

<sup>1/</sup> For further details, see box I.1 of the *Financial Stability Report*, Second Half 2010.

**Figure II.5**

Real exchange rate (\*)  
(index 1986=100)

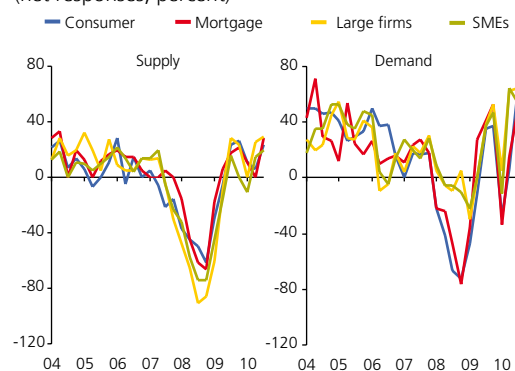


(\*) Data as of 16 December 2010.

Source: Central Bank of Chile.

**Figure II.6**

Bank Lending Survey (\*)  
(net responses, percent)

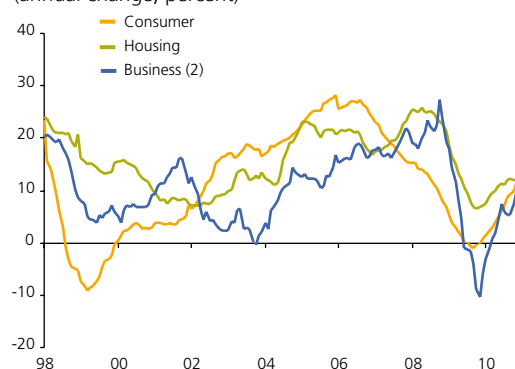


(\*) Average responses by quarter. Negative values indicate tighter restrictions than in the previous quarter.

Source: Central Bank of Chile.

**Figure II.7**

Nominal loans by type (1)  
(annual change, percent)



(1) Preliminary data for November 2010.  
(2) Commercial loans plus foreign trade loans.

Sources: Central Bank of Chile and Superintendence of Banks and Financial Institutions.

The real appreciation has had heterogeneous effects on different sectors of the economy. In some sectors, the appreciation of the peso has been more than offset by higher export prices (mining). In others, the effects have been lessened by the appreciation of local currencies. The agricultural sector has recorded greater appreciation, due to the importance of the U.S. and European markets in agricultural exports.

However, considering the level of the nominal exchange rate and the currency parities prevailing at the statistical closing date of this *Report*, the RER stands at 87 (where 1986=100), fairly close to the minimum levels considered consistent with its long-term fundamentals. The baseline forecast scenario of this *Report* uses as a working assumption that toward the long term the peso will post a moderate depreciation in real terms (figure II.5).

**Table II.2**

Parities of Chile's main trading partners against the U.S. dollar (\*)  
(percent change)

Currency	Accum. 2010	Sept 2010 Report to Dec 2010 Report	Jun 2010 Report to Sept 2010 Report	March 2010 Report to June 2010 Report	31. Dec. 2009 to March 2010 Report
Argentina	4.6	0.8	0.6	1.5	1.7
Brazil	-3.7	-3.3	-4.2	2.1	1.9
Canada	-4.3	-4.5	1.3	2.2	-3.2
<b>Chile</b>	<b>-5.2</b>	<b>-4.9</b>	<b>-6.8</b>	<b>2.0</b>	<b>4.9</b>
China	-2.5	-2.1	-0.4	0.1	0.0
Colombia	-7.2	4.4	-6.6	1.6	-6.3
Japan	-8.9	-1.1	-7.8	0.5	-0.5
Mexico	-4.1	-4.7	1.9	2.1	-3.4
Peru	-2.2	0.8	-1.7	0.3	-1.6
United Kingdom	-1.7	1.9	5.9	-3.0	-6.0
South Korea	-2.7	-3.9	-3.3	8.3	-3.3
Sweden	-5.4	-7.0	-7.2	10.4	-0.7
Switzerland	-6.2	-4.8	-11.0	8.3	2.2
Eurozone	7.9	-4.2	-4.9	11.7	6.1

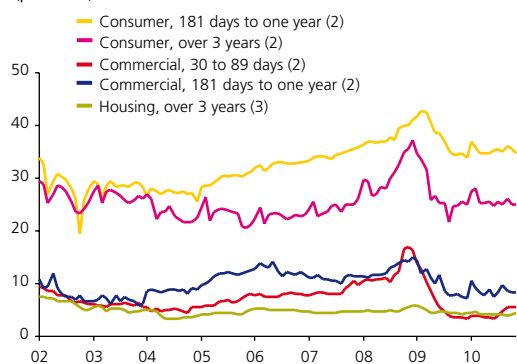
(\*) An increase indicates currency depreciation.

Sources: Central Bank of Chile and Bloomberg.

## Financial conditions

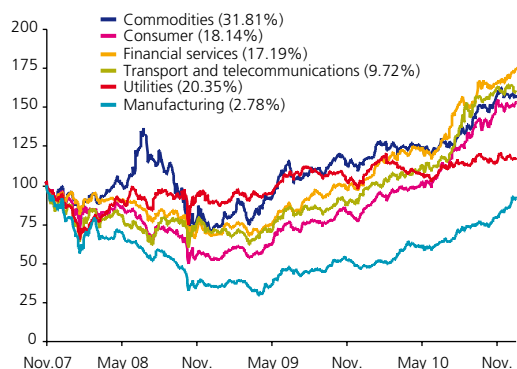
According to the Bank Lending Survey of the third quarter, the majority of banks continued to loosen lending conditions, while demand was considered to be strengthening for both individuals and businesses (figure II.6). Conditions are looser for all business loan segments, which can be attributed to a reduction in client risk and increased competition among financial institutions, mainly in the large firm segment.

The loosening of financial conditions since the publication of the September *Report* has coincided with dynamic domestic demand. According to preliminary data for November, the stock of both consumer and business loans increased in annual terms: 11.5 and 9.5%, respectively (figure II.7). The interest rates on consumer loans at the most representative maturities have fallen slightly since the last *Report*. Commercial lending rates posted a mixed performance: the shortest rates, associated with working capital financing, rose around 70 basis points, while the longer rates, which are more related to investment, fell almost 150 basis points (figure II.8).

**Figure II.8**Lending rates (1)  
(percent)

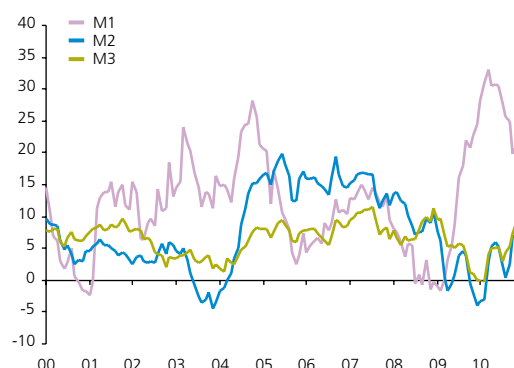
(1) Weighted average rates for all operations carried out in the month.  
(2) Nominal rates.  
(3) UF rates.

Source: Central Bank of Chile.

**Figure II.9**Ipsa by sector (\*)  
(index, Oct. 07 average=100)

(\*) Sectoral indices are weighted by the relative weight of each stock in the composition of the Ipsa as of 16 December 2010. The share of each sector in the Ipsa is in parentheses.

Sources: Central Bank of Chile and Bloomberg.

**Figure II.10**Monetary aggregates  
(annual change, percent)

Source: Central Bank of Chile.

Housing loans grew 12% in annual terms. The interest rates on these loans rose nearly 30 basis points in the period, but they remain below the average for the period 2002–2009. In line with the favorable financial conditions for this type of operation, new home sales are recovering, and the number of months it would take to sell the existing inventory at the current sales pace has fallen.

Banks' loan-deposit spread has been falling since early 2009, especially for maturities between 90 days and one year. This could be associated with a drop in lending rates and slight increases in deposit rates. In particular, prime deposit rates peaked before the September *Report* and then fell, only to start rising again in the most recent period. At some maturities, current rates exceed their September levels. Consequently, the prime-swap spreads also fell<sup>2/</sup>.

The local stock exchange, measured through the Ipsa, continued to rise. From the September *Report* to date, it yielded 11% measured in dollars. This is in line with other exchanges: the world as a whole and Latin America yielded between 9 and 12%, measured through their respective MSCI indices in foreign currency. The stock market recovery has been stronger in emerging markets than in developed countries, reflecting differences in economic growth and capital inflows to emerging economies.

The different sectors that make up the Ipsa performed evenly, accumulating positive returns. Only manufacturing is lagging behind and has not returned to its pre-crisis levels yet (figure II.9). In terms of valuation and using the price-earnings ratio as a reference, both the IPSA and the MSCI Latin America index are above their historical averages. Bond placements on the domestic market have been slower, but Chilean firms issued bonds overseas during the period, as have firms in other emerging markets. The spreads on these issues have been below the average for 2001–2007. Bond spreads are also low at the local level, especially for bonds with an AA or A risk rating, despite the increases recorded since September.

Since August, based on data available in the last *Report*, the monetary aggregates have continued to expand monthly: M1 grew 1%; M2, 5%; and M3, 7%. In annual terms, M1 has maintained growth rates of over 20%, while the less liquid aggregates like M2 and M3 present annual growth rates on the order of 10%, which is similar to the growth rate of credit (figure II.10). Time deposits grew 5% between August and November, which probably reflects the MPR increases and the recovery of foreign currency deposits (just under 30% in the same period) and Central Bank and Treasury bonds (13.5%).

