MONETARY POLICY REPORT

SEPTEMBER 2001

CENTRAL BANK OF CHILE

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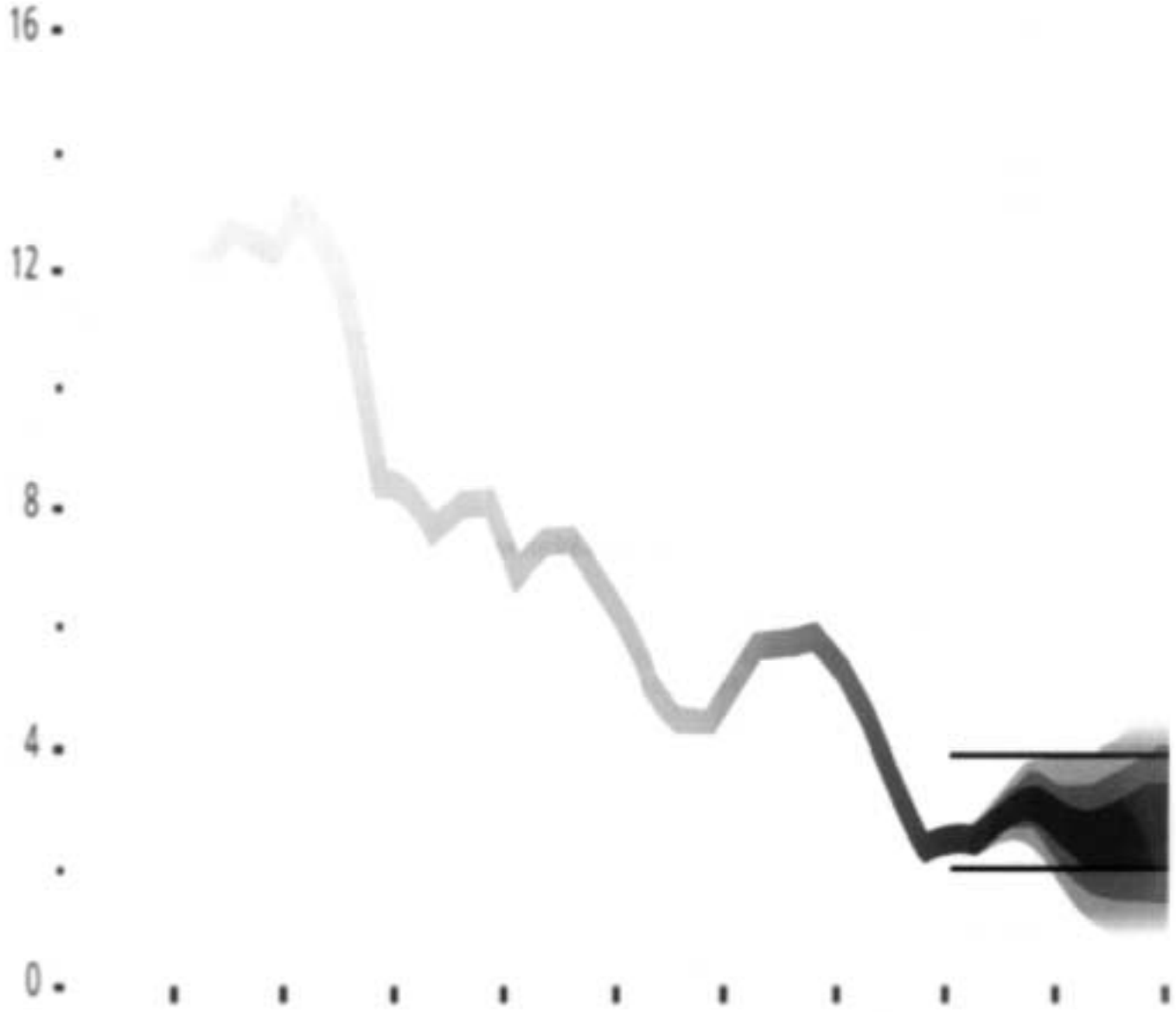

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PREFACE

The main purpose of the Central Bank of Chile's monetary policy is to keep inflation low and stable, defined as a range of 2% to 4% per annum, centered on 3%. Controlling inflation is the means by which monetary policy contributes to the society's welfare. Low, stable inflation improves economic performance and growth, while preventing the erosion of personal income. Furthermore, monetary policy's focus on inflation targeting helps to moderate fluctuations in employment and domestic output.

The main objectives of this Report on Monetary Policy are: (i) to inform and explain to the general public the Board's view of recent and expected inflation trends and their consequences for the conduct of monetary policy; (ii) to publicly explain the medium-term framework used by the Board of the Central Bank to formulate monetary policy; and (iii) to provide information that is useful in the formation of economic agents' expectations regarding future inflation and output trends.

The report is published three times a year, in January, May and September. The first section of this report concentrates on the main factors affecting trends in inflation. These include the international environment, financial conditions, prospects for aggregate demand, the current account, the labor market, and recent price and cost developments. The last section summarizes the consequences of this analysis both in terms of prospects and risks affecting inflation and economic growth over the next eight quarters. The report also provides several boxes that offer more detailed information on issues relevant to evaluating inflation and monetary policy.

The Board approved this Report at its meeting on September 7th, 2001.

The Board

In recent months, inflation has fluctuated noticeably, but has nonetheless remained within the target range. Aside from certain effects that can be associated with specific products, rising prices to date have remained in line with rates of economic activity and expenditure, dollar price trends abroad, labor cost increases, and fuel prices.

While recent information still shows some fluctuations, in general there are signs that the slowdown in production and expenditure growth that began in the middle of last year should bottom out during the second half of this year. For several months, manufacturing sales and production have performed more strongly, despite July's somewhat less encouraging figures. The most liquid monetary aggregates are growing at very high two-digit annual rates, somewhat moderated recently by the impact of nominalization of the monetary policy rate and by volatility in foreign exchange markets. The credit market has behaved according to traditional patterns, with recovery lagging behind activity growth. All this makes it likely that during the second half of this year, economic growth should be higher than the 3.5% posted during the first half, with short-term inflation remaining essentially stable, but somewhat volatile.

Private consumption will determine the speed of growth in domestic expenditure in coming quarters, and remains hampered by the uncertainty that accompanies high unemployment, leading households to behave more cautiously. One factor behind this phenomenon is that despite the worsening conditions affecting the world's economy and persistently high unemployment, in real terms labor costs have continued to grow at a relatively fast pace. Moreover, companies' efforts to boost efficiency after sharp production reductions, particularly in manufacturing and commerce, have affected employment rates. Both factors should be temporary, so it is difficult to argue that unemployment will remain permanently at current levels. Recovering low unemployment rates, however, will require more flexible factor markets, such as labour and capital, and the removal of several regulatory distortions affecting goods markets. This is turn will be key to restoring consumer confidence.

Investment, in contrast, should recover somewhat more strongly, especially the construction component. This is due in part to low interest rates prevailing throughout the year. In general, most market interest rates have responded to the ongoing reductions in the monetary policy rate that began early in the year. The market freely determines the relative price of these instruments, so their rate of return, in normal conditions, reflects expectations of capital gains or losses associated with changes in short-term interest rates and international arbitrage conditions.

One segment where the transmission of monetary policy decisions was less evident was very short-term unindexed loans. Higher risks affecting smaller clients in the past year due to both the employment situation and the correction of domestic demand are probably behind rising spreads for these loans. Nonetheless, greater market information, competition and increased flexibility in debt renegotiations are to be desired and would support the efficiency of the economy as a whole. In any case, the recent nominalization of monetary policy offers a reference point for market operations through the nominal policy rate, already reflected in a tendency toward lower spreads on unindexed operations.

Recently, the most dynamic component of aggregate demand by far has been non-traditional exports. During the first half of this year, exports by volume rose by 18%, up from 9.5% in 2000. To a large degree this has been the result of significant real depreciation experienced by the peso since 1999 and is doubly important because it has occurred even though in recent months the international environment facing the Chilean economy has markedly deteriorated. In effect, despite the fact that decelerating growth in the US seems to be proceeding as forecast, the latest figures indicate recovery has been delayed; moreover, its impact on the rest of the world's economy has been greater than originally expected. In the euro zone, and especially in Japan, growth prospects for this year and next have fallen significantly, reducing average expected growth for Chile's trading partners by around one percentage point compared to estimates from a few months ago.

Despite two-digit growth in export volumes, the Chilean economy has not been immune to the slowdown in world trade. This can be seen in the sharp drop in the terms of trade this year, estimated at almost 6%. In a small, open economy like Chile's, relative prices and agents' spending decisions must of necessity reflect fluctuations in the international environment. The drop in the terms of trade, although cushioned somewhat by the Copper Stabilization Fund (*Fondo de Estabilización del Cobre, FEC*), effectively reduces national income. Demand for non-tradable goods and services has also dropped, so real wages (at least those in dollars) must partly offset this reduced demand for labour. Retail margins, because they're pro-cyclic, will also have to contribute to accommodating these changes in relative prices. Real depreciation in the exchange rate is partly due to these correction phenomena, although it is always hard to distinguish exactly which part of exchange rate shifts corresponds to changes in fundamental variables.

This has been particularly the case of late, due to difficult financial conditions in some emerging economies that have offset the positive effect that should have come from interest rate reductions in industrialized countries. The scenario of greater regional turbulence is no longer just a possibility, but actually forms part of assumptions for the short-term central scenario. Both Turkey and Argentina have suffered from uncertainty over their situation and Brazil has seen its currency depreciate and sovereign risk rise. In Chile, most of the effect has centered on the evident peso depreciation, while sovereign risk has remained virtually constant.

The consequences of peso depreciation for the rest of the economy and monetary policy must be evaluated in light of recent developments in domestic demand, price performance, and the current policy framework.

With regard to the first point, the ongoing instability of international financial markets is increasing the uncertainty and postponing decisions about investment and consumption, which has led to a lower current account deficit and domestic demand pressures in the medium term. As a result, depreciation in the real exchange rate, which reached over 20% by May compared to late 1997, the period of greatest appreciation, will probably persist.

In the second place, in recent years little passthrough of exchange rate increases to inflation has been observed. One reason for this is dollar appreciation on international markets, which has translated into lower external inflation in dollars. Moreover, the prices of durable goods

produced in Asia, which represent an important share of import baskets, have tended to fall in absolute terms for some time. The limited transfer of the higher priced dollar to domestic prices is also based on reduced intermediation margins because of tougher competitive pressure affecting local retail stores, at a time when economic activity is rising below potential. Another significant factor here is the fact that annual inflation has stabilized, the result of the credibility achieved by monetary policy based on inflation targeting, appropriate management of macroeconomic policies in general, and the floating exchange rate policy. The baseline scenario for this Report assumes that these factors will remain essentially in effect, although a gradual and very partial reversion in any of them (such as lower intermediation margins and lower external inflation in dollars) is also assumed.

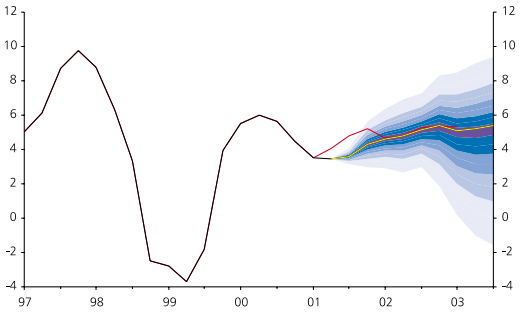
Finally, the limited passthrough of depreciation to inflation is not typical of Chile alone. This has also occurred in other economies with similar exchange rate and monetary stances. The floating exchange rate, in effect since 1999, was specifically designed to allow the exchange rate, freely determined by the market, to be the correction variable during the periods of turbulence in the financial system or terms of trade that may affect a small, open economy. This has allowed the Central Bank to conduct monetary policy autonomously and thus keep inflation within the target rate. The credibility resulting from achieving this target provides the economy with a nominal anchor and expectations about inflation in recent months reveal that exchange rate depreciation has not significantly changed this.

Measures adopted by the Board on 16 August respond to this context, and were designed to make the country's financial markets more stable in scenarios where negative conditions abroad persist, by increasing the supply of instruments for hedging exchange rate risk and foreign currency liquidity. This has been done without establishing targets for the value of the exchange rate, a move compatible with the floating regime.

The Board's assessment is that the worsening international context explains an important part of recent shifts in the peso, but this should tend to turn around gradually over the projection horizon. Inflation and growth projections in this Report were developed assuming that over the eight-quarter horizon, the real exchange rate should tend to appreciate with respect to August's average. This is in line with some indicators of market expectations (indicating that part of recent depreciation is temporary) and other assumptions in the baseline scenario. Despite the recent worsening of the international environment, the prospects for a recovery in the pace of world economic growth toward 2002 and 2003 remain, although somewhat weakened, in consensus projections. As a result, the report's main scenario assumes growth rates of 2.8% and 3.1% for Chile's trading partners over the next two years, respectively.

In summary, considering the prospects for recovery of the world economy and gradual progress in domestic demand, the main scenario projects growth for Chile that should reach 3.7% this year, 5.0% in 2002, and 5.3% in 2003. At the same time, domestic expenditure should rise by 2.1% this year, 6.5% over the next two years. The current account deficit for this year is estimated at 2.6%, 2% in 2002 and 2003. Projections in this Report are carried out, as usual, based on the methodological assumption that the monetary policy rate will remain steady at its current level of 6.5%.

Quarterly GDP growth scenarios (1)
(percentage change over the same quarter of the previous year)



(1) The figure shows the baseline projection (yellow line) and the confidence interval for the respective forecast horizon (colored zone).
Confidence intervals of 10%, 30%, 50%, 70% and 90% are used. These confidence intervals summarize the Central Bank's risk assessment for future economic growth, under the assumption that the monetary policy rate remains constant at 6.5% for the next two years.
The red line indicates the projection in May 2001.

Source: Central Bank of Chile.

Baseline scenario assumptions
(annual change, percent)

Specification	2000	2001(f)	2002(f)	2003(f)
		(annual change, percent)		
Terms of trade growth	0.2	-5.9	3.4	1.3
Trading partners growth	3.7	1.5	2.8	3.1
External inflation (in US$)	2.4	-1.8	1.0	2.0
		(levels)		
Copper price, LME (¢/lb)	82.0	73.0	78.0	82.0
Brent oil price (US$/barrel)	29.0	26.0	24.0	24.0
LIBOR US$ (nominal, 90 days, current)	6.5	4.3	4.7	5.7

(f) Projected.

Source: Central Bank of Chile.

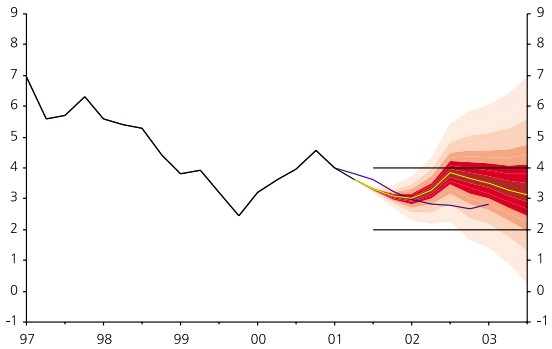
Economic growth and the current account 1997-2003

Specification	1997	1998	1999	2000(f)	2001(f)	2002(f)	2003(f)
			(annual change, percent)				
GDP	7.4	3.9	-1.1	5.4	3.7	5.0	5.3
National income	7.6	0.5	-4.1	5.9	1.3	7.9	5.0
Domestic demand	9.1	3.9	-10.0	6.6	2.1	6.4	6.6
Current account (percentage of GDP)	-5.0	-5.7	-0.1	-1.4	-2.6	-2.0	-2.0
			(US$ million)				
CURRENT ACCOUNT	-3,728	-4,144	-78	-987	-1,700	-1,320	-1,480
Balance of trade	-1,557	-2,517	1,664	1,437	1,070	1,020	1,260
Exports	16,663	14,830	15,616	18,157	18,100	19,820	21,910
Imports	-18,220	-17,346	-13,951	-16,720	-17,030	-18,800	-20,650
Non-financial services	48	-115	-315	-558	-430	-310	-340
Financial services	-2,738	-1,975	-1,881	-2,404	-2,900	-2,620	-3,000
Unilateral transfers	519	463	453	538	540	590	600

(f) Projected.

Source: Central Bank of Chile.

Inflation (CPI) projection (1)
(percentage change over the same quarter of the previous year)



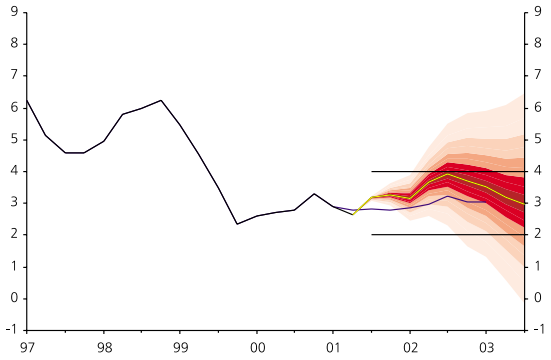
(1) The figure shows the baseline projection (yellow line) and the confidence interval for the respective forecast horizon(colored zone).
Confidence intervals of 10%, 30%, 50%, 70% and 90% are used. These confidence intervals summarize the Central Bank's risk assessment for future inflation, under the assumption that the monetary policy rate remains constant at 6.5% for the next two years.
The blue line indicates the projection in May 2001.

Source: Central Bank of Chile.

Growth this year will clearly be less than market and Central Bank forecasts predicted last year. Downward correction is mainly due to the fact that the macroeconomic scenario abroad facing the Chilean economy since the middle of last year has undoubtedly been much less promising than foreseen one year ago. The oil shock was and continues to be more intense and lasting than forecast, negatively affecting households' disposable income and companies' production costs. This, along with rapid deceleration of the world economy, persistent low terms of trade, and frequent turbulence affecting international financial markets have generated an environment that is not very favorable to local economic growth. Nonetheless, it is also clear that some domestic factors have helped to slow domestic demand since the second quarter of last year and have a dynamic of their own, beyond conditions abroad. The same, more adverse international scenario has uncovered several faults in the functioning of domestic markets, some of them longstanding (such as the rigidity affecting real wages) and others more attributable to regulatory problems (or excess in same) accumulated in the past or foreseen for the future.

Inflation has remained close to the center of the target range in recent months, although the higher figure registered in August represented a significant turnaround. As usual, different fuel prices have played a relevant role. To date, the Brent oil price has remained somewhat above forecasts from the May Report, so it is expected to remain close to current levels, averaging US$26 per barrel this year and US$24 in 2002 and 2003. This trend is consistent with production cuts announced by OPEC.

Underlying (CPIX) inflation projection (1)
(percentage change over the same quarter of the previous year)



(1) The figure shows the baseline projection (yellow line) and the confidence interval for the respective forecast horizon (colored zone).
Confidence intervals of 10%, 30%, 50%, 70% and 90% are used. These confidence intervals summarize the Central Bank's risk assessment for future inflation, under the assumption that the monetary policy rate remains constant at 6.5% for the next two years.
The blue line indicates the projection in May 2001.

Source: Central Bank of Chile.

A sharp additional decline in international fuel prices will not appear completely in prices to the public in Chile, because the FEPP is close to operating to build up more resources.

In the short term, CPI inflation is expected to reach 3.1% while CPIX (underlying inflation) should reach 3.4% at the end of this year. Further down the road, the different assumptions forming part of the baseline scenario suggest that inflation, as measured by the CPI and the CPIX, will move toward the upper limit of the target range toward the middle of next year, before dropping back to stabilize around 3% toward the end of the policy horizon. CPI inflation is projected to reach 3.6% by the fourth quarter of 2002 (3.5% through December of this year) and 3.0% toward the third quarter of 2003, while CPIX inflation will reach 3.6% in the fourth quarter of 2002 and 3.0% in the last quarter of 2003.

Inflation
(annual change, percent)

Specification	2000	2001(f)	2002(f)	2003(f)
Average CPI inflation	3.8	3.6	3.5	3.2
December CPI inflation	4.5	3.1	3.5	3.0
Average CPIX inflation	2.9	3.1	3.7	3.2
December CPIX inflation	3.5	3.4	3.6	3.0

(f) Projected.

Source: Central Bank of Chile.

This trend in inflation is consistent with several factors. In the first place, despite the fact that so far depreciation's effect on inflation seems low, it is not zero, and will probably lead to an increase in annual inflation toward the middle of next year. Moreover, the main scenario assumes a real exchange rate that should tend to appreciate compared to the average posted in August. Secondly, the deterioration in the international scenario, particularly dollar prices abroad, will tend to reduce medium-term inflationary pressures, which will remain contained despite the foreseeable increase in activity during the second half and coming years. Thirdly, the lower oil price will not generate further reductions in inflation, beyond those already observed. Finally, medium-term inflation expectations remain clearly within the target range of close to 3%.

As always, all the projections in this Report line up with the events the Board considers most probable for the next eight quarters and constitute the baseline projection scenario. It is possible, however, that over the next two years the economy may evolve differently from the baseline, thus requiring the assessment of a series of alternative scenarios and their effects on the balance of risks. These alternative events are associated with the international environment and the behavior of the domestic economy.

Among the first, uncertainty associated with emerging economies stands out. Although most of the negative scenario considered in previous reports has taken shape during the second and third quarters, it is clear that the situation could worsen further. This would probably bring with it further, temporary peso depreciation. Recent peso depreciation's timing and impact on inflation can only be generally estimated, adding degrees of uncertainty to those already affecting the behavior of the exchange rate.

While the US has so far continued to grow, albeit slowly, and reasonable growth rates are expected in coming semesters, there is a significant risk that that country's economy may further decelerate, and a recession cannot be ruled out. The alternative scenario consists therefore of a more prolonged slowdown in world growth in the near future, that would keep major import prices down, limiting domestic expenditure.

In the domestic sphere, despite incipient signals indicating activity could speed up during the second half, it is still early to predict sustained growth of expenditure. In fact, growth in manufacturing production and imports faltered in July, reversing a rising trend apparent in previous months.

The occurrence of these alternative scenarios, both in Chile and abroad, could of course modify inflation and growth projections. The Board estimates that in light of the information available to date, the balance of risks for activity is biased downward. A high degree of uncertainty remains about the persistence of faster growth in domestic economic activity, the world economy's probable growth in coming years, and the scenario for the terms of trade.

There is also a risk that regional turbulence will worsen, leading the peso to depreciate more than estimated in the main scenario. Furthermore, as mentioned above, relative uncertainty about exactly when and how much a phenomenon of this nature will affect domestic prices may, in certain circumstances, push medium-term inflation expectations higher. With this information, the Board estimates that the balance of risks for inflation is biased upward.

It is important to note that these balances of risk for inflation and growth do not make the scenario combining greater inflationary pressure and less economic growth the most probable alternative. Rather, sets of relatively independent events, among them the behavior of the world economy as a whole and the financial prospects for the region's economies, make up alternative scenarios, all of which assume that the monetary policy rate will remain constant at its current rate.

Nonetheless, the Central Bank will remain alert to any sign that one of these alternative scenarios is actually taking place, in order to apply monetary policy with all the flexibility necessary to avoid compromising its inflation target. The Board will pay special attention in the coming months to how quickly consumption and employment grow, along with developments in the world economy, particularly growth in the United States and financial conditions affecting other emerging economies.

REPORT SUMMARY BOX: THE NOMINALIZATION OF THE MONETARY POLICY RATE

1. Introduction

The nominalization of the monetary policy rate is the logical consequence of the modernizing of monetary policy, over time by the Central Bank. The current approach began in the mid-eighties with indexed interest rates being used as the main policy instrument. This was an instrument well suited to that point in time, because of a history of high and variable inflation in Chile and the relative depth of financial markets offering fixed earnings indexed to the UF. Then, during the nineties the Central Bank progressed in several areas essential to modernizing policy instruments, first in 1995, when it defined the daily interbank rate as the relevant instrument, and then when it created incipient peso markets by introducing the 90-day and the 360-day PDBC´s. In 1999, the exchange rate was allowed to float and the country moved significantly toward opening up the capital account and increasing the transparency of monetary policy formulation. The natural next step in this process was the recent nominalization of the monetary policy rate.

Until July, the main mechanism involved in monetary policy involved specifying a target for the interest rate premium over the change in the UF. This meant that on the ninth day of every month the Central Bank changed the nominal interest rate, thus influencing the monetary market, offering liquidity instruments so as to bring this rate into line with the known change in the UF. Extraordinary rises in the UF some months were offset by lesser changes in other months.

Today, monetary policy consists of specifying the target rate over a fixed nominal rate rather than a premium over the UF. That is, using the nominal system, the rate affected by the Central Bank, which establishes the cost for its liquidity facilities, remains fixed over the period considered appropriate by Board. The new nominalization policy should not affect average interest rates, real and/or nominal, and therefore it should not affect the overall monetary policy stance. The only effect should be a reduction in short-term (month to month) variability of nominal interest rates and a marginal increase in the volatility of UF rates (also month to month).

2. Advantages and disadvantages

In the debate about nominalization of the monetary policy rate target carried out within the Bank over time a series of arguments were put forward comparing the indexed system to the nominal one.

The arguments favoring nominalization are that it reduces nominal interest rate as well as the volatility of, liquid monetary aggregates; it reduces short-run exchange rate fluctuations; it simplifies international financial integration; it facilitates the financial match of non-indexed loans; and makes rates themselves more transparent. There are also arguments favoring the indexed system, including the fact that changing inflationary expectations could damage the signal sent out by monetary policy in a nominal system, and that to offset the above, monetary policy would have to become more active.

In current circumstances, the Board decided that the disadvantages of an indexed system were becoming more evident, making the exchange rate

and demand for money more volatile. When inflation temporarily rises or falls, the Central Bank was forced to intervene to shore up an extremely low or high short-term nominal interest rate.

On the other hand, a review of recent experience reveals that in a climate where inflation targets are credible, inflationary expectations move within relatively limited ranges. Stable expectations reduce the apparent disadvantages of a monetary policy regime based on a nominal rate as compared to an indexed one. The policy signal is transparent for agents and requires no further activism in this area.

3. Calculating the monetary policy rate during the transition

The Central Bank considered it important to the credibility of monetary policy to transparently define the monetary policy rate (TPM) equivalent to the indexed TPM of UF+3.5% in effect until 9 August. To do so, the Board adopted the extraordinary decision of announcing the rate almost two weeks in advance.

In general, a nominal interest rate (i_t) is a composite combining a real interest rate (r_t) and inflation expectations (Π_t^e):

$$(1+i_t) = (1+r_t) \times (1+\Pi_t^e)$$

As both expected interest rates and inflation are low, it is appropriate to simplify the above expression, defining it in a linear fashion.

$$i_t = r_t + \Pi_t^e$$

Thus, based on a monetary policy rate (TPM) defined as UF+3.5%, an equivalent nominal monetary policy rate (TPMN) was constructed assuming inflation expectations of 3%, the same as the inflation target. This forecast for inflation is consistent with the August survey of expectations for the end of this year and next.

This section examines recent trends and prospects for the world economy over the next two years, outlining the external scenario that the Chilean economy is most likely to face. World economic activity, international inflation, terms of trade and international financial conditions that will affect Chile are analyzed in this context.

Prospects for world economic growth over the coming year grew darker in recent months, mainly due to stagnation in Japan and the impact of slowdown in the United States on the rest of the world, which will also significantly affect our terms of trade. In the financial sphere, the outlook for capital flows has deteriorated. While the risk scenario associated with the Argentine economy has tended to materialize, how it will evolve over the coming months remains to be seen, a situation that has generated considerable uncertainty throughout the region. In any case, to date Chile still has not suffered from greater volatility or a larger sovereign spread and nor have the country's firms.

World growth

Chile's main trading partners are projected to grow on average 1.6% in 2001, based on *Consensus Forecast* figures corrected using estimates from an investment bank sample, one percentage point less than forecast a few months ago. This is mainly due to downward corrections in growth for Japan and the US. Growth of Chile's trading partners reached a ten-year low this year. World growth is projected to reach 2.7% in 2001, measured using Purchasing Power Parity (PPP),[1] down from the 3.3% estimate included in the previous Report. This is mainly due to downward corrections in Japan's growth projections and the impact of slowdown in the US on the rest of the world. Although world growth is still expected to pick up during 2002, projections for that year have also been corrected downward (Figure I.1).

In Japan, according to consensus estimates from last August, the economy will contract this year. This discouraging panorama is based on weak domestic demand, which has not only failed to show signs of recovery, but is also falling even further, mainly because of trends in private investment. This has combined with the deterioration in the external sector, affected by the slowdown in the United States and high unemployment, which makes a prompt recovery in consumption less likely. Only the hoped-for turnaround in the US economy toward year's end could provide new impetus and that is not guaranteed. Overall, output is projected to fall 0.2% this year, then rise 0.6% in 2002.

This situation will be affected by the indirect impact that the Japanese economy has on other countries and the lagging effect of US economic slowdown on the rest of the world. Asia's emerging economies have been particularly hard hit, due to the importance of high technology export products. Accordingly, these economies are expected to grow 5.6% in 2001, then bounce back to almost 7% on average over the next two years. If China is excluded regional growth would fall to 2.2% for this year and 4.2% in 2002.

[1] World growth weighted by purchasing power parity prices (PPP) exceeds the weighted figure for Chile's main trading partners, because of the difference in Asia's share. This is because China, with high growth rates, accounts for a much larger share of world GDP at PPP than it does within Chile's exports. Meanwhile, Japan's share of Chilean exports is almost double its share of world GDP at PPP, and its economy is growing substantially less.

Europe has not been immune to corrections in growth projections either, although it remains the most dynamic region in the developed world during 2001. While projections have not changed significantly, the sluggish performance of domestic demand in some countries within the euro zone has been worrisome. This situation has developed further to the degree that inflation's behavior in recent months have not allowed new cuts to the policy interest rate. Prospects for the future remain relatively stable, with growth projected to reach 2.6% in the next two years.

Latin America, along with emerging Asia excluding China, are the regions that have suffered the most corrections to growth projections compared to forecasts some months ago. Aside from the slowdown in the world economy, local factors have played a significant role. In Argentina, conditions originally considered just a possibility tended to materialize, with strong turbulence spreading throughout the region. Constant pressure on the Brazilian currency has led that country's central bank to implement more restrictive monetary policy, with interest reaching 19%. This represented an effort to limit the inflationary impact of depreciation in the Brazilian real, which in July reached 6.8%. Moreover, the energy crunch has significantly reduced Brazil's projected growth for this year. Thus, estimates suggest growth in Latin America will reach 1.2% this year, 1.7 percentage points less than forecast in the previous Report. Toward 2002, estimated growth for the region should reach 2.9% measured at PPP, and should remain around that level into 2003 (Table I.1).

Table I.1
World growth
(percent)

	Average 1990-1999	2000 (e)	2001 (f)	2002 (f)	2003 (f)
World (1)	3.3	4.6	2.7	3.6	4.0
United States	3.0	4.1	1.7	2.8	3.0
Europe	2.0	3.3	2.1	2.6	2.7
Japan	1.7	1.5	-0.2	0.6	1.0
Rest of Asia (2)	7.9	7.4	5.6	6.6	7.1
Latin America (3)	2.8	4.0	1.2	2,9	3.5
Trading Partners (4)	3.0	3.6	1.6	2.8	3.1

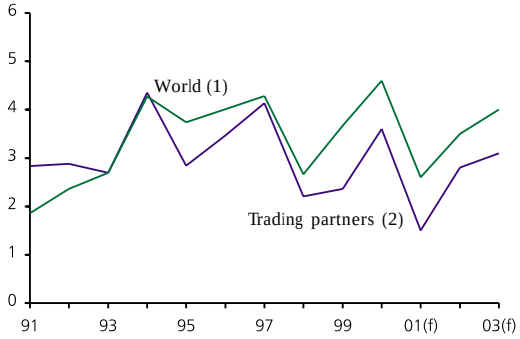
(1) Weighted regional growth by share of world GDP at PPP. Countries included represent 85% of world GDP (1999).
(2) China, Indonesia, Malaysia, Thailand, Singapore, Korea, Philippines, Taiwan and Hong Kong.
(3) Brazil, Argentina, Mexico, Colombia, Uruguay, Venezuela, Ecuador, Paraguay, Bolivia and Peru.
(4) Growth of Chile's main trading partners weighted by share of total exports (1998). Countries included account for 94% of total exports.
(e) Estimates.
(f) Projections.

Sources:
Consensus Forecasts Global Outlook: 2000-2010 (October 2000).
Consensus Forecasts (August 2001), corrected using projections from a sample of investment banks.
International Monetary Fund. World Economic Outlook (May 2001).
Central Bank of Chile.

The clear exception to this outlook is that growth projections for the US remain the same. This year, it should grow 1.6%, similar to projections published in May's report. This last figure assumes the US economy will recover during the second half, with growth reaching about 3% by the end of the fourth quarter of 2001 (Figure I.1).

Average growth of Chile's main trading partners should reach 1.6% this year, one percentage point less than forecast some months ago. Growth should recover in 2002, reaching just under 3%.