<sup>2/</sup> For further details, see box III.1 of the *Financial Stability Report*, Second Half 2010.

## Box II.1: The exchange rate in Chile: determinants and sectoral differences<sup>1/</sup>

The nominal peso-dollar exchange rate depreciated in the first half of the year, but in July, it started moving sharply and quickly in the opposite direction. Since then, the peso has appreciated 13% against the dollar, 6% against the euro, and 10% against a basket of currencies made up of the economy's main trading partners (figure II.4). The real exchange rate (RER) index has also recorded a downward trend, and it is currently below the averages of the last 15 and 20 years (figure II.5). The factors that explain why the RER is lower than these averages include the impact of the financial crisis on demand in the developed economies and the global imbalances. Moreover, the Chilean economy's terms of trade (TOT) are substantially better now than in that period, and its external financial position is significantly less negative (figure V.1).

Internationally, the financial crisis left an excess of savings or liquidity in the world, which puts downward pressure on the real international interest rate. Together with the divergent growth rates of developed and emerging economies, this weakens the real exchange rate of countries with a current account deficit and strengthens the rest. Consequently, the currencies of several emerging markets and commodity exporters are facing real appreciation pressures. The Chilean peso is also affected by this process (figure II.11).

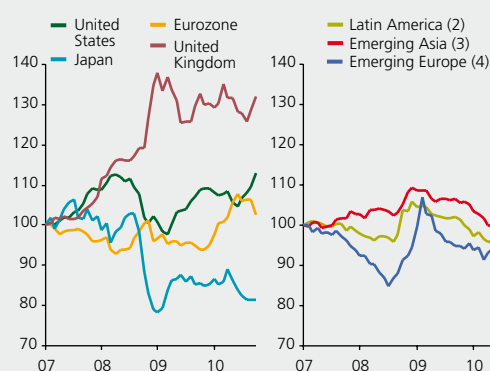
Not all countries contribute to the exchange rate adjustment at the same rate, which generates tension in the international economy. For example, in the Eurozone, the single currency slows down the real exchange rate adjustment between surplus economies with a stronger cyclical position, on one hand, and the deficit countries of the periphery, on the other. In Asia, exchange rate interventions in China and other economies impedes the nominal adjustment of the currencies.

Over the years, the Chilean economy has improved its net financial position relative to the rest of the world. Public debt has fallen significantly, and the sovereign wealth funds have accumulated foreign currency resources. This contributes to a lower RER through a lower sovereign risk level, more favorable

external financing conditions, and higher permanent foreign exchange income to the Treasury through interest received.

**Figure II.11**

Real exchange rate (1)  
(index Jan. 2007=100)



(1) An increase indicates depreciation of the local currency against a basket of currencies of the country's main trading partners. The latest data are from October 2010.

(2) Latin America includes Argentina, Brazil, Chile, Mexico, and Peru.

(3) Emerging Asia includes China, Indonesia, Malaysia, South Korea, and Thailand.

(4) Emerging Europe includes Hungary, Poland, Czech Republic, and Russia.

Sources: Central Bank of Chile and BIS.

### Sectoral differences

The global recovery (with regional differences), the behavior of trading partners' currencies, and export prices all contribute to creating wide differences in the external competitiveness of Chilean exporters, in terms of output and destination markets.

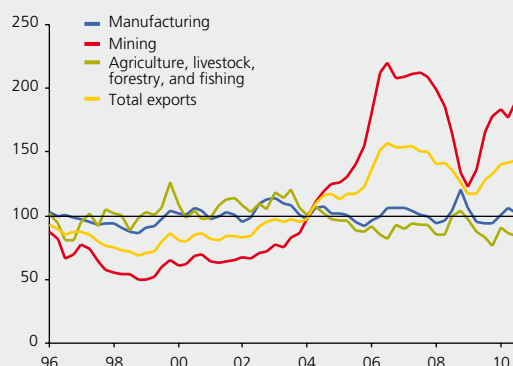
<sup>1/</sup> For further details, see De Gregorio (2010).



The evolution of the average RER does not reflect this diversity. A look at a measure of sectoral competitiveness reveals that in some sectors, including mining, the appreciation of the peso has been more than offset by higher prices for the exported products (figure II.12). The agricultural sector, in contrast, has experienced an appreciation.

**Figure II.12**

Sectoral real exchange rate (\*)  
(index 1996–2007 average =100)



(\*) RER calculated using unit value indices.

Source: Central Bank of Chile.

The difference in the sectoral impact also reflects differences in the destination markets for Chilean exports. For example, more than 70% of exports in agriculture, livestock, forestry, and fishing are concentrated in the developed economies, which continue to post a slow recovery. Manufacturing and mining shipments are more diversified, with a lower relative share for the developed economies (around 40%) and the rest distributed between Asia and Latin America. These sectors have thus benefited from the fast recovery of the emerging economies. Nevertheless, total export levels have not yet returned to their pre-crisis levels (table II.3).

**Table II.3**

Destination of Chilean exports in 2009  
(percent share in total, by type of good)

	Developed economies (1)	Asia (2)	Latin America	Other	Total US\$ fob million
Ag., livestock, forestry, and fish.	73.6	11.1	11.7	3.5	3,629
Manufacturing	41.0	18.7	30.0	10.3	16,897
Mining	37.5	52.5	6.1	3.9	30,461
Total	40.1	36.5	16.4	7.0	53,735
<b>Total US\$ fob million</b>	<b>21,561</b>	<b>19,595</b>	<b>8,802</b>	<b>3,778</b>	

(1) United States, Europe, and Japan.

(2) Excluding Japan.

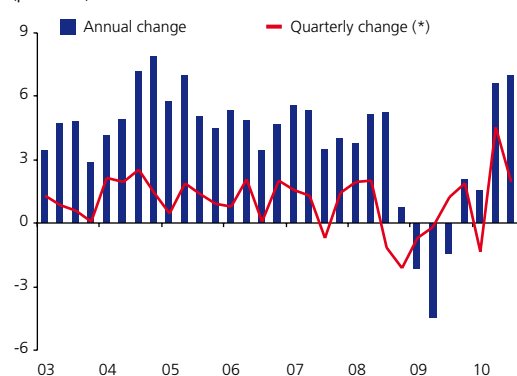
Source: Central Bank of Chile.



# III. Demand and activity

**Figure III.1**

Gross domestic product  
(percent)

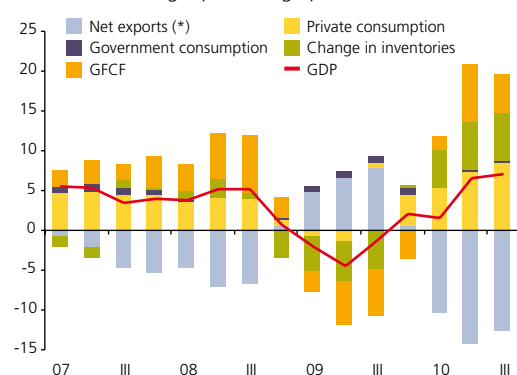


(\*) Seasonally adjusted series.

Source: Central Bank of Chile.

**Figure III.2**

Contribution to annual GDP growth  
(real annual change, percentage points)



(\*) Goods and services export minus goods and services import.

Source: Central Bank of Chile.

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

## Aggregate demand

In the third quarter of the year, output and demand continued to be very dynamic, although they slowed somewhat relative to the first half of the year. GDP grew 7% in annual terms, with an expansion velocity of 8.1% (figure III.1). On aggregate, third quarter output was consistent with the baseline scenario of the last *Report*, but with differences in composition. GDP of supply sectors<sup>1/</sup> was lower than projected, while GDP of other sectors was higher. The growth of output was once again led by trade, especially retail trade, and by electricity, gas, and water (EGW), communications, and transport. In the third quarter, almost all sectors grew in annual terms, with the exception of fishing. For the current quarter, the annual growth rate is expected to be lower than in the previous two quarters, due, in part, to a higher basis for comparison, since output began to recover in late 2009. The baseline scenario of this *Report* projects that GDP will close 2010 with annual growth of 5.2%, which is within the range of the September forecast. This means that output gaps have narrowed and will be closed soon.

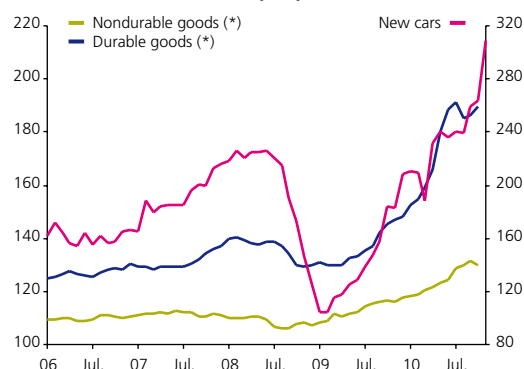
Domestic demand grew 18.2% in annual terms in the third quarter of the year, with annualized quarter-on-quarter growth of 4.1%. The slowdown in the growth rate was in line with expectations in the September *Report*, which considered that a share of the high growth reflected increases in expenditures to alleviate the immediate effects of the earthquake and tsunami in late February (27-F). However, demand was determined by higher private consumption than expected. Investment grew more slowly, although it was still dynamic, driven by gross fixed capital formation and inventory build-up (figure III.2).

<sup>1/</sup> In accordance with the policy on the regular disclosure of the Quarterly National Accounts, the first GDP estimate for the third quarter of 2010 and new GDP estimates for the first and second quarters of 2010 were published on 18 November. The lower growth rate of the GDP of supply sectors is associated with a downward revision of 10 points, on average, for the EGW sector in the first half, due to a reduction in the use of hydrological resources in favor of less efficient inputs.

**Figure III.3**

Retail sales and new car sales

(index 2003=100, seasonally adjusted series)

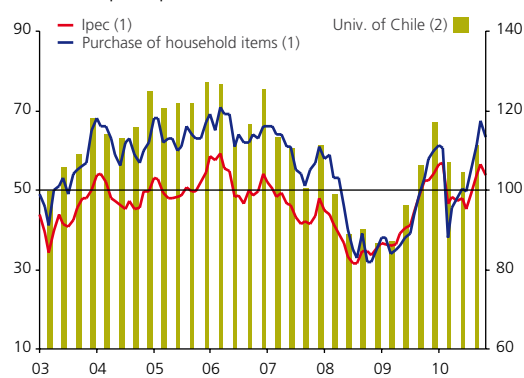


(\*) Sold in the moving quarter.

Sources: National Automobile Association of Chile, Central Bank of Chile, and National Chamber of Commerce.

**Figure III.4**

Consumer perception indices

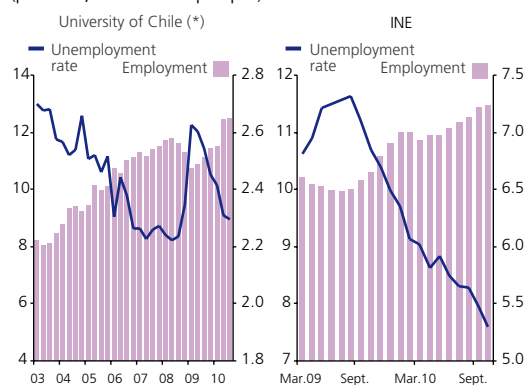
(1) Ipec survey: a value over (under) 50 points indicates optimism (pessimism).  
(2) Index March 2001 = 100.

Sources: Adimark and University of Chile.

**Figure III.5**

Labor market

(percent; millions of people)



(\*) Seasonally adjusted series.

Sources: Central Bank of Chile, National Statistics Bureau (INE), and University of Chile.

Private consumption remained high in the third quarter, although the growth rate was lower than in the previous quarter. Retail trade surprised, especially in terms of habitual consumption<sup>2/</sup>, which grew 8.7% in annual terms. Durable goods consumption, in turn, growing 37% in annual terms, slowed relative to the second quarter. This is in line with the assumption that part of this growth trend reflected the replacement of goods destroyed during 27-F. Partial indicators for the fourth quarter, as well as the evolution of their determinants, suggest that the growth trend for private consumption will continue to be dynamic through early 2011, though it will slow somewhat relative to this year. New car sales are at historically high levels; and sales of items such as household appliances, clothing, and shoes also remain high, despite a slight decline, which coincides with the drop in their prices (figure III.3). Consumer goods imports similarly continue to grow. Consumer expectations, as measured by the Economic Perception Index, have fluctuated, but they have been optimistic since September. In particular, consumers consider that this is a good time to buy household items. The University of Chile's indicator has similarly risen relative to the first half and reveals an increase in confidence about expected conditions twelve months out (figure III.4). Credit conditions support this positive outlook for consumption. This is reflected in the increased supply and demand for consumer loans reported in the Bank Lending Survey for the third quarter. Consumer loans continued to expand in November, while the interest rates on these loans were at or below their historical averages. As mentioned in the *Financial Stability Report*, household credit card debt with a variable interest rate grew, which could become a concern in an upward rate cycle.

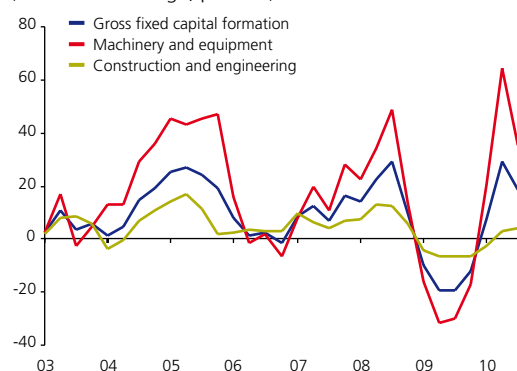
The favorable performance of the labor market also supports the outlook for consumption. According to information from the University of Chile, the National Statistics Institute (INE), the Chilean Insurance Association, and the Pension Funds (number of affiliates), employment has continued to increase fairly generally across sectors. Data from INE and the University of Chile reveal that over the course of the year, job creation has been dominated by the growth of self-employment, especially in trade and manufacturing, although payrolls have also been more dynamic in the most recent period. The unemployment rate continues to decline. According to INE data, employment grew 8.9% in annual terms in the August–October moving quarter, while the unemployment rate fell from 8.3% in the moving quarter ending in July to 7.6% in the most recent data (figure III.5). At the same time, the labor force grew over 5.0% in annual terms, and the participation rate approached 60%. The employment outlook, as captured in the Monthly Business Confidence Index (*Indicador Mensual de Confianza Empresarial*, or Imce), remains optimistic on aggregate and is higher than in the September *Report*. The employment outlook contained in the Economic Perceptions Index similarly remains optimistic<sup>3/</sup>. Finally, another factor that might explain the evolution of private consumption is the real increase in wages.

<sup>2/</sup> Habitual consumption corresponds to the consumption of nondurable goods and services.

<sup>3/</sup> Specifically, the survey question is about the unemployment level expected in the next twelve months. Values over 50 (optimistic) indicate that a lower unemployment level is expected for the next twelve months.

**Figure III.6**

Gross fixed capital formation  
(real annual change, percent)

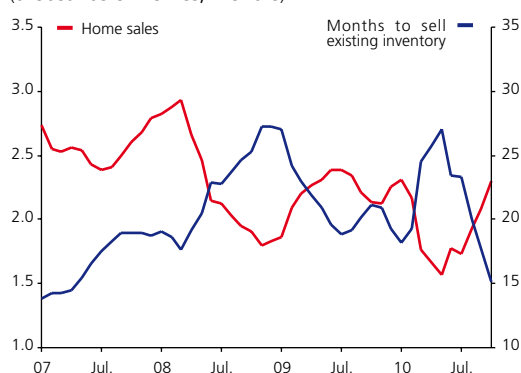


Source: Central Bank of Chile.

Investment continued to grow strongly in the third quarter, but it was lower than forecast due to a lag in the expected recovery of construction and engineering investment. Gross fixed capital formation grew 18.5% in annual terms (figure III.6). It continued to be driven by machinery and equipment, which grew 35.4% in annual terms but was down from the second quarter. This is explained, in part, by the replacement of equipment associated with 27-F. Capital goods imports have been more dynamic since September, although they remain below the peaks recorded in May. Investment related to construction and engineering was higher than in the second quarter, but lower than forecast, at 4.3% in annual terms. Construction grew an annualized 5.6%, again driven by expenditures for repairs following 27-F. The sector's evolution has coincided with low dynamism of cement sales and of the Monthly Construction Activity Index (*Índice Mensual de la Actividad de la Construcción*, or Imacon), as well as a drop in cement deliveries since the last Report. However, the baseline scenario of this Report estimates that the investment-to-GDP ratio this year will be 28.4% measured in constant prices and 21.7% in current prices.

**Figure III.7**

Greater Santiago real estate market (\*)  
(thousands of homes; months)



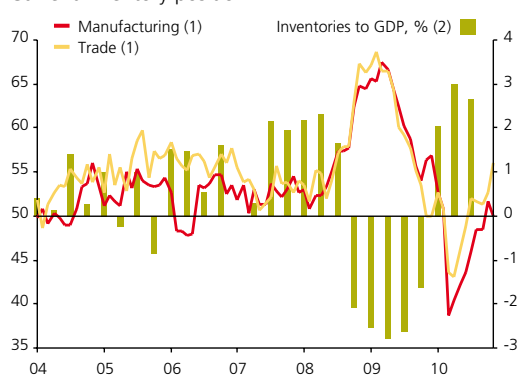
(\*)Moving quarter average. Seasonally adjusted series.

Sources: Central Bank of Chile and Chilean Chamber of Construction.

Going forward, the composition of this component of investment is expected to change, with a stronger role for construction. This projection is mainly based on expectations for the reconstruction process. As forecast in the September Report, new home sales increased, causing inventories to drop (figure III.7). This is related, in part, to more flexible lending conditions according to the Bank Lending Survey for the third quarter and low mortgage interest rates compared with the historical average, despite an increase since the last Report. The Bank Lending Survey also reports looser lending conditions for the business sector, especially for real estate firms and businesses that directly manage investment projects. The demand for real estate loans has also strengthened. The outlook for the construction sector, measured by the Imce, became optimistic again in October, for the first time since early 2008. Finally, employment has increased and the labor outlook in the construction sector continues to rise.

**Figure III.8**

Current inventory position



(1) Imce: a value over (under) 50 points indicates that inventories are above (below) optimal.

(2) Seasonally adjusted quarterly series.

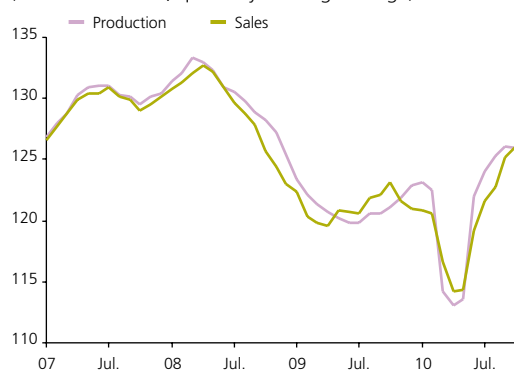
Sources: Central Bank of Chile and Icare/Universidad Adolfo Ibáñez.