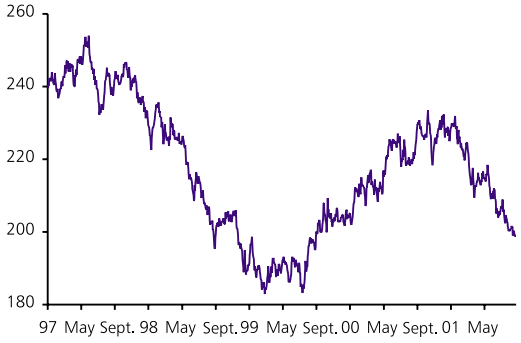
Figure I.1
World growth
(percent)



(1) Weighted growth by share of world GDP at PPP.
(2) Weighted growth by share of Chile's total exports (1998).
(f) Projections.

Sources:
Consensus Forecasts Global Outlook: 2000-2010 (October 2000).
Consensus Forecasts (August 2001), corrected using projections from a sample of investment banks.
International Monetary Fund. World Economic Outlook (May 2001).
Central Bank of Chile.

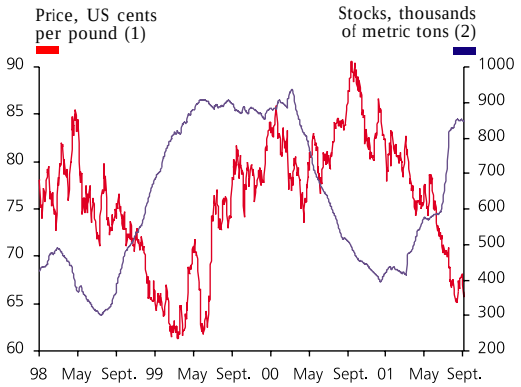
Figure I.2
Commodity price index (1)
(1967 = 100)



(1) Daily index of futures prices prepared by the Commodity Research Bureau.

Source: Bloomberg.

Figure I.3
Copper market



(1) Daily prices London Metal Exchange.
(2) Daily stocks on the London Metal Exchange and New York.

Source: Bloomberg

Commodity prices and terms of trade

The more depressed scenario for world economic activity has led to a decline in commodity prices. The CRB[2] commodity index is 10% lower at present than it was in December (Figure I.2), a fall that has not left untouched the prices of Chile´s exports.

In recent months, the international copper market was strongly impacted by the new outlook for world growth. This is due to a lack of buyers, for seasonal reasons, combined with a trend among international investment funds to reduce their buying, which has significantly boosted stocks on metal exchanges and pushed the copper price down as low as it was in the first half of 1999. The spot price is under 70 cents per pound with the annual average standing at 77 cents per pound. Because of this, copper price projections have been corrected to 73 cents per pound for this year and 78 cents per pound next year, rising again to 82 cents per pound in 2003 (Figure I.3 and Table I.2).

Table I.2
Copper price projections
(cents per pound, London Metal Exchange, average)

	2000	2001	2002	2003
Central Bank	82.3	73.0	78.0	82.0
Cochilco	82.3	74-78	78-82	-
Goldman Sachs	82.1	71.8	-	-
Economist Intelligence Unit		76.8	81.0	86.5
Futures (1)	82.3	72.7	71.0	71.0

(1) Average over the 30 days prior to September 4th 2001.

Sources:
Bloomberg.
Chilean Copper Corporation.
Goldman Sachs. The International Economics Analyst (July/August 2001).
Central Bank of Chile.
Economist Intelligence Unit Global Outlook (July 2001).

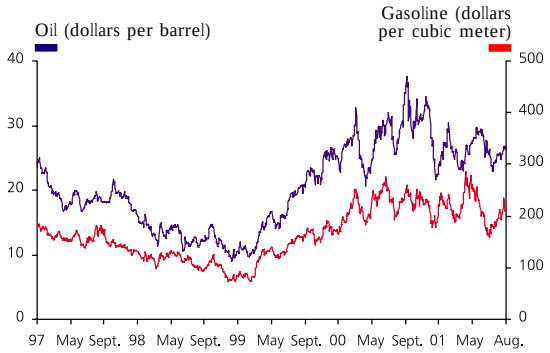
Prices for other export commodities have also been sinking. In recent months, wood pulp prices fell even further, because stocks, which have been building up since the middle of last year, have continued to accumulate due to lower world demand during the first half of 2001. Future prices suggest this decline will continue through year's end, then turn around slightly in 2002. The prospects for fishmeal are also unpromising, despite higher prices in 2001, because of the poor performance of the Japanese economy (the main market for this product) and the permanent suspension of its consumption in the European Union, to avoid contagion of "Mad Cow" disease in that continent.

The copper price is projected to reach 73 cents per pound in 2001, 78 cents per pound in 2002, rising to 82 cents per pound in 2003.

The oil price averaged US$26.5 per barrel during the first half of the year, remaining at around US$25 per barrel in the past month, although with some volatility. This is the center of the band established by the oil cartel and is considered as the medium-term equilibrium value. According

[2] Commodity Research Bureau.

Figure I.4
Oil and gasoline prices (1)



(1) Daily prices, Brent oil and 87 octane gasoline.

Source: Bloomberg.

to measures and announcements from OPEC at its last two meetings, the crude oil price is unlikely to change much during the second half of the year, although it could rise as the northern hemisphere moves into winter. In this context, the projected price for this year was corrected upward to US$26 per barrel, US$24 per barrel in 2002, in line with signs from futures markets (Figure I.4 and Table I.3).

Table I.3
Brent oil price projections
(dollars per barrel, average)

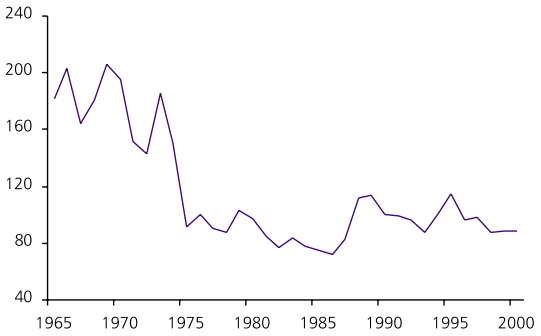
	2000	2001	2002	2003
Central Bank	28.4	26.0	24.0	24.0
JP Morgan	28.4	26.6	24.3	22.0
Goldman Sachs	28.5	23.9	-	-
Economist Intelligence Unit	28.4	26.9	25.5	23.6
Futures (1)	28.4	26.0	23.8	22.0

(1) Average over the 30 days prior to 4 September 2001.

Sources:
Bloomberg
JP Morgan. Energy Research (July 2001).
Goldman Sachs. The International Economics Analyst (July/August 2001).
Economist Intelligence Unit. Global Outlook (June 2001).
Central Bank of Chile.

The baseline scenario calculates the average oil price at US$26 per barrel in 2001, US$24 per barrel in 2002 and 2003.

Figure I.5
Terms of trade
(base 1990 = 100)



Source: Central Bank of Chile.

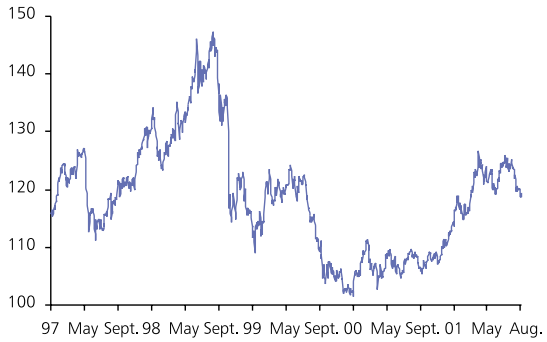
Overall, the terms of trade will fall 6% this year, then rise slightly in 2002 and 2003 (Figure I.5).

International inflation

World inflation for this year has risen above projections in the previous Report. This is because of the impact of the rise in gasoline prices in April and May on developed economies (except Japan). In Europe, energy prices' effects were amplified by euro depreciation during the first eight months of the year. Price deflation in Japan reflected the depressed outlook for domestic demand.

Inflation projections for the US have reached 3.2% for this year, falling to 2.5% for 2002-2003. Europe is expected to experience inflation of around 2.6%, slightly less toward the end of 2002 (2.0%). Despite the Central Bank of Japan's efforts, the outlook for prices remains deflationary, not only for the rest of the year, but also through 2002.

Figure I.6
Exchange rate yen/US$



Source: Bloomberg.

Because expected euro appreciation has been slower than hoped and projections for a strengthened euro have weakened, currently external deflation in dollars is expected for this year. Further along, although the projected weakening of the dollar is less than forecast last May and lower inflation is projected for local currencies, dollar inflation should rise slightly toward an annual average of 1.5% in 2002 and 2003 (Figures I.6 and I.7 and Table I.4).

Figure I.7
Exchange rate US$/euro (1)

(1) Through 31 December 1998, figures are for the US$/ecu.

Source: Bloomberg.

Table I.4
World inflation
(percent)

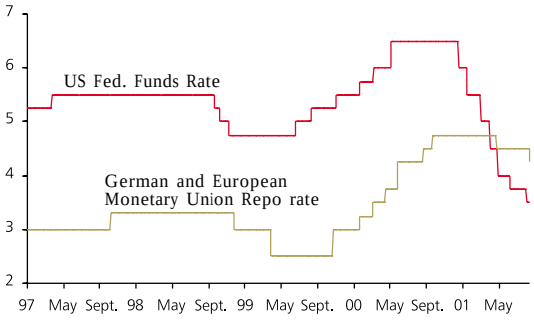
	Average 1990-1999	2000 (f)	2001 (f)	2002 (f)	2003 (f)
	(average monthly change in local currency)				
United States	3.0	3.4	3.2	2.4	2.7
Europe	3.2	2.3	2.6	2.0	1.9
Japan	1.2	-0.7	-0.4	-0.5	0.9
Rest of Asia (1)	7.6	1.1	2.6	2.9	3.8
Latin America (2)	380.7	8.2	6.0	5.5	5.5

(1) China, Indonesia, Malaysia, Thailand, Singapore, Korea, Philippines, Taiwan and Hong Kong.
(2) Brazil, Argentina, Mexico, Colombia, Uruguay, Venezuela, Ecuador, Paraguay, Bolivia and Peru.
(e) Estimates.
(f) Projections.

Sources: Consensus Forecasts (August 2001), corrected using projections from a sample of investment banks.
International Monetary Fund, World Economic Outlook (May 2001).
Central Bank of Chile.

International interest rates

Figure I.8
Monetary policy interest rate
(percent)



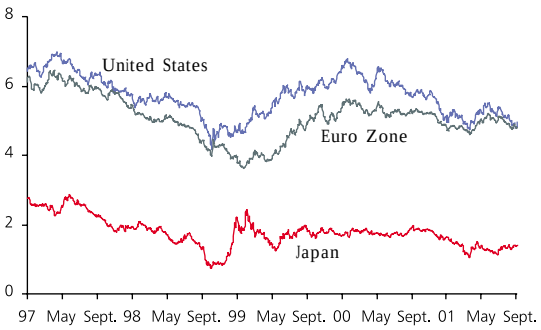
Source: Bloomberg.

The trend to cut interest rates in the developed world continues. The Federal Reserve reduced interest rates by 100 basis points from 4.5% in early May, 50 basis points more than estimates at the time. Prospects for future trends in policy interest rates for the US have varied slightly in recent weeks, mainly because the Federal Reserve still foresees some risks regarding the speed of economic recovery expected in coming quarters. Thus, the market has assumed that a further cut to federal fund rates of 25 basis points is likely. This shift depends on figures for economic activity at the beginning of the third quarter, which should provide signals on the probable pace of US economic recovery.

The European Central Bank reduced its policy rate by 25 basis points in late August, bringing it to 4.25%. In Japan, trends in interest rates on futures contracts and the monetary authority's target rate have not changed significantly. For the future, both the euro zone and Japan look unlikely to experience significant changes in terms of market expectations about future monetary policy scenarios. For the euro region, the rate will probably reach 4% in coming months, particularly if inflationary pressure and monetary aggregates remain under control. In Japan, monetary policy is expected to hold the rate at zero and inject liquidity, based on its authorities' stated objective regarding medium-term inflation (Figure I.8).

The market foresees some monetary relaxation on the part of the Fed and the ECB.

Figure I.9
10-Year government bond yields
(percent)



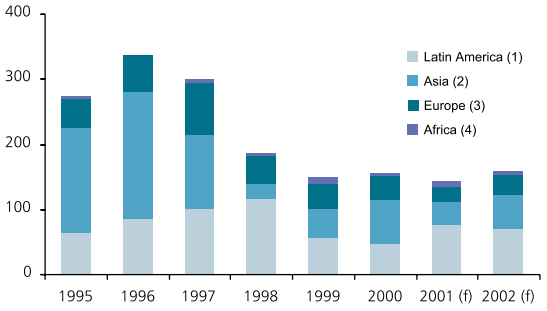
Source: Bloomberg.

Markets have modified their outlook in terms of long-term bond yields in the three main economies. On one hand, with inflation under control, the yield on a 10-year US bond is expected to recover more slowly in the medium term, despite the fact this supports the hypothesis that the economy bottomed out during the second quarter of this year. In Europe, long-term instruments peaked in May then fell to almost 4.8%, while inflationary pressures have dissipated and economic growth is expected to recover more slowly. Japan has shown no significant change in long-term bond rates, a reflection of the uncertainty about future

Figure I.10
Sovereign spreads
(basis points)

Source: JP Morgan, Merrill Lynch.

Figure I.11
Net capital flows to emerging economies
(US$ billion)



(1) Argentina, Brazil, Mexico, Colombia, Ecuador, Peru, Venezuela and Chile.
(2) China, India, Indonesia, South Korea, Malaysia, Philippines, Taiwan and Thailand.
(3) Russia, Poland, Hungary, Czech Republic, Slovak Republic, Bulgaria and Turkey.
(4) Morocco, Nigeria and South Africa.
(f) Projections.

Source: JP Morgan, Global Economic Forecast (4 September 2001).

prices and activity. Nonetheless, projections implicit in forward curves for each country indicate that long-term interest rates will rise by almost 50 basis points over the next eight quarters, looking forward to a more favorable scenario (Figure I.9).

Emerging financial markets

The scenario of scarce capital flows into emerging economies forecast since the start of this year has not changed significantly. In the case of Latin America, projections are more favorable for larger economies or those showing greater liquidity, such as Mexico, while smaller or less liquid economies have seen their projected flows shrink. In Chile's case, capital inflow projections have been corrected downward, as a result of less demand. Chilean companies' reduced need for external financing is due to low rates on the local market. Similarly, the outlook for capital flows for 2002 remains unchanged in both global and regional terms.

Although the prospects for capital flows have proved relatively stable in recent months, the price of external debt has been rather less favorable. Sovereign spreads for most emerging economies have risen significantly because of turbulence in Argentina. To date, however, markets have differentiated among emerging countries' bonds. Quotes for Chilean and Mexican sovereign and corporate bonds have remained relatively stable since the start of the year.

In the case of the Chilean economy, virtually the entire impact of regional turbulence has been channeled through the exchange market, with a high correlation appearing lately between Chile's exchange rate and dollar forwards in Argentina over the short term. The region's stock markets have continued to correlate at around the same levels as in previous years, which has meant that the negative impact of growing volatility of shares in Argentina has been passed on to the rest of the continent's stock markets[3] (Figure I.10).

Sovereign spreads for emerging economies have continued to rise. The stable performance of Chile's sovereign spread, however, indicates that markets continue to discriminate.

Sources of risk

Although the international scenario has deteriorated since the close of the previous Report, additional downward corrections to growth projections may still become necessary, especially because of a slower recovery in the US and its impact on the rest of the world's economies. This would also lead to a slower turnaround in commodity prices. Similarly, the Argentine economy's performance in the short term represents further risks for emerging economies. Although there is evidence that markets discriminate in Chile's favor compared to some aspects of other countries, it is not immune to the potential impacts of a larger crisis throughout the region.

[3] It should be noted that the correlation between Argentine peso/dollar forwards and the Chilean peso/dollar exchange rate went from 0.56 in 2000 to 0.89 in the June-August 2001 period.

This section reviews recent trends in financial markets, particularly monetary policy, interest rates and the exchange rate, monetary and credit aggregates, and external financing of the Chilean economy.

Interest rates, monetary aggregates and credit

Monetary policy and the structure of interest rates

At its Monetary Policy Meeting of June12th, the Central Bank's Board decided to reduce the Monetary Policy Rate (TPM) for the fifth time this year, this time by 25 basis points, bringing the TPM to UF+3.5% per annum.

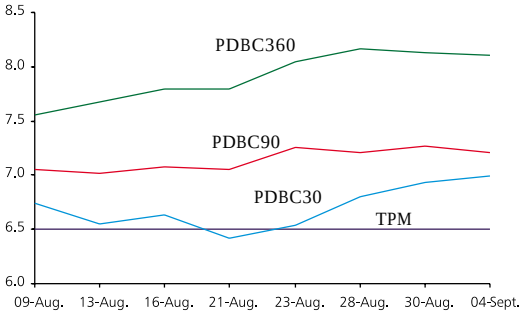
On July 27th the Board decided that as of 9 August, the TPM would be expressed in nominal terms, instead of as a percentage of change in the UF (*Unidad de Fomento*, an inflation-indexed accounting unit). This method will reduce the variability of financial asset yields and prices expressed in pesos and make transactions involving this kind of instrument more transparent, thus encouraging these markets to function better and facilitating financial integration into international markets. Moreover, this measure contributes to reducing the variability of the more liquid monetary aggregates. Using this new method for expressing the TPM, it currently stands at 6.5% per annum.

The TPM has been reduced five times this year and currently stands at 6.5% per annum.

To implement monetary policy nominalization the Central Bank has incorporated into its current structure the auction of nominal 30- and 60-day securities, thus generating a nominal yield curve with maturities ranging from one day to one year. At the same time, it changed the maturity structure on indexed securities, stopped issuing PRBC90s and PRCs maturing in 10, 12 and 14 years. Similarly, it has started to auction PRBCs that mature in one year and increased the amounts to be auctioned as PRCs with 8- and 20-year maturities. The Board of the Central Bank will remain particularly alert to how the financial market functions during the transition to this new nominal monetary policy system and is ready to take the measures necessary to facilitate this process. A recent agreement allowing the Central Bank to buy back its own issues forms part of this kind of measure.

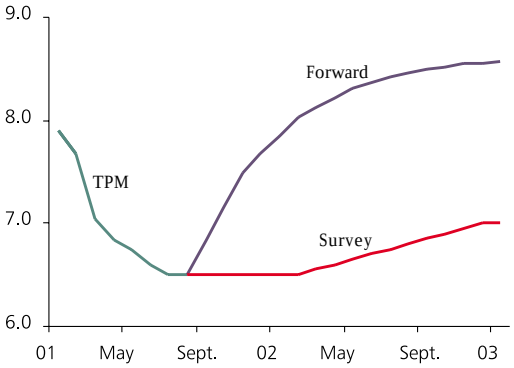
The Central Bank's first auctions of nominal documents have produced a rising yield curve. This begins with an overnight interest rate of 6.5% (TPM), rising around 30 basis points for a 30-day maturity, 30 basis points more for a 90-day maturity, and 8% for securities maturing in one year. Although this nominal yield structure may suggest that the market is not expecting further cuts to the policy rate, one must consider that interest rates in general have been influenced by the uncertainty affecting some of the region's economies and the increase in the supply of corporate bonds, both Chilean and foreign, issued on the local market. Another factor is the transition to a new nominal monetary policy system, which caused a temporary rise in long-term indexed rates (PRC8 and PRC20). These peaked at UF+5.6% and UF+6.1%, respectively. With the

Figure II.1
Monetary policy rate (TPM) and interest on nominal Central Bank notes
(percent)



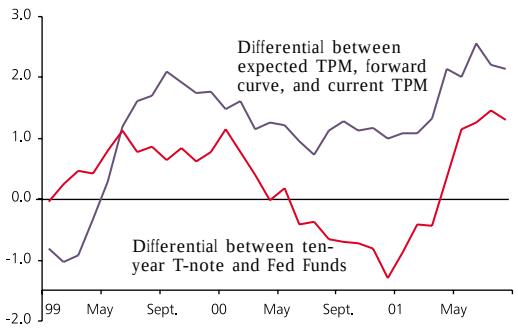
Source: Central Bank of Chile.

Figure II.2
TPM, expectations and forward curve
(percent)



Source: Central Bank of Chile.

Figure II.3
Differential between expected TPM, forward curve, and current TPM
(percent)



Source: Central Bank of Chile, Bloomberg.

recent measures adopted by the Central Bank, however, and greater calm regarding the Argentine situation, rates for both types of document fell by almost 20 basis points (Table II.1, Figure II.1)

Table II.1
Interest rates on Central Bank notes (1)
(monthly average; percent)

	2001								
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.(2)	Sept.
TPM	4.90	4.68	4.05	3.84	3.75	3.59	3.50	6.50	6.50
PDBC									
30 days								6.66	6.99
60 days								6.86	7.16
90 days	8.30	8.06	6.14	8.62	8.69	6.74	6.44	7.07	7.21
360 days	9.02	8.37	7.54	7.85	8.01	7.79	7.44	7.86	8.10
PRBC									
90 days	4.71	4.42	3.84	3.72	3.60	3.57	3.72		
360 days								4.82	
PRC									
8 years	5.60	5.21	4.93	5.00	5.06	5.08	5.08	5.45	5.37
20 years	5.78	5.48	5.26	5.37	5.51	5.64	5.54	5.95	5.86
PRD						5.49	5.59	5.99	5.67

(1) Corresponds to auctions.
(2) As of 9 August, the TPM is expressed in nominal terms.

Source: Central Bank of Chile.

The market expects the TPM to rise gradually as the economy recovers strength.

Because of the above, expectations for the TPM as revealed by the forward curve contrast with the August survey, which indicates that the market expects the TPM to remain at its current level until the end of this year and rise 50 basis points in 2002. In contrast, the nominal forward curve suggests a rise of more than 50 basis points is expected for the second half of this year, followed by an additional increase of almost 150 basis points in 2002 (Figure II.2). In any case, expectations for a higher TPM are consistent with activity picking up as forecast for the second half and a balance of risks for inflation that is upwardly biased.

The current TPM reflects an expansive approach to monetary policy.

Given that the forward curve provides some insight into market expectations, the difference between the TPM expected over a medium-term horizon and the current TPM provides an indicator of how expansive or contractive current monetary policy is (Figure II.3).[1] This indicator shows that current monetary policy is the most expansive it has been in recent times.[2]

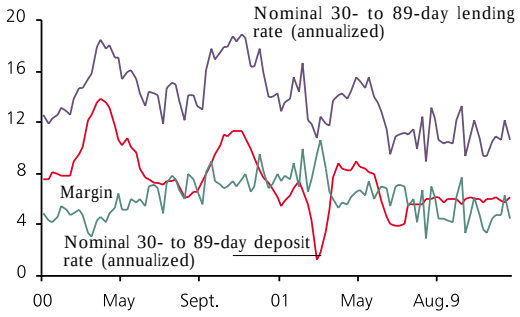
Short-term interest rates in the financial system and liquid monetary aggregates

Monetary policy's effectiveness depends not only on how changes to the TPM influence the structure of interest rates for financial instruments

[1] For the purpose of comparison, the spread between the rate on the ten-year T-note and the Fed's reference rate is also provided.

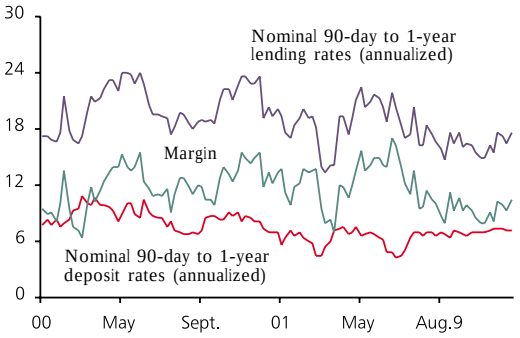
[2] This is only a partial indicator, but the conclusion holds if one looks at the strong performance of monetary aggregates and other leading indicators.

Figure II.4
Nominal 30- to 89-day deposit and lending rates
(weekly average and daily figures for August; percent)



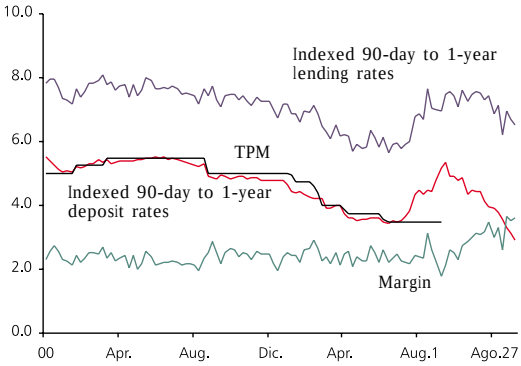
Source: Central Bank of Chile.

Figure II.5
Nominal 90-day to 1-year deposit and lending rates
(weekly average and daily figures for August; percent)



Source: Central Bank of Chile.

Figure II.6
TPM and indexed 90-day to 1-year deposit and lending rates
(weekly average and daily figures for August; percent)



Source: Central Bank of Chile.

of the Central Bank of Chile, but also on how these are passed through to other market interest rates. Trends in deposit and lending rates within the banking system are particularly important. Nominal, unindexed deposit and lending rates, particularly short-term ones (30 to 89 days) were highly volatile before nominalization, following monthly inflation trends. Moreover, the margin between both rose persistently during the first quarter of the year, then held constant in May, at higher levels than in the nineties (See Box "Spread Between Lending and Deposit Rates"). With nominalization of the TPM, these rates became significan tly less volatile, as did the spread between lending and deposit rates (Figure II.4).

Nominal rates over 90 to 365 days have lined up with the monthly equivalent of the TPM. With the announcement of the new TPM system, which coincided with a period of enormous volatility abroad and a negative shift in the UF, deposit and lending rates in UFs rose by around 130 basis points. More recently, the deposit rate in UFs has retreated, falling below 3.0%, with lending rates falling less. This increase in the spread between lending and deposit rates reflects a higher premium, given that UF-denominated interest is more volatile, due to arbitrage with nominal rates) (Figure II.5, Figure II.6 and Table II.2).

Table II.2
Market interest rates
(monthly average; percent)

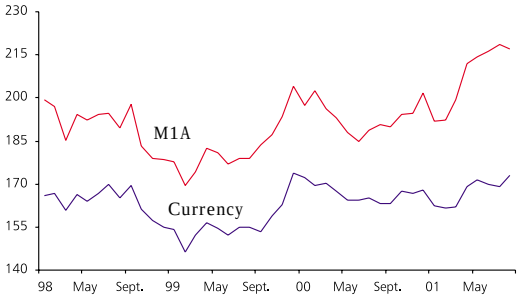
	2001								
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
Unindexed operations									
Deposit (30 to 89 days)	0.49	0.52	0.24	0.66	0.69	0.53	0.34	0.49	0.50
Lending (30 to 89 days)	1.07	1.04	0.84	1.09	1.13	0.97	0.80	0.84	0.85
Deposit (90 days to 1 year)	0.54	0.51	0.42	0.59	0.62	0.47	0.43	0.56	0.58
Lending (90 days to 1 year)	1.42	1.49	1.18	1.36	1.59	1.55	1.46	1.27	1.36
Indexed operations									
Deposit (90 days to 1 year)	4.50	4.24	3.97	3.77	3.60	3.54	3.66	4.41	2.91
Lending (90 days to 1 year)	6.85	6.77	6.18	5.94	5.98	5.83	5.96	7.07	6.53

Source: Central Bank of Chile.

Currency and private money (M1A), once they have been adjusted for seasonal and interest rate effects, reflect consumers' and companies' transaction needs. In fact, trends in M1A have traditionally preceded the cycle by around a quarter. Since April, private money (adjusted for seasonal and interest rate effects) has shown two-digit annual growth in real terms. This has led to indications, incomplete to date, that economic activity may be bouncing back, apparent first in the factor cost IMACEC since March and more recently in a broader set of real sector indicators. This disparity between trends in private money and economic activity and expenditure has led to different hypotheses. Some of these are evaluated in the following Box (Box: "Money Demand and Current Conditions") (Figure II.7 and Table II.3). In any case, there is no conclusive evidence to date that the historic link between money growth and economic activity has now vanished.

Private money has performed strongly, a sign associated with increased activity, at least in the past.

Figure II.7
Seasonally adjusted real monetary aggregates corrected for interest rates
(January 1990 = 100)



Source: Central Bank of Chile.

Table II.3
Real, seasonally adjusted monetary aggregates
(monthly change)

	2001							
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.
Currency (1)	-3.5	-0.3	0.2	4.2	1.4	-0.8	-0.5	2.3
M1A (1)	-4.9	0.3	3.5	6.4	1.1	0.9	1.0	-0.7
M2A								
with AFP	0.7	-0.3	-0.3	2.5	-0.3	0.5	0.3	-0.3
without AFP	-0.2	0.2	0.3	1.0	-0.5	0.3	-0.3	0.2
M7A								
with AFP	0.3	0.0	0.0	1.0	-0.4	1.0	0.8	0.7
without AFP	0.5	0.4	0.1	1.1	-0.8	1.6	0.4	1.5

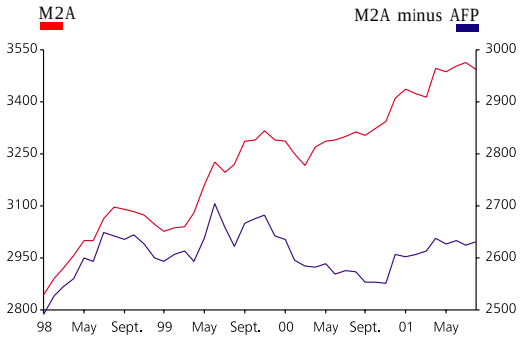
(1) Seasonally adjusted monthly change corrected by interested rate.

Source: Central Bank of Chile.

Other long-term interest rates, credit and monetary aggregates in the financial system

The broader monetary aggregates, M2A and M7, have performed more modestly than money. This is because pension funds have continued to reorganize their portfolios, moving resources away from Central Bank securities and into short-term, more liquid instruments in order to gain access to more profitable investments (bonds, dollars and shares). Nonetheless, with the announcement of smaller PRC issues due to new PRD issues, there has been more demand for this kind of document from institutional investors (Figure II.8 and II.9).[3]

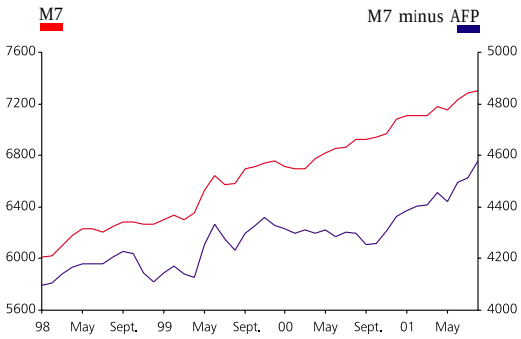
Figure II.8
Real, seasonally adjusted M2A and M2A minus AFP
(billions of 1986 pesos)



Source: Central Bank of Chile.

Total credit continues to grow, although at more modest monthly rates than those observed in May. This growth has been sustained in part by mortgages, which include credits for financing housing and general purposes. Loans for housing have risen due to more favorable tax and financial conditions and, in the case of general-purpose credits, due to the rise in re-scheduling using mortgage guarantees, above all by small businesses (PYMEs). Peso-denominated loans, meanwhile, have stagnated in recent months, contrasting with the turnaround noted in May. Finally, loans in foreign currency grew more moderately, possibly due to the greater volatility of the exchange rate. Overall, credit trends have been consistent with the historic lag between this variable and activity (Figure II.10 and Table II.4).

Figure II.9
Real, seasonally adjusted M7 and M7 minus AFP
(billions of 1986 pesos)



Source: Central Bank of Chile.

Table II.4
Public and private sector loans
(monthly change over real, seasonally adjusted series)

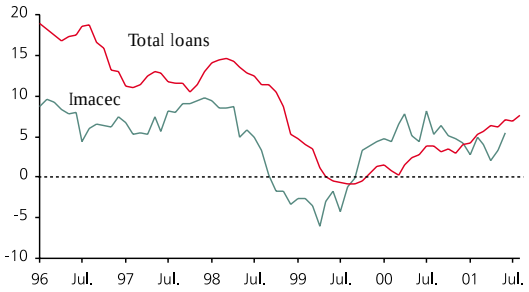
	2001							
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.
Loans in Chilean currency								
Actual	0.7	0.8	-0.2	-0.3	0.6	0.4	0.4	0.0
Mortgage	0.3	0.6	0.5	0.2	0.2	1.3	1.4	0.3
Loans in foreign currency (1)	1.8	0.7	4.9	7.6	1.8	4.7	-1.9	-0.9
Total	0.7	0.7	0.6	0.8	0.6	1.2	0.8	0.6

(1) Loans in foreign currency have been converted using the observed exchange rate.

Source: Superintendent of Banks and Financial Institutions and Central Bank of Chile.

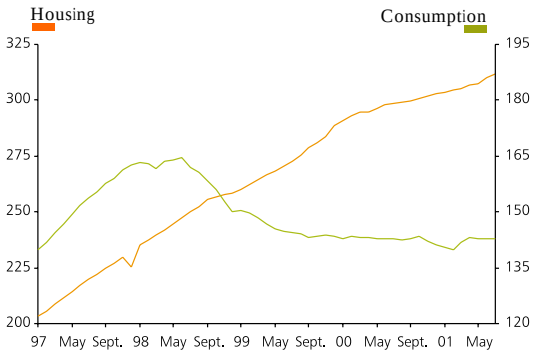
[3] Pension fund managers represent about 25% of M2A and 37% of M7.