The greater investment activity projected in association with the reconstruction process is partially offset by project rescheduling in the mining and energy sectors. The survey carried out by the Capital Goods and Technological Development Corporation (*Corporación de Desarrollo Tecnológico y de Bienes de Capital*, CBC) includes a downward correction for investment in the period 2010–2012 and an upward correction for 2013–2014. Nevertheless, business expectations contained in the Imce remain optimistic for all sectors, as does the outlook for investment.

Data for the third quarter point to a strong inventory accumulation. In the moving year ending in the third quarter, inventories grew 1.8% of GDP. Going forward, this variable is expected to contribute less to investment, both because the aggregate inventory level is considered adequate according to the Imce and because the gap between sales and manufacturing production is virtually closed (figures III.8 and III.9).

**Figure III.9**

Manufacturing: production and sales (\*)  
(index 2002=100, quarterly moving average)

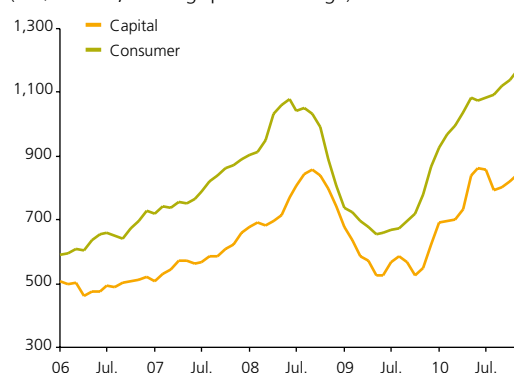


(\*) Seasonally adjusted series.

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

**Figure III.10**

Goods imports (\*)  
(US\$ million, moving quarter average)



(\*) Seasonally adjusted series.

Source: Central Bank of Chile.

In the fiscal area, the overall balance was  $-0.2\%$  of GDP in the third quarter of the year, according to data from the Budget Division. Total income grew  $22.3\%$  in real annual terms, largely because of increases in tax income—mainly from copper. Expenditures grew  $0.4\%$  in real annual terms, with a marked reduction in investment and capital transfers. The forecasts used in the baseline scenario of this Report are consistent with the fiscal scenario depicted in the Budget Law.

In the external sector, international trade recovered strongly in the third quarter. Moreover, export prices increased much more sharply than import prices, as a result of the upward trend in commodity prices in international markets. The volume of total goods exports thus grew  $5.7\%$  in annual terms in the third quarter ( $29.5\%$  in value), after several quarters of negative annual growth rates. The biggest contribution was from mining shipments, especially copper. However, it is important to note that the quantum of manufacturing exports again posted positive annual growth rates after falling for almost two years. Although the volume of wood pulp and fishmeal shipments increased, they remain below the levels recorded before 27-F, and the fishmeal industry is facing a shortage of deep sea resources. Production in these sectors has been somewhat at odds with exports. Mining continues to post moderate annual growth rates, on the order of  $2\%$ . Manufacturing production has stagnated to some extent, while the sector has been redirecting its exports from developed countries to Asia and Latin America. The performance of the fishing industry reflects the low production of salmon farming, which is still being affected by ongoing fish health problems.

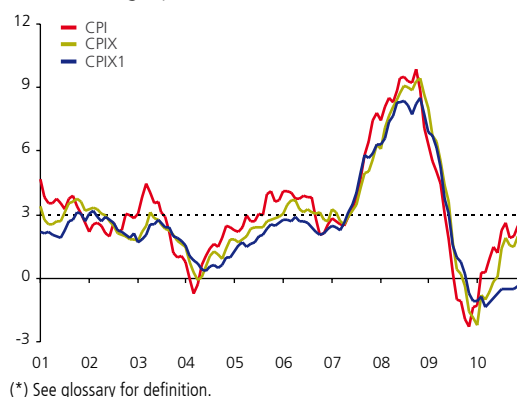
Imports became more dynamic, after slowing slightly between June and August. The volume of imports grew  $38.9\%$  in annual terms in the third quarter ( $42.1\%$  in value). In contrast with the second quarter, consumer goods imports played a stronger role, in line with the evolution of this component of demand and retail trade. In terms of quantum, consumer goods imports grew  $54.5\%$  in annual terms, while capital goods imports grew  $37.8\%$ . Partial data for the fourth quarter indicate that these imports remain dynamic (figure III.10).

In the third quarter of this year, the current account of the balance of payments posted a deficit of US\$416 million in the last moving year, equal to  $1.2\%$  of GDP. In addition, the terms of trade have improved, largely as a result of the high copper price. The forecast for this year has therefore been adjusted from an expected deficit in September, to an estimated current account surplus of  $0.3\%$  of GDP.

## IV. Prices and costs

**Figure IV.1**

CPI, CPIX, and CPIX1 inflation (\*)  
(annual change, percent)



Source: National Statistics Bureau (INE).

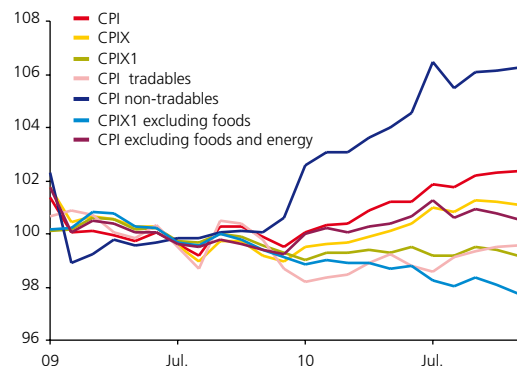
This chapter examines recent trends in the main components of inflation and costs, identifying different sources of inflationary pressures and their probable future behavior.

### Recent trends in inflation

In the last few months, annual CPI inflation and the core measures (the CPIX and the CPIX1) have been lower than forecast in the September *Report* and than what could be inferred from the narrowing output gaps. The lower inflation of imported goods—which is related to the exchange rate appreciation and lower international inflation in manufactured products—and some specific factors have contributed to mitigating the rise in inflation. Thus, as of November, annual CPI and CPIX inflation were in the lower end of the tolerance range, while the CPIX1 has been in negative territory for a full year (figure IV.1). The baseline scenario of this *Report* projects that annual inflation will remain around 3% until the end of the projection horizon.

**Figure IV.2**

Inflation indicators  
(index 2009=100)



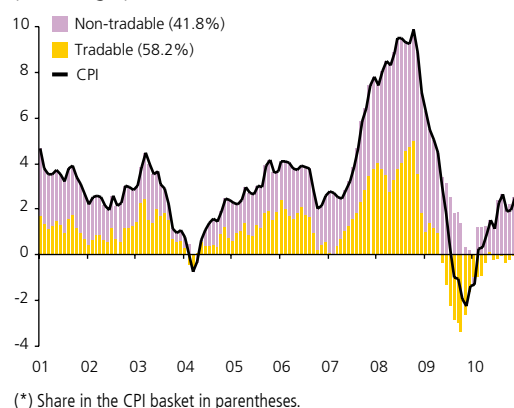
Sources: Central Bank of Chile and National Statistics Bureau (INE).

Between July and November, inflation indicators recorded low or negative monthly growth rates, the majority of which were lower than both market consensus forecasts and the baseline scenario of the last *Report*. The factors contributing to the low monthly inflation included not only the exchange rate appreciation, the lower international inflation in manufactured products, and the drop in clothing prices, but also the reduction of stamp duties and the drop in interurban bus fares. These decreases were partially offset by increases in electricity rates, food prices, and, most recently, fuel prices. Thus, the CPI grew 0.5% between July and November, the CPIX expanded 0.1%, and the CPIX1 recorded no change (figure IV.2). The velocity of expansion of all inflation indicators eased. In annual terms, the CPI rose from 2.3 to 2.5% in this period, the CPIX from 1.4 to 2.0%, and the CPIX1 from -0.5 to -0.4%.

Non-tradables goods inflation (CPINT) has made a positive contribution, in contrast to tradables. This probably reflects the absorption of output gaps and the low imported inflation in pesos (figure IV.3). The CPINT accumulated an increase of 5.6 percentage points thus far this year and has largely been determined by the rise in the price of services (such as potable water, rent, housing maintenance, and transport), as well as specific factors such as the increase in financial costs.

**Figure IV.3**

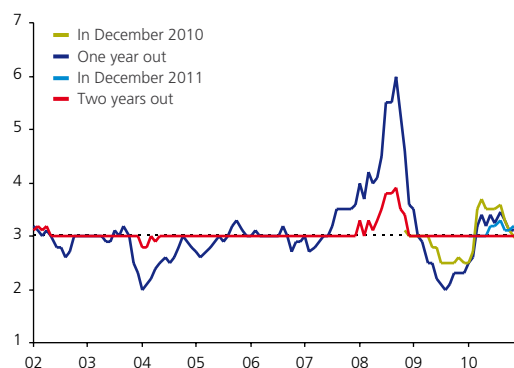
Contribution to annual CPI inflation (\*)  
(percentage points)



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

**Figure IV.4**

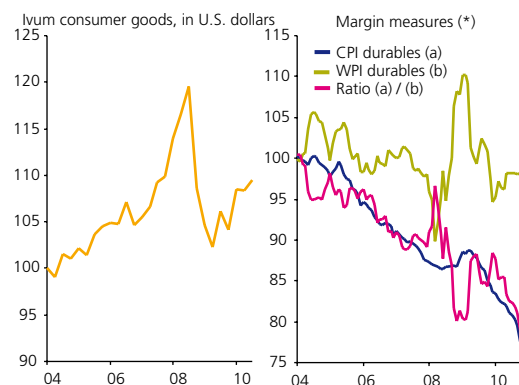
EES: Inflation expectations  
(percent)



Source: Central Bank of Chile.