Figure II.10
Imacec and total loans
(percentage change over 12 months)



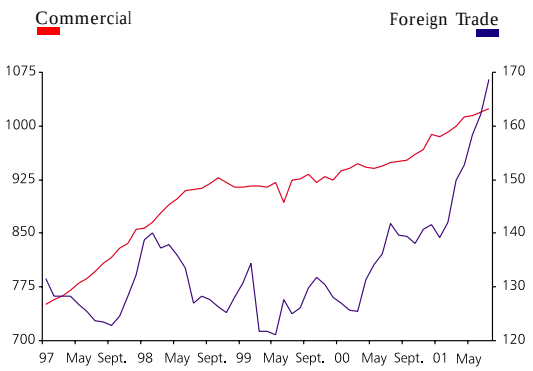
Source: Central Bank of Chile.

Figure II.11
Real, seasonally adjusted credit to individuals
(UF thousands; monthly balance)



Source: Superintendent of Banks and Financial Institutions.

Figure II.12
Real, seasonally adjusted credit to companies
(UF thousands; monthly balance)



Source: Superintendent of Banks and Financial Institutions.

In disaggregated terms, the growth of total credit to the private sector has been driven by trends in loans to companies. Credits for housing have shown stable growth during the first half, although this was strongest in June and July. Meanwhile, although credits for consumption picked up in March and April, they have fallen since May (Table II.5 and Figures II.11 and Figure II.12).

Table II.5
Loans to the private sector
(monthly change over real, seasonally adjusted series)

	2001						
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.
Loans to individuals							
Consumption	-0.5	-0.4	1.4	1.0	-0.3	0.1	-0.1
Housing	0.3	0.3	0.3	0.5	0.1	0.9	0.6
Loans to companies							
Commercial	-1.7	2.1	5.5	1.8	3.8	2.4	4.0
Foreign trade	-0.3	0.7	0.8	1.3	0.2	0.5	0.5
Total	0.1	0.5	1.2	1.3	0.5	1.0	0.5

Source: Superintendent of Banks and Financial Institutions and Central Bank of Chile.

Aside from significant growth in bank credit to companies, there continues to be a significant rise in corporate bond issues.

It should be noted that the sources of company funding have not been limited to the banking system, with a clear rise apparent in corporate bond issues in UFs on the domestic market. Today, the amount outstanding has reached UF 200 million, with the total for this year reaching UF 65 million. Similarly, there have been fewer corporate bond issues abroad since 2000, due to lower domestic interest rates and conditions affecting emerging economies on international credit markets. This trend indicates that UF-denominated debt is replacing dollar-denominated debt, particularly if one considers the fact that bond issues so far this year on the local market correspond mainly to companies that in the past have placed their bonds abroad (Figure II.13)

After the reduction in amounts of long-term Central Bank instruments auctioned and their concentration in PRCs 8 and PRCs 20, the premium between the interest on corporate bond issues and PRC8, which peaked at 162 basis points in June, has dropped. The premium of mortgage bills over PRC8s has also fallen, since May, to about 120 basis points (Table II.6 and Figure II.14).

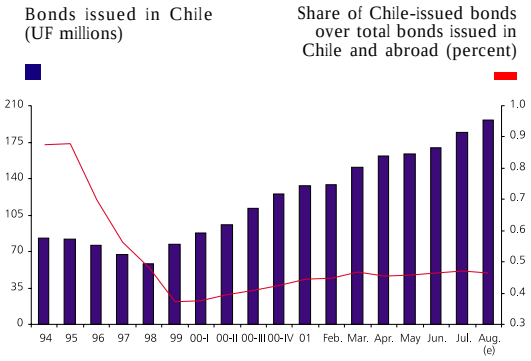
Table II.6
Yield (TIR) on Central Bank notes, mortgage bills and corporate bonds
(monthly average; percent)

	2001							
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.
Mortgages	6.71	6.52	6.46	6.65	6.61	6.62	6.49	6.78
Premium*	0.97	1.16	1.21	1.38	1.28	1.28	1.16	1.20
Corporate bonds	6.76	6.77	6.72	6.74	6.90	6.96	6.67	7.05
Premium*	1.02	1.41	1.47	1.47	1.57	1.62	1.34	1.48
Central Bank	5.74	5.36	5.25	5.27	5.33	5.34	5.33	5.57

*Difference between the TIR and the average price for Central Bank notes on the Stock Exchange.

Source: Santiago Stock Exchange.

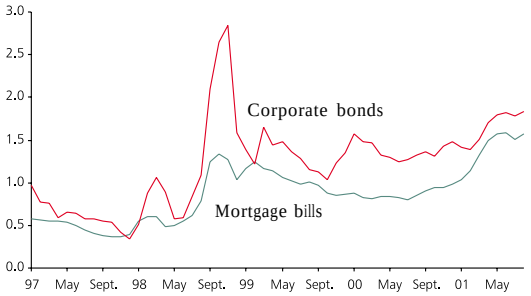
Figure II.13
Private, non-financial sector bonds outstanding in Chile
(UF millions and percent)



(e) Estimate.

Source: Superintendent of Securities and Insurance, Central Bank of Chile.

Figure II.14
Interest differential for fixed income instruments and Central Bank papers MDRR* secondary markets
(moving quarterly average; percent)



Source: Santiago Stock Exchange.

*Monthly Domestic Rate of Return.

In summary, the private corporate sector continues to enjoy fluid access to domestic financing sources, an important fact when it comes to evaluating how effective monetary policy is and the strength of the financial system as a whole.

Exchange rate

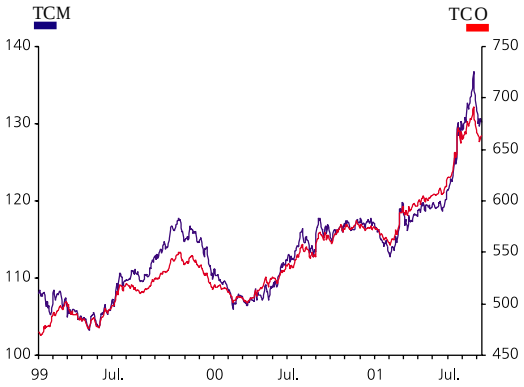
During the present year, the peso has depreciated substantially against the dollar. Thus, from December 2000 to mid-August, the observed exchange rate depreciated by 20%. This was mainly due to economic instability in the region's countries (Argentina and, to a lesser degree, Brazil) and the drop in the terms of trade, particularly the depressed price for copper. Thus, the nominal exchange rate has been the main adjustment variable in dealing with recent turbulence abroad, which is exactly what is to be expected when using a free floating exchange rate regime such as the one operating in Chile since 1999.

At the end of last year, Argentina's sovereign spread stood at about 800 basis points and the copper price was over 80 cents per pound. While the latter remained relatively stable until mid-March, the perception of risk for the Argentine economy improved temporarily, reducing its sovereign spread by almost 150 basis points toward the end of January, before deteriorating again to reach from 900 to 1000 basis points during the second half of March. The observed exchange rate reflected trends in these variables for the period, appreciating at first during January, then returning to levels from earlier in the year in early March, when it reached around 3% during March. From mid-March to mid-June the copper price fluctuated between 75 and 80 cents per pound, while Argentina's sovereign spread continued to fluctuate until late June around levels similar to March. The peso, however, continued to devalue against the dollar, driven mainly by weaker economic activity and domestic expenditure. Overall, toward the end of the first half of the year the exchange rate had depreciated by almost 10%.

Starting in July, the worsening scenario abroad, due to a significant rise in the perception of risk for the Argentine economy and a persistent decline in the copper price to around 65 cents per pound, further weakened the Chilean peso, which was selling at over 690 pesos per dollar in mid-August.

The substantial weakening of the peso during this period disturbed financial markets. The speed and quick succession of movements that led to a decline in conditions abroad exacerbated peso volatility and depreciation, despite the strength of Chile's economy and the coherence of its macroeconomic policies. This led the Central Bank Board to adopt measures to improve the stability of the country's financial markets. One way of achieving this goal has been by providing securities that satisfy higher demand for instruments for hedging exchange risk. Thus, on 6 July, the Bank announced its decision to auction around US$1 billion in additional PRDs during the second half and extend maturities for this type of instrument by offering an early swap option. Moreover, on 16 August, the Central Bank's Board decided to raise the amount of PRD auctions to US$2 billion, over two and four years. As a result of these operations, stock of PRDs by the end of 2001 could reach up to US$4.5 billion. As another way of stabilizing the exchange rate market, the Central Bank decided to use up to US$2 billion of its international reserves to finance currency sales on the exchange market through to year's end.

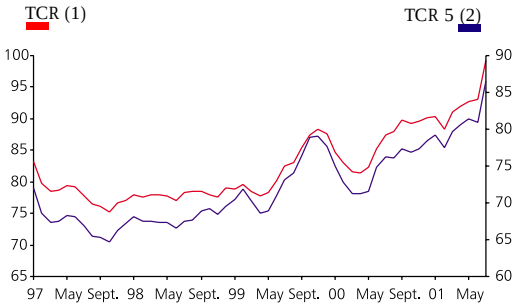
Figure II.15
Multilateral exchange rate index (TCM) (1) and observed exchange rate (TCO)



(1) Calculation based on parities of Chile's main trading partners. These are (ordered by weight): United States, Japan, Argentina, Brazil, Mexico, Germany, Spain, Italy, France, United Kingdom, Korea, Canada, Peru, Holland, Belgium, Colombia, Taiwan, Venezuela, Ecuador, Sweden and China. More information in the Informe Económico y Financiero, 30 March 2001.

Source: Central Bank of Chile.

Figure II.16
Real exchange rate (TCR) index



(1) Calculations based on parities of Chile's main trading partners (ordered by weight): United States, Japan, Argentina, Brazil, Mexico, Germany, Spain, Italy, France, United Kingdom, Korea, Canada, Peru, Holland, Belgium, Colombia, Taiwan, Venezuela, Ecuador, Sweden and China. More information in the Informe Económico y Financiero, 30 March 2001.
(2) Includes USA, Japan, Canada, United Kingdom, Euro.

Source: Central Bank of Chile.

The announcement of these measures, the improved availability of funds to relieve Argentina's situation, and a slight improvement in the price of copper combined to reduce the observed exchange rate, which fell even further when the Central Bank effectively carried out some operations on the exchange market. Thus, today the exchange rate stands at 665 pesos per dollar, the result of almost 16% depreciation so far this year.

As things stand, most of the currencies of Chile's main trading partners (euro, pound sterling, yen and real) have also depreciated against the US dollar so far this year. As a result, in multilateral terms, depreciation has been somewhat less (Table II.7). Overall, depreciation accumulated by the real exchange rate index (TCR) reached 14% between December and August, with two-thirds of this occurring from June to August (Figure II.15 and II.16).

Table II.7
Changes in the observed and multilateral exchange rates

	Average (1)	Dec.'00	One-month change	One-year change
TCO	673.7	574.6	2.6	17.2
TCM (2)	132.6	117.2	3.6	13.2
TCM 5 (3)	145.0	125.4	4.4	15.6

(1) Average August.
(2) The multilateral exchange rate index (TCM) represents the nominal value of the peso against a broad basket of foreign currencies.
(3) The TCM5 brings together currencies from the US, Japan, the United Kingdom, Canada and the Euro zone.

Source: Central Bank of Chile.

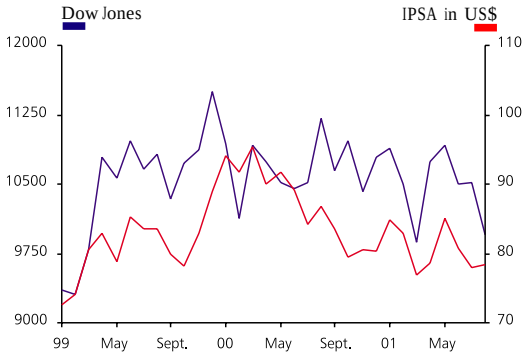
Market expectations concerning the future of the nominal and real exchange rates are mixed (Box: "Expectations regarding the nominal and real exchange rates"). Because of this, the central scenario for the real exchange rate in this report has been treated differently from other relevant variables, with market expectations treated solely as additional background information.

According to the baseline scenario in this Report, the strong depreciation in the peso during the first half of August was the result of a temporary situation produced by uncertainty about when and how the Argentine crisis would be resolved and the decline in the copper price on international markets. Over the next eight quarters, a gradual increase in the terms of trade, consistent with more growth of Chile's main trading partners, along with the increasing forecasted growth for economic activity and domestic expenditure, are consistent with real appreciation over the next 24 months. This refers to real appreciation over the average exchange rate reached in August. As always, this is a working assumption and not a projection. Chapter V will discuss its implications for growth and inflation in the baseline scenario and the balance of risks.

The baseline scenario assumes the real exchange rate will tend to appreciate over the next eight quarters.

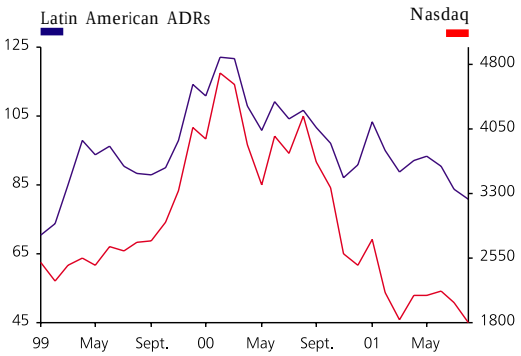
Recent surveys of expectations conducted in July and August provide additional information consistent with the evaluation of real exchange rate trends assumed within the baseline scenario (Table II.15 in Box "Market Expectations about the Nominal and Real Exchange Rates"). Both surveys reveal that market analysts expect the exchange rate to appreciate over the next 24 months.

Figure II.17
IPSA and Dow Jones stock indices



Sources: Bloomberg, Santiago Stock Exchange.

Figure II.18
Latin American ADR and Nasdaq stock indices



Source: Bloomberg.

Table II.9
Sectoral share indices

	One-year change	One-month change
IPSA	14.3	3.2
IGPA	16.4	3.3
Sectors		
Banking and Finance	22.0	-2.1
Agriculture, Hunting and Forestry	-10.0	5.1
Mining	18.6	7.6
Manufacturing	17.2	3.1
Food and Drink	29.0	2.1
Construction	9.0	1.0
Different Products	14.6	6.1
Metal-Mechanical	7.6	3.6
Fishing	2.3	0.0
Chemical Products	42.1	-0.2
Textiles and Clothing	-27.2	0.0
Services various	15.6	4.0

Source: Stock Market, Electronic Stock Exchange of Chile.

Prices of other financial assets

During the year, the IGPA (the general share price index for the Santiago stock exchange) rose 16.4% while the IPSA (selected share prices on the Santiago exchange) rose 14.3%. Given exchange rate trends, both indices fell, as measured in dollars, although less than the Dow Jones and the index for Latin American ADRs. The Nasdaq has fallen by almost 27% so far this year (Table II.8 and Figures II.17 and II.18). The price/earnings ratio for the Chilean stock exchange has hovered around 19. Positive trends in local stock exchanges were associated with a significant increase in amounts trading in May after reforms to the capital market were announced. Since then, volumes have tended to fall, in an environment characterized by financial difficulties faced by some of the region's economies, which have had an unfavorable impact on Latin American exchanges.

Table II.8
Monthly stock indices change

	IPSA (1)	IGPA (1)	Dow Jones	ADR LAT.	NASDAQ
Jan.'01	5.6	5.5	0.9	13.7	12.2
Feb.	-2.3	-2.4	-3.6	-8.0	-22.4
Mar.	-7.2	-3.6	-5.9	-6.7	-14.5
Apr.	2.2	0.7	8.7	4.0	15.0
May	8.2	7.2	1.6	1.1	-0.3
Jun.	-5.1	4.6	-3.8	-2.8	2.4
Jul.	-3.6	-12.1	0.2	-7.6	-6.2
Aug.	0.5	0.9	-5.4	-3.6	-10.9

(1) Expressed in US dollars.

Sources: Bloomberg, Santiago Stock Exchange.

Growth in the banking sector led the sectoral performance of local stock indexes, benefiting from the announced market reforms and a significant rise in profits. Prices for some manufacturing stocks also performed well, particularly those of chemical products, the result of a successful bond placement and public offers for shares (OPAs), and food and drinks, and other products. The poor performance of agricultural-fishery and forestry sector stocks was mainly due to the sharp drop in the price of wood pulp (Table II.9).

Solvency, risk and profitability of Chile's financial system

Solvency

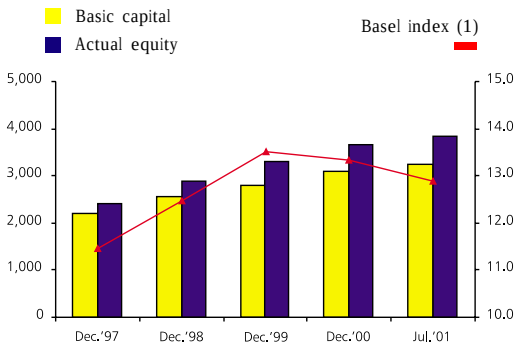
Through July, the Basel Index[4] for the financial system as a whole stood at 12.9%, that is 490 basis points over the required minimum (8%).

Despite slower economic growth in recent years, which has caused a decline in the relative quality of productive assets and required higher spending on provisions, in general financial institutions show suitable capitalization levels.

This has contributed significantly to the financial system's stability and generated a favorable perception among the public and the international

[4] Ratio of actual equity over risk-weighted assets.

Figure II.19
Financial system equity
(billions of pesos)



(1) Basel = Actual equity / Risk-weighted assets.

Source: Superintendent of Banks and Financial Institutions.

financial community, thus allowing them to accommodate future growth in their activity levels (Figure II.19).

Credit risk

So far this year, credit risk indicators for the financial sector have performed stably. The portfolio quality index[5] remains at around 1.85% indicating that in general there has been no additional decline in recent months (Table II.10).

Table II.10
Portfolio quality indicator
Non-performing loans / Total loans
(percent)

	Group 1	Group 2	Group 3	System
Sept.'99	1.57	2.05	1.29	1.71
Jan.'00	1.60	2.20	1.01	1.77
May	1.69	2.24	1.27	1.84
Sept.	1.72	2.29	1.54	1.89
Jan.'01	1.66	2.16	1.14	1.80
Feb.	1.65	2.25	1.22	1.82
Mar.	1.65	2.28	1.26	1.83
Apr.	1.68	2.39	1.25	1.88
May	1.66	2.35	1.22	1.86
Jun.	1.65	2.34	1.09	1.84
Jul.	1.62	2.38	1.47	1.84

Institutions are ranked by total loans. Group 1: Chile, Santiago, Estado, Santander, Crédito and A. Edwards.
Group 2: BBVA Bhif, Corpbanca, Citibank, Desarrollo, Sud Americano, Security, BICE, BankBoston, Conosur, ABN Amro, Internacional; Group 3: Dresdner, DoBrasil, HSBC Bank USA, Bank of America, Sudameris, Chase, American Express, Nación Argentina, Tokyo, Deutsche and Falabella

Source: Superintendent of Banks and Financial Institutions.

A similar conclusion can be reached after examining trends in the risk index published by the Superintendent of Banks and Financial Institutions, which in February stood at 2.08% and in June had fallen to 1.99%. This index represents an estimate of expected losses on the loans portfolio according to different risk categories.

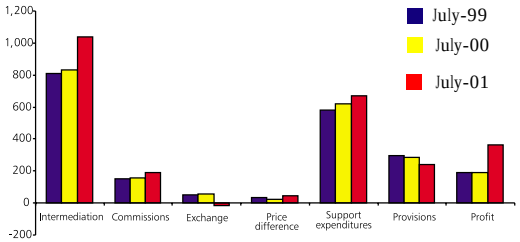
Finally, the coverage index for the non-performing loans portfolio stood at 1.5 times in July, indicating the system is reasonably well covered.

Profitability

As of July, the banking industry was enjoying high profitability indices. The system's earnings reached US$548 million for the January to July period, representing an annualized profit over capital of 19.3%, well up from the 11.1% posted for the same period the previous year. In this regard, the profitability over capital of the Group 1 banks was particularly

[5] Ratio of non-performing debt over total debt.

Figure II.20
Financial system results
(billions of pesos)



Source: Superintendent of Banks and Financial Institutions.

outstanding, remaining at 22% to 23% from March to date (Table II.11). In 1997, when the economy was thriving, profitability over capital did not rise above 20% per annum. This increase in profits can be partly attributed to increased efficiency,[6] particularly among Group 1 banks. Higher profits during this period, however, are mainly due to higher net corrections and interest and the establishment of lower provisions. These better results have been partially offset by lower exchange profits (Figure II.20). Undoubtedly, profit levels reached as the result of financial intermediation and in general the high rate of profit over capital are directly related to banking spreads, an issue examined in detail in the respective Box (Box "Spreads Between Lending and Deposit Rates").

Table II.11
Profits over capital
(percent)

	Group 1	Group 2	Group 3	System
Sept.'99	15.28	3.32	17.91	11.57
Jan.'00	15.51	3.79	-8.46	9.71
May	15.03	5.20	2.52	10.48
Sept.	17.32	3.88	8.48	11.97
Jan.'01	21.26	14.26	16.20	18.58
Feb.	20.14	11.62	13.27	16.81
Mar.	22.33	15.98	27.68	20.85
Apr.	22.40	14.09	22.54	19.69
May	23.30	13.30	20.40	19.70
Jun.	22.80	12.80	15.90	18.70
Jul.	22.50	12.70	22.90	19.30

Los grupos de instituciones están agrupados de acuerdo al tamaño relativo de sus colocaciones. Grupo 1: Chile, Santiago, Estado, Santander, Crédito y A. Edwards. Grupo 2: BBVA Bhif, Corpbanca, Citibank, Desarrollo, Sud Americano, Security, BICE, BankBoston, Conosur, ABN Amro e Internacional; Grupo 3: Dresdner, DoBrasil, HSBC Bank USA, Bank of America, Sudameris, Chase, American Express, Nación Argentina, Tokio, Deutsche y Falabella.

Fuente: Superintendencia de Bancos e Instituciones Financieras.

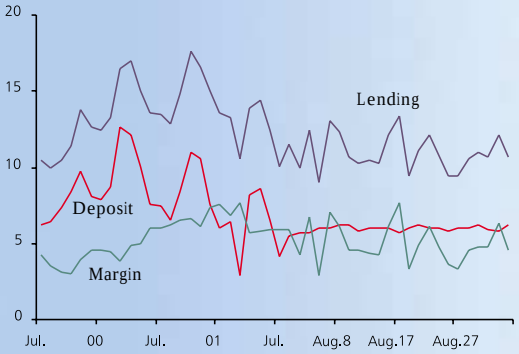
Despite the fact that interest rates have reflected several factors recently, among them nominalization, it is possible to infer that the market expects no further cuts to the TPM. This is confirmed by the August expectations survey. Expansive monetary conditions are reflected in the strong evolution of private money, traditionally associated with faster growth. This year and particularly from June to August, the peso depreciated substantially against the dollar, although in multilateral terms depreciation was somewhat less. The baseline scenario of this report includes the working assumption that the real exchange rate will tend to appreciate over its August average during the next eight quarters, which is consistent with a gradual increase in the terms of trade and the turnaround forecast for activity and domestic expenditure over the next 24 months.

[6] Measured as the ratio between operating spending and gross operating margin.

BOX II.1: LENDING AND DEPOSITS RATE SPREADS

Ongoing cuts to the TPM from August 2000 on have been reflected in the interest rates for different instruments auctioned by the Central Bank. This is apparent in the case of both nominal and indexed medium- and long-term Central Bank securities, although the latter have declined less noticeably.

Figure II.21
Margin and unindexed 30- to 89-day deposit and lending rates
(monthly averages and daily figures for August)



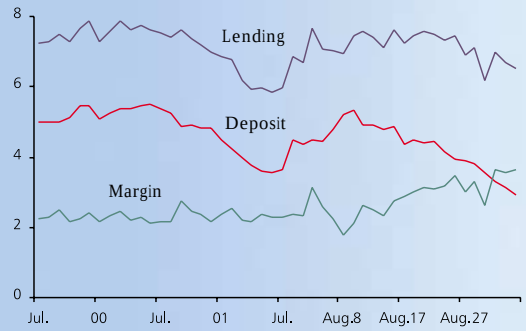
Source: Central Bank of Chile.

Interest rates have also affected operations within the domestic financial system. In terms of indexed operations, however, this effect has not been symmetrical. The evidence suggests that the passthrough of cuts to the TPM has been greater for indexed operations, which account for a little over 70% of total loans within the Chilean financial system. Rates charged on indexed operations for the 90- to 365-day period fell by 157 basis points for deposits and 144 basis points for loans between August 2000 and July 2001. For this same period, the spread between the two rates fluctuated around 2.3%. Similarly, average interest rates on mortgages for the period also fell, in line with interest on long-term Central Bank instruments.

Unlike UF operations, the spread between lending and deposit rates on unindexed operations doubled from the end of 1999 to July 2001. This is particularly apparent in consumer loans for less than UF200. This pattern repeated itself, to a lesser degree, in spreads for longer-term loans and deposits (Figures II.21 and II.22).

Although this behavior persisted until late July 2001, with the announcement of a new, nominal monetary policy system, it changed significantly. In fact, in August, once nominalization came into effect, the nominal lending spread fell from a level similar to early 2000 while the indexed lending rate rose by almost 40 basis points.

Figure II.22
Margin and indexed 90-day to 1-year deposit and lending rates
(monthly averages and daily figures for August)



Source: Central Bank of Chile.

To explain the different behavior of indexed and unindexed interest rates apparent through July 2001, an exercise was performed to compare them to different variables: the TPM (captures passthrough of Central Bank monetary policy to the market); interest on a Central Bank instrument with a similar maturity; lagging and expected inflation (which respectively influence the cost of funds and the real ex ante rate implicit in unindexed lending); and a credit risk indicator.

The exercise covered two periods: from 1992 to 1995 and from 1999 to date. Compared to this last period, during the first, macroeconomic variables were more stable and banking sector ownership less concentrated. In this sense, it provides a reference to evaluate the hypothesis that the increase described above in nominal spreads between deposit and lending rates is due to fundamental variables. The evaluation methodology consists of comparing regression coefficients for lending rates and their fundamental determinants for both periods.

The results, in terms of risk indicators, indicate that for unindexed loans maturing in less than one year, the interest rate charged has been more risk-sensitive in this recent period. A positive impact on indexed loans has not been detected. In fact, this impact is negative and significant in some cases (Table II.12).

Results regarding the relationship between interest paid out and charged by the national banking system and shifts in the TPM for both periods are not all that conclusive. These indicate that a statistically significant difference in deposit rates appears only in the case of indexed rates with maturities of over one year. In the case of lending rates, a statistically significant difference

appears only in the case of unindexed rates maturing in over one year. These were less sensitive to shifts in the TPM in the recent period (Table II.13 and II.14).

Table II.12
Risk index effect (1) on lending rates:1992-1995, 1999-2001

	Nominal entire period	1999-2001	Indexed entire period	1999-2001
30-89 days	1.63 **	3.08 *	0.68 *	-0.88 *
90 days-1 year	131.53 *	307.90 *	10.21 *	-7.52
1 to 3 years	204.29 *	81.67	14.00 *	-28.54 **

(1) Non-performing loans over total loans used for 30- to 89-day loans, provisions for the rest.
Significant to: * 5% and ** 10%.

Source: Central Bank of Chile.

Table II.13
Effect of the monetary policy rate on deposit rates:1992-1995, 1999-2001

	Nominal entire period	1999-2001	Indexed entire period	1999-2001
30-89 days	0.83 *	-0.62		
90 days-1 year	1.02 *	-0.55	0.95 *	0.00
1 to 3 years	1.66 *	1.16	1.07 *	-0.23 *

Significant to: * 5% and ** 10%.

Source: Central Bank of Chile.

Table II.14
Effect of the monetary policy rate on lending rates:1992-1995, 1999-2001

	Nominal entire period	1999-2001	Indexed entire period	1999-2001
30-89 days	1.42 *	-0.73	0.89 *	0.11
90 days-1 year	3.85 *	0.94	1.00 *	-0.03
1 to 3 years	7.12 *	-6.57 *	0.91 *	0.07

Significativo al: * 5% y ** 10%.

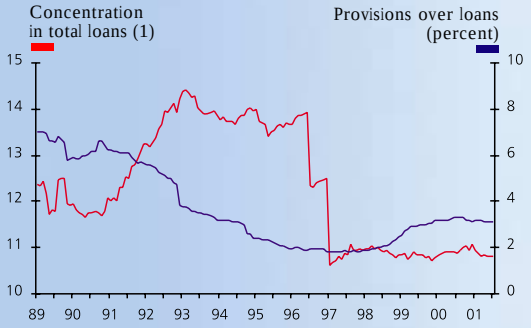
Source: Central Bank of Chile.

Before reaching any conclusions based on these correlations, one must take into account a series of regulatory changes introduced between mid-1997 and early 2000, which presumably had some impact on interest rates within the banking system. These include: a) the application of a new definition for the maximum conventional rate, to ensure that the rate applied includes additional commissions and administrative charges (in effect since March 1999); and b) limits on extra-judicial collection charges, in effect since January 2000. While it is not possible to quantify the effects of these regulations on lending rates, they should have had a greater impact on the operating costs involved in lending small amounts. This impact depends on the type of debtor and associated risk.

Based on this information, it can be assumed that in terms of risk these changes made some credits more expensive and these additional charges would be passed on to the public through an increase (or a smaller decline) in lending interest rates. This would particularly affect those credits for which operating and administrative costs have been most affected, presumably unindexed loans maturing in less than one year, which is where most credits for amounts under UF200 are concentrated. In any case, this is the sector where there has also been an increase in banking concentration (figure II.23).

To end, it should be noted that the recent decision to nominalize the monetary policy interest rate and deepen the market for unindexed documents maturing in one year or less, generates greater transparency for credit operations with a nominal rate, as there is a direct reference for comparing the cost of funds and banking system interest rates.

Figure II.23
Risk and bank concentration



(1) Herfindhal index.

Sources: Superintendent of Banks and Financial Institutions, Central Bank of Chile.

BOX II.2: **MONEY AND ACTIVITY TODAY**

During the present year money (M1A) has grown significantly, at over two-digit annual rates. Traditionally, this tendency preceded a rise in economic growth, as a leading indicator.[7] The purpose of this Box is to analyze the validity of this relationship under current conditions.

For this purpose, we calculated a money demand equation using a translogarithmic specification. That is, the real money logarithm is a function of its own lag, the IMACEC logarithm and the IMACEC logarithm squared, the 30- to 90-day deposit rate and its own square. Finally, seasonal dummies were included, along with a variable representing holidays and a couple of specific dummies.[8] This specification yielded coefficients that are consistent with economic theory and national and international empirical evidence,[9] and reveals the existence of non-linearities in money demand. Specifically, there is a concave relationship with output and a convex one with the interest rate, which is consistent with the hypothesis that low nominal interest rates in recent months are generating stronger than usual demand for money.

An additional fact is that traditionally, every time the monthly CPI is significantly negative, demand shocks are generated as the result of the lower alternative cost of maintaining money.[10] This effect is enhanced when it coincides with a scenario of very low interest rates. Moreover, this effect persists for two or three months before fading with time.

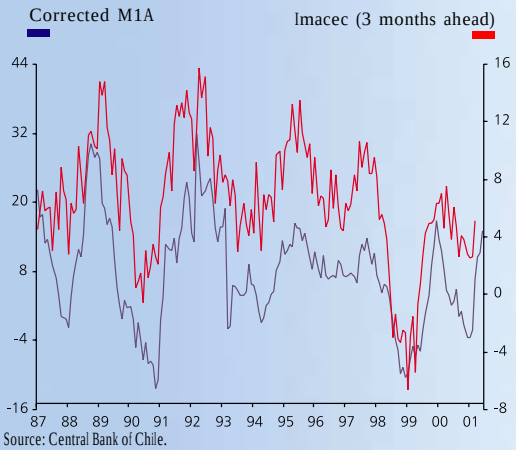
To distinguish which of the money components have influenced growth more, estimates using Currency (25% of M1A) and Checking Accounts were carried out, in the latter's case distinguishing between individuals and companies. In general, they behaved rather differently. Thus currency is less sensitive to output variables and interest rates than Checking accounts.

From the analysis of Checking accounts by agent, we can see that individuals are less sensitive to interest rates. This is because their checking account is a function of their demand for transactions and need for caution. Companies are also subject to these needs, and they also need to keep some assets liquid to be able to make portfolio decisions. If this occurs in an environment such as the current one, in which they face a market with a range of asset investment opportunities, including company bonds, shares and dollars, the balances that companies maintain in their checking accounts tend to be larger, because the liquidity of money makes it easier to recompose their portfolios. This effect is not very persistent, however, because once investment in another financial instrument takes place, the investor's checking account balance falls and it becomes less attractive for the counterpart to maintain a liquid asset with a very low or negative real return.

Overall, although current conditions tend to generate stronger demand for money for reasons not related directly to economic activity and expenditure, money's quality as an advance indicator of activity remains valid. This can be seen clearly in Figure II.24, where demand for money is presented duly corrected for seasonal effects and interest rate differences.

Finally, considering the recent nominalization of monetary policy, monetary balances should become more stable in the future, because the nominal interest rate will be more stable.

Figure II.24
Imacec, seasonally corrected demand for money, and interest rate
(change over 12 months)



Source: Central Bank of Chile.

[7] Following up on research by Bravo and Franken (2001) we can observe that 12-month changes in money (M1A) occur three to four months before changes in the IMACEC.

[8] These were October 1988 (plebiscite) and March 1992 and 2001 (negative CPI).

[9] Mies and Soto (2000).

[10] This used to occur because the TPM was expressed in UF, making monthly interest rates in pesos more volatile.

BOX II.3: EXPECTATIONS OF NOMINAL AND REAL DEPRECIATION

Today, there is a series of indicators regarding different agents' expectations about the future of the nominal and real exchange rate. One is the survey of expectations carried out monthly by the Central Bank of Chile since February 2000. Some 40 market analysts respond to this survey. Among the questions, analysts surveyed respond to questions about the level expected for the observed exchange rate over a horizon that goes from three months to approximately two years. Another indicator can be obtained from forward instrument quotes. In Chile, there is regular trading in peso-dollar and UF-dollar futures. The price of peso-dollar forward contracts represents an approximation of the expected value for the future observed exchange rate. The price of UF-dollar operations, on the other hand, provides an idea of future expectations about the real exchange rate. In both cases, the price of these currency futures reflect interest rate differentials among countries. In general, there is information about effective peso-dollar forward contracts maturing in up to 90 days or slightly more[11], and slightly over one year in the case of UF-dollar forwards. Bloomberg, however, provides quotes on peso-dollar futures maturing in up to two years. These do not correspond to operations actually carried out but rather to spot quotes from financial operators. Finally, it is possible to calculate exchange rate expectations by directly comparing interest rate differentials on other financial instruments. The next section comments briefly on recent trends in indicators of exchange rate expectations.

Expectations survey

Unlike their predecessors, monthly surveys of economic expectations for July and August revealed that market analysts expect that at least part of the strong depreciation in the exchange rate should turn around in the near future (Table II.15). July's survey indicated expectations that peso appreciation would be in the order of 2% over the next six months, while this rose to 4% in August's survey. These expectations grow more moderate the longer the time horizon. Thus, through December 2002, the August survey reveals expectations that appreciation will reach 2.6%, with depreciation of 0.8% in 2003.

Table II.15
Exchange rate expectations
(pesos/US$)

	July	August
3 months	638	665
6 months	631	652
Dec. 2001	640	660
Dec. 2002	650	665

Source: Monthly survey, Central Bank of Chile.

Forward operations

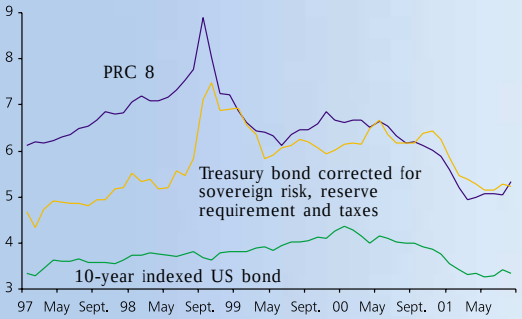
90-day peso-dollar forwards traded during August revealed expectations that the observed exchange rate would remain stable. This coincides with data from Bloomberg's for a similar time period. In the longer term, however, Bloomberg reports quarterly depreciation is expected to reach around 1.0% for accumulated depreciation of 5% by December 2002. Depreciation against the TCM5 is greater than for the dollar, because futures in other currencies (euro, yen, pound, Canadian dollar) show some appreciation or less depreciation against the US dollar. Finally, UF-dollar forwards maturing in over one year traded with an average premium of 0.6% over the UF during August, thus indicating some expectations of real depreciation.

Other interest rate differentials

The spread between the eight-year PRC and the indexed, 10-year US bond (corrected for sovereign spread and taxes) currently stands at around 0%

[11] The amounts traded in peso-dollar forward contracts maturing in over 90 days tend to be very small (under 5% of the total traded) and often there is simply no trading at all.

Figure II.25
Real domestic and foreign interest rates
(percent)



Sources: Bloomberg, Central Bank of Chile.

(Figure II.25). This represents expectations that the real exchange rate will remain stable. Similarly, the differential between the PRD and the zero coupon bond with similar maturities, although somewhat volatile, currently stands at around 0.6%. This is consistent with expectations that real appreciation will accumulate to about 1.7% during a period equivalent to the average duration of both instruments.[12]

Conclusion

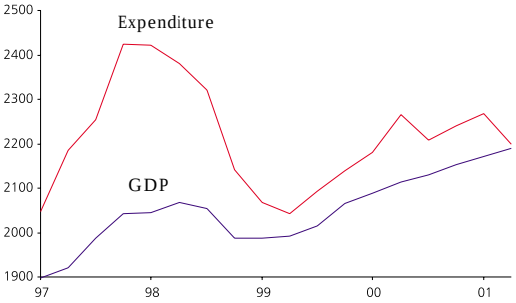
Market expectations regarding nominal and real exchange rate trends are mixed. On one hand, information from surveys of expectations from July and August point to appreciation in the observed exchange rate over the next 24 months. This is consistent with the spread in interest rates based on the PRD. This information contrasts, however, with UF-denominated forwards, which point to real depreciation, the spread between the eight-year PRC and the indexed, 10-year US bond (corrected for sovereign spread and taxes), which points to real stability, and quotes from Bloomberg, which point to nominal depreciation.

[12] Slightly less than three years.

This section analyzes recent and foreseeable trends in the real sector of the economy, including prospects for economic activity, the labor market, and the current account, in order to examine their relevance to the future behavior of inflation. To do so, it reviews in detail factors influencing both domestic and external demand, recent trends in employment, productivity and resource use, in order to examine possible future inflationary pressures derived from factor markets.

Chapter synthesis

Figure III.1
Gross domestic product and seasonally adjusted expenditure (1)
(billions of 1986 pesos)



Source: Central Bank of Chile.

During the first half of 2001, economic activity fell below the level expected in the previous report. In effect, GDP rose by 3.5%, while expenditure increased slightly by 0.5% (Figure III.1). At the sectoral level, very important sectors, such as manufacturing, commerce and mining, experienced only modest growth, offsetting significant growth in the agricultural-fishery and forestry sectors. Starting in June, however, indicators for manufacturing and commerce registered some improvement, as did imports. These sectors are an important component to the increased growth forecast for the second half of the year.

On the demand side, domestic expenditure fell 2.8% during the second quarter, to total a slight increase of 0.5% for the first half of the year. This explains the sluggishness of job creation and persistent unemployment at high levels (see Box III.1) and a sharp fall in inventories.

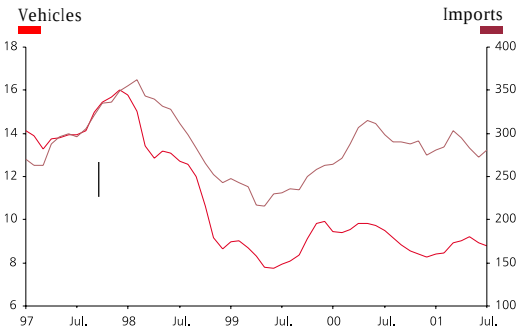
During the second quarter, the fact that inventories were being sold off became apparent, a situation directly related to the drop in import volumes registered during this period. This situation should be temporary and turn around in what remains of the year, to the degree that companies have to replace inventories in response to higher sales.

Investment rose 3.4% during the second quarter, with the housing market showing the most strength. Sales of houses and apartments rose significantly, thus further reducing existing stocks. Meanwhile, building permits, particularly for housing, showed encouraging signs at the end of the second quarter of this year, thanks to the implementation of public works projects, channeled through higher expenditure by the Public Works and Housing and Urbanism Ministries. These figures, along with a significant number of projects in preparation, suggest that investment in construction will rise, mostly toward the end of this year and into the beginning of the next.

Investment in machinery and equipment during the early part of the year rose above investment rates for construction. This is consistent with levels of capital goods imports registered during the first half of the year. For the second half, this component's behavior is less clear, given the discreet behavior of capital goods imports in recent months.

In terms of the external sector, despite the fall in the terms of trade, total exports rose, particularly non-traditional ones, stimulated by depreciation in the real exchange rate. Imports performed well below May forecasts. This was one of the main factors behind the poor performance of expenditure during the second quarter.

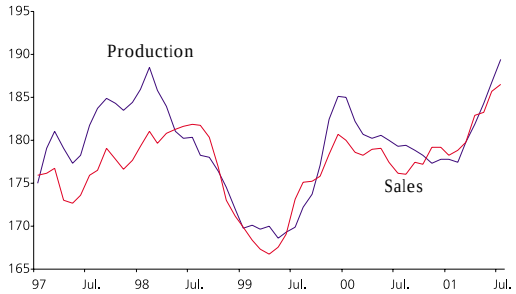
Figure III.2
Seasonally adjusted consumer goods imports and sales of new vehicles (1)
(thousands of units and US$ million)



(1) Moving quarterly average.

Sources: Central Bank of Chile, Asociación Nacional Automotriz de Chile (national car association of Chile).

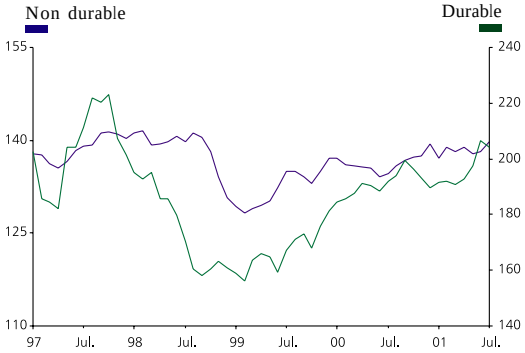
Figure III.3
Manufacturing production and sales of consumer goods
(average 1989 = 100)



(1) Moving quarterly average.

Source: National Statistics Bureau.

Figure III.4
Seasonally adjusted sales of non-durable and durable consumer goods (1)
(average 1989 = 100)



(1) Moving quarterly average.

Source: National Statistics Bureau.

Finally, so far this year, inflationary pressures in the labor market have been controlled given conditions in that market. For the next half, prospects for employment depend on what happens in construction and manufacturing. In this sense, the recent increase in building permits promises a new boost to employment in construction during the second half. Significant strength in manufacturing in recent months, however, has not affected employment. Finally, for the recovery of employment to consolidate during the second half, domestic expenditure must grow more quickly and unexpected negative events must not occur, in particular, a deterioration in the scenario abroad.

Domestic demand

Consumption and inventory change

In the first half of 2001, private consumption remained stable. Figures for the sale of consumer goods, according to different breakdowns, reveal the slow pace of growth in private consumption during the early months of 2001. Other partial indicators confirm this diagnosis, with consumer goods' imports performing poorly during the second quarter, while sales of new vehicles also stagnated (Figure III.2). More recently, the main indicators for production and manufacturing and retail sales show signs of recovery (Figures III.3, III.4 and III.5), and the economic perception index prepared by ADIMARK (IPEC) shows some signs of a slight improvement in consumer confidence about the future performance of the economy (Figure III.6).

Persistent unemployment continues to inhibit consumption decisions over time. These factors combine with a more conservative financial position on the part of individuals, leading to the stagnation of consumer loans (Figure III.7). What happens to family's disposable income and the labor market will determine individuals' possibilities for consumption in the future.

Household spending on consumption in the coming months will probably grow only modestly.

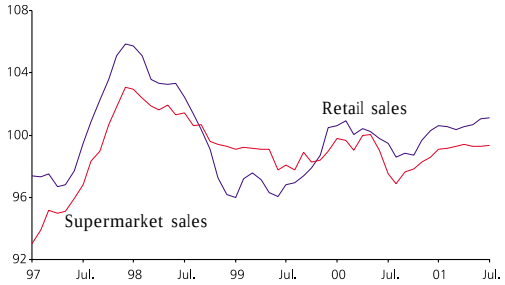
Partial indicators for inventory changes suggest that this component negatively affected growth in domestic demand during the second quarter of 2001. Declining inventories were consistent with trends in manufacturing sales and production from May to July, as registered by INE and the SOFOFA (the manufacturers' lobby group). While manufacturing sales rose noticeably in recent months, production grew more slowly. This decline in inventories is consistent with the reduction in imports in recent months, which should turn around toward year's end.

Fixed investment: Construction and machinery and equipment

Gross fixed capital formation continued to rise during the first quarter of 2001, in line with preceding quarters. During the second quarter, however, this turned around due to lower capital goods imports and the completion of many projects in the construction sector (Figure III.8).

In any case, the outlook for the construction sector remains favorable, thanks to positive trends in the housing market, advantageous conditions

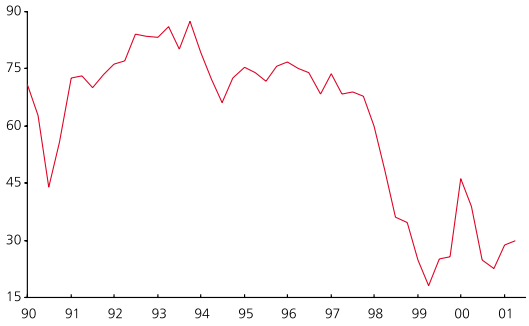
Figure III.5
Seasonally adjusted retail and supermarket sales (1)
(average 2000 = 100)



(1) Moving quarterly average.

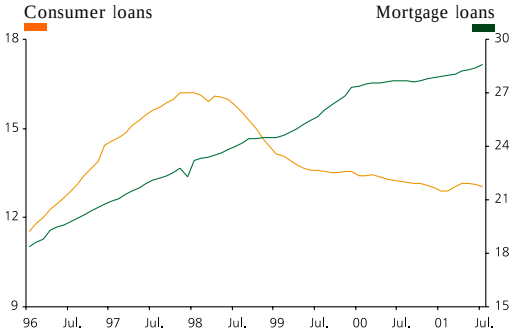
Source: National Chamber of Commerce.

Figure III.6
Economic perception index (IPEC)
(percentage of people expecting the economy to improve in future)



Source: ADIMARK.

Figure III.7
Household debt indicators
(loans over income from work (1))



(1) Income from work is the seasonally adjusted wage bill.

Source: Central Bank of Chile.

for mortgages, and the benefits this sector should receive from tax reforms.

Sales of houses and apartments stand at just under 1000 units per month. Stocks have declined slightly over previous months (Figure III.9). Similarly, permits for residential buildings rose recently, reversing the trend earlier this year. In contrast, the number of permits issued for other types of building have fallen (Figure III.10).

These figures, along with the number of projects at the planning stage, suggest investment in this sector will perform positively, especially toward the end of this year and the beginning of next. This should combine favorably with the positive impact of higher levels of public investment, channeled through the Public Works and Housing and Urbanism Ministries. Thus, during the second half of 2001, trends in construction will be favored by this larger governmental contribution in the form of social housing and infrastructure investment.

Gross fixed capital formation is projected to grow about 6.0% in 2001.

The list of investment projects prepared by the *Corporación de Bienes de Capital* (capital goods corporation) for the month of June, maintains the volume of investment forecast in the previous report. With a few minor adjustments, the same applies to 2002. Thus, this report maintains its projections of slight growth for this year and more for the next, when some of the projects postponed this year will also be executed, particularly in the mining sector.

In this context, projects planned for the real estate, mining and public works sectors (associated with auctions and investment in sanitary works projects) continue to stand out. Meanwhile, investment in manufacturing, forestry and energy is expected to increase substantially in 2002 and to some degree in 2003. The investment expected in ports should rise noticeably next year, and then run its course a little further down the road. Projected investment in telecommunications will not reach the volumes posted in 1999 and 2000 (Table III.1).

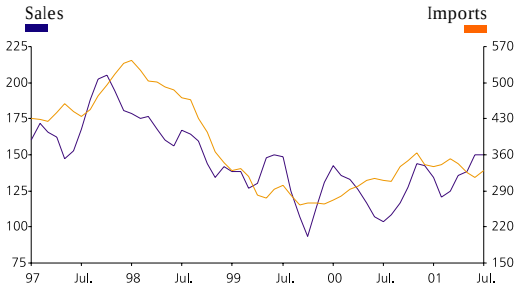
Table III.1
Investment projects
(US$ million)

Sector	1998	1999	2000(e)	2001(f)	2002(f)
Mining	2,129	770	568	908	2,484
Forestry	166	60	150	166	441
Manufacturing	562	324	99	196	411
Energy	1,827	1,160	278	408	920
Ports	110	79	56	83	135
Real estate	1,780	1,339	1,415	1,744	1,771
Public works	687	796	1,199	991	1,378
Telecommunications	845	729	631	157	38
Other	115	20	15	8	2
Total	8,221	5,275	4,411	4,662	7,579

(e) Estimate.
(f) Projected.

Source: Corporación de Desarrollo Tecnológico de Bienes de Capital.

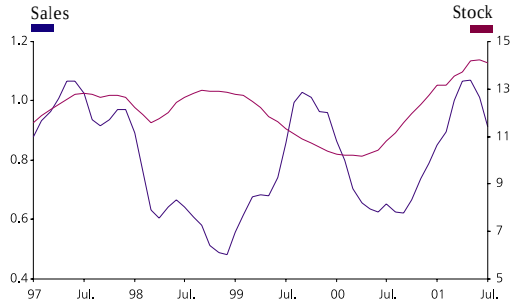
Figure III.8
Seasonally adjusted sales and capital goods imports (1)
(average monthly index 1990 = 100 and US$ million)



(1) Moving quarterly average.

Sources: Central Bank of Chile, National Statistics Bureau.

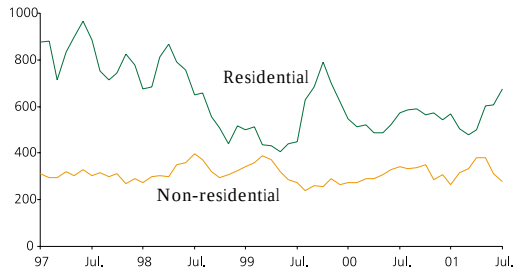
Figure III.9
Seasonally adjusted sales and stock of new housing (1)
(thousands of units)



(1) Moving quarterly average.

Source: Cámara Chilena de la Construcción (Chilean association of construction firms).

Figure III.10
Building permits, new works (1)
(thousands of square meters)



(1) Moving six-month average.

Source: National Statistics Bureau.

Fiscal Policy

During the second quarter of this year, public expenditure with macroeconomic impact rose less than during the first quarter (3.8% annually). With this, expenditure rose 4.4% during the first half. Also during the first half of the year, the most dynamic component was spending on goods and services for consumption and production (9.5% annually) while current expenditure rose 5.2%. Similarly, both real investment and sectoral investment through regional allocations components rose by only 1.8%.

Analysis of the fiscal balance for the first half reveals the effects of slower than expected growth and the fact that the copper price was lower than assumed in the 2001 budget. Net tax income rose by just 2.4% during the second quarter of 2001. Similarly, in that quarter some US$42 million was withdrawn from the copper stabilization fund (*Fondo de Estabilización del Cobre, FEC)*, the result of the low average price for the metal during the year. For the third quarter, a total of US$85 million in withdrawals from the FEC is expected, which would bring its balance to around US$530 million at the end of the third quarter of 2001. In summary, the general surplus accumulated during the past four quarters reached –0.5% of GDP[1] (Figure III.11 and III.12), with a deficit of 0.5% of GDP projected for this year too (Table III.2).

Table III.2
Fiscal indicators

	1998	1999	2000	2001(p)
	(annual change, percent)			
Public absorption	6.2	5.7	3.1	6.4
Current revenue	0.0	-2.9	11.5	3.9
Tax revenue	-0.2	-5.6	9.7	10.0
	(percentage of GDP)			
Overall surplus (1) (2)	0.4	-1.5	0.1	-0.5
FCC (Fondo de Compensación del Cobre)	-0.4	-0.7	-0.6	0.0
Fiscal impulse	0.8	1.3	-1.4	0.0

(p) Budget 2001.
(1) Without correcting for FCC.
(2) Estimate for 2001 consistent with structural surplus of 1% of GDP.

Source: Dirección de Presupuestos (National Budget Office).

Based on figures from the 2001 budget, growth in public expenditure with macroeconomic impact is expected to pick up during the second half of 2001 (Figure III.13).

Expenditure with macroeconomic effects should pick up during the second half of the year.

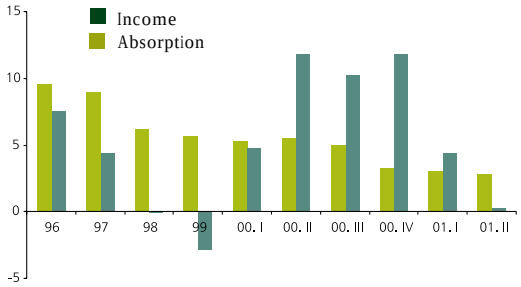
External sector and current account

Exports

The weakness of external demand, the result of a slowdown in the world's economy, translated mainly into the continuation of the decline

[1] This figure is consistent with a surplus of 0.5% of GDP announced by DIPRES for the first half, a calculation that includes the total estimated GDP for the year in the denominator.

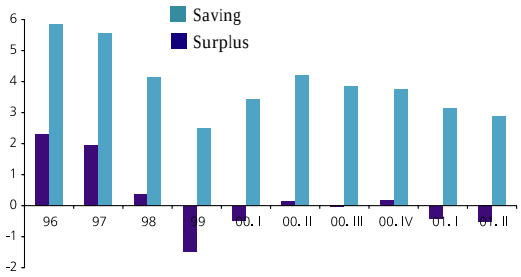
Figure III.11
Current income (1) and public absorption
(percentage change over the previous year) (2)



(1) Includes income from privatizations for 2000.
(2) Quarterly figures represent annual moving quarterly averages.

Source: Dirección de Presupuestos (National Budget Office).

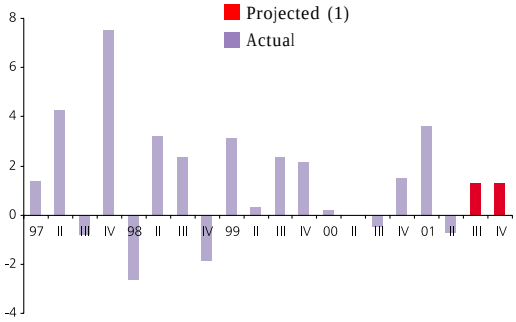
Figure III.12
Current account and central government general surplus (1) (2)
(percentage of GDP)



(1) Without correcting for FCC and including income from privatizations in 2000.
(2) Quarterly figures represent annual moving quarterly averages.

Source: Dirección de Presupuestos (National Budget Office).

Figure III.13
Quarterly public expenditure with macroeconomic impact
(quarterly growth rate)



(1) Projected based on budget.

Source: Dirección de Presupuestos (National Budget Office) and own calculations.

in export prices. Nonetheless, this fall in prices was more than offset by an increase in export volumes, particularly in the case of non-traditional items, which is probably associated with the significant peso depreciation of recent years. From the third quarter of 1999 to the second of 2001, non-traditional exports have tended to rise at an average of 8.3%, practically twice average growth during the previous two years (4.3%) (Table III.3 and III.4).

Table III.3
Exports
(annual percentage change in quantity, price and value by category)

Specification	1999.I	2000.I	2000.II	2000.III	2000.IV	2001.I	2001.II
Percentage change by volume							
Copper	7.4	14.5	-8.0	13.8	2.4	-0.9	9.1
Non-copper	9.3	6.9	9.3	6.3	7.5	8.1	16.9
Main	13.0	5.5	0.5	0.4	5.9	-1.1	13.2
Other	5.9	8.0	16.4	9.2	8.3	16.1	19.6
Total	8.7	9.3	2.7	9.3	5.4	4.7	13.9
Percentage change in prices							
Copper	-11.7	29.0	23.1	13.5	11.1	0.2	-3.0
Non-copper	-7.5	4.1	0.5	8.6	0.8	-8.4	-7.1
Main	-15.4	8.7	3.0	19.1	10.0	-6.9	-8.7
Other	0.3	0.5	-1.2	3.9	-3.2	-9.5	-6.0
Total	-8.9	12.5	8.2	10.6	4.9	-5.3	-5.6
Percentage change in value							
Copper	-5.2	47.7	13.3	29.2	13.8	-0.7	5.9
Non-copper	1.1	11.3	9.8	15.5	8.4	-0.9	8.6
Main	-4.4	14.7	3.5	19.6	16.4	-7.9	3.4
Other	6.2	8.5	15.0	13.4	4.8	5.1	12.4
Total	-1.0	22.9	11.2	20.9	10.6	-0.8	7.5

Source: Central Bank of Chile.

Table III.4
Exports
(percentage change in quantity, price and value by product)

Specification	1999.I	2000.I	2000.II	2000.III	2000.IV	2001.I	2001.II
Percentage change by volume							
Copper	7.4	14.5	-8.0	13,8	2,4	-0,9	9,1
Wood pulp	57.4	-8.4	3.9	-4,9	-3,4	-11,3	23,5
Fishmeal	-42.5	-1.9	-28.2	-6,7	17,1	72,5	-29,4
Fresh fruit	17.9	-1.4	6.7	9,2	40,2	0,7	17,6
Methanol	45.3	73.5	25.8	8,7	-4,7	-17,7	19,2
Total	8.7	9.3	2.7	9,3	5,4	4,7	13,9
Percentage change in prices							
Copper	-11.7	29.0	23.1	13,5	11,1	0,2	-3,0
Wood pulp	-14.7	57.2	60.6	51,5	27,0	-4,0	-34,3
Fishmeal	-13.9	-17.6	-4.5	-6,9	-5,3	-3,1	19,7
Fresh fruit	-15.7	6.4	-21.7	0,8	1,7	-17,2	-7,1
Methanol	-47.6	16.6	60.5	94,1	163,1	149,2	95,0
Total	-8.9	12.5	8.2	10,6	4,9	-5,3	-5,6
Percentage change in value							
Copper	-5.2	47.7	13.3	29,2	13,8	-0,7	5,9
Wood pulp	34.3	44.0	66.8	44,1	22,8	-14,8	-18,8
Fishmeal	-50.5	-19.2	-31.4	-13,1	10,9	67,1	-15,5
Fresh fruit	-0.6	4.9	-16.4	10,0	42,5	-16,6	9,2
Methanol	-23.8	102.3	102.0	111,0	150,9	105,2	132,4
Total	-1.0	22.9	11.2	20,9	10,6	-0,8	7,5

Source: Central Bank of Chile.

Higher volumes for products such as salmon, trout, fruit juice, wooden boards, newsprint, copper wire and potassium nitrate contributed to the 8.7% increase in exports by value of non-traditional products, during the first half of the year.

Analysis of the value of total exports for this half of the year by geographic area (Table III.5) reveals a 12.5% fall in sales to Asia over twelve months, the result of deteriorating markets in Korea, Japan and Taiwan. A significant part of this fall was due to lower copper exports. In contrast, exports to Europe and the United States were more favorable, rising 8.8% and 7.9% respectively. The increase in copper exports to the United States was particularly important and was the result of lower production caused by the closure of some American producers due to low prices.

Table III.5
Exports
Percentage change in quantity, price and value, by destination
(period to June 2001 / to June 2000)

Specification	Asia	(Japan)	Rest of the world	(US)	(Argentina)	World total
Percentage change by volume						
Copper	-12.3	-0.1	17.4	68.4	6.5	4.0
Non-copper	20.9	16.6	21.1	4.2	15.9	12.1
Main	8.6	-15.3	3.8	-12.3	-12.8	5.0
Other	33.5	29.2	33.9	22.4	19.0	17.8
Total	3.1	9.3	19.9	12.9	15.0	8.9
Percentage change in prices						
Copper	-5.2	-5.6	0.2	-2.7	-0.9	-1.4
Non-copper	-23.4	-20.4	-11.7	-4.8	-6.5	-7.7
Main	-13.6	5.6	-5.1	1.8	10.0	-7.4
Other	-31.5	-27.1	-15.6	-10.0	-7.8	-7.9
Total	-15.1	-14.5	-8.1	-4.4	-6.0	-5.3
Percentage change in value						
Copper	-16.8	-5.7	17.5	64.0	5.6	2.5
Non-copper	-7.4	-7.2	6.9	-0.7	8.3	3.5
Main	-6.2	-10.6	-1.5	-10.6	-4.1	-2.7
Other	-8.6	-5.9	13.1	10.1	9.7	8.5
Total	-12.5	-6.5	10.2	7.9	8.1	3.1

Source: Central Bank of Chile.

Exports to Latin America rose 12.1% (some US$220 million, with outstanding amounts going to Mexico, Ecuador, Peru and Venezuela). Exports to Argentina were not affected during this period, rising 7.1% during the first quarter (10.1% in the second quarter).

Imports

During the second quarter, 12-month imports fell drastically (-5.5%). Imports of consumer goods, down 13% from the previous 12 months and 16% over the previous quarter, were the main reason. The products most affected were household appliances and cars, which fell 34% and 22% respectively. Imports of capital goods rose 1% over the same quarter of the previous year, and fell 9% over the previous quarter. This fall was significantly influenced by transportation vehicles, down 25% over the twelve month period (Table III.6).

Meanwhile, imports of intermediate goods fell 5% during the second quarter, influenced by the fall in fuel prices and replacement parts for vehicles. The decline compared to the previous quarter was only 1%.

Table III.6
Imports
(annual percentage change in quantity, price and value by category)

Specification	2000.I	2000.II	2000.III	2000.IV	2001.I	2001.II
Percentage change by volume						
Consumer goods	31.2	35.3	17.7	1.1	5.8	-11.9
Capital goods	-8.7	3.4	15.3	26.6	18.9	3.4
Intermediate						
non-fuel goods	7.0	15.3	4.1	1.4	5.5	-3.1
Total	7.0	14.1	8.4	6.9	8.2	-3.0
Percentage change in prices						
Consumer goods	-2.8	0.4	-0.8	1.4	-2.4	-0.9
Capital goods	4.3	3.7	4.4	1.0	-0.5	-2.4
Intermediate						
non-fuel goods	5.7	5.9	4.5	5.5	-0.6	-1.5
Total	11.5	10.9	9.0	7.2	-0.1	-2.3
Percentage change in value						
Consumer goods	27.5	35.8	16.8	2.5	3.2	-12.7
Capital goods	-4.8	7.2	20.3	27.8	18.3	0.9
Intermediate						
non-fuel goods	13.1	22.1	8.8	7.0	4.9	-4.6
Total	19.3	26.5	18.1	14.6	8.1	-5.3

Source: Central Bank of Chile.

In terms of import origins, the 2% growth in total declared value of imports coming through customs during the first half came primarily from imports from Latin America, which increased 8.8% (US$235 million), mainly due to the higher cost of oil imports from Argentina and intermediate and capital goods from Brazil. Purchases from Europe rose 7.8% (US$118 million), from Asia 1.2% (US$15 million), while those from the US fell by 6.8% (US$104 million).

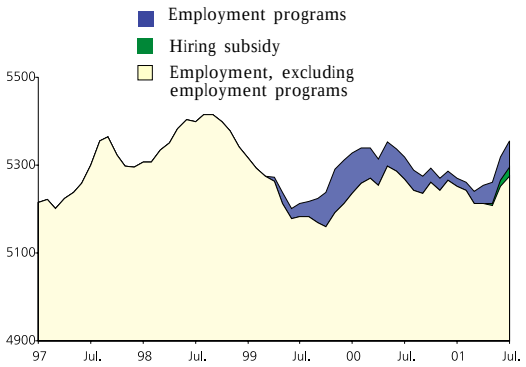
Balance of trade and current account projections

The balance of trade during the second quarter posted a surplus of US$641 million, more than the surplus for the first quarter and much more than the same period for the previous year. This was the result of a 7.6% increase in exports over the previous 12 months, and a 5.5% drop in imports, by value.

The main difference between the actual results in the balance of trade for the first half of 2001 and those forecast in the May report is that imports during the second quarter were lower than expected. Exports, on the other hand, were slightly higher than estimated, the result of higher volumes, which offset lower prices. Given their performance during the first half and price expectations for the second, exports for the year should reach about US$18.1 billion, somewhat less than forecast a few months ago. This is mainly due to a decline in copper and wood pulp exports, the result of lower prices (US$550 million less for copper, with the LME averaging 74 cents per pound instead of 80 cents per pound, and US$184 million less in wood pulp). Non-traditional products are expected to perform better, thanks to higher export volumes.

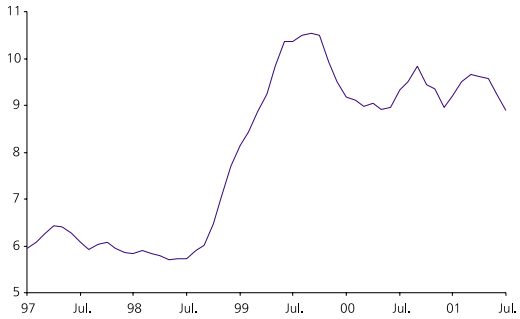
Projections for 2001 suggest the current account deficit will reach US$1.7 billion, 2.6% of GDP. The increase in the projected deficit since last May (when it stood at 2.2%) is the result of assuming a larger decline in the

Figure III.14
Seasonally adjusted national employment
(thousands of people)



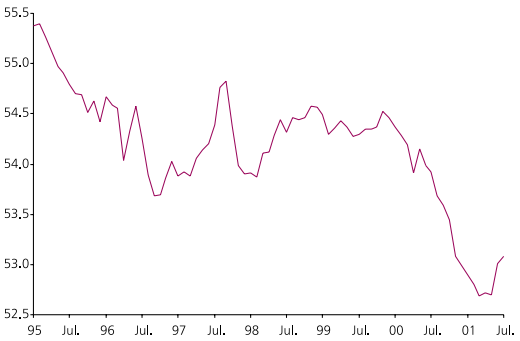
Sources: National Statistics Bureau, Ministry of Labor.