**Figure IV.5**

Consumer goods prices  
(index 2004.I=100)



(\*) The same basket of durable goods is used for the CPI and the WPI.

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

Private agents have incorporated the negative inflation surprises and the exchange rate trend into their expectations, so current expectations for inflationary pressures one year out are lower than they were in September. Inflation is also expected to be low in the next few months. In fact, between August and December, the inflation expectations in the Economic Expectations Survey (EES) fell from 3.6 to 2.9% for December of this year and from 3.3 to 3.2% for December 2011. At the same time, the percentage of people who think that inflation will rise “a lot” in the next twelve months, as measured by the Economic Perceptions Index, dropped to 46% (versus 51% in August). Expectations also fell in the Imce, but only slightly, to 3.4% (versus 3.5% in August). In the medium term, all the expectation measures are in line with the inflation target (figure IV.4).

The U.S. dollar has followed a downward trend since July of this year, losing nearly 14% from its July peak (\$547). A little less than half of the peso appreciation (5%) has occurred since the last *Report*. Comparing the two weeks prior to the statistical closing dates of this and the September *Report*, the real exchange rate (RER) has fallen around 3.5%. This appreciation of the peso has had an impact on the observed inflation path and on inflation forecasts. The peso appreciation has more than offset the increases in the cost of imported consumer goods in dollars, according to the unit price of imports index (Ivum) (figure IV.5). The domestic market has recorded significant declines in imported consumer goods prices. In particular, the prices of electronic products and household items have fallen between 8% and 13% since July. Historical estimates of the pass-through coefficient for exchange rate fluctuations to local inflation in one month is on the order of 10% in the short term<sup>1/</sup>. The lower prices of imported goods in pesos could also be a result of increased competition in the local market. The steady decline in margins on durable goods since 2008 may support this argument.

The appreciation of the peso partially suppressed the fuel price in national currency. Comparing the ten days prior to the statistical closing dates of this and the September *Report*, the fuel price in pesos increased around 5%, whereas the international WTI oil price rose 20% in the same period, as did gasoline price in the external reference market.

The prices of food included in the CPI continued to rise, which reflects not only the usual seasonal increases and frosts, but also price hikes in international markets. The international prices of beef and coffee exceeded the historical peaks of 2008. The international price of sugar has increased about 50% since the statistical closing of the September *Report*, while corn, rice, and wheat have risen, in the same period, between 20 and 40%<sup>2/</sup>. Some countries are already seeing pass-through from these prices to their inflation indicators. For Chile, past experience shows that these prices can quickly pass through to inflation indicators, so these price movements should be

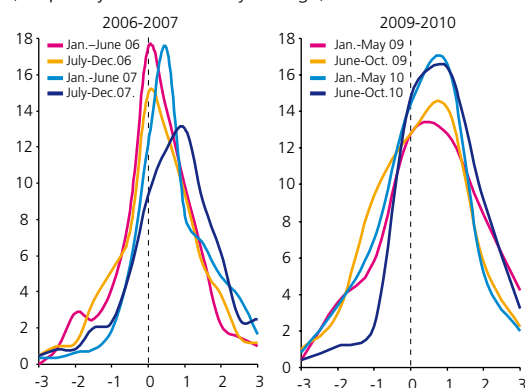
<sup>1/</sup> García and Restrepo (2001).

<sup>2/</sup> The international reference price for coffee and sugar correspond to the prices traded on the New York Mercantile Exchange; for wheat, the N° 2 soft red winter wheat spot price on the Chicago Board of Trade; for corn, the N° 2 yellow corn spot price on the Chicago Board of Trade; and for rice, the N° 2 long grain rough rice spot price, also on the Chicago Board of Trade. The international reference price for beef corresponds to cattle futures contracts in Brazil.



**Figure IV.6**

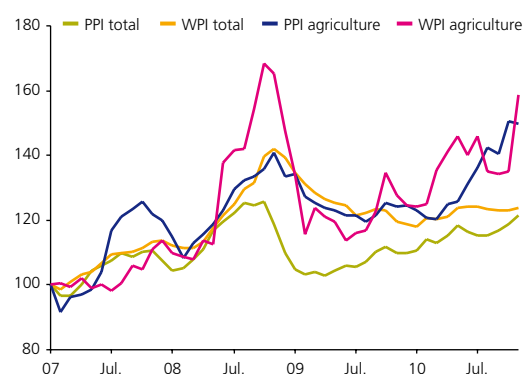
CPIX1 food distribution  
(frequency of the monthly change)



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

**Figure IV.7**

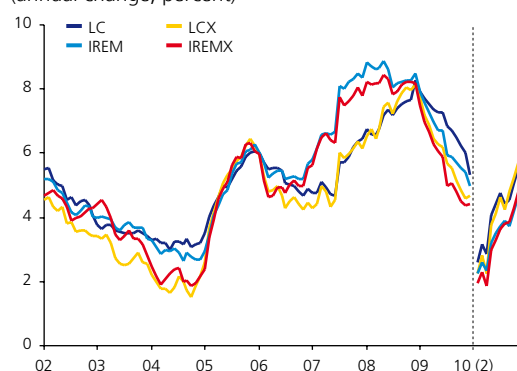
Producer prices  
(index Jan. 2007=100)



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

**Figure IV.8**

Nominal wages (1)  
(annual change, percent)



(1) See glossary for definitions.

(2) Starting in January (indicated by the dotted line), the new indices with base year 2009 = 100 are used, which are not strictly comparable with the earlier data.

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

carefully monitored. A look at the distribution of the monthly change in food prices in the CPIX1 basket reveals that the median has been moving to the right since 2009—that is, a greater number of products display price increases (figure IV.6).

Going forward, the absorption of output gaps and the higher food prices underlie the projection that annual CPI inflation will remain around the target until the end of the projection horizon, this time the fourth quarter of 2012. The CPI will follow a faster path than its core counterparts. Thus, CPIX and CPIX1 inflation will converge to the target only toward the end of next year, to stay there for the remaining part of the policy horizon. Market expectations for inflation in the medium term are consistent with this scenario.

The inflationary pressure on producer input prices has been limited. The Ivum for intermediate goods, measured in the currency of denomination in dollars as well as in pesos, has continued to decline, following the downward trend recorded since the beginning of the year. Some of these movements have been captured in the wholesale price index (WPI), which includes imported and domestic goods prices. Notably, the WPI recorded an upward trend until July of this year and has since leveled off. In contrast, the producer price index (PPI), which only considers domestic goods and services prices, continued to grow (figure IV.7). In particular, the price of domestic agricultural goods has risen steadily since March, as some of the international food price hikes have passed through to domestic producer prices. Thus far, the market has not seen a margin compression such as occurred in 2007–2008, due to a partial pass-through of the reductions in international prices starting in the second half of 2008 (box IV.1).

Imported inflation in dollars has continued to rise since September, albeit at moderate rates. In the external price index (EPI), these increases are more a reflection of the depreciation of the dollar in international markets than the increases in local inflation rates.

Pressure from the labor market remains latent in the face of tighter conditions in this market. The annual growth rate of nominal and real wages has continued to rise gradually, which is consistent with the closing of supply gaps in this market. As of October, nominal wages and labor costs grew between 5 and 6% in annual terms. In real terms, the growth was around 3% annually. Wage cost expectations, as deduced from the Imce, are in the expansive zone, rising to 73 points (versus 67 points in August). The baseline scenario of this *Report* assumes that nominal wages will adjust according to the cyclical state of the economy and the inflation dynamics. In addition, decisions on price adjustments are based on inflation expectations that are in line with the target (figure IV.8).

## Box IV.1: The food price hike and the international acceleration of inflation

Since July of this year, food prices have shown a renewed and sharp upward trend in the international market. Given the experience of 2008, this has raised the concern of monetary authorities in several countries. Some emerging economies are already showing signs of an increase in the contribution of the food component to inflation.

Some food prices are approaching their historical peaks, most of which were recorded in the first half of 2008. Other prices, such as meat<sup>1/</sup> and coffee<sup>2/</sup>, have already exceeded these values (figure I.4). The prices that can be deduced from futures contracts indicate that they will be stable at these levels or even rise in the medium term.

This upturn has been influenced by an increase in demand, reflecting dynamism of emerging economies, as well as problems in global supply stemming from unfavorable climatic conditions and export restrictions in some of the main producer countries. In the case of corn, the inventory-consumption ratio is lower than in the two-year period 2007–2008. There could also be a speculative component in these prices, as in the previous episode.

In the past few months, for most countries, the international price hikes have passed through to local inflation indicators. This is a matter of concern in particular for emerging economies. In these countries, food weights more in the CPI basket, and several of these economies are facing inflationary pressures from the rapid closing of the output gap. In Brazil, China, South Korea, Russia, and some countries in emerging Europe, inflation has accelerated in the past few months, exceeding the levels sought by the monetary authorities (figure IV.9). In China, the government has even implemented local food price controls to moderate the increase.