Figure III.15
Seasonally adjusted national unemployment
(percent of the work force)



Source: National Statistics Bureau.

Figure III.16
Seasonally adjusted national participation rate
(percent of the population 15 years and over)



Source: National Statistics Bureau.

terms of trade due to the lower copper price. In May, this price was projected at 80 cents per pound for 2001, while in September it was reduced to 73 cents per pound. For the future, this situation is expected to turn around only partially in 2002, with the deficit reaching US$1.32 billion, 2.0% of GDP.

Table III.7
Economic growth and current account 1997-2002
(annual change, percent, and percentage of GDP)

Specification	1997	1998	1999	2000(f)	2001(f)	2002(f)
Domestic demand	9.1	3.9	-10.0	6.6	2.1	6.4
Exports of goods and services	9.4	5.9	6.9	7.5	8.3	5.7
Imports of goods and services	12.9	5.4	-14.3	10.1	4.2	8.6
Current account deficit	-5.0	-5.7	-0.1	-1.4	-2.6	-2.0
GDP	7.4	3.9	-1.1	5.4	3.7	5.0

(f) Projected.

Source: Central Bank of Chile.

Table III.8
Current account
(US$ million)

	2000	2001 I	2001 II	2001 Total (f)	2002 (f)	2003 (f)
CURRENT ACCOUNT	-987	-77.4	-90.4	1,700	-1,320	-1,480
Balance of trade	1,437	521.7	640.8	1,070	1,020	1,260
Exports	18,157	4,802.6	4,665.8	18,100	19,820	21,910
Imports	-16,720	-4,280.9	-4,025.0	-17,030	-18,800	-20,650
Non-financial services	-558	-64.8	-124.6	-430	-310	-340
Financial services	-2,404	-645.3	-788.1	-2,900	-2,620	-3,000
Unilateral transfers	538	110.0	181.4	540	590	600

(f) Projected.

Source: Central Bank of Chile.

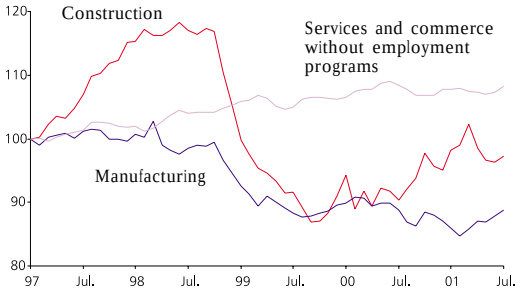
Employment and unemployment

Trends in the labor market started to show slight signs of recovery in June 2001. During the moving quarter May – July, annual employment rose 0.7%. Nonetheless, compared to the first quarter of 2001, employment fell by about 17,000 people. Lower job creation boosted national unemployment to 9.8% for the May – July period (Figure III.15). Seasonally adjusted, however, employment rose 2.2% over the first quarter (Figure III.14). Private employment rose by 62,000, indicating this rise in employment was not solely the result of public programs.

This slight recovery in employment influenced general trends in the labor market, braking its fall and rising by 0.7% over the first quarter of 2001 (Figure III.16). Even so, there has been an annual decline in participation in the work force among both men and women aged 15 to 34 years. One relevant factor in explaining this behavior is the negative impact that persistent unemployment has on the decision to seek work.

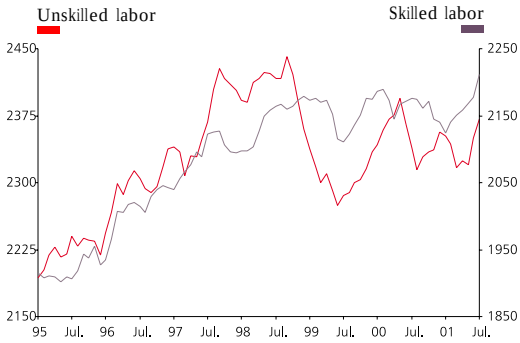
During the second quarter of 2001, overall employment showed a slight improvement.

Figure III.17
Seasonally adjusted employment by sector
(january 1997 = 100)



Source: National Statistics Bureau.

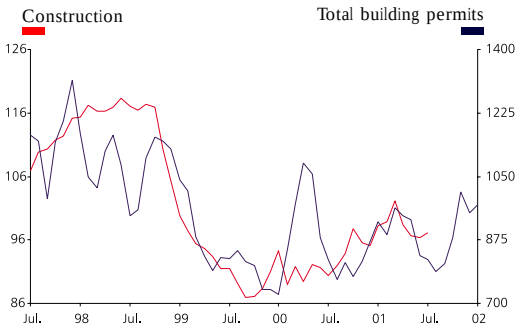
Figure III.18
Seasonally adjusted employment by occupation (1)
(thousands of people)



(1) Occupations considered skilled labor are: professionals, technicians, management, administrators, directors, office workers and sales staff. Unskilled occupations (excluding farmers, cattle ranchers and fishing people): drivers, crafts people, machine operators, workers, day-workers and personal service workers.

Source: National Statistics Bureau.

Figure III.19
Employment in construction and total building permits
(january 1997 = 100; permits are lagged 6 months)



Source: National Statistics Bureau.

The slight improvement in job creation during the second quarter of 2001 is associated with major economic sectors (Figure III.17). Seasonal factors aside, employment in construction fell steadily from March to June, breaking the tendency to recover evident during the first quarter. This behavior, however, tended to revert during May-July. Annual employment in manufacturing, which continues to fall, did improve slightly over the previous quarter. The most outstanding trend was the strong recovery in commerce, because this sector depends less on seasonal changes in winter.

An analysis of employment by occupational groups reveals that unemployment among unskilled laborers[2] also recovered, rising 1.4% over the May – July quarter of 2000, using seasonally adjusted figures. Employment of skilled workers[3] continued to recover as it has since the start of the year (Figure III.18).

Despite a strong real increase in the minimum wage, which negatively affected the hiring of younger (15 to 24 years) workers during the first quarter of the year, in the May-July quarter, employment for this group rose by 1.0%, the result of better prospects for the labor market.

The prospects for a recovery in employment continue to depend, among other factors, on what happens with manufacturing and construction. The performance of this last sector can be explained using the hypothesis that construction projects are more labor intensive during their final stages. Changes in employment in construction lag behind building permits (Figure III.19). In this sense, the recent increase in building permits suggests employment in construction could rise during the second half. In contrast, the important strength in manufacturing in recent months has still not had any impact on employment; the sector's steady increase in productivity seems to be a rather persistent characteristic.

Productivity and the use of productive resources

In contrast to the lack of job creation there has been an important increase in average productivity since 1999, which has concentrated on specific sectors, particularly manufacturing and commerce (Figures III.20 and III.21). Although there is not enough plant-level information, partial data suggests that the increase in the ratio of value added to employment in manufacturing could be due to the more dynamic performance of less labor-intensive sectors within the tradable sector.[4] This effect is identified by keeping the ratio of value added to employment constant, which yields a decline of 82,000 jobs (See Figure III.22).

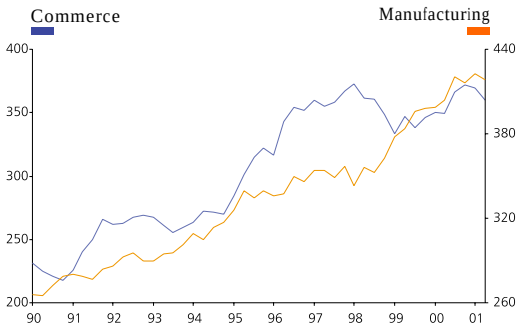
An alternative explanation for this increase in the average productivity of industry corresponds to the increase in efficiency or intensity of capital use within each subsector. This fact is consistent with the increase in the relationship between real salaries and capital costs (Figure III.23), which rose by almost 10% due to lower interest rates and the stability of

[2] This corresponds to farmers, cattle ranchers, fishing people, transport drivers, crafts people, operators, workers, day-laborers, and personal service workers.

[3] This includes professionals, sales people, white collar workers and management.

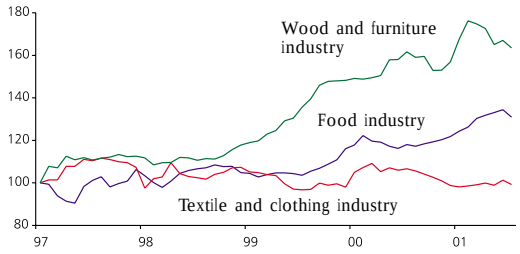
[4] According to the Hernando classification system (2001).

Figure III.20
Sectoral labor productivity
(thousands of 1986 pesos per person)



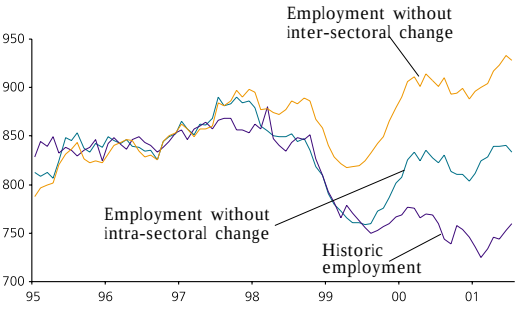
Source: National Statistics Bureau.

Figure III.21
Labor productivity in manufacturing
(1997 = 100)



Source: SOFOFA (Manufacturers Lobby Association).

Figure III.22
Industrial employment according to intra-sectoral and inter-sectoral productivity changes
(thousands of people)



Source: Own calculations using figures from Sofofa, MIP (1996) and National Statistics Bureau.

real wages during 2001. Although the substitution of capital for labor is slow and requires important changes to productive processes, the increase in the cost of labor is a factor in delaying the recovery of employment. The impact of this phenomenon can be estimated by maintaining the value added to employment ratio for each branch of industry (2 digits) constant, which indicates there are 95,000 fewer jobs compared to historic levels.

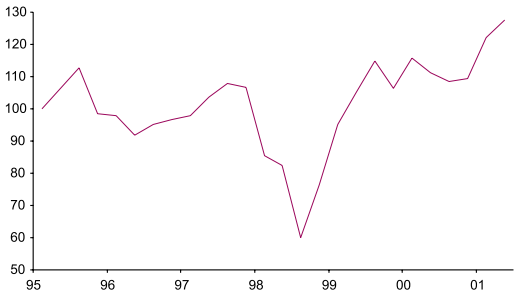
Aside from shifts in productivity, the output and employment gaps show a significant degree of idle capacity affecting productive resources within the economy, essentially in the labor market. In effect, unemployment of men aged 35 to 54, a benchmark less affected by fluctuations in the labor force, remains well above its usual level in the past (Figure III.24).

Idle capacity in the labor market is higher than levels reflected in unemployment rates, due to municipal employment programs and the use of contingency funds, which altogether generated 82,000 jobs during the second quarter of 2001, around 1.4% of the labor force. This figure will probably grow in the coming months, due to the increase in funds that came into effect in April of this year.

Significant idle capacity in the labor market persists.

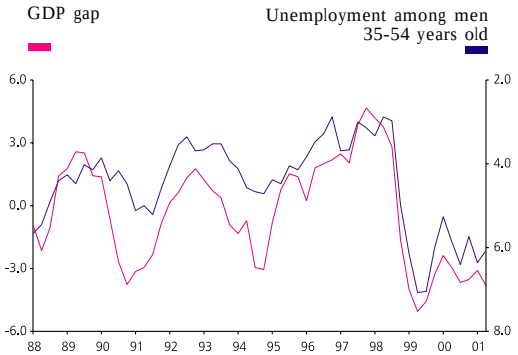
All the above information indicates that inflationary pressures from the labor market remain negative (Figure III.25). Given the current unemployment rate and growth expected in investment, the economy's productive capacity should rise around 3.8% this year and 5.0% next year. This, however, does not represent a ceiling on effective economic growth, because the current output level is below its potential level (see Box III.3).

Figure III.23
Real wages and cost of capital ratio
(1995:I = 100)



Sources: Central Bank of Chile, National Statistics Bureau.

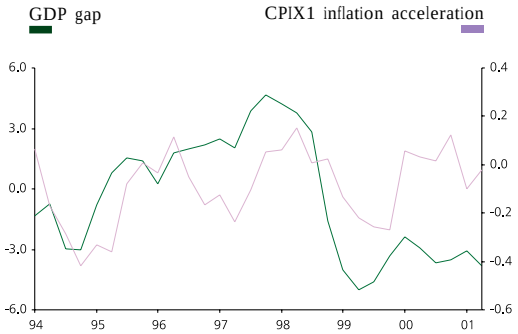
Figure III.24
Output gap (1) and seasonally adjusted employment
(percent)



(1) Trend GDP calculated using the Hodrick-Prescott filter. Estimate for 2001.III.

Sources: Central Bank of Chile, National Statistics Bureau.

Figure III.25
Output gap (1) and inflationary acceleration (2)
(percent)

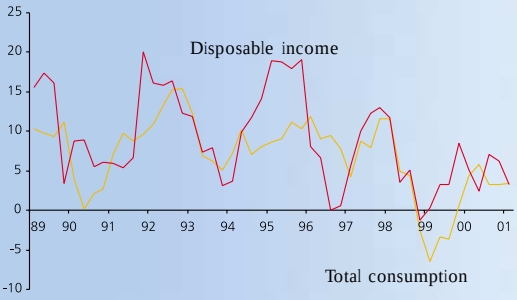


(1) Trend GDP calculated using the Hodrick-Prescott filter. Estimate for GDP 2001.III and 2001.II.
(2) Estimate 2001.II.

Sources: Central Bank of Chile, National Statistics Bureau.

BOX III.1: **CONSUMPTION AND UNEMPLOYMENT**

Figure III.1A
Consumption and private income
(percentage change over the previous year)



Source: Central Bank of Chile and own calculations.

In recent semesters, private consumption has been particularly depressed, falling more than private real disposable income.[5] This uneven behavior contrasts with trends observed in the mid-nineties, when growth in consumption was much lower than income growth (Figure III.1A).

The relevant question, therefore, is what is behind this behavior? One answer can be found in an empirical analysis of private consumption using some elements developed by economic theory. The most widely disseminated hypothesis among consumption theories is that of permanent income. This theory views consumption as determined by household income net of temporary changes. This assumes that households are interested in adjusting their level of consumption as a function of permanent changes in earnings (and, therefore, their wealth) and as a result do not react to temporary changes. To maintain stable trends in consumption, households go into debt during periods when current income is lower than usual and save under opposite conditions. In this process, the real interest rate becomes a relevant variable, because it is the price of today's consumption compared to the future.

This is consistent with growth in consumption observed from 1993 to 1997, which tended to rise less than growth rates for earnings. Consumption's recent behavior, however, and in the early nineties, makes it necessary to expand this focus of the theory of permanent income to include at least two additional elements: the existence of restrictions on liquidity and the relevance of precautionary attitudes. On one hand, liquidity restrictions prevent consumers from going into debt during periods when they need to because they do not find alternatives available at a suitable cost. Thus, consumers, in troubled times, tend to reduce consumption even when changes in their earnings are temporary, because they cannot go into debt.[6] On the other hand, where there is uncertainty about future income, consumers tend to save part of their earnings (and, as a result, cease to consume). Moreover, the interaction of both factors reinforces their contractive effect on consumption (See Browning and Lusardi, 1996).

Thus, the integration of these elements suggests that they play a role in the current situation. As mentioned in the May Report, loans for consumer credit have grown considerably less since 1998, which suggests that (i) the supply of credit has declined, and/or (ii) consumers have reduced their demand for consumption as current uncertainty has risen, in particular regarding the job environment. This last element is fundamental, because conditions in the labor force in a market such as Chile's not only determine the income individuals receive, but also influence their access to credit within the financial system. In fact, a variable such as unemployment seems to play a much more important role than income growth in terms of consumers' view of the economy (Figures III.2A and III.3A). Thus, the noticeable drop in consumer confidence indicators apparent since 1998 is intimately linked to unemployment. This variable thus serves as an approximation for the current degree of liquidity restrictions and uncertainty about the future.

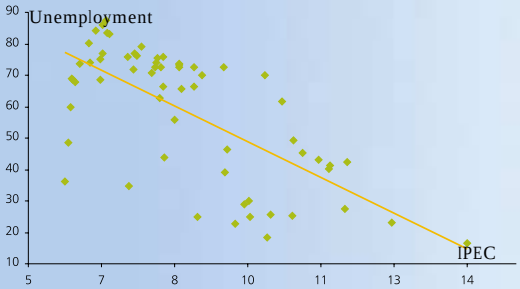
[5] Real disposable income of the private sector was developed using the sum of real disposable national income and real public sector transfers minus real taxes paid. Taxes and transfers were corrected using the consumption deflator.

[6] Moreover, some evidence suggests that restricted liquidity generates a pro-cyclic effect (that is it is more significant when economic activity is more depressed). In this sense, see Aportela (2000) for the case of Mexico and Butelmann and Gallego (2001) for Chile.

Figure III.2A
Unemployment and consumption growth
(percent)

Source: National Statistics Bureau and own calculations.

Figure III.3A
IPEC and unemployment
(percent; index)



Source: National Statistics Bureau and ADIMARK.

In this context, we carried out an empirical exercise to explain trends in consumption, using the elements mentioned above. In particular, we examined the period from 1986 to 2000 using total quarterly consumption series. Annual data on consumption and private disposable income published by the Central Bank was translated into quarterly form, by applying a procedure based on related series that are available quarterly.[7] The main conclusions from this exercise are detailed below.

In the first place, there is a long-term relationship between per capita consumption, per capita income, the eight-year PRC rate, the national unemployment rate and total per capita loans. It should be noted that this long-term relationship presents the theoretically foreseeable signs and that the correction of long-term imbalance is relatively quick (in one year, more than 95% of the imbalance was corrected). In effect, both higher disposable income and a larger stock of loans generate an increase in consumption; and a higher long-term interest rate and/or higher unemployment cause consumption to drop.

Moreover, other variables exist that help to understand the dynamics of consumption, without affecting its long-term trajectory, such as: a lag in the imbalance between the variables that make up the long-term relationship, the slope of the yield curve and growth in economic perception indices, the real exchange rate, and the wage mass. Thus, in the short term, a positive effect arising from trends affecting the wage mass, the economic perception index and the yield curve is apparent, along with a negative effect from depreciation in the real exchange rate, which at least in the short term affects wealth in the economy through *durable consumer goods*. The above indicates that individuals, when deciding how much to consume, analyze their economic situation, their expectations about the economy's future, the cost of consuming today versus tomorrow, and the wealth effect derived from changes in relative prices with the rest of the world. This last directly affects trends in durable consumer goods that, moreover, are more sensitive to all the fundamental variables and to others, such as the yield curve.

In summary, given the behavior of the variables explained above, it is reasonable to assume that trends in consumption from 1999 to 2001 can be explained by factors associated with trends in structural variables intrinsic to the model, such as disposable income, unemployment, and total loans.

[7] In technical terms, Bravo and Gallego (2001) carried out a process of quarterization using related series by applying the Chow-Lin method. Thus, for annual consumption they used quarterly series classified as "other domestic demand," government expenditure published by the Budget Department, sectoral GDP series, and annual change in GDP. To build disposable income for the private sector they used quarterly GDP.

BOX III.2: **NEW GDP CALCULATION FOR 1996**

As published in the "*Matriz de Insumo Producto de la economía chilena 1996*," (MIP)[8] (input-output matrix for the Chilean economy, 1996) at prices current in 1996, GDP was 10.5% higher than estimated using 1986 as the basis. This new level could be measured using input-output studies, which involved a broad calculation of costs and production usage, difficult to carry out on an annual basis.

Annual national accounts at current prices are calculated using information on prices, volumes and values that include only part of the coverage included in an MIP. If for any reason these figures are under- or over-estimated, the value of transactions, the measurement of economic activities, will become less representative, and this will get worse over time. The use of a base year, which affects primarily census-type studies, helps to detect and correct the measurement of those activities that may suffer from this problem.

Thus, measurements using 1996 as the new base year, from the perspective of production, as can be seen in Table III 1.A, helped to identify relevant under-estimations associated with real estate assets, particularly the prices of housing and buildings built between 1986-1996. This phenomenon led to underestimating both the production value for residential and non-residential building, as well as the value of housing rental.

Table III.1A
Gross domestic product (GDP) 1996, by economic activity MIP 96 and AAB 96
(billions of 1996 pesos)

Production	PIB	MIP 96/AAB	Incidence	Percentage share		
	AAB 96	MIP 96	(%)	(%)	AAB 96	MIP 96
Farming, Hunting and Forestry	1	1	-8.8	-0.5	5.1	4.2
Extractive fishing	409.0	383.0	-6.4	-0.1	1.4	1.2
Mining	2.0	2.1	5.9	0.4	7.0	6.7
Manufacturing	5.4	5.5	1.4	0.3	19.1	17.5
Electricity, Gas and Water	838.0	889.0	6.1	0.2	3.0	2.8
Construction	2.0	2.9	45.9	3.2	7.1	9.3
Retail, Hotels and Restaurants	3.8	3.5	-8.2	-1.1	13.4	11.1
Transportation and Communications	2.0	2.0	0.5	0.0	7.1	6.4
Financial and company services	3.2	3.8	18.1	2.1	11.3	12.1
Residential property	1.1	2.4	118.9	4.5	3.8	7.5
Social and personal services	3.2	3.3	2.4	0.3	11.4	10.6
Public administration	1.0	1.3	25.2	0.9	3.6	4.0
Added value	26.4	29.3	11.0	10.2	93.3	93.7
Minus: Bank charges	1.1	1.0	-8.1	0.3	3.9	3.2
Plus: Net VAT	2.3	2.3	1.1	0.1	8.1	7.4
Plus: Import duties	727.0	688.0	-5.4	-0.1	2.6	2.2
GDP	28.3	31.2	10.5		100.0	100.0

Source: Central Bank of Chile.

In this activity, buildings improve their quality in ways that are not accounted for in the definition for the 1986 base year, producing what is technically assimilated as the appearance of new products. The correction of this distortion for the years between the two bases would have required having access to construction studies similar to those for a base year.

In the case of housing rentals, on the other hand, constant improvements in construction products and the increase in real estate demand, typical of a

[8] See www.bcentral.cl

decade of strong economic growth, pressured the value of rental properties upward. This increase was not reflected in official property rental price statistics.

Another, although less important factor, was the realization that the value of producing services provided to companies was underestimated, mainly due to differences in the volumes detected rather than the prices of these services. The switch to outsourcing that the economy experienced during the period under analysis was not fully reflected in the measurement of these activities in the national accounts, for lack of direct surveys and / or representative statistics.

Moreover, for public administration, an increase in its value accounts for a 0.9 point change in its impact within GDP, as a result of a methodological change introduced with this new base year. In effect, following recommendations from the 1993 United Nations National Accounts System (SCN 1993) calculations of fixed capital consumption were broadened to include estimates for public sector infrastructure works projects (buildings and engineering works).

In terms of GDP expenditure, the main components that explain the differences are end consumption (6.7%) and gross fixed capital formation (4.2%).

Table III.2A
Expenditure of gross domestic product (GDP)
(billions of 1996 pesos)

Expenditure	AAB 96	MIP 96	MIP 96 / AAB	Incidence
			(%)	
Private end consumption	18.4	19.8	7.5	4.9
Government consumption	2.9	3.4	17.4	1.8
Gross fixed capital formation	7.0	8.2	17.1	4.2
Inventory change	559.0	313.0	-44.0	-0.9
Exports FOB	8.1	8.5	5.5	1.6
Minus: Imports CIF	8.7	9.0	3.6	-1.1
GDP	28.3	31.2	10.5	

Source: Central Bank of Chile.

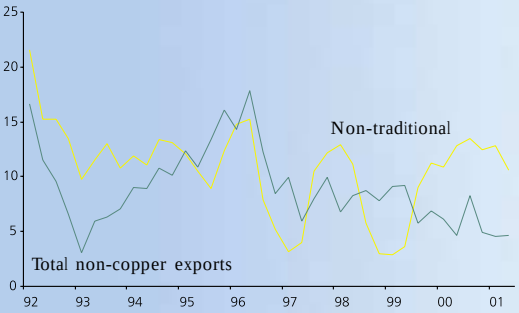
End consumption has risen mainly due to higher amounts going to service residential properties and obtaining other services, with household demand for commerce, restaurants, hotels, transportation and communications becoming less important. Governmental consumption was affected by the inclusion of the fixed capital consumption mentioned above.

Gross fixed capital formation has risen due to the increase in investment in residential and non-residential construction. Thus, investment in fixed capital rose from 24.9% (MIP 86) to 26.4% (MIP 96).

Finally, higher exports and imports were mainly the result of a change in the treatment of foreign trade through duty-free zones, which involved including a measurement of gross foreign trade flows along this route, as per SCN 1993 recommendations, whereas when the 1986 base year was used these flows were measured in net terms.

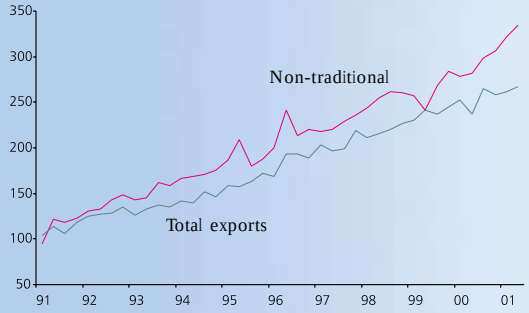
BOX III.3: **TRENDS IN EXPORT VOLUMES BY DESTINATION**

Figure III.4A
Seasonally adjusted exports by volume and category
(12-month change over moving years)



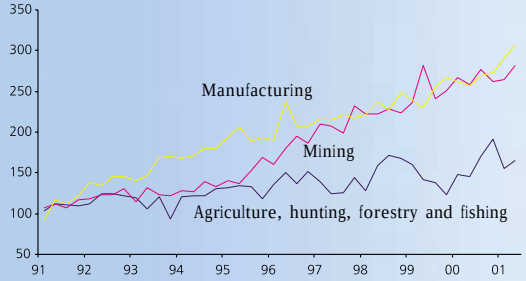
Source: Central Bank of Chile.

Figure III.5A
Seasonally adjusted exports by volume and category
(base 1990 = 100)



Source: Central Bank of Chile.

Figure III.6A
Seasonally adjusted exports by volume and sector
(base 1990 = 100)



Source: Central Bank of Chile.

The noteworthy growth in export volumes has been a fundamental factor driving economic activity in Chile for the past decade.

Despite the turbulence that has affected emerging economies during this period, exports have continued to perform well. In particular, the Asian crisis that developed during the second quarter of 1997 and mainly affected prices, did not in any way restrict the tendency for export volumes to grow. In effect, annualized average quarterly growth of export volumes[9] reached 6.6% for the period starting in the first quarter of 1997 through the second of 2001, 18.0% from the first quarter of 1999 to date. These figures compare with a rate of 11.9% from the first quarter of 1991 to the first quarter of 1997 (Figure III.4A).

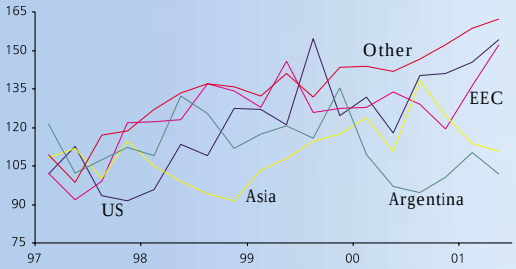
Ongoing growth in export volumes since the nineties continued during 2001, above all during the second quarter, and has more than offset the drop in prices experienced during the first half. This is especially noticeable for non-traditional exports (Figure III.5A), which have experienced strong real increases, during both the first (16% over 12 months) and the second (20% over 12 months) quarters. Particularly outstanding were trends affecting seafoods such as salmon and trout, fruit juice, wooden boards, newsprint, copper wire and potassium nitrate.

An analysis of trends by economic sector (Figure III.6A) reveals that industrial exports have performed more strongly this year and in the previous decade. In this group, non-traditional products such as salmon, bleached wood pulp and methanol performed particularly well, followed by mining exports, with significant increases during the decade, the result of sizeable investment, which in turn boosted copper volumes.

The positive real increase in exports throughout these years has been accompanied by a shift in destination markets, possible to a large degree thanks to how very competitive Chilean products have become. Thus, export volumes to Asia through the second quarter of 2001 had fallen to a level similar to the first quarter of 1997, due to sluggish demand in these countries. Exports to the US, Chile's main trading partner, however, rose significantly during this period. While trends in export volumes to different destinations have generally increased in recent years, smaller increases in exports to Asia have been offset by a strong rise in sales to the US, above all over the past 12 months (See Figure III.7A). The stable character of growth in exports to the European Economic Community also stands out, in the case of copper and other products, as does the gradual but sustained growth in non-traditional exports to all markets except Argentina, which has deteriorated in the past two years (Figure III.8A).

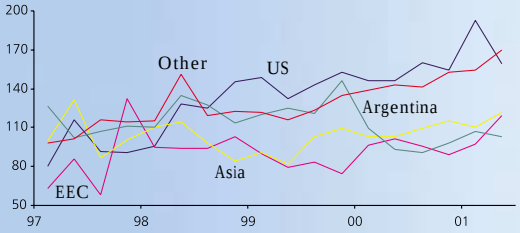
[9] Seasonally adjusted.

Figure III.7A
Seasonally adjusted exports by volume and destination
(base 1996 = 100)



Source: Central Bank of Chile.

Figure III.8A
Seasonally adjusted non-traditional exports by volume and destination
(base 1996 = 100)



Source: Central Bank of Chile.

BOX III.4: **SOURCES OF GROWTH**

Beyond the immediate situation, one issue present in economic debate is what medium-term growth rate can be expected for the economy over the coming years. The Central Bank is particularly interested in this issue, given that it is a key element in evaluating inflationary pressures from factor and goods markets. A central issue in this analysis is growth in total factor productivity, that is, the fraction of economic growth that cannot be explained by capital accumulation or more intensive use of labor. Furthermore, the prospects for labor productivity growth, that is growth in value added per worker, is a key ingredient when it comes to putting real growth in wages into context.

Sources of growth

In theoretical terms, a breakdown of growth into its sources starts with the assumption that value added within the economy comes from a combination of capital, labor and total factor productivity, as a production function with a constant scale of yields:

$$PIB = F(K, L, PTF) = PTF \times K^{\alpha} \times L^{1-\alpha}$$

This shows, moreover, that average labor productivity, a key ingredient in evaluating the performance of real wages, depends on PTF and the relative intensity of capital use: a more capital intensive or more productive economy can pay higher real wages, because average labor productivity is also higher:

$$\frac{PIB}{L} = PTF \times \left(\frac{K}{L}\right)^{\alpha}$$

Table III.3A shows the results of a simple breakdown of sources of growth in Chile, using new information about the stock of capital[10] and projections implicit in this Report. In the past decade and a half, the contribution to economic growth from different sources has varied substantially.

Table III.3A
Sources of growth in Chile from 1986 to 2003
(average annual rate of change)

	GDP	Capital	Employment	PTF	Corrected PTF (1)	Labor productivity
1986 - 90	6.8	3.9	6.0	2.3	0.7	0.7
1991 - 97	8.3	7.7	2.5	4.4	4.3	5.7
1998 - 00	2.7	5.7	-0.1	0.0	0.1	2.8
2001 - 03 (2)	4.7	4.5	1.2	2.0	0.9	3.5

(1) Growth of total factor productivity, adjusted for changes in labor quality, hours worked and rate of capital utilization.
(2) Projections.

Source: Own calculations.

In the late eighties, growth in employment played an important role, which is reflected in the fact that a substantial fraction of aggregate growth at that time was based on the absorption of unemployed labor after the

[10] See Aguilar y Collinao (2001).

1982-83 recession. Capital accumulation and total factor productivity both contributed somewhat less, so that growth in average labor productivity was virtually zero. Then, during the nineties, before the Asian crisis, growth was clearly less intensive in employment, due in part to absorption of idle capacity in the labor market. Growth in capital accumulation and total factor productivity practically doubled, bringing average labor productivity growth to almost 6%. This last factor was key to the significant growth in real wages, in a situation of full employment such as that experienced until 1997.

In recent years, there has been a significant decline in economic growth, first due to financial crises in Asia and Russia and then due to the sharp drop in the terms of trade. This decline in growth did not come with a rapid slowdown in capital accumulation, which reveals that investment rates in recent years, while lower than in 1996 and 1997, would still sustain a reasonable amount of growth in productive capacity. Employment and total factor productivity, however, did slow significantly.

The baseline scenario of this Report assumes that accumulated GDP growth in the coming years, will be based more intensively on employment and total factor productivity than it has been recently. As can be seen, although growth in average labor productivity is expected to remain similar to the average since 1998, the reasons for this growth will change, with growth becoming less capital- and more labor-intensive.

Rate of return on Capital

The estimates above suggest an implicit rate of return on capital. In effect, under general conditions it is assumed that factor (capital and labor) payment is equal to value added:

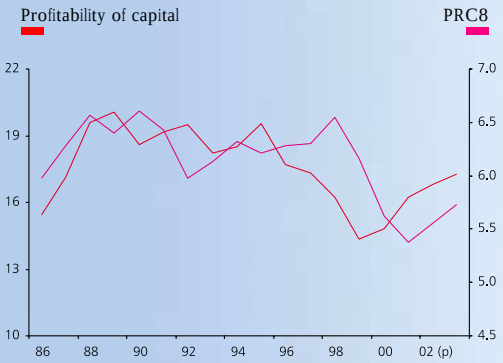
$$PIB = R \times K + W \times L$$

Therefore, the net rate of return (gross rate of return minus the deprecation rate) on capital is:

$$R = \frac{PIB - W \times L}{K} - DEP$$

Figure III.9A provides this rate, along with the return on Central Bank PRCs, corrected for cyclical fluctuations in monetary policy. As can be seen, the recent reduction in long-term interest rates is consistent with a drop in the rate of return on capital, but will tend to turn around in coming years.

Figure III.9A
Profitability of capital and PRC8 rate (1) (2)



(1) Corrected for cyclical changes in TPM.
(2) PRC8 projection based on expectations survey, August 2001.
(p) Projected.

Source: Own calculations.

This section analyzes recent and foreseeable trends affecting prices and their determinants. The performance of different inflation indicators, their trends and main components such as international inflation, the exchange rate and wages are all examined and interpreted.

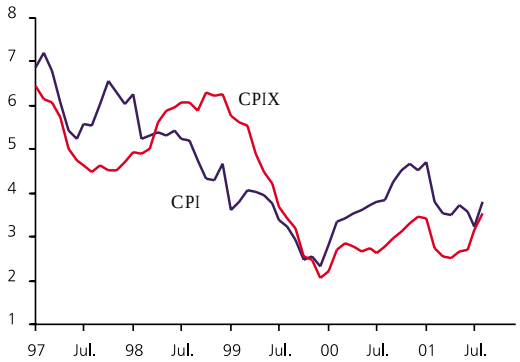
Recent trends in inflation

The combination of increases and decreases in fuel prices, along with an increase in food prices[1] brought inflation to just over 3.5% at the end of the third quarter, a figure similar to where it stood some months ago (3.5%-4.0%) (Figure IV.1 and Table IV.1).

From May to August, the CPIX[2] rose from an annual rate of 2.7% in May to 3.5% in August, the direct result of regulated service fees (public transportation fares and telephone charges) and the price of food.

In the second four months of the year, CPI inflation reached around 3.5%.

Figure IV.1
CPI and CPIX inflation
(percentage change over the same period of the previous year)



Source: National Statistics Bureau.

Tradable goods inflation

The effect of changes in fuel and food prices was most apparent in tradable goods inflation, which remained at almost 3.0% between May and August. Nonetheless, it is expected to fall to around 2.0% toward year's end (Figure IV.2 and Table IV.2).

The CPIXT began to show positive annual growth rates, with this increase in underlying tradable inflation stemming from two main sources: (1) an increase in food prices,[3] and (2) a weakening in the downward trend affecting durable goods prices (Figure IV.3).

Aside from these specific factors, one worrisome element in terms of inflation has been peso depreciation in the past two quarters. Normally, the most important channel for passing depreciation through to inflation is an increase in the costs of imported products and inputs. A higher cost for consumer imports should raise the domestic price of durable goods in particular. Moreover, a higher peso price for inputs purchased abroad should affect the costs of different sectors and services. Despite these transmission channels, passthrough from the exchange rate to end prices has remained low.

One explanation for this phenomenon is that inflation expectations have held steady around the target, so cost increases have not generated a dynamic of price rises that culminates in persistent overall inflation (See Box IV.1). In any case, other elements exist that may explain this low passthrough.

Table IV.1
CPI and CPIX
(annual change)

		CPI	CPIX
2000	Jan.	2.8	2.2
	Feb.	3.3	2.7
	Mar.	3.4	2.8
	Apr.	3.5	2.8
	May	3.6	2.7
	Jun.	3.7	2.7
	Jul.	3.8	2.6
	Aug.	3.9	2.8
	Sept.	4.2	3.0
	Oct.	4.5	3.1
	Nov.	4.7	3.3
	Dec.	4.5	3.4
2001	Jan.	4.7	3.4
	Feb.	3.8	2.7
	Mar.	3.5	2.5
	Apr.	3.5	2.5
	May	3.7	2.7
	Jun.	3.6	2.7
	Jul.	3.2	3.1
	Aug.	3.8	3.5

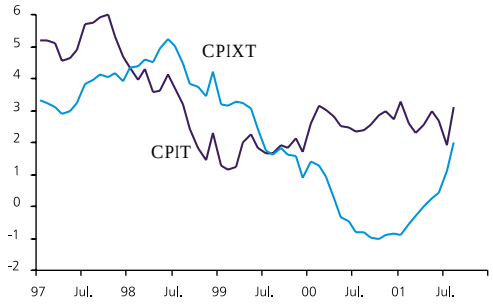
Source: National Statistics Bureau.

[1] This increase was especially apparent in August and affected meat, milk and bread most.

[2] The CPIX excludes perishables and fuels from price measurements.

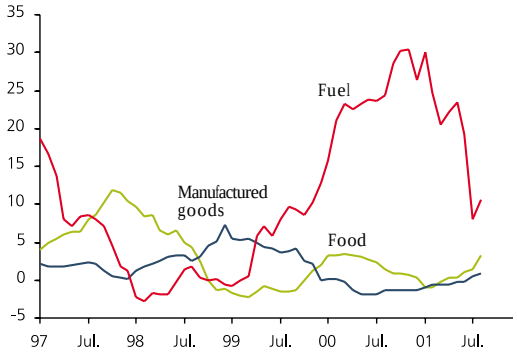
[3] Meat and milk were the main foods included among tradables that experienced price rises this year (6% on average).

Figure IV.2
CPIT and CPIXT
(percentage change over the same period of the previous year)



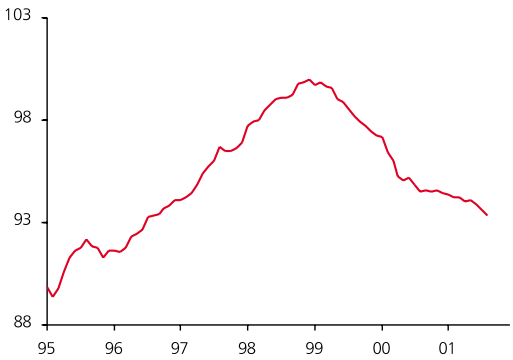
Sources: National Statistics Bureau, Central Bank of Chile.

Figure IV.3
Breakdown of tradable inflation
(percentage change over the same period of the previous year)



Source: Central Bank of Chile.

Figure IV.4
Durable goods CPI
(index December 1998 = 100)



Source: Central Bank of Chile.

Table IV.2
CPIT, CPIXT, CPIN and CPIXN
(annual change)

		CPIT	CPIXT	CPIN	CPIXN
2000	Jan.	2.6	1.4	3.0	2.9
	Feb.	3.1	1.3	3.5	3.9
	Mar.	3.0	0.9	3.8	4.4
	Apr.	2.8	0.3	4.2	4.9
	May	2.5	-0.4	4.6	5.2
	Jun.	2.4	-0.5	4.9	5.4
	Jul.	2.3	-0.8	5.2	5.6
	Aug.	2.4	-0.8	5.2	5.7
	Sept.	2.6	-1.0	5.8	6.3
	Oct.	2.9	-1.0	6.0	6.6
	Nov.	3.0	-0.9	6.3	6.9
	Dec.	2.7	-0.9	6.2	7.1
2001	Jan.	3.3	-0.9	6.0	7.0
	Feb.	2.6	-0.5	4.9	5.4
	Mar.	2.3	-0.3	4.7	4.8
	Apr.	2.6	0.0	4.4	4.6
	May	3.0	0.3	4.5	4.6
	Jun.	2.7	0.4	4.4	4.5
	Jul.	1.9	1.1	4.5	4.8
	Aug.	3.1	2.0	4.4	4.7

Sources: National Statistics Bureau, Central Bank of Chile.

Durable consumption goods

In the case of durable goods, retail margins may be compressed on a permanent basis so this has led to a steady drop in prices for these goods (Figure IV.4), a situation apparent in the fact that the ratio of retail to whole prices (IPC/IPM) fell yet again during the second quarter of 2001 (Figure IV.5). Nonetheless, some precision about the relationship between the performance of margins is in order: (1) In the first place, the prices of durable goods imported from Asia have been negatively affected by depreciation of Asian currencies against the peso and a drop in prices in their countries of origin, thus weakening the impact of peso depreciation against the dollar (See Box IV.2); and, (2) information from SERNAC[4] indicates that in the past year, the cost of credit provided by department stores has not fallen in line with rates within the financial system. During the first half of this year, the credit versus cash price ratio was 1.26 times the cash value,[5] while the relevant interest rate was 20% per year.[6] During the second half of 2000, the credit versus cash price ratio was 1.27 times and the relevant interest rate 23%. Thus, it is possible that the higher import cost for these products was being partially passed along by making credit more expensive rather than through a higher cash price.

[4] This is available in SERNAC studies examining the cash versus 12-month credit prices of television sets, vacuum cleaners, microwave ovens and musical equipment.

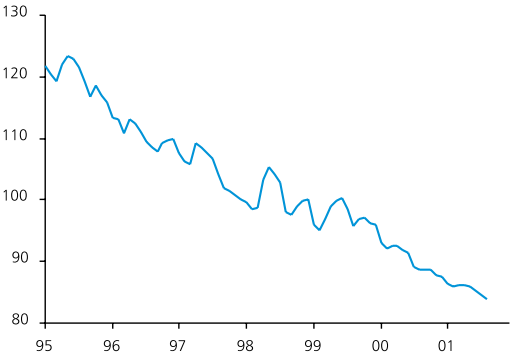
[5] SERNAC used the cash versus 12-month credit price of television sets, vacuum cleaners, microwave ovens and musical equipment.

[6] This is the average interest paid out in non-indexed operations maturing in 90 days to one year, and one to three years.

Figure IV.5
Price of durable goods and clothing corrected for inflation abroad and the exchange rate, and ratio durable price CPI /WPI
(durable and clothing prices in December 98 index = 100, CPI/WPI in %, moving quarterly series average)

Source: Central Bank of Chile.

Figure IV.6
Clothing CPI
(index December 1998 = 100)



Source: Central Bank of Chile.

Figure IV.7
Index of external prices relevant to Chile
(index 1986 = 100)

Source: Central Bank of Chile.

Along with the above, clothing prices[7] continued to fall (Figure IV.6). This was due to structural changes in the sector, resulting from more competition, and lower input costs, especially for elements coming from Asia. Overall, retail margins and prices for these products should remain stable in the medium term.

It is not yet possible to identify inflationary pressures in trends affecting durable consumption goods.

Importable manufactured goods inflation

The strength of the US dollar in international markets has been another factor limiting the inflationary impact of peso depreciation. The Report's baseline scenario has incorporated the effect of the dollar's recent behavior in international markets on world inflation measured in dollars and the prices of goods imported by Chile over the next eight quarters. Through July, the external price index measured in dollars (IPEX) fell at an annual rate of 3.0% and its future performance will be determined by the behavior assumed for the dollar (Figure IV.7). Specifically, external deflation in dollars is expected, while in 2002 and 2003 there should be positive but low inflation.

The baseline scenario assumes external deflation in dollars for this year, with positive but slight inflation over the next two years.

In particular, import prices fell during the second quarter of 2001, to reach levels lower than at the start of the year. The lower oil price was joined by lower prices for intermediate, non-fuel goods [-13%] (Figure IV.8). Prices for consumer goods purchased abroad, meanwhile, rose compared to the previous quarter, although they remain lower (-3.5%) than for the same quarter in 2000 (Figure IV.9).

Wholesale prices

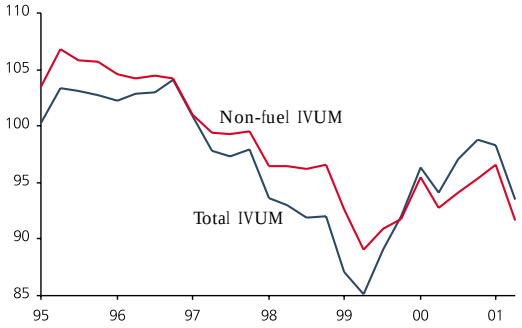
Wholesale prices fell, with some fluctuation, from May to August, pushed by the decline in prices for Chilean products, which more than offset the increased inflation posted by imports. The lower cost of fuel refining and the drop in the copper price pressured the WPI for Chilean products to rise less than it had been doing earlier in the year. At the same time, higher inflation affecting imports is directly linked to the higher exchange rate, an effect that is passed on almost completely to this sub-group within the WPI[8] (Figure IV.10 and Table IV.3).

Annual WPI fell because prices for Chilean products rose less.

[7] This definition includes only clothing, shoes and accessories, eliminating other items usually included here by National Statistics Bureau (INE), such as associated services and other products for making clothing.

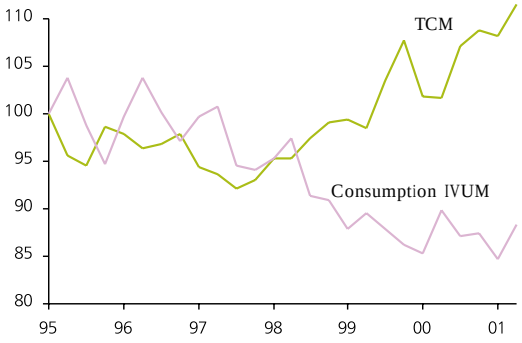
[8] The use of a wholesale price indicator that considered products included in the CPIX (47% of the original WPI basket), reveals annual growth rates that are lower than the aggregate index and, moreover, tend to be slightly lower than consumer prices.

Figure IV.8
Total and non-fuel IVUM
(index 1990=100)



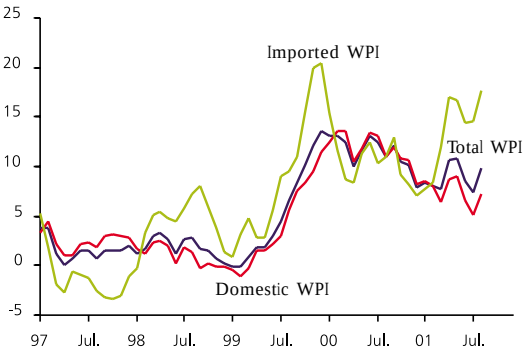
Source: Central Bank of Chile.

Figure IV.9
Consumption IVUM and TCM
(index 1995.I = 100)



Source: Central Bank of Chile.

Figure IV.10
Total WPI, national and imported
(percentage change over the same period of the previous year)



Source: National Statistics Bureau.

Table IV.3
WPI total, WPI domestic products and WPI imported products
(annual change)

		Total WPI	Domestic WPI	Imported WPI
2000	Jan.	13.1	12.4	15.4
	Feb.	13.1	13.7	11.6
	Mar.	12.4	13.6	8.7
	Apr.	9.9	10.5	8.3
	May	11.7	11.8	11.3
	Jun.	13.1	13.3	12.5
	Jul.	12.5	13.2	10.4
	Aug.	11.0	11.0	11.0
	Sept.	12.1	11.9	13.0
	Oct.	10.5	10.9	9.2
	Nov.	10.1	10.7	8.3
	Dec.	7.9	8.2	7.0
2001	Jan.	8.3	8.5	7.7
	Feb.	8.1	8.0	8.3
	Mar.	7.7	6.4	11.9
	Apr.	10.7	8.7	17.0
	May	10.9	9.0	16.7
	Jun.	8.5	6.6	14.4
	Jul.	7.4	5.1	14.6
	Aug.	9.9	7.3	17.6

Source: National Statistics Bureau

Fuel prices

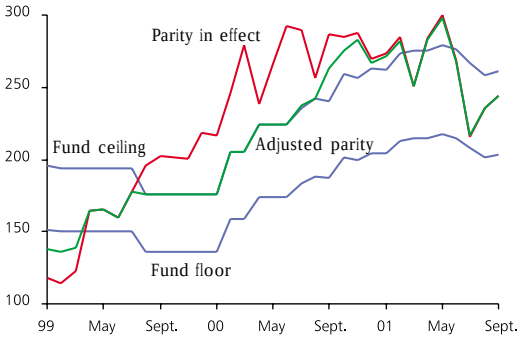
The international fuel price experienced some significant movements during the second and third quarters. Toward mid-July the international price for gasoline had fallen by almost 50% due to lower demand worldwide. From this date onward, it bounced back marginally, which did not offset the previous decline, but did lead to an increase in domestic prices. In the case of car gasoline, the cubic meter cost somewhat more than US$310 in mid-April, reaching around US$245 today, after falling to almost US$200 during the first half of July.

Domestically speaking, between May and July this led to a 75 peso per liter drop in the price of gasoline, which affected the CPI by about 0.6 percentage points. Part of the fall was reversed in August. Something similar happened with the price of liquefied gas, which fell by 14% between April and June, and then rose somewhat in July and August. In the case of kerosene and diesel the changes were smaller.

In the short term, international fuel prices are expected to remain where they are. This is reinforced by the prospects for the oil price toward year's end. The Report's baseline scenario assumes that the Brent oil price per barrel will be US$24 for 2002 and 2003.

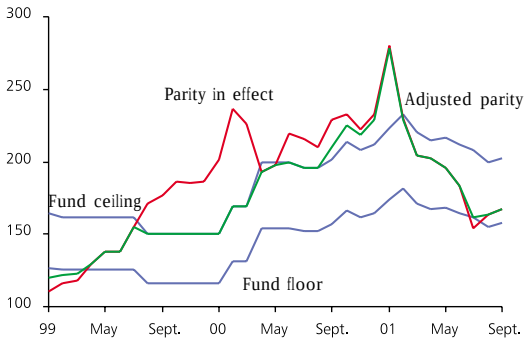
In terms of operations of the Oil Price Stabilization Fund *(Fondo de Estabilización del Precio del Petróleo, FEPP)*, during part of the second quarter

Figure IV.11
FEPP band for gasoline
(US$ per cubic meter)



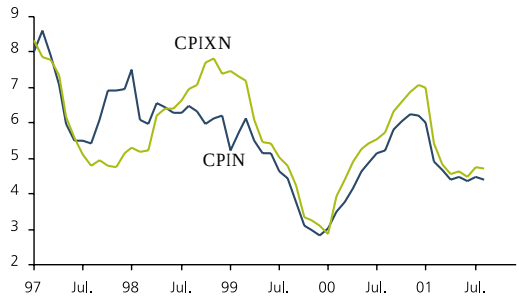
Source: National Energy Commission.

Figure IV.12
FEPP band for liquefied gas
(US$ per cubic meter)



Source: National Energy Commission.

Figure IV.13
CPIN and CPIXN
(percentage change over the same period of the previous year)



Sources: National Statistics Bureau, Central Bank of Chile.

it operated by charging a tax on the price of gasoline and liquefied gas, a situation that reverted somewhat as import parities rose. Currently, the import price on gasoline is closer to the upper limit of the corresponding sub-fund, while the price of liquefied gas is closer to the floor of its respective sub-fund. For kerosene and liquefied gas, import parities are lined up with the central parity for their respective sub-funds (Figure IV.11 and IV.12).

Non-tradable goods and services inflation

Inflation for non-tradable goods as measured by both the CPIN and the CPIXN in recent months remained relatively stable. For the end of this year, the annual rise in both indices is expected to reach 4.0%, given that increases in public transportation will be lower than last year (Figure IV.13, Figure IV.14 and Table IV.2).

Toward year's end inflation for non-tradables should stand at around 4.0%.

Services with regulated fees

The impact of the higher exchange rate was felt most directly in the fees charged for regulated services. Thus, transportation (bus) fares rose by ten pesos in July and September,[9] despite the drop in the fuel price. For now, given the assumption about the behavior of the real exchange rate in the baseline scenario, no further increases are expected right away.

Other service fees also moved during this period. Telephone service charges rose slightly due to peso depreciation, and electric bills are expected to rise in September, with the node price. Moreover, in November, the second of twice-yearly generation price reviews is scheduled. The amount and direction of the adjustment are not known, but electric power sector analysts foresee an increase. Finally, the startup of a new sewage treatment plant will bring an increase in drinking water charges, that should come into effect later this year or early next year.

Peso depreciation has affected the costs of public transportation, telephones and electric power.

Perishable goods

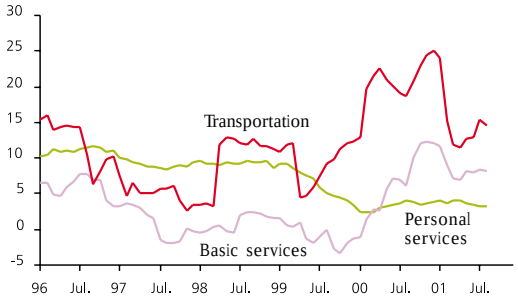
Perishable prices in general performed similarly to their usual seasonal movements within the year. The working assumption for projections for the next few months is that the seasonal cost of this kind of good will behave as usual in the coming months (Figure IV.15).

Wages and labor unit costs

As with nominal wages, rising costs for personal services incorporated into the CPI remained stable in recent months. In August, the 12-month increase reached 3.2%, somewhat less than the 3.6% registered in May.

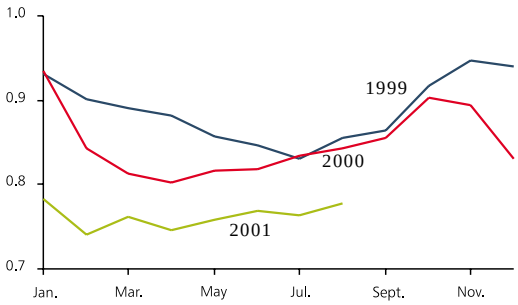
[9] This increase may be reviewed in coming months, depending on the behavior of the exchange rate and the price of diesel oil.

Figure IV.14
Breakdown of non-tradable inflation
(percentage change over the same period of the previous year)



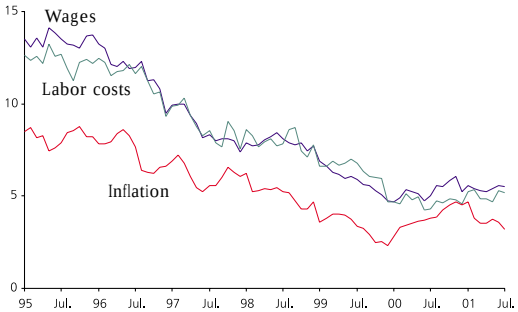
Source: Central Bank of Chile.

Figure IV.15
Perishable prices and CPI



Source: National Statistics Bureau.

Figure IV.16
Wage indices, labor costs and inflation
(percentage change over 12 months)



Source: National Statistics Bureau.

In July 2001, the nominal wage index developed by the INE reached 5.5% annually, while the nominal cost of labor index rose 5.2% in annual terms. The public sector wage index rose 6.1% annually in July. In general terms, this behavior by nominal wages reveals the effects of automatic cost of living indexation clauses, so in the coming months the acceleration in private wages is expected to remain in line with observed inflation during the first half of 2001 (Figure IV.16).

In July, the real cost of labor index posted an annual increase of 1.9%, more than during the first quarter of 2001 (Figure IV.17). The cost of labor corrected using the implicit GDP deflator posted 0.7% annual growth.[10] Despite this tendency to slow down, real wages are still growing rather fast (Figure IV.18). Nominal unit labor costs[11] on average have tended to rise slightly since the end of last year (Figure IV.19). In manufacturing, in any case, the process has been the reverse.

The inflationary impact of wages is low due to the increase in average labor productivity.

Prospects for the fourth quarter of 2001 and the first quarter of 2002

During the fourth quarter of 2001, annual inflation will gradually fall, to end the year at around 3%. The incorporation in the basis for comparison of higher fuel and transportation prices as occurred during the last part of 2000 will lead to this decline. For the end of the first quarter of next year, annual inflation is expected to pick up. In any case, this situation is subject to degrees of uncertainty about the exact timing and magnitude of the passthrough to prices of recent peso depreciation. Moreover, perishable prices are not expected to fluctuate beyond their normal seasonal movements during the summer months.

Inflationary pressures in the labor market are under control. The increase in average labor productivity has partly offset the effect of wage increases over inflation.

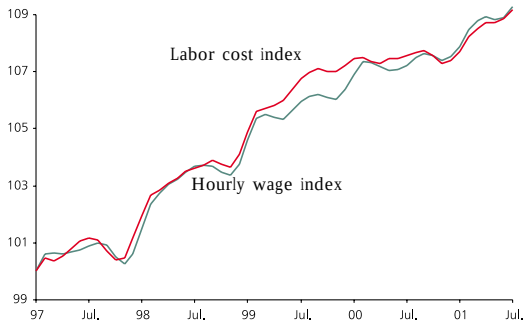
In the longer term, the differential between the Central Bank's discountable promissory note maturing in one year (PDBC-360) and the zero coupon indexed bonds or TAB over the same period indicates that inflation expectations are in line with the center of the target range of 3%. The August survey of expectations reveals a similar situation, with inflation at 3.0% in December of this year, rising to 3.3% in December of next year, then falling back to 3.0% at the end of 2003 (Table IV.4, Figure IV.20).

Fuel and food price movements generated more volatility within annual inflation between May and August 2001. Nonetheless, these are expected to fall to 3.0% toward the end of this year and the beginning of the next. This trend is consistent with cost pressures within the economy.

[10] This deflator is more accurate given that by excluding imports it only examines domestic production.

[11] This is defined as the cost of labor divided by average productivity.

Figure IV.17
Wages and labor costs
(Real index, January 1997 = 100)



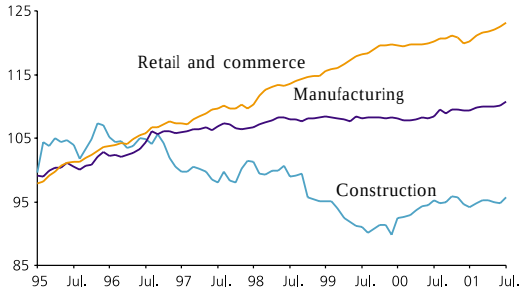
Source: National Statistics Bureau.

Table IV.4
Interest on nominal instruments of the Central Bank of Chile and inflation premium
(monthly average; percent)

	2000 Sept.	Oct.	Nov.	Dec.	2001 Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.
PDBC													
to 90 days	10.3	11.5	10.9	9.3	8.3	8.1	6.1	8.6	8.7	6.7	6.4	7.1	7 2
to 360 days	10.3	10.7	10.6	10.0	9.0	8.4	7.5	7.9	8.0	7.8	7.4	7.9	8 1
Premium PDBC 360 over zero coupon to one year	4.5	4.8	4.8	4.2	4.1	3.8	3.5	3.4	3.7	3.7	3.6	3.2	3 5
Inflation expectations survey													
December 2001	3.8	3.8	3.9	3.8	3.7	3.5	3.2	3.1	3.5	3.4	3.3	3.0	n.d.
December 2002	3.5	3.5	3.5	3.4	3.5	3.3	3.0	3.0	3.0	3.0	2.9	3.3	n.d.
December 2003											3.0	3.0	n.d.

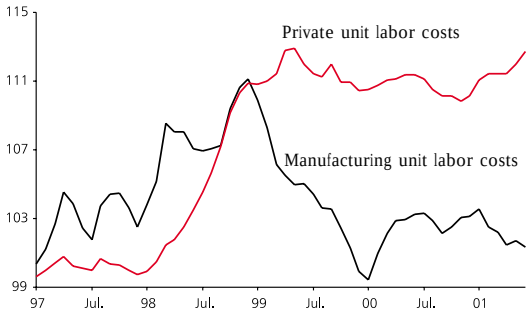
Source: Central Bank of Chile.

Figure IV.18
Real wages by sector
(January 1995 = 100)



Source: National Statistics Bureau.

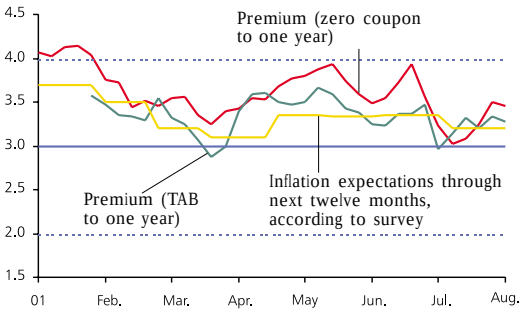
Figure IV.19
Unit labor costs (1)
(moving quarterly average, January 1997 = 100)



(1) Ratio between the nominal cost of labor for the private sector and seasonally adjusted average labor productivity (IMACEC/Employment).

Sources: National Statistics Bureau, Central Bank of Chile.

Figure IV.20
Premium paid on 1-year nominal versus indexed notes and expectations survey for the same period (1)
(percent; weekly average)

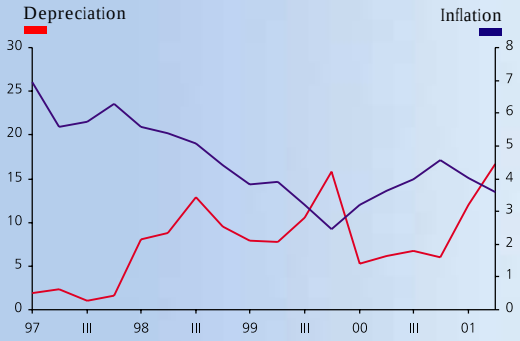


(1) Includes risk premium.

Sources: Central Bank of Chile, Association of Banks.

BOX IV.1: **PASSTHROUGH FROM DEPRECIATION TO INFLATION**

Figure IV.21
Inflation (CPI) and annual depreciation (peso/US$)
Chile



Sources: National Statistics Bureau and Central Bank of Chile.

A significant aspect of the Chilean economy in the past three years is that significant peso depreciation has not led to higher inflation. Figure IV.21 shows that inflation and the depreciation rate have clearly diverged in recent quarters, with peso depreciation accompanied by lower inflation. This Box will review international evidence in this sense, focusing on the experience of several countries where monetary policy is similar to Chile's, before going on to analyze the relationship between expectations about depreciation and inflation in the past year and a half in Chile.

International evidence

This phenomenon of a passthrough coefficient that is less than one has also occurred elsewhere. A study by Borensztein and De Gregorio (1999), covering 41 episodes of exchange rate crises occurring from 1972-1994, found that the passthrough coefficient is not 1:1 over a two-year horizon: 30% of the initial devaluation is offset after three months and only 60% after two years. This means that changes in the real exchange rate usually last a long time. The authors indicate that the inflationary effect after a devaluation depends to a crucial degree on the initial level of inflation. In the episodes under study, low initial inflation was associated with an appreciated real exchange rate and a significant current account deficit. Thus, devaluations tended to correct imbalances existing in the economy instead of producing an inflationary spiral.

A study by Goldfajn and Werlang (2000), which examined 71 countries from 1980-1998, also confirmed that the passthrough coefficient was not 1:1. Table IV.5 indicates that a 10% rise in the nominal exchange rate produces a 1.6% increase in inflation after three months and 7% after 18 months. This result is critically dependent on the geographic region. For example, the region with the lowest passthrough coefficient is Australia and New Zealand. In contrast, the Americas showed the highest coefficient, reflecting the depreciation-inflation spiral experienced in the past by some Latin American countries. This result provides an added element for explaining the low passthrough coefficient. Countries such as Australia and New Zealand have successfully kept inflation low thanks to well-focused monetary and exchange rate policies based on inflation targeting and a floating exchange rate.

Table IV.5
Passthrough coefficient by region

Months	Total	Europe	Africa	Americas	Australia and New Zealand	Asia
1	0.012	0.018	0.018	0.013	0.002	0.093
3	0.169	0.116	0.159	0.199	0.051	0.166
6	0.426	0.211	0.343	0.539	0.092	0.367
12	0.732	0.360	0.643	0.692	0.158	0.712
18	0.701	0.460	0.520	1.240	0.193	0.841

Source: Goldfajn and Werlang.

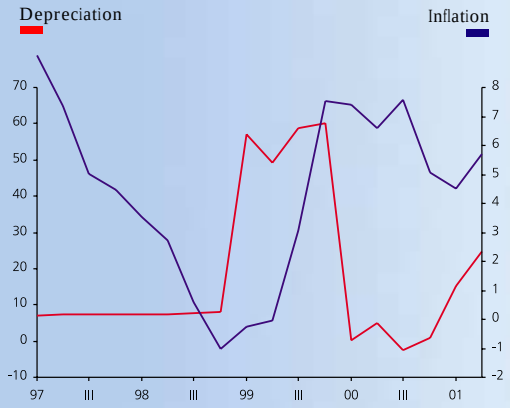
Figure IV.22
Inflation (CPI) and annual depreciation (AUD/US$)
Australia

Sources: IMF and Bloomberg.