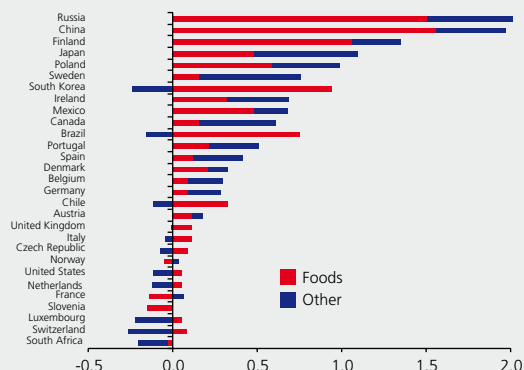
At the local level, in November, just over one percentage point of annual CPI inflation corresponded to the contribution of foods, with a smaller share for fruit and vegetables. However, these movements have been offset by reductions in other prices, as a result of the exchange rate appreciation, the low international inflation in manufactured goods, and specific factors. The increases in the different inflation measures have therefore been limited.

<sup>1/</sup> Corresponds to the average price of beef, sheep, pork, and poultry traded in the main international markets. Prices published by FAO.

<sup>2/</sup> Corresponds to the Brazilian coffee price traded in the U.S. market.

**Figure IV.9**

Change in annual CPI inflation: July–November 2010 (\*)  
(percentage points)



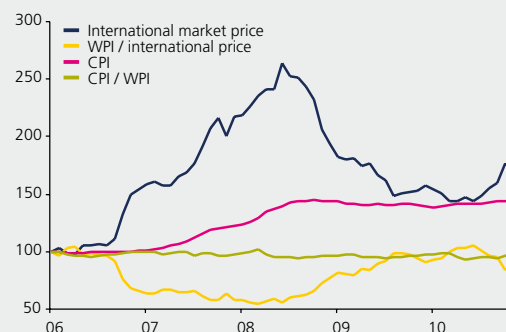
(\*) In some cases, the last available data are from October.

Sources: Oecd and CEIC data.

In the case of food, Chile has not yet recorded a margin compression like there was in the 2007–2008 episode before inflation began to accelerate in this component (figure IV.10)<sup>3/</sup>. While domestic prices rose, it was not a one-to-one increase with external prices. Later, the reduction in international prices that took place abroad starting in the second half of 2008 had a limited effect on local prices, which did not drop as much. This allowed margins to recover to levels that were high in historical terms. This situation has provided a buffer for the local inflationary effects of the international price hikes in the past few months.

**Figure IV.10**

Margins on foods derived from grains and milk (\*)  
(in pesos, index Jan. 2006=100)



(\*) All the series correspond to the aggregate of grains and milk.

Sources: Central Bank of Chile, Bloomberg, Cotrisa, and National Statistics Bureau (INE).

<sup>3/</sup> For more detail, see González et al. (2010).



# V. Inflation scenarios

**Table V.1**

International baseline scenario assumptions

	2009	2010 (f)	2011 (f)	2012 (f)
(annual change, percent)				
Terms of trade	4.1	20.0	-2.0	1.4
Trading partners' GDP (*)	-0.2	5.1	3.6	4.2
World GDP at PPP (*)	-0.6	4.9	3.8	4.5
World GDP at market exchange rate (*)	-2.0	3.7	2.9	3.7
External prices (in US\$)	-6.2	5.6	6.1	3.1
(levels)				
LME copper price (US\$/lb)	234	340	330	320
WTI oil price (US\$/barrel)	62	79	89	89
Gasoline parity price (US\$/m <sup>3</sup> ) (*)	471	598	681	675
Libor US\$ (nominal, 90 days, %)	0.7	0.3	0.5	1.0

(\*) For definition, see glossary.

(f) Forecast.

Source: Central Bank of Chile. Banco Central de Chile.

This chapter presents the Board's assessment on the Chilean economic outlook over the next two years, including the analysis and the decision of the monetary policy meeting on 16 December 2010. Projections are presented of the most likely inflation and growth trajectories, conditional on the assumptions that make up the baseline scenario, so the Board's assessment of the risk balance for output and inflation is also provided.

## Baseline projection scenario

### External scenario

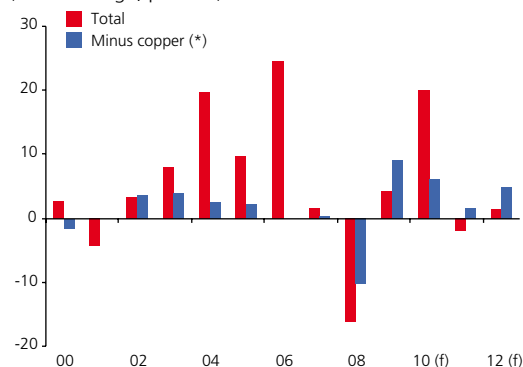
Since the last *Report*, figures for world economic output have been above projections, so the forecast for world growth in 2010 has been adjusted upward. Global expansion has continued at dissimilar velocities, with a greater lag in developed—which are growing below trend—compared to emerging economies (box I.1). The baseline scenario assumes that this disparity will continue. For the 2011-2012 period, global expansion is forecast to be less than the market consensus by about 0.3 percentage points on average. This, considering the real effects that recent turbulences in European financial markets and the fiscal adjustment plans in place will have on growth in the region, plus the failure of developed economies to resume demand and how this affects the emerging economies via the trade channel. Also, that some emerging economies facing inflationary pressures are adopting measures to bring growth down to their trend levels. Accordingly, for 2011 world growth is projected at 3.8%, down from this year, and at 4.5% for 2012 (table V.1). In any case, expected growth for the next two years is similar to the average of the 2000-2007 period, which was 4.2%.

Commodity prices have continued on the rise in the last few months, and some products—including copper—have reached new all-time peaks. Among the reasons for these trends are the vigorous demand of emerging economies, especially in Asia, supply-side constraints in some markets and a depreciated U.S. dollar. The baseline scenario assumes that part of these factors will persist over the projection horizon. Regarding copper, although it is not foreseen to stay in its current price, it is expected to be more than 10% above September's projections, at US\$3.3 per pound in 2011 and US\$3.2 in 2012. WTI oil price projections are also revised upward from September, at US\$89 per barrel in both years.

**Figure V. 1**

Terms of trade

(annual change, percent)



(\*) Estimated using the average price at the London Metal Exchange of 2003 as reference. No other potential effects on price and quantity are considered.

(f) Forecast.

Source: Central Bank of Chile.

**Table V. 2**

## Economic growth and current account

	2008	2009	2010 (f)	2011 (f)
(annual change, percent)				
GDP	3.7	-1.5	5.2	5.5 - 6.5
National income	4.1	-1.2	12.9	5.3
Domestic demand	7.6	-5.9	16.1	6.6
Domestic demand (w/o inventory change)	7.5	-2.8	11.2	8.0
Gross fixed capital formation	18.6	-15.3	18.9	14.6
Total consumption	4.0	1.8	8.9	5.8
Goods and services export	3.1	-5.6	1.5	4.9
Goods and services import	12.2	-14.3	28.5	6.9
Current account (percent of GDP)	-1.5	2.6	0.3	-1.4
(US\$ million)				
Current account	-2,513	4,217	600	-3,200
Trade balance	8,848	13,982	13,900	12,200
Exports	66,464	53,735	68,100	73,000
Imports	-57,617	-39,754	-54,200	-60,800
Services	-871	-1,074	-1,400	-1,400
Rent	-13,423	-10,306	-15,900	-17,600
Current transfers	2,934	1,616	4,000	3,600

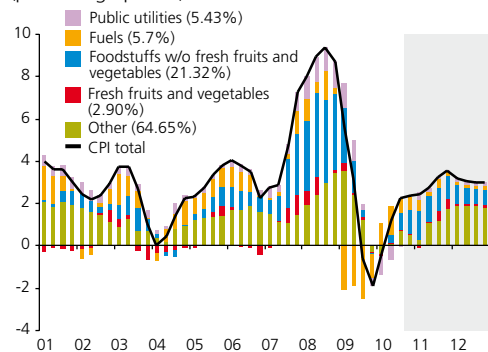
(f) Forecast.

Source: Central Bank of Chile.

**Figure V. 2**

## Incidences on annual CPI inflation (1) (2)

(percentage points)



(1) The gray area, as from the fourth quarter of 2010, depicts the breakdown of forecast inflation in the baseline scenario.

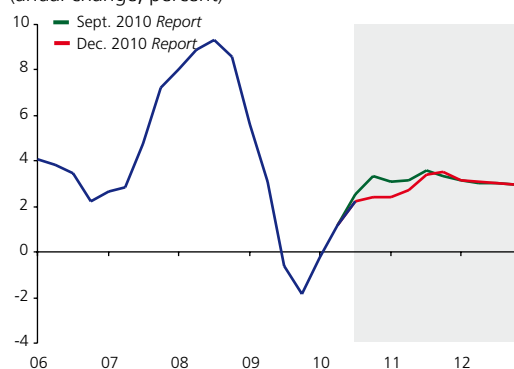
(2) In parenthesis, shares in the CPI basket with annual base 2009. For the period 2001-2008, uses weights in the basket of December 1998. For 2009, uses weights in the basket of December 2008.

Sources: Central Bank of Chile and National Statistics Bureau.

**Figure V. 3**

## CPI inflation

(annual change, percent)



(\*) The gray area, as from the fourth quarter of 2010, shows the forecast.

Sources: Central Bank of Chile and National Statistics Bureau.

Therefore, after increasing 20% this year, the terms of trade will drop 2% in 2011 to pick up mildly in 2012 (figure V.1). The external price index relevant to Chile (EPI), measured in U.S. dollars, will change 6.1% in 2011. This figure is higher than was foreseen in September, mainly because of the depreciation of the U.S. dollar in the world markets and, to a lesser extent, because of slightly higher inflation rates in local currency. For 2012, a smaller depreciation is estimated for the U.S. dollar, leading to an EPI variation of 3.1%.