Country experiences

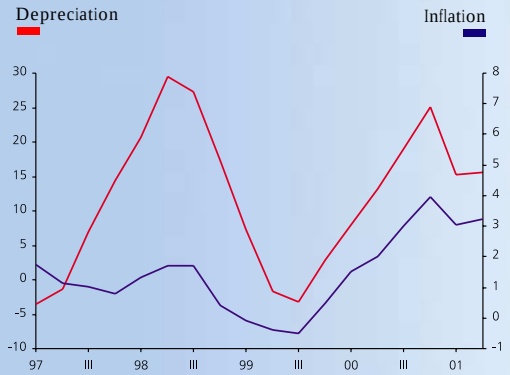
Figures IV.22, IV.23 and IV.24 show inflation and annual depreciation for three countries that have adopted inflation targeting with a floating exchange regime. In New Zealand and Australia depreciation has reached as high as 25% without producing significant fluctuations in inflation, which has

Figure IV.23
Inflation (CPI) and annual depreciation (Real/US$)
Brazil



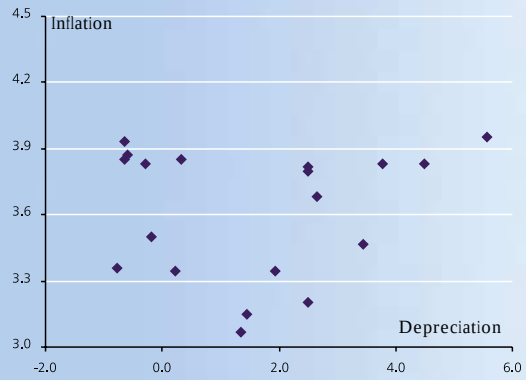
Sources: IMF and Bloomberg.

Figure IV.24
Inflation (CPI) and annual depreciation(NZD/US$)
New Zealand



Sources: IMF and Bloomberg.

Figure IV.25
Anticipated inflation and depreciation through one year



Source: Central Bank of Chile.

remained within the target range defined by their central banks. In the case of Brazil, after turbulence in 1999, inflation remained stable despite depreciation of the real.

Chile: Target inflation, expectations and the passthrough coefficient

From the theoretical perspective, inflation's impact on the passthrough coefficient can be explained among other factors by market structures. In an economy with low inflation, a change in the price of a good is more easily perceived as a change in relative prices, which has more effect on demand and market share (Goldfajn and Werlang 2000 and Taylor 2001). As a result, the costs of increasing prices may be high for a company if its market share influences total profits. Consequently, a reduction in inflation should lead to a reduction in the passthrough coefficient.

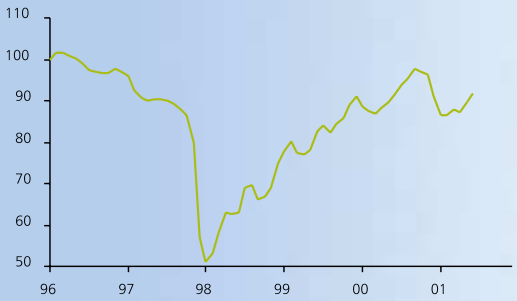
The above is more likely to occur if the Central Bank applies an inflation target that influences inflation expectations. This way economic agents do not completely transfer a cost increase to prices, because their expectations regarding inflation are lower. Figure IV.25 illustrates this point. Expectations about peso depreciation through one year have fluctuated strongly in recent months, while expectations about inflation have remained stable.[12] Even in recent months both variables have moved in opposite directions: expectations of inflation have started to fall while expectations of depreciation have risen.

Meanwhile, the effect of the inflation target on the passthrough coefficient rises if the economy is growing at a rate under its potential growth level. In effect, lower demand affecting each company reinforces the negative impact of a price increase of its market share. Thus, firms tend to postpone price increases until the cycle has reached a more expansive stage.

[12] As identified by the Central Bank's survey of expectations.

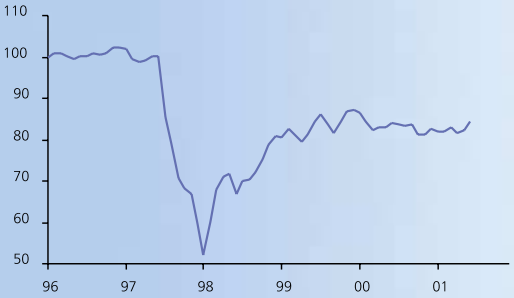
BOX IV.2: **PRICE OF DURABLE IMPORTS FROM ASIA**

Figure IV.26
Exchange rate Chilean peso – Korean won
(index January 1996 = 100)



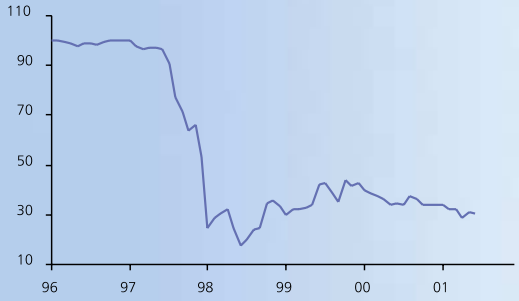
Source: Central Bank of Chile.

Figure IV.27
Exchange rate Chilean peso - Thai baht
(index January 1996 = 100)



Source: Central Bank of Chile.

Figure IV.28
Exchange rate Chilean peso – Indonesian rupiah
(index January 1996 = 100)



Source: Central Bank of Chile.

The higher exchange rate has provoked concern about its possible impact on the prices of imports, especially durable goods. This has become more prominent in a scenario that assumes the ongoing contraction of retail margins as a result of depressed demand.

Nonetheless, in the case of durable consumption goods – most of them from Asia – further cost pressures due to peso depreciation against the dollar cannot be clearly established. Import prices for this type of good from Asia have fallen, the result of the peso's appreciation against these countries' currencies, on one hand, and the lower price in local currency of these same goods. In this section we will review the case of three markets from which Chile imports this type of good. One is Korea, which accounts for a large share of this kind of product.[13]

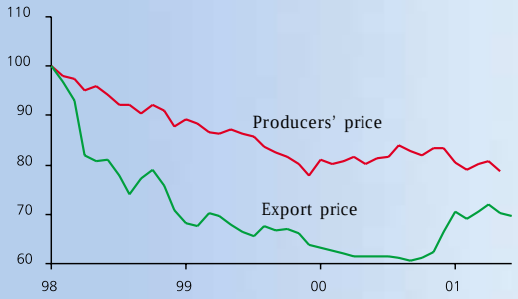
From 1996 to July 2001, the peso depreciated 60% against the US dollar, while Asian currencies depreciated even more. The Korean *won* lost 65% of its value against the dollar during this period, although it appreciated during 1999 and 2000, thus offsetting some of the 116% depreciation that occurred through January 1998. A similar situation affected the Thai *baht,* which lost 70% of its value against the US dollar from January 1996 to July 2001, performing similarly to the Korean currency during this period. Indonesia's *rupiah* depreciated even more, by 400%, during the same period. In summary, from the perspective of the exchange rate, in recent years the Chilean peso has grown stronger against the Asian currencies, which has reduced the cost of imports from these markets, to the degree that countries transfer depreciations to lower dollar prices (Figures IV.26, IV.27 and IV.28).

Furthermore, the prices of durable goods in their markets of origin have fallen significantly in recent years, a trend that is attributable as much to changes in production conditions as it is to marketing strategies. In Korea's case, the producer's price index for durable consumption goods fell by 21% from January 1998 to May of this year. For Thailand, this fall reached 3% and for Indonesia 9%, during the same period. In terms of export prices for these goods, measured in dollars, the markets of Korea and Indonesia show a drop of 30% and 40%, respectively, from January 1998 to date, which tends to validate the hypothesis that depreciation can lead to lower dollar prices. In Thailand, in contrast, these prices tended to increase by somewhat less than 50% during the same period. For the future, this tendency for the production prices of durable goods to fall in their markets of origin will probably continue, to the degree that new technological changes and productivity improvements continue to be incorporated into production (Figures IV.29, IV.30 and IV.31).

In summary, while peso depreciation against the dollar introduces additional pressures on the prices of durable goods due to the upward pressure from import costs, other elements work in the opposite direction: the appreciation of the Chilean peso against the currencies of other countries from which these goods are imported and the lower price at the producer level in markets of origin.

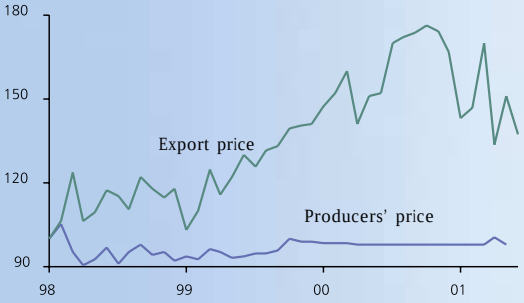
[13] During the first half of this year, 20% of imported consumer goods were from Korea.

Figure IV.29
Producers' prices durable good export prices in Korea
(index January 1998 = 100, export price in dollars, producers' price in local currency)



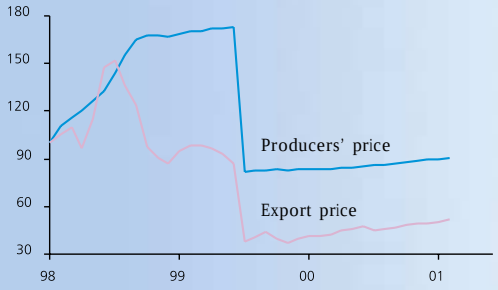
Source: Bank of Korea.

Figure IV.30
Producers' prices and durable good export prices in Thailand
(index January 1998 = 100, export price in dollars, producers' price in local currency)



Source: Bank of Thailand.

Figure IV.31
Producers' price and durable good export prices in Indonesia
(index January 1998 = 100, export price in dollars, producers' price in local currency)



Source: Bank of Indonesia.

This section presents the Board's evaluation of the prospects for the Chilean economy over the next two years, as analyzed during the Monetary Policy meeting on 6 September 2001. It provides projections for inflation and economic growth and examines the most significant risks. These projections assume that the monetary policy rate will remain at 6.5% over the next eight quarters (as set at the meeting). Moreover, projections depend on the series of events that together make up the baseline or most probable scenario. New information will modify this scenario and associated projections. Forecasts are presented in the form of confidence intervals in order to reflect future sources of risk to monetary policy.

Baseline scenario: Main assumptions

International scenario

The prospects of a recovery in the world economy appear to be receding and becoming more uncertain. The average growth projection for Chile's main trading partners, on the basis of *Consensus Forecasts*, is an estimated 1.5% for 2001, a percentage point below projections from previous months. The main reason is the downward adjustment of growth projections for Japan and the USA. The projection for world growth in 2001, measured by purchasing power parity,[1] is 2.6%, down from the 3.3% forecast in the previous Report.

Deterioration in the Asian economies, most notably Japan's, has had a strong impact on the price of copper, which is now expected to average 73 cents per pound in 2001, and then recover gradually over the next two years. Other commodity prices, such as wood pulp, have also been affected by the weakness of the world economy. On the positive side, the price of oil has moved into line with the projections of earlier months, and should reach around US$24 a barrel in 2002 and 2003.

Prospects for the terms of trade have thus been drastically revised downwards, and are forecast to fall by around 6.0% this year, then recover gradually in 2002 and 2003 by an average 2.4% a year.

Chile's trading partners will grow by an estimated 1.5% this year.

Capital flows into Chile are likely to remain limited, according to estimates from several investment banks. Argentina's difficult fiscal situation and the significant depreciation of Brazil's *real* have increased instability in emerging economies. In the short term, volatility is expected to persist until trends affecting the Argentine economy become clearer.

[1] World economic growth weighted by purchasing power parity (PPP) is higher than the figure for growth for Chile´s main trading partners because of the different weighting for the participation of Asia. China´s, whose growth rate is high, has a considerably higher share in world GDP than in Chilean exports. By comparison, Japan´s share in Chilean exports more than doubles its share in world GDP by PPP because of its much lower growth.

International financial markets have tended to distinguish Chile from other emerging economies, and its sovereign risk premium should remain at around 175 basis points over the coming quarters, with a slight reduction in 2002. The current phase of more expansive money in the world economy will also continue in coming months, in line with lower growth estimates. Futures markets are anticipating further cuts in the Federal Reserve's reference rate, to be followed by increases, consistent with a pick-up in the US economy during 2002.

Although the euro has appreciated in recent weeks, the dollar's strength so far this year suggests that the Chilean economy will see a drop in dollar prices abroad during 2001. This situation should revert somewhat in the next two years.

The terms of trade will fall by an estimated 6% this year, to recover gradually in 2002 and 2003.

Interest rates and exchange rate

The baseline scenario assumes that the monetary policy rate will remain stable at 6.5% over the next 24 months. This is not a projection but a methodological assumption, which makes it possible to evaluate the coherence of current monetary policy against its medium-term inflation target.

In general, the market anticipated the cuts made to the monetary policy rate from January onwards, as is apparent in the ongoing decline in rates, both nominal and real, for all maturities, up until March. Thereafter they tended to stabilize, with some fluctuation more recently under the impact of the recent nominalization of monetary policy, and instability in Argentina. September's survey of private expectations suggests that the market expects the monetary policy rate to remain the same until year's end, and then to rise by around 100 basis points in 2002. The figures show the market has incorporated expectations that inflation will remain at around the target range for 2002 and 2003, and that domestic demand and GDP will grow at rates similar to those forecast in this Report.

The baseline scenario assumes the monetary policy rate will remain steady at 6.5% over the next 24 months

The future performance of the exchange rate has been a matter of public debate recently. From January until end-August the bank rate depreciated by 15.4% in nominal terms, representing a real depreciation of about 14%. Movement either upwards or downwards is undoubtedly hard to predict within a floating system such as this one. But the Board believes that – in line with the assumptions in its baseline scenario for a recovery in the world economy and the terms of trade, together with more economic activity and increased domestic expenditure – the exchange rate will tend to appreciate in real terms over the next eight quarters in relation to its average level in August.

Fiscal policy

Projections incorporate information from the 2001 budget and its execution in the first half- year. Since the growth rate and the copper

price are both lower than forecast, the fiscal deficit is likely to be higher than originally projected, closer to 0.5% of GDP. Moderate increases in spending with a macroeconomic impact up to mid-year suggest that fiscal policy will be more significant in driving activity in the second half.

Productive capacity

Changes in the gap between demand and productive capacity are important in determining future inflationary pressures. Productivity performance is judged by historic trends, adjusted for those factors that may modify them, such as variations in investment rates.

Current levels of fixed investment and projections for the next two years suggest capital stock will expand moderately. Overall productivity factors, which fell throughout 1998 and 1999, should grow by around 1.5% over the coming years.

Productive capacity can thus be expected to grow at rates close to 5% over the next two years. In the short term, growth on the supply side will not restrict growth in demand or the control of inflation because idle capacity remains, particularly in the labor market, to be absorbed gradually over the next two years.

Transitory price factors

In the third quarter, domestic fuel prices have been volatile, but total overall retail price inflation and underlying inflation have stayed within the target range. Further ahead, tariff adjustments are expected in regulated sectors, in particular, utilities and public transport.

Inflation and growth in the baseline scenario

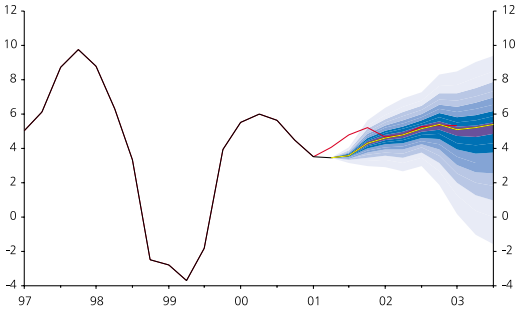
Growth

All available information suggests that activity and expenditure will both slow during the second half of 2001 compared to their growth rate at the beginning of the year, because of weaker than expected investment, particularly in re-stocking.

But several factors suggest that the economic slowdown that began in mid-2000 should touch bottom in the second half of this year. Manufacturing sales and production show significant rates of annual growth and money remains well above levels at the beginning of the year. The external sector seems to be reacting to real peso depreciation; non-traditional exports have grown significantly in the first half. However, the worsening international scenario has affected the domestic economy in the form of lower national income and the uncertainty resulting from the instability affecting other regional economies. Both factors have led to consumption being postponed.

Growth in 2001, 2002 and 2003 will therefore be driven mainly by investment and the external sector. Consumption will pick up only gradually; the decisive factor remains job stability, with only the most

Figure V.1
Quarterly GDP growth scenarios (1)
(percentage change over the same quarter of the previous year)



(1) The figure shows the baseline projection (yellow line) and the confidence interval for the respective forecast horizon (colored zone).
Confidence intervals of 10%, 30%, 50%, 70% and 90% are used. These confidence intervals summarize the Central Bank's risk assessment for future economic growth, on the assumption that the monetary policy rate will remain at a nominal 6.5% for the next two years.
The red line indicates the projection in May 2001.

Source: Central Bank of Chile.

recent surveys suggesting some recovery. Along with demand projections, the baseline scenario also makes some assumptions about trends in the mining and fishing industries and power generation, which in the short term will fluctuate considerably for reasons unrelated to the economic cycle.

These factors are behind the baseline scenario projection that growth will average 5% in the next eight quarters, from the fourth quarter of 2001 to the third quarter of 2003. In the short term, it should reach 3.7% in 2001, increasing to 5% in 2002, and 5.3% in 2003, on a rising curve throughout the projection horizon (Figure V.1.). Domestic demand will grow only 2% this year, then recover to an average 6.5% in the next two years. The current account deficit is expected to reach 2.6% of GDP in 2001 and almost 2.0% in 2002 and 2003.

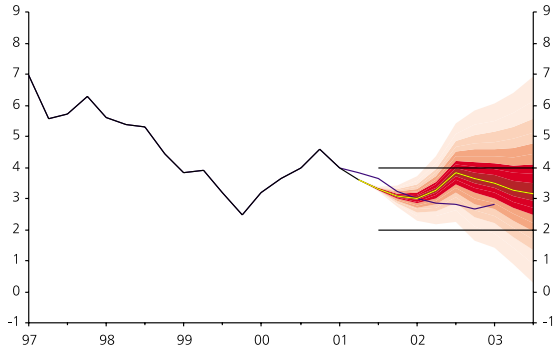
This analysis, as usual, forms only the baseline projection scenario and is based on the assumptions the Board considers most probable. Alternative events could lead to growth rates that differ from those in this scenario, as will be analyzed in more detail in the balance of risks.

Inflation

The monetary policy stance sets the pattern for inflation in the medium and long term, but it has a less obvious and more variable impact on short-term inflation, which is influenced by a broad range of factors. These include underlying price trends, exchange rate movements, labor cost pressures, changes in sales margins, the degree of competition in end-markets, regulated service tariffs, probable growth rates, and pressures from demand.

From the second quarter onwards, monetary aggregates have grown vigorously, a situation usually associated with a speed-up in activity. The broadest aggregates and lending, however, have grown less strongly than money during 2001, and this trend is expected to continue in 2002.

Figure V.2
Inflation (CPI) projection (1)
(percentage change over the same quarter of the previous year)



(1) The figure shows the baseline projection (yellow line) and the confidence interval for the respective forecast horizon (colored zone). Confidence intervals of 10%, 30%, 50%, 70% and 90% are used. These confidence intervals summarize the Central Bank's risk assessment for future inflation, on the assumption that the monetary policy rate will remain at a nominal 6.5% for the next two years.
The blue line indicates the projection in May 2001.

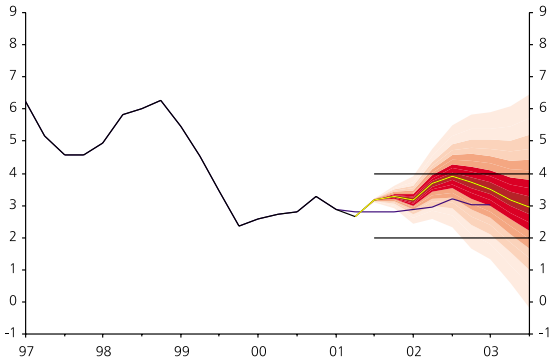
Source: Central Bank of Chile.

Nominal wages, measured by the National Statistics Bureau (INE), show the impact of backward indexation as a major factor in inflation, particularly in the private sector. Continuing high unemployment has reined in wage increases only slightly, revealing the degree of downward inflexibility in wages in the Chilean economy. This makes sectoral adjustments more difficult and delays the re-absorption of the jobless into the labor market. A rise in average labor productivity has limited wage impact on inflation, however.

Annual inflation has remained within the target range since February, indicating that the depreciating exchange rate has had little impact on prices. Specific reasons could be the dollar's strength in international markets and the falling price of consumer durables in Asian markets. Expectations for medium-term inflation rates are close to the target, according to the Central Bank's monthly survey, and this is borne out by the expectations implicit in nominal interest rates.

These elements form the basis for the inflation projection over 12 months for the CPI and the underlying inflation rate, assuming the monetary policy rate remains constant at 6.5%. The target for price stability is set in terms of the CPI. But the Board also takes into account trends in

Figure V.3
Underlying (CPIX) inflation projection (1)
(percentage change over the same quarter of the previous year)



(1) The figure shows the baseline projection (yellow line) and the confidence interval for the respective forecast horizon (colored zone).
Confidence intervals of 10%, 30%, 50%, 70% and 90% are used. These confidence intervals summarize the Central Bank's risk assessment for future inflation, on the assumption that the monetary policy rate will remain at a nominal 6.5% for the next two years.
The blue line indicates the projection in May 2001.

Source: Central Bank of Chile.

underlying inflation, measured by the CPIX, to evaluate the impact of demand pressures on prices more precisely. Annual inflation projections are presented as probability distributions across the forecasting horizon, i.e. from the fourth quarter of 2001 to the third quarter of 2003 (Figures V.2 and V.3).

Recent peso depreciation should have some impact, so inflation is expected to speed up in the coming quarters, but to stay within the target range. Annual inflation is expected to reach almost 3.1% by year's end, 3.5% in 2002, and 3.0% at the end of 2003. In the baseline scenario, CPIX inflation is projected to reach 3.4% in December of this year, 3.6% for end-2002, and 3% for December 2002. Over the next eight quarters, annual inflation as measured by the CPI and the CPIX will average 3.45%.

Balance of risks

This baseline scenario describes the most probable path to be followed by inflation and economic growth, based on the working hypotheses of a constant monetary policy rate and the other economic and financial developments mentioned. However, risk factors exist that could change this scenario and the future course of inflation and growth. Some alternative scenarios, which may be relevant to the direction of future monetary policy, are examined in the following sub-section.

On the external front, the main threat continues to be the magnitude of the slowdown in the world economy and its impact on the terms of trade. There are still doubts over the timing of the recovery in the US economy, and this more complicated international scenario would negatively affect the Asian economies and the price of Chile's main exports.

Unforeseen events could significantly change the expected pace of world economic growth and thus the timing and scope of future monetary policy decisions in the US or the euro zone, and this would also affect Chile's exchange rate. Similarly, the baseline scenario forecasts that emerging financial markets will remain unstable at least in the short term. This is important because although the main financial variables for Chile (except the exchange rate) remain relatively immune to contagion, a major crisis in the region would nevertheless have a significant impact. In this kind of scenario, external financing would become even scarcer and as a result the exchange rate would temporarily suffer additional depreciation.

The timing and scope of the impact of recent peso depreciation on inflation can only be evaluated in general terms so far, and adds more uncertainty to doubts about the exchange rate's future performance. It may also affect inflation expectations in the medium term, although it has not appeared to do so to date.

On the domestic front, activity is expected to pick up in the coming quarters, but expenditure will remain cautious. The more relaxed monetary conditions of recent months, money's steady recovery and some real sector indicators support this projection. These conditions are expected to develop more strongly in the coming year, but are obviously contingent on the performance of the world economy.

The probability of these scenarios occurring may reflect bias in projections for both inflation and growth. There is still no guarantee of a sustained

recovery in activity and domestic expenditure, and a rally in the world economy has been delayed. The Board believes that, in light of all available information, both factors suggest that the scenario of lower future growth in Chile is slightly more probable than other scenarios. As a reference point, the confidence interval with a 50% probability of occurring suggests growth will range from 4.0% to 5.9% in 2002, and from 2.7% to 6.8% during the first three quarters of 2003.

The probability distribution for the annual inflation rate over the next one to two years, assuming the same monetary policy rate, appears in Table V.1. The table contains the same information as Figures V.2 and V.3, and reveals variability around the inflation projection as a result of volatility affecting specific prices and the exchange rate, as well as uncertainty over growth projections. On this last point, an alternative scenario of weak economic growth would see exchange rate depreciation persist, thus partly offsetting reduced direct inflationary pressures resulting from a larger gap between capacity and employment. Also, a renewal of major turbulence in international financial markets cannot be ruled out. In light of these factors, the Board believes that the balance of risks is biased upward.

In the case of the 12-month inflation projection measured by the CPI, confidence intervals range from 3.1% to 4.5% for the third quarter of 2002, and from 1.9% to 4.6% for the four subsequent quarters. For underlying inflation measured by the CPIX, confidence intervals range from 3.1% to 4.5% in the next four quarters, and from 1.9% to 4.6% for the following12 months. Values above these ranges are possible but less likely as they move away in either direction.

The working hypothesis of the fixed monetary policy rate is essential to correctly interpret these probability distributions and the risks facing baseline projections for inflation and growth. This distribution reflects the probability of changes in *inflation projections*, not actual inflation, since it does not take into account the monetary policy response to the latter. In fact, if the revisions to projections proved substantial, they would require adjustments to monetary policy to keep inflation stable and in line with the medium-term target. These probabilities do not therefore reflect the real behavior of inflation but rather evaluate risks relevant to the course of future monetary policy.

TABLE V.1
Inflation scenarios

		Inflation ranges			
		2% or less	2% to 3%	3% to 4%	4% or more
		(percent)			
Inflation					
	2002.III	3	17	38	42
	2003.III	27	21	17	34
Underlying CPIX inflation					
	2002.III	3	17	38	42
	2003.III	27	21	18	35

(1) Average inflation represents average annual change in CPI.

Source: Central Bank of Chile.

Growth-related risks are believed to be biased downward, while those related to inflation are upwardly biased.

Other projections

Other projections can be made using methodological assumptions other than the monetary policy rate remaining constant at current levels. Trends implicit in the expectations survey in the baseline scenario would produce inflation and growth projections for 2002 that are somewhat lower than those in the Report, because the market expects the monetary policy rate to rise early next year.

Conclusion

The Board believes the current direction of monetary policy is consistent with the aim of keeping inflation within the target range. Projections within the main scenario show that, despite a temporary increase in mid-2002, inflation as measured by the CPI will be close to 3% at the end of the forecasting horizon. Economic growth will reach 3.7% in 2001 and average somewhat more than 5% in 2002 and 2003.

However, it is important to stress the conditional nature of these projections. Currently some risk factors could change the future path of inflation, but it is hard to weigh their impact using available information. This means that during upcoming meetings the Board will pay special attention to evaluating three main areas: first, the situation in the world financial markets, and in particular in emerging economies; second, developments in the world economy and the price of Chile's main exports; third, trends in the domestic economy, in particular, consumption and employment, all factors that make it possible to evaluate domestic expenditure growth and inflationary pressures. As always, the Board will react flexibly to any event that could threaten meeting its inflation target, which is monetary policy's fundamental contribution to economic and social progress.

BOX V.1: COMPARATIVE ANALYSIS OF MONETARY POLICY REPORT PROJECTIONS SEPTEMBER 2001 VERSUS SEPTEMBER 2000

The unexpected slowdown in GDP and domestic demand led the Central Bank to begin a series of cuts in the monetary policy rate from the end of August onwards. Since then, the Central Bank has cut the policy rate eight times, by a total of 150 basis points.

In September 2000, Monetary Policy Report projections were largely based on the assumption that interest rate cuts at the end of August of that year would boost aggregate demand and expectations, bringing a gradual recovery in employment and investment. Similarly, an international scenario in which the world economy was expected to remain strong, growing at 4% per annum in 2001 and 2002, and improvements in international financing conditions, suggested a more optimistic future for the Chilean economy.

One year ago, specific price rises associated with large increases in the price of oil from the beginning of the year were expected to affect inflation only temporarily. On that basis, the CPI was projected to reach 4.6% per annum and the CPIX 3.5%, levels similar to those prevailing at the end of the period. Over a longer horizon, projections assumed a gradual fall in the price of oil and continuing idle capacity in domestic markets, both of which offered better prospects for inflation for 2001 and 2002. Total CPI and CPIX inflation were expected to reach around 3.4% per annum by the third quarter of 2001. Recent estimates of CPI inflation for the third quarter of this year are above this projection, while the CPIX is in line. For the future, the baseline scenario's current projections suggest that CPI inflation will move to the upper limit of the target range by mid-2002, then stabilize in the center towards the end of 2003. The CPIX should reach around 3.6% at end-2002 and 3.0% at end-2003.

The marked rise in the nominal exchange rate in 2001 has meant that current inflation projections for coming quarters are higher than those foreseen in September 2000. However, recent peso devaluation should be only short term and its impact on inflation less than the historic average. These inflation projections are consistent with an economy that does not yet show clear signs of a rally in domestic demand and still has substantial spare capacity in its markets. Complementing these factors, the deteriorating international scenario, particularly the lower terms of trade, will directly affect income and therefore consumption. In the medium term this will reduce inflationary pressures, which will remain contained, despite a recovery in activity during the second half of 2001 and beyond.

In assessing the probable course of GDP, the September 2000 Report foresaw a scenario characterized by a more expansive monetary policy stance, a structural fiscal superavit consolidated at around 1% of GDP, and an international scenario favorable to the Chilean economy. As a result it forecast average annual growth rate over the next 24 months of around 5.8%, 5.6% in 2000, 5.7% in 2001 and 6.2% in 2002.

However, the international context has seriously deteriorated, as a result of doubts over economic recovery in the US and its impact on major countries in the rest of the world. This has meant lower growth for Chile's main trading partners and a drastic fall in Chile's main export prices. Worsening financial conditions for some of the main emerging economies have tended to neutralize the advantages of lower interest rates in the major economies. Chile has suffered repercussions from the turbulence generated by instability

in the Argentine economy; while this has not increased the sovereign risk premium or interest rates, it has triggered a rise in the exchange rate in recent months.

The worsening international scenario has created an unfavorable context for local economic growth, and recent projections are below those made last year. Growth this year is expected to be somewhat lower than 4%, but should recover in the following years (to 5% in 2002 and 5.3% in 2003), thanks to the expectations that international conditions will improve, and with them the terms of trade. Domestic expenditure should grow by around 2.1% this year and continue to rise from next year onwards.

In the external accounts, projections last year were for growing deficits in the balance of payments' current account, starting in 2000 at around 1% of GDP, rising to 1.7% in 2001, and 2.3% in 2002. In practice, despite the worsening international conditions of the past year, external accounts have remained solid. Recent estimates suggest the deficit for this year will be almost 2.6% of GDP, showing the impact of the sharper-than-expected fall in the terms of trade; in subsequent years it should reach around 2% of GDP.

A. Monetary Policy of the Central Bank of Chile: Objectives and Transmission

This paper provides information on the objectives of the Central Bank of Chile's inflation policy and how the monetary authority understands the effects of its policies on inflation and price stability.

Along with making the goals of reaching price stability more explicit, the first part of the paper also provides details on the current program of inflation targeting. It also describes the transmission channels used to apply monetary policy throughout the economy, before materializing in concrete results relevant to inflation.

This paper, along with other initiatives like the new Regulation for the Functioning of the Board and the Report on Monetary Policy respond to a decision by the Central Bank to treat its procedures and policies with maximum transparency. Similarly, this paper aims to complement the Report on Monetary Policy and make its reading easier.

I. Price stability and monetary policy

The Basic Constitutional Act of the Central Bank of Chile establishes that the purpose of this institution is: "to watch over the stability of the currency and the normal functioning of internal and external payments". To fulfill this purpose, the law gives the Central Bank the authority to regulate the amount of money and credit in circulation, to carry out international exchange and credit operations, and to make regulations governing monetary, credit, financial and exchange matters. These attributes allow the Bank to configure its main tool: monetary policy.

- The purpose of price stability and the main principles of monetary policy

Money plays a fundamental role in the correct functioning of any economy. To preserve this role, the Central Bank's monetary policy must defend the value of our currency, the peso, seeking to keep inflation low and stable.

The purpose of keeping inflation low and stable, which is how the concept of price stability is interpreted in practice, is no mere whim of the law, but rather serves the broader goal of maintaining the country's economy on the road to sustained growth, with full employment, and, in general, progress and well being for Chileans. In fact, the Central Bank's greatest contribution to growth and progress is rooted in the confidence in the future associated with price stability. This encourages saving, investment and productivity gains, all indispensable to economic growth. Furthermore, low, stable inflation is beneficial from the distributive point of view, because it favors the growth of employment and protects the income of the most vulnerable sectors of society.

Monetary policy can not influence long-term growth beyond this contribution of price stability. The potential consequences of this stance for economic activity and employment over the short- and medium-term arise from the different channels along which changes in monetary policy are transmitted in order to affect inflation. This is why monetary policy takes an anti-cyclical stance that, along with preserving price stability, seeks to avoid extreme variations in overall expenditure or domestic demand, which could provoke unnecessary risks on financial markets and difficult conditions in terms of recession and unemployment. In this sense, the focus of the Central Bank of Chile's monetary policy is price stability over time, taking into consideration this policy's effects on economic activity and employment in the short- and medium-term.