The financial conditions in emerging economies will continue to be favorable in the baseline scenario, with low sovereign premiums and low global interest rates. All of this shapes an external scenario that will continue to boost the Chilean economy, but it will gradually dissipate over time.

**Output, domestic demand and external accounts**

In the baseline scenario, domestic demand and output moderate in the last quarter of 2010, thus closing the year with annual variations of 5.2% and 16.1%, respectively (table V.2). This means that output gaps have narrowed and will be closed soon. On the output side, the fourth-quarter results reflect a higher base for comparison and the smaller contribution of some sectors. On the demand side, the short-term effects of the earthquake and tsunami of 27 February (27-F) will have dissipated. In 2011, growth will continue to be driven by domestic demand, which will increase 6.6% annually. Consumption and investment will be dynamic, although not as much as in 2010. This path is based on still optimistic confidence indicators, a positive labor market, still expansionary monetary conditions and favorable conditions for access to credit. In addition, the public and private reconstruction works will have a stronger impact, which should reflect mainly in infrastructure investment and therefore construction. Accordingly, the investment to GDP ratio will increase in 2011, reaching more than 30% in real terms. Inventory variation, meanwhile, will descend from 2010, as the inventory replacement process triggered by the depletion of 2008 and later by 27-F is completed. Regarding the public sector, the baseline scenario is consistent with provisions in the Budget Law. Then, GDP growth should be between 5.5% and 6.5%, with a smaller contribution of the supply-driven sectors than assumed in the last *Report*, while the GDP of the rest of the sectors will converge to its growth trend as the monetary and external impulses are normalized.

The baseline scenario in this *Report* foresees that net external demand will have a positive incidence on the increase in aggregate demand, consistent with still strong world growth. For 2011, exports of goods and services are forecast to increase by almost 5%, with shipments of goods growing by a real rate of 7%. This is less than was forecast in September, due, to a certain extent, to reduced mining exports, in line with the sector's decline in production. Imports of goods and services will grow by 7% in real terms in 2011—down from the slightly less than 30% increase this year—, which is consistent with the normalization of the pace of expansion of domestic demand.

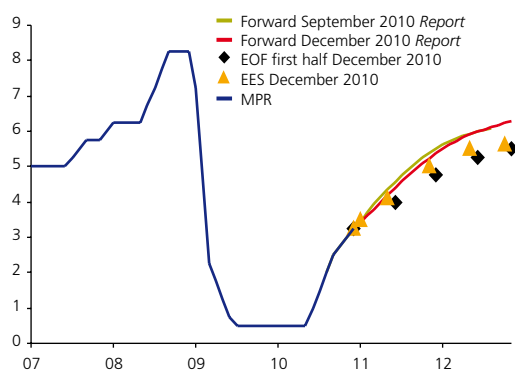
**Table V. 3**

Inflation				
	2009	2010 (f)	2011 (f)	2012 (f)
(annual change, percent)				
Average CPI inflation	1.6	1.4	3.0	3.0
December CPI inflation	-1.4	2.8	3.3	
CPI inflation in around 2 years (*)				3.0
Average CPIX inflation	2.8	0.5	2.7	3.1
December CPIX inflation	-1.8	2.3	3.1	
CPIX inflation in around 2 years (*)				3.0
Average CPIX1 inflation	2.8	-0.7	2.0	3.0
December CPIX1 inflation	-1.1	-0.1	3.0	
CPIX1 inflation in around 2 years (*)				3.0

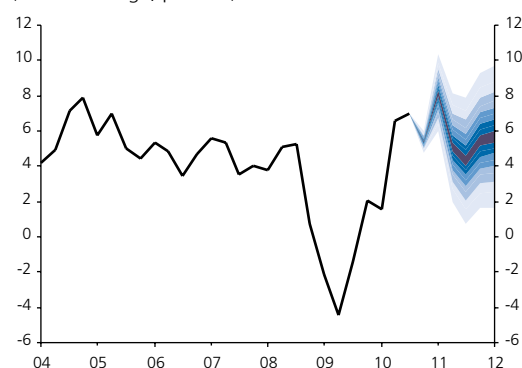
(f) Forecast.

(\*) Inflation forecast at the fourth quarter of 2012.

Source: Central Bank of Chile.

**Figure V. 4**MPR and expectations  
(percent)

Source: Central Bank of Chile.

**Figure V. 5**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 monetary stimulus will continue to be gradually reduced, at a pace comparable to the one that can be derived from the various expectations surveys.

Source: Central Bank of Chile.

The current account of the balance of payments is forecast to post a surplus of 0.3% of GDP this year, exceeding September estimates mainly because of the higher copper price. In 2011, the current account balance will again post a deficit, estimated at 1.4% of GDP. Measured at trend prices—a computation that considers changes in prices and not in volumes—the current account should post a deficit between 6% and 7% GDP for the two-year period 2010-2011<sup>1/</sup>. This figure is high by historic standards and is partly due to the fact that public and private levels of saving and investment have been affected by the direct effects of 27-F and subsequent reconstruction works. Favorable financial and credit conditions, domestic and external, also play a part.

## Inflation

The Board estimates that this year the CPI will vary by 2.8% and will stand around the target until the end of the projection horizon, this time the fourth quarter of 2012. Core indicators will change less than the CPI and will reach 3% only toward the end of next year, to stay there for the remaining part of the policy horizon (figures V.2 and V.3 and table V.3). This reflects the absorption of output gaps and higher food prices—due to limited transmission of world prices—and the assumption that going forward, the process of margin compression in some specific prices will not continue.

Adding to the already mentioned assumptions with respect to output gaps, higher food prices, external demand and commodity prices, the Board also assumes that the real exchange rate (RER) will experience a moderate depreciation into the long term. For this, it considers that, at the statistical closing of this Report, the RER is around the minimum level consistent with its long-term fundamentals. Another assumption is that, although the external scenario will continue to add momentum to the economy, this will gradually dissipate over time. Imported inflationary pressures will remain well contained. It is also estimated that nominal wages will be adjusted in line with the cyclical stage of the economy and the dynamics of inflation, and that pricing decisions are based on inflation expectations aligned with the target. Finally, the projections use as a working assumption that the monetary stimulus will continue to be gradually reduced, at a pace comparable to the one that can be derived from the various expectations surveys (figure V.4). The Board states that this will depend, in any case, on the evolution of internal and external macroeconomic conditions.

## Risk scenarios

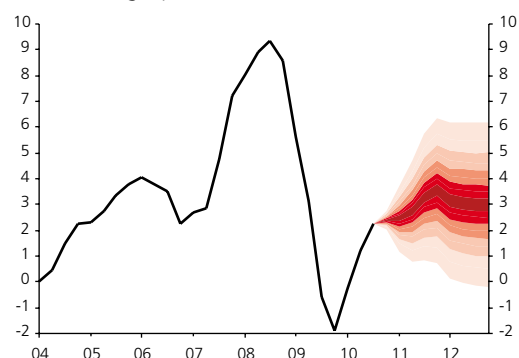
The baseline scenario reflects the events believed to be the most likely with the information at hand when making these projections. Different situations will shape a macroeconomic scenario—and a monetary policy trajectory—also different. Having performed these evaluations, the Board estimates that the risk balance is unbiased for inflation, and downward biased for output (figures V.5, V.6 and V.7).

<sup>1/</sup> Considering prices of US\$2.0 per pound for copper and US\$75 per barrel for oil. The current account balance estimated with the reference copper price used in the structural fiscal budget (US\$2.59/lb) stands between 4% and 5%.

**Figure V. 6**

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 inflation as assessed by the Board. The baseline scenario uses as a working assumption that the monetary stimulus will continue to be gradually reduced, at a pace comparable to the one that can be derived from the various expectations surveys.

Source: Central Bank of Chile.

Internationally, the main concern is that global recovery could be slower than forecast in the baseline scenario, resulting in a reduced external impulse to the national economy. Among the reasons tilting the risk balance toward negative territory are the limited flexibility of macroeconomic policies—fiscal and monetary—in the main advanced economies to cushion potential negative trends in private confidence. These facts could originate in the persistence and intensification of financial turbulences associated to European economies, or in the adoption of tighter policies in some emerging economies to prevent a resurgence of inflation and/or an overheating of the economy. This entails the risk of the emerging world having to make a more drastic adjustment and, therefore, being unable to sustain world growth. In addition, this will have a negative impact on commodity prices. Barriers to exchange rate adjustments contribute to amplify those effects on international activity.

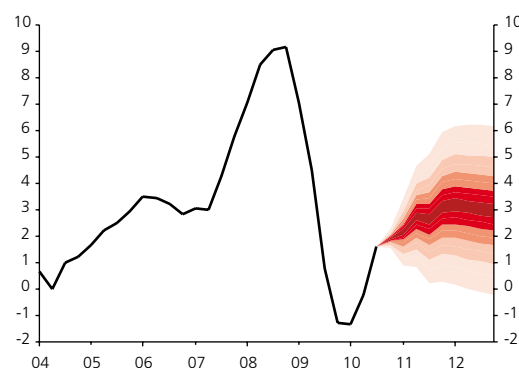
On the inflation side, the main risks are related to pressures coming from higher prices of food and/or other commodities, which could continue rising internationally and be transmitted faster and with more intensity to local prices. It is also possible that the strength of domestic demand and output continues in 2011 beyond projections, generating stronger than expected inflationary pressures. Finally, labor cost pressures are still latent as conditions in the labor market are tighter.

In any case, and as it has done in the past, the Board will adopt every measure necessary to deal with events modifying the macroeconomic scenario and inflation projections.

**Figure V. 7**

CPIX 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 inflation as assessed by the Board. The baseline scenario uses as a working assumption that the monetary stimulus will continue to be gradually reduced, at a pace comparable to the one that can be derived from the various expectations surveys.

Source: Central Bank of Chile.

## Index of tables and figures

### Tables

International baseline scenario assumptions	8
Economic growth and current account	8
Inflation	9
I.1: World growth	13
I.2: World inflation	15
II.1: Expectations for the MPR	19
II.2: Parities of Chile's main trading partner against the U.S. dollar	21
II.3: Destination of Chilean exports in 2009	24
V.1: International baseline scenario assumptions	33
V.2: Economic growth and current account	34
V.3: Inflation	35

### Figures

CPI inflation forecasts	10
CPIX inflation forecasts	10
I.1: World output	13
I.2: World current account balance	14
I.3: Oil and copper prices	14
I.4: Food prices	14
I.5: MPR and forward curve	15
I.6: Sovereign risk premiums	15
I.7: Long-term interest rates in developed economies	16
I.8: Currency parities	16
I.9: Net capital inflows to emerging economies	16
I.10: Output gaps	17
I.11: United States: Consumption and saving	18
II.1: Real monetary policy interest rate based on EES expectations	19
II.2: MPR and expectations	19
II.3: MPR and interest rates on Central Bank of Chile instruments	20

II.4: Nominal exchange rate	20
II.5: Real exchange rate	21
II.6: Bank Lending Survey	21
II.7: Nominal loans by type	21
II.8: Lending rates	22
II.9: Ipsa by sector	22
II.10: Monetary aggregates	22
II.11: Real exchange rate	23
II.12: Sectoral real exchange rate	24
III.1: Gross domestic product	25
III.2: Contribution to annual GDP growth	25
III.3: Retail sales and new car sales	26
III.4: Consumer perception indices	26
III.5: Labor market	26
III.6: Gross fixed capital formation	27
III.7: Greater Santiago real estate market	27
III.8: Current inventory position	27
III.9: Manufacturing: production and sales	28
III.10: Goods imports	28
IV.1: CPI, CPIX, and CPIX1 inflation	29
IV.2: Inflation indicators	29
IV.3: Contribution to annual CPI inflation	30
IV.4: EES: Inflation expectations	30
IV.5: Consumer goods prices	30
IV.6: CPIX1 food distribution	31
IV.7: Producer prices	31
IV.8: Nominal wages	31
IV.9: Change in annual CPI inflation: July–November 2010	32
IV.10: Margins on foods derived from grains and milk	32
V.1: Terms of trade	33
V.2: Incidences to annual CPI inflation	34
V.3: CPI inflation	34
V.4: MPR and expectations	35
V.5: Quarterly GDP growth scenarios	35
V.6: CPI inflation forecast	36
V.7: CPIX inflation forecast	36

# Glossary

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

**CPIX:** Core consumer price index. CPI excluding fuels and fresh fruit and vegetables, leaving 91% of the total CPI basket (91% in the December 2008 basket).

**CPIX1:** CPIX excluding fresh meat and fish, regulated tariffs, indexed prices, and financial services, leaving 73% of the total CPI basket (73% in the December 2008 basket).

**Credit Default Swap (CDS):** A derivative instrument that provides insurance against the risk of default of sovereign or corporate debt. The premiums implicit in the cost of this hedge (the CDS spread) are commonly used as an indicator of sovereign or corporate risk.

**Emerging Asia:** Hong Kong, Indonesia, Malaysia, Philippines, South Korea, Singapore, Taiwan, and Thailand.

**EPI:** External price index, calculated using the wholesale price index (WPI)—or the CPI if the WPI is not available—expressed in dollars, of the countries relevant to Chile (that is, the countries used for the calculation of the multilateral exchange rate, MER), weighted according to their share of Chilean trade, excluding oil and copper.

**EPI-5:** EPI using the price indices of Canada, Eurozone, Japan, the United Kingdom, and the United States.

**GDP, other:** Includes the following sectors: agriculture, livestock, and forestry; manufacturing; construction; retail; transport and communications; financial and business services; home ownership; personal services; and public administration.

**GDP, supply sectors:** Includes electricity, gas, and water (EGW), mining, and fishing.

**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 93% of total exports.

**Irem:** Wage index. The average wage paid per hour, weighted by the number of regular hours worked.

**Iremx:** Irem excluding community, social, and personal services, electricity, gas, and water (EGW), and mining.

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

**LCX:** Labor costs (LC) excluding community, social, and personal services, electricity, gas, and water (EGW), and mining.

**LPI:** Local price index of the economies relevant to Chile, calculated using the WPI (or the CPI if the WPI is not available) expressed in the local currencies of the countries considered in the EPI, weighted according to their share of Chilean trade, excluding oil and copper.

**M1:** A measure of the money supply that includes currency in circulation, the value of checking accounts held by the non-financial private sector (net of clearing), non-checking demand deposits, and demand savings accounts.

**M2:** M1 plus time deposits, time savings deposits, mutual fund shares with investments in debt instruments with a maturity of up to one year, and deposits with savings and loan cooperatives, less the time deposits of the aforementioned mutual funds and savings and loan cooperatives.

**M3:** M2 plus foreign currency deposits, Central Bank of Chile notes, Treasury bonds, mortgage letters, commercial papers, corporate bonds, other mutual fund shares, pension fund shares in voluntary savings, less mutual

fund and pension fund investments in the assets that make up M3.

**MER:** Multilateral exchange rate. A measure of the nominal value of the peso against a broad basket of currencies, weighted as for the RER. For 2010, the following countries are included: Argentina, Belgium, Brazil, Canada, China, Colombia, Ecuador, France, Germany, Italy, Japan, Mexico, Netherlands, Peru, South Korea, Spain, Sweden, Switzerland, United Kingdom, United States, and Venezuela.

**MER-5:** MER using only the currencies of Canada, Eurozone, Japan, the United Kingdom, and the United States.

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

**Oil exporters:** Angola, Algeria, Azerbaijan, Bahrain, Ecuador, Equatorial Guinea, Gabon, Iran, Kazakhstan, Kuwait, Libya, Nigeria, Norway, Oman, Qatar, Rep. Congo, Russia, Saudi Arabia, Sudan, Syria, Trinidad and Tobago, United Arab Emirates, Venezuela, and Yemen.

**Parity price of gasoline:** Reference cost of gasoline imports, calculated on the basis of quotes for similar conditions to Chile, in relevant markets (America, Europe, and Asia). Includes maritime shipping, the insurance rate, duties, and other costs.

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

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

**World growth at market exchange rate:** Each country is weighted according to its GDP in dollars, published in the IMF's *World Economic Outlook* (WEO, October 2010). The sample of countries used in the calculation represent 88% of world GDP. For the remaining 12%, average growth is estimated at 2.2% for the period 2010–2012.

**World growth:** Regional growth weighted by its share in world GDP at PPP, published in the IMF's *World Economic Outlook* (WEO, October 2010). World growth projections for 2010–2012 are calculated from a sample of countries that represent 85% of world GDP. For the remaining 15%, average growth is estimated at 4.5% for the period 2010–2012.

## Abbreviations

**BCP:** Central Bank bonds in pesos

**BCU:** Central Bank bonds in UFs

**EES:** Economic Expectations Survey

**FBS:** Financial Brokers Survey

**CPIG:** Consumer goods price index

**CPINT:** Non-tradables consumer price index

**CPIS:** Consumer services price index

**CPIT:** Tradables consumer price index

**Ivum:** Unit price of imports index

# References

- Barclays Capital. 2010. *Global Economics Weekly*. November
- Central Bank of Chile. 2010. *Financial Stability Report*. Second Half.
- Central Bank of Chile. *Monetary Policy Report*. Several issues.
- Consensus Forecasts. 2010. *A Digest of International Forecasts*. Several issues.
- De Gregorio, J. "Exchange rate, macroeconomic policies, and the global scenario" Speech prepared for the Senate's special session on the exchange rate, Valparaíso, 14 December 2010.
- Deutsche Bank. 2010a. *Asia Economics Monthly*. November.
- Deutsche Bank. 2010b. *Dollar Bloc Weekly*. November.
- Deutsche Bank. 2010c. *Emerging Markets Monthly*. November.
- Deutsche Bank. 2010d. *Focus Europe*. November.
- Deutsche Bank. 2010e. *Global Economic Perspectives*. November.
- García, C. and J. Restrepo. 2001. "Price Inflation and Exchange Rate Pass-through in Chile." Working Paper 128. Central Bank of Chile. December.
- González, M., M. González, and M. Petersen. 2010. "Precios internacionales de alimentos y márgenes en Chile." Draft. Central Bank of Chile. December.
- International Monetary Fund. 2010. *World Economic Outlook*. October.
- JP Morgan Chase. 2010. *Global Data Watch*. November.



**Juan Esteban Laval Z.**  
Legal Representative

**CENTRAL BANK OF CHILE**  
Institutional Affairs Management  
Publications Department  
DECEMBER 2010

ISSN: 0716-2219  
Santiago, Chile  
Agustinas 1180, Santiago, Chile  
P. O. Box 967, Santiago, Chile  
Tel.: 56-2-670 2000  
Fax: 56-2-670 2231  
[www.bcentral.cl](http://www.bcentral.cl)  
[bcch@bcentral.cl](mailto:bcch@bcentral.cl)

---

This publication is protected by Law 17,336 on Intellectual Property. Reproduction is prohibited without express permission from the Central Bank of Chile, although parts of this work may be reproduced provided that the source, title, and author are fully cited.



BANCO CENTRAL  
DE CHILE