- *The inflation target range*

To preserve price stability, the Central Bank has committed itself to a monetary policy stance that seeks to keep annual inflation within a range of 2% to 4% over time. The central value of this range, 3%, constitutes the operational target that guides monetary policy in the medium term. Both this central value and the ranges around it adequately represent the concept of price stability

in the current conditions facing the Chilean economy, in spite of the fact that they are somewhat higher than the mean inflation rates observed in developed countries' economies (from 1% to 3%). In the first place, this 2-4% range takes into account a certain degree of inflationary inertia derived from the use of indexing (regarding past inflation) on several markets, practices that form part of the legacy of high inflation that affected Chile from the thirties onward. In the second place, international experience reveals that countries that grow faster than average (like Chile) are also those with greater productivity growth in the tradable sector (involved in foreign trade), a factor associated with a slight tendency to increase inflation. This is due to the fact that improved productivity in the tradable sector pressures wage increases and these, in turn, affect the prices of non-tradable goods, a situation that is not completely offset in the short-term because of the downward inflexibility of some prices. Finally, it has been demonstrated that inflation indicators show positive bias in every country in the world, because of the way they are calculated, due to changes in consumption habits, and the inclusion of new products (among other elements). These factors are usually more acute in countries experiencing rapid growth, as Chile is, introducing a positive bias somewhat greater than in developed countries.

The operational target is defined in terms of changes in the Consumer Price Index (CPI). This indicator, however, can show a relatively high degree of volatility from month to month, the result of changes in the prices of perishable foods (affected by seasonal and weather factors), and fuels (associated with fluctuations in the international oil price). Thus, to periodically interpret price information over the short term (up to 12 months), the Central Bank prefers to focus its attention on measures of underlying or trend inflation, among them shifts in underlying or trend CPI (an index that excludes vegetables, fruit and fuel) maintained by the National Statistics Bureau (Instituto Nacional de Estadísticas, INE). To project inflation trends over a medium timeframe of 12 to 24 months, two indicators are used, as they do not present practical or interpretative problems, given that both tend to coincide over this horizon.

Temporary deviations in inflation around the central range value (3%) are tolerable, but only as long as they remain within the established limits and it remains likely that within a prudent period, inflation will return to 3%. That is, both the range ceiling and the floor represent exceptional levels of inflation and not targets as such.

- The operative aspects of this policy

Monetary policy's main operative instrument consists of the auction quotas for its own debt securities that are held on the open market from month to month, adding or subtracting liquidity from the very short-term interbank market, as needed (repo and anti-repo operations, to use international terms), in order to stabilize the (overnight) interbank interest rate around the operative or instrumental target, defined as the monetary policy rate (tasa de interés de política).[1]

- Transmission channels and monetary policy horizon

Several channels are involved in transmitting monetary policy changes to the rest of the economy and each takes a relatively long and variable amount of time to materialize.[2] Thus, for example, a more restrictive policy stance (reflected in an increase to the monetary policy rate) leads to lower private spending on investment and consumption affecting the gap between aggregate demand and potential output, and, ultimately, inflation. At the same time, an increase in the policy interest rate can also affect the exchange rate (causing the peso to appreciate), eventually reducing inflation for imported products, as well as affecting external demand and the expenditure to output gap. This process, from the moment the policy rate changes to the point where inflation reacts substantially along the series of transmission channels, may take from one to two years. This period of time has been defined as the "prudent period" considered by the Central Bank to be the horizon for monetary policy.

This is why actions to apply said policy are based on the expected evolution of inflation over a period of 12 to 24 months and not necessarily its current behavior.[3] See Section II below. Thus,

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[1] Note too that the Bank has other operative instruments, whose use is less frequent (see sidebar).

[2] For more details, see Section III of this appendice.

[3] See Section II below.

even if inflation remains within the defined target range at any given moment, it may be necessary to act preventively to avoid future deviations in trend inflation associated with this range. It is also possible that specific movements of inflation beyond this range may not require policy actions if there is a well-founded assumption that these will be very short-term and do not risk unleashing trend inflation. Similarly, it's important to underline that the 2% to 4% range, centered on 3%, defines a symmetrical target implying that, in principle, preventive action is essential regardless of whether the projection for trend inflation threatens to rise above 4% or fall below 2%.

- Monetary policy, the floating exchange rate, and inflation targets

The floating exchange rate currently in effect allows the Central Bank to use its monetary instruments more flexibly and independently than in the case of a rigid exchange rate regime. This is significant, because it makes it possible to combine the price stability sought by monetary policy with the possibility of absorbing impacts from the world economy through a flexible exchange rate. Furthermore, the floating exchange rate, the growing depth and sophistication of domestic capital markets, and integration into the global economy are all elements that substantially reduce the probability of the Chilean economy, with sound fundamentals, being exposed to tension regarding external payments, like those resulting from pronounced fluctuations in the terms of trade or external financing conditions.

The floating exchange rate regime, furthermore, is perfectly consistent with the medium-term perspective of the current monetary policy stance, given that inflationary or deflationary effects of temporary exchange rate fluctuations tend to cancel each other out over horizons longer than one year. Furthermore, the growing importance of exchange rate hedging mechanisms and the improved know-how of the private sector in dealing with the short-term fluctuations in the exchange rate that characterize a floating system are elements that tend to reduce the magnitude of inflationary (or deflationary) impacts of changes in the value of the peso.

This combination of a monetary policy stance based on inflation targeting and a floating exchange rate regime is increasingly common around the world, in the case of both developed countries (Australia, Canada, New Zealand, the United Kingdom, Sweden, the European Union, and to some degree the USA), and emerging economies (Brazil, Chile, Israel). These experiences have been particularly successful when it comes to maintaining price stability in a growth environment.

- Monetary policy and transparency

Changes to monetary policy are transmitted to the rest of the economy via their impact on asset prices, such as market interest rates, stock prices, and the exchange rate. These impacts will be more or less pronounced and therefore more or less useful to the objective of influencing inflation, to the degree that market expectations line up with these goals, so clear signals regarding the future monetary policy stance are absolutely vital. This demands enormous transparency in terms of what the monetary authority seeks to achieve with its policies and with regard to how the Central Bank diagnoses the current state of the economy and projects its future.

In other words, monetary policy will be more successful in achieving target inflation if the public at large and financial markets understand the factors affecting inflation and the evaluation of same carried out by the Central Bank, along with the policy prescription applied by the monetary authority. During the last decade, for example, it was noteworthy how, to the degree that inflationary targets were achieved one after another, inflation expectations lined up increasingly with the Bank's own target, based on the credibility of its commitment to these goals.

Over time, a credible commitment to price stability not only succeeds in reducing inflation, but also, to the degree that it increases credibility, reduces uncertainty about future inflation and is thus reflected in lower average interest rates, which favor investment and, in the long-term, growth. Moreover, people's and markets' growing confidence that inflation is under control makes them less sensitive to unexpected factors that could affect inflation. This ensures that, today, a slight adjustment in monetary policy may be enough to avoid a misalignment of expectations, which contributes to greater economic stability and provides the Central Bank with the time necessary to evaluate the depth of permanence of any unexpected events.

- Transparency Initiatives

In order to support the transparency of monetary policy, the Central Bank publishes a Report on Monetary Policy (Informe de Política Monetaria). The main objectives of this Report are: (i) to inform and explain to the general public the Board's view of recent and expected inflation trends and their consequences for the conduction of monetary policy; (ii) to publicly explain the medium-term framework used by the Board of the Central Bank to formulate monetary policy; and (iii) to provide information that is useful in the formulation of economic agents' expectations regarding future inflation and output trends.

The report is published three times a year, in January, May and September. The first section of this report concentrates on the main factors affecting trends in inflation, import prices and specific price trends that temporarily affect inflation rates, it then goes on to examine the main factors influencing future inflation, including the international environment, financial conditions, prospects for aggregate demand, the current account and the labour market. The last section summarizes the consequences of this analysis both in terms of prospects and risks affecting inflation and economic growth over the next eight quarters. The report also provides several boxes that offer more detailed information on issues relevant to evaluating inflation and monetary policy.

At the same time, the new Regulations for the Functioning of the Board (Reglamento para el Funcionamiento del Consejo) contemplate a series of measures to achieve greater transparency for Central Bank policies, among them, publication of the dates of monthly monetary policy meetings six months in advance, along with the minutes of these meetings, and other measures whereby policy decisions are adopted, with a 90-day lag. This is intended to formalize communication of the debate carried out during monetary policy meetings and make the Central Bank's relations with the Ministry of Finance regarding monetary policy more transparent.

It is worth noting that the effort to achieve greater transparency responds not only to the intention of making monetary policy more effective. In fact, transparency allows those who administer the State to account for their actions and decisions in a simple direct manner, at the same time as it encourages greater efficiency and performance incentives. In the case of an autonomous central bank, like Chile's, transparency is especially important to legitimize actions and policies before the public and to be responsible for them.

II. Projections and monetary policy

Because there is a relatively long and variable lag before changes in monetary policy interest rates affect inflation authorities cannot base monetary policy decisions solely on what is happening with inflation today. In fact, in an inflation targeting scheme like the one in effect in Chile, it is essential that the Central Bank carry out projections for inflation and the most relevant variables affecting aggregate price behavior. These projections should cover a period consistent with the monetary policy horizon, that is, two years in Chile's case. In this sense, inflation projections can be considered an intermediate objective in and of themselves:[4] they reflect today what is forecast to occur tomorrow with inflation, which in turn informs current monetary policy. Because of this, the Central Bank has made an enormous effort to develop projection tools for inflation and short-term economic growth that permit a prognosis that is both efficient and at the same time faithfully represents the Board's view. The relationship between inflation projections and changes in monetary policy, however, is far from mechanical and linear.

- The projection process

The inflation and growth projections published every four months in the Monetary Policy Report are based on an iterative and interactive process. About six weeks before the monetary policy meeting, at which the corresponding Monetary Policy Report is approved, the Board and others participating in the meeting receive a questionnaire exploring their opinions about the most likely

[4] Note they can only be considered an intermediate objective to the degree that they constitute a key indicator of inflationary pressures (upward or downward) over the policy horizon, on the assumption that the policy rate remains constant. If they are only treated as the result of a statistical exercise, inflation projections could not be considered an intermediate objective.

future course of variables that influence inflation and growth in economic activity. Rather than precise values for each variable, respondents are asked to emphasize changing trends and the intensity of these changes as compared to predictions in the previous Report and in light of information accumulated since then. Similarly, they are also asked to provide an analysis of the risks that could cause the variable in question to behave very differently from its most probable trajectory. Based on this, and using a series of statistical models developed by the Central Bank, a process of feedback then begins between Board members, others participating in monetary policy meetings, and the technical team, all of which combine to generate the central or baseline scenario containing inflation and growth projections for the next eight quarters. The risk analysis also involves considering one or more alternative scenarios that, although they appear less likely, are important enough to be worth considering and monitoring.

- The central or baseline scenario

The fan graphs used to present inflation and growth in the summary and chapter on Future Inflation Scenarios in the Monetary Policy Report offer a visual summary of this projection process. In the first place, these graphs provide the baseline scenario, which, in the opinion of the Board, represents the most likely behavior of inflation and growth over the next eight quarters, assuming that the policy interest rate remains constant throughout this period. Given that the purpose of monetary policy is to keep inflation stable at the center of the 2-4% annual range on a permanent basis, the policy rate must be coherent with an inflation projection within the central scenario that will converge on 3% during the projection horizon. If this were not the case, today's monetary policy rate (TPM) would not be suited to meeting the Bank's inflation target. In this sense, the main projection for inflation during the eight-quarter period is similar to an intermediate target for monetary policy. The above is the result of the methodological assumption underlying projection development, which is that the TPM will remain constant over the next two years. In fact, the Board considers this methodological assumption to be appropriate, given that, in general, it is neither possible nor prudent to treat the future direction of monetary policy as a certainty.

- Balance of risks

In the second place, the fan around the main projection represents the uncertainty that accompanies a projection of this type, which increases to the degree that the projection distances itself from the present. It is important to underline that this representation of uncertainty, using a fan, is based on two components: variance in the distribution of probabilities, associated with the breadth of the fan, and the balance of risks, which appears as the distribution bias. The dispersion considered in these projections is estimated based on errors in prognosis in recent years, but can be adjusted when the volatility of fundamental variables influencing inflation and growth are perceived as more or less than was usual in the past. When the balance of risk around the central or modal projection slopes upward (positive bias), values above the modal projection are considered more likely to occur than the values below it. Graphically speaking, the fan swells more above the main projection than below it. The opposite occurs when the bias is negative.

In other words, and by way of example, a positive bias in the balance of risk for inflation indicates that the economy is more likely to evolve toward a situation that generates more inflationary pressure than in the central scenario, than it will toward a situation generating less inflationary pressure. The implications for monetary policy are, as a result, that it is more likely that interest rates will rise in the near future than that they will fall. It is important to note the contrast with the consequences of the methodological assumption of a constant TPM (monetary policy rate). In effect, if this were not assumed or similarly if the inflation projection showed no clear convergence on 3% over the four to eight-quarter horizon, the Central Bank would be communicating the certainty that the TPM would move in one or other direction in the future. The existence of bias, therefore, is an additional element revealing the degrees of uncertainty surrounding monetary policy decisions.

Furthermore, the use of bias in projecting inflation indicates that monetary policy is applied with prudence, responding to events only when their impact on future inflation trends becomes more evident.

Nonetheless, there is no simple, mechanical relationship between inflation projections and (real or foreseeable) changes to monetary policy. There are circumstances that make this relationship

even more complex. For example, an assessment of risk may be balanced in terms of the likelihood of opposing scenarios occurring, but biased about the costs of a mistake in either direction. That is, scenarios may be equally probable, but if one decision is made and the wrong scenario occurs, costs may be higher than they would have been if the opposite decision had been made and the resulting scenario is exactly the opposite.

Moreover, the objective of monetary policy is to keep annual inflation low and stable at around 3% and between 2% and 4% all the time, not just in the next 24 months. Because of this, while the eight-quarter horizon is the main focus for monetary policy actions, the Bank also evaluates relevant prospects for inflation from before and after this timeframe. For example, if the baseline inflation projection remains within the target range over the horizon of the next eight quarters, but threatens to rise above this level beyond that period, the Board may decide to harden its monetary policy stance now, as a preventive measure, considering the often long delay between policy interest rate changes and their impact on inflation. Similarly, on occasion inflation projections for a horizon shorter than eight quarters (for example, over one year) can also influence Board decisions. After all, a rising trend in inflation over a prolonged period can create doubts about the efficiency of inflation projections or the Board's real commitment to its goal of keeping inflation low and stable. In other words, it is fundamental that the 12-24 month period remain within the target or converge toward it. The same delays in monetary policy taking effect, however, make it less recommendable to respond over shorter time horizons, because there is a risk of higher real and financial instability.

In synthesis, inflation projections over a 24-month horizon assuming a constant monetary policy rate constitute a key indicator of inflation's probable behavior over the policy horizon and in this sense can be interpreted as an intermediate monetary policy objective and a methodological ingredient well-suited to the Central Bank's purposes. In building these projections (and those for other relevant variables) available statistical models have not been used exclusively and mechanically, because they provide a view of the macroeconomic environment that is valuable but incomplete and based on past experience. Projections are enriched with a risk assessment through which the Board can incorporate other considerations and elements of judgment to make the right monetary policy decisions, which are consistent with achieving price stability.

III. Transmission mechanisms for monetary policy in Chile

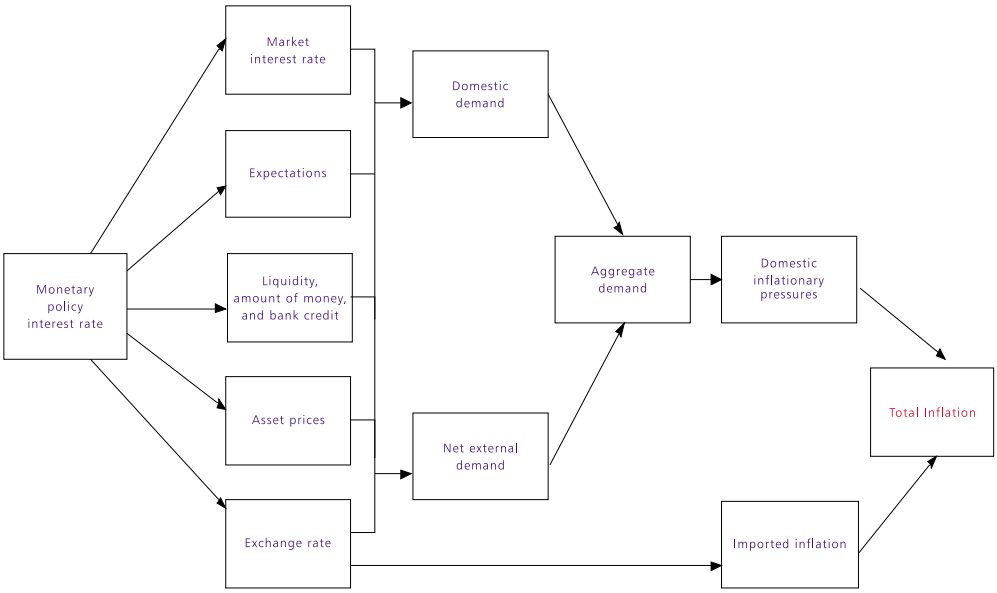
Although monetary policy influences a wide range of variables in the short term, especially those related to aggregate demand, its consequences for aggregate supply and growth are practically non-existent in the long term. For this horizon, monetary policy essentially influences nominal variables, particularly price levels. It is in this context that some analysts sustain that inflation, defined as the rate of change in price levels, is ultimately a monetary phenomenon. This is why it is important for inflation be the main focus for Central Bank monetary policy.

However, over the short and medium term, monetary policy changes affect real activity, traveling along different transmission channels until they finally reach and affect inflation. This is why efforts to achieve an inflation-related goal beyond a certain period may take different routes with regard to economic activity, employment and external accounts.

The diagram in the following page shows simply and graphically how a change in monetary policy can produce a range of impacts on the economy. It highlights the existence of immediate impacts on financial markets and asset prices, which trigger first and second round impacts on company and individual decisions that eventually affect inflation. These aspects are explained below.

- Monetary policy effects on financial markets

As mentioned above, monetary policy is the Central Bank's tool for showing the market its stance regarding a specific moment in the country's economic development and inflationary prospects. This policy is expressed in an interest rate known as the monetary policy rate (or simply, the policy rate), which has been directly linked to the interbank interest rate since 1995. This last is the rate at which commercial banks loan each other funds overnight, in order to meet liquidity requirements (mostly due to the legal reserve requirement). Nonetheless, the Central Bank does not set its policy rate by decree, but rather announces an operating target that it tries to sustain through open market transactions and other operating instruments with commercial banks themselves. In other words, it injects or withdraws liquidity, sometimes on a daily basis and using very short-term



securities, so that the interbank rate remains near the policy rate. A special Box, below, provides details on the operating aspects involved.

The quantitative effect of a change in the policy rate on other interest rates and on financial markets generally depends on the degree to which this policy change was anticipated and how it affects expectations regarding future policy. Similarly, it is important to keep in mind that some of the effects described may occur when market expectations change rather than the policy rate itself.

- Short-term interest rates

An unforeseen change in the policy rate is immediately transmitted to other short-term rates in the monetary market. Suddenly, interbank rates adjust pari passu, then go on to affect nominal 30- to 90-day deposit and loan rates and, with slightly less intensity, nominal and real security, deposit and lending rates for up to one year, particularly those for Central Bank promissory notes such as the 90-day PRBC and the 360- and 90-day PDBC. However, these rates do not always move by exactly the same amount as the policy rate, and there may also represent temporary corrections to spreads or margins between asset (loan) and liability (deposit) rates.

- Long-term interest rates

Although a shift in the policy rate produces unequivocal changes in the same direction in other short-term rates (although some react slowly), the impact on longer-term interest rates may go in any direction. This is because these long-term rates are affected by an averaging of short-term rates, both actual and future, so that the outcome depends on the direction and the size of the policy rate change's impact on expectations regarding future interest rates. For example, an increase in the policy rate could create expectations that interest will drop in the future, in which case long-term rates would also fall in response to a rise in said policy rate. However, normally the tendency to rise would predominate, although clearly less than the increase in the policy rate itself.

- The exchange rate

Changes in interest rates provoked by monetary policy can also affect the exchange rate. This variable is the relative price of a foreign currency (normally the dollar) against the Chilean peso and in this sense depends on monetary conditions both in Chile and abroad. Nonetheless, the precise impact of a change in the monetary policy rate on the exchange rate is uncertain, given that its impact will depend on existing expectations about interest rates and domestic and foreign inflation. These expectations, for their part, may be influenced by policy changes. However, if all else remains

equal, an unexpected increase in the policy rate normally leads to an immediate rise in the peso (and possibly the UF) against the dollar. Appreciation is due to the fact that higher domestic interest rates compared to external rates applying to equivalent foreign currency assets causes peso (and UF) assets to become more attractive to local and foreign investors. The exchange rate then moves to a level at which investors expect a future depreciation in the peso (and the UF) that will also reduce the attractiveness of peso-denominated securities. Eventually this reaches a point where, given the degree of substitution of dollar securities and peso or UF-denominated securities, those investors would feel the same toward assets in either of the two currencies. Under these conditions, the corresponding interest differential for instruments with any maturity date is approximately equal to the sum of the rate of change expected in the exchange rate for the same period, the exchange risk premium and the risk premium on peso (or UF) instruments.

It is useful to remember that monetary policy's impact on the exchange rate may be limited where there is an exchange rate band and capital account regulations. With the reserve requirement reduced to zero in 1998 and the exchange rate band eliminated in 1999, and the fact that in general the exchange rate regime became more flexible, this transmission channel is almost fully effective in Chile.

- Asset prices

Changes in the policy rate also affect market prices for securities, among them bonds and shares. The bond price is inversely proportionate to long-term interest, so that any increase causes the price of bonds to fall. If all else remains equal (especially expectations), higher interest rates also push down the prices of other securities such as shares and properties. This is because expected future returns are discounted from the higher rate, so that the current value of any future income source falls.

It must be pointed out, however, that several other factors may not remain equal. For example, policy changes may indirectly influence expectations, a situation commented on below.

- Liquidity, the amount of money, and bank credit

Although demand for money can be unstable, a shift in the policy rate will affect the amount of available liquid monetary assets (those that do not pay interest or pay very little interest), like currency and M1A (which basically adds demand deposits). For example, an increase in the policy rate is usually associated with monetary restriction, given that its tendency to push up market interest rates will raise the cost to the public of keeping those assets liquid and thus reduce the amount in demand. This in turn leads to a situation where banks require less liquidity for their transactions at the higher interbank rate, which means the Central Bank needs to provide less liquidity to sustain the new rate.

With lower demand for liquid monetary assets comes a reduction in demand deposits in banks, which, if not offset by an increase in other forms of deposit, will reduce banks' sources of funds and their base for extending credit. Similarly, even if other forms of interest-paying deposit rise exactly to offset the decline in demand deposits, it will now be more expensive for the bank to obtain funds, so it will have to charge more for its credits. This will affect both the cost of credit (whose impact on demand is discussed in more detail below), and the supply of credit. In fact, higher interest rates charged on credits will make a commercial bank evaluate the risk involved in loans to its clients more conservatively, leading it to partially restrict some clients' access to credit. Furthermore, as can be seen below, more restrictive monetary policy precedes a deceleration in overall expenditure, which will affect some bank customers' ability to repay, another factor that will lead banks to be more cautious.

- Expectations

Changes in the policy rate can influence expectations about the future path of real activity, by directly affecting investment and consumption decisions and, through them, eventually, inflation itself. This occurs even before the indirect impacts of monetary policy changes on these variables affect financial and exchange markets. Predicting the course these effects will take is not easy. For example, an increase in the monetary policy rate can be interpreted as a sign that the Central Bank

thinks the economy is probably growing more quickly than expected, encouraging expectations of future growth. Many observers interpret an increase in the policy rate as a sign that the Central Bank feels it necessary to temporarily dampen growth in domestic demand and thus meet inflation targets, which affects growth prospects for company sales, their investment and employment plans, but at the same time moderates inflation expectations more quickly, thus contributing to a "smooth landing".[5] In contrast, if the increase in rates is considered to be too tardy or insufficient, the market may infer that a larger correction to interest is coming, thus magnifying the negative effect on economic activity. The general damage to expectations may, in the short term, be counterproductive in terms of containing inflation.

The possibility of this occurring contributes to uncertainty about the impact of any policy rate change, increasing the importance of a monetary policy stance that is both credible and transparent.

In synthesis, although the Central Bank only acts directly on a specific short-term interest rates, changes in the policy rate affect market interest rates, the exchange rate, and, to a lesser degree, asset prices. These variables' response varies, from time to time considerably so: neither the external environment, nor the policy stance, nor market sentiments can ever really be assumed to be constant. However, changes in monetary policy generally affect financial markets in the way described above.

[5] In fact, a reduction in the expected inflation rate reduces the alternative cost of maintaining money in a more liquid form, thus increasing the demand for liquidity, causing overall expenditure to fall (or rise), and as a result, reducing inflationary pressure. This facilitates monetary policy efforts.

APPENDIX A BOX: OPERATING ASPECTS OF MONETARY POLICY IN CHILE

The Central Bank applies its monetary policy by defining a target level for the interbank interest rate known as the monetary policy rate (TPM). To ensure that the interbank rate remains at the desired level, the Central Bank must regulate the financial system's liquidity[6] (or reserves) through the use of several instruments: open market transactions, buying and selling short-term promissory notes, lines of credit and liquidity deposits (extended services). These tools also include the bank reserve requirement over deposits, although in practice the Central Bank does not use this as an active monetary policy instrument.

Open market transactions are essentially carried out through regular auctions of promissory notes issued by the Central Bank: 90-day inflation-indexed promissory notes (PRBC90), 42-day, 90-day and 360-day short-term nominal discount promissory notes (PDBC42, PDBC90, PDBC360), and indexed promissory notes payable in coupons maturing in 8, 10, 12, 14, and 20 years (PRC8, PRC10, PRC12, PRC14 AND PRC20). Banks, pension fund managers, insurance companies and mutual funds can participate in these tenders or auctions.

Note auctions are carried out using the single price per auction method, that is, a cut-off rate is applied to all participants in the auction placing winning bids, in what is known as the "Dutch method". This encourages competition among auction participants and tends to reflect current market conditions more accurately.

In the case of the (average) interbank rate deviating from the policy rate due, for example, to liquidity levels below demand, liquidity is injected to lower the interbank rate and bring it into line with the TPM. This liquidity injection is generally achieved by overnight purchases of notes with repurchasing clauses (repos). When the opposite occurs, and there is excess liquidity and the interbank rate tends to be below the target rate, the excess is withdrawn by selling short-term promissory notes. These last transactions are implemented using electronic documentation (documentos desmaterializados, that is, papers that are not physically issued).

Other tools at the Central Bank's disposal are the liquidity credit line and the liquidity deposit account. The Central Bank uses the former to provide financial institutions with overnight loans, without collateral, involving limited amounts and interest charged by tranche. Currently, the interest on the first of the three liquidity line tranches is set at the same level as the TPM; the second at 200 basis points above the TPM; and the third at 400 basis points above the TPM. Similarly, the liquidity deposit allows financial institutions to deposit temporary excess liquidity overnight with the Central Bank and receive a minimum return. Currently, this rate is set at 100 basis points below the TPM and in practice this constitutes the floor of the interbank interest rate.

In order to suitably regulate financial system liquidity, the Central Bank develops a cash flow timetable covering the reserve requirement time period, that is, from day nine of each month through day eight of the next month. To encourage less volatility in the banks' reserve requirement compliance and thus the interbank rate, there is also an intermediate reserve required through day 23 of each month, the deadline by which the banks must have complied with at least 90% of the required reserve.

To program cash flow, projections are made for both supply and demand of banks reserves, that is bills and coins in the power of banks and balances in banks' current accounts in the Central Bank. Demand is of a derived nature that basically depends on reserve requirement rates and trends forecast for demand and term deposits, along with the behavior of currency in the public's hands. The supply of bank reserves depends on the behavior of currency in the public's hands and the main sources of emission, particularly the maturities of previously auctioned promissory notes and other, more autonomous sources of monetary expansion for which projections are required. These operations include eventual purchases or sales of dollars within the financial system by the Central Bank and state financial operations affecting money.

Once bank reserve supply and demand have been determined, the amounts of the notes to be tendered by the Central Bank are established. The calendar of auctions is published the day before each new reserve period begins.

The liquidity projection is monitored daily to permit fine tuning operations on bank reserves, as needed, using the repo operations already mentioned or special sales of short-term promissory notes.

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[6] Conventionally, financial market liquidity is understood as the level of the reserve maintained by banks and financial institutions over and above the minimum reserve requirement. The reserve required must consist of bills and coins in cash or deposited in the Central Bank current account, equal to 9% of demand deposits and 3.6% of time deposits.

• Individuals' and companies response to financial and exchange market variations: First round effects

Monetary policy affects interest rates, the exchange rate and asset prices. What effects do these changes have on individuals' and companies' spending decisions? The analysis that follows focuses on the immediate effects of a policy change, with later impacts on aggregate income, employment and inflation examined further along. Given that the effects of policy changes on expectations and confidence are somewhat ambiguous, this analysis assumes a given level of expectations about the future path of real activity and inflation. Furthermore, it is assumed that the government's fiscal policy remains unchanged in response to change in monetary policy.

It's important to keep in mind that the impacts described, both in this and the second round, are in response to Central Bank actions seeking to avoid serious imbalances in aggregate supply and demand, which could place inflation goals at risk. The Central Bank is not trying to influence employment or economic activity per se, but rather to keep the economy on a path of price stability that will facilitate growth and progress over time.

- *Individuals*

A shift in monetary policy influences individuals in different ways. First, they face a new interest rate on their debts (for example, credit cards) and potential loans (for consumption, at department stores, on mortgages), as well as savings. Thus, peoples' available income changes, as do the incentives to save or go into debt. Second, as access to credit becomes more difficult for some individuals and they therefore present more risks to banks in the face of higher interest rates, their ability to spend is also affected. Third, the value of people's wealth also changes in response to changes in asset prices. Fourth, any shift in the exchange rate also affects local currency prices for many goods, services, assets and liabilities whose values are measured in foreign currency. Of these four consequences, the one felt most strongly by the most individuals is the impact of interest applied to debts and loans. When interest climbs significantly and the outlook is for a contraction in economic activity, the second consequence is also relevant.

In Chile, banks' consumer loans constitute about 9% of total loans, over 6% of GDP. These credits mature over a medium timeframe of about 20 months, so that the amount renewed annually reaches about 3.6% of GDP. Thus, about 1.3 million people per year use these credits, that is, about 24% of the occupied work force. Assuming that GDP growth averages 5% and that the average amount of credits as a percent of output is constant, about 65,000 people obtain this kind of credit for the first time each year. At the same time, mortgages, which are provided at a fixed rate, are the main means for acquiring housing. They represent 12% of GDP and on average they mature in about 13 years. If GDP growth is added in, it can be said that the annual flow of housing mortgages subject to changing interest rates represents about 1% of GDP. In any case, an increase in market interest rates following an increase to the policy rate will make credit to individuals more expensive, discouraging debt and thus reducing their spending on goods and services.

Although some people with net savings might spend more following an increase in interest rates, evidence suggests that the overall impact on individuals (which is what is relevant from the macroeconomic perspective) leads to a reduction in total consumption, even though this reduction may not be very large during the first round of effects.[7]

The impact on wealth will probably work similarly. In Chile's case, shifting interest rates have a more noticeable impact on housing prices, much more so than share and security prices, given the low penetration of these last markets. In the case of housing, higher interest rates normally increase financing costs and therefore reduce demand. Lower demand will bring slower growth in housing prices or even make them drop. As housing is a major component of (gross) personal wealth, any change in its equity value can affect consumer buying in the same direction as changes to financial wealth, although not necessarily by the same amount. Part of this result derives from the fact that individuals may feel poorer when the market value of their housing falls. Another factor stems

[7] Only afterward, during a second round of effects and when economic activity has already been affected, does individuals' spending react more strongly to the fall in current income (due to higher unemployment, lower real wages or lower sales).

from the fact that housing is used to guarantee loans, so that the lower net value of this asset becomes an obstacle in obtaining a loan.

The level of consumer purchases is also influenced by the changing interest rate's impact on consumer expectations regarding prospects for future savings and employment. These effects vary according to the moment, but when consumers expect a policy change to stimulate economic activity, their expectations regarding future employment and income growth tend to rise, all of which leads them to buy more. The reverse situation could occur after a policy change aiming to slow growth in aggregate expenditure.

The eventual exchange rate appreciation that would result from an increase in the policy rate may also affect individual spending, although more in terms of its composition (shifting from domestic to imported goods, for example) than its level. However, wealth impacts cannot be ignored, particularly where a significant share of individual debt is expressed in or indexed to the dollar (a minor effect in Chile).

In short, in the absence of other factors (expectations remaining the same), raising the policy rate leads consumers to spend less. Eventual exchange rate appreciation would cause some displacement of spending toward goods and services produced abroad. The size and even the direction of these effects may be altered by the impact of the policy change on individuals' expectations. The hypothetical increase in the policy rate would arise from Central Bank projections showing an increase in overall expenditure inconsistent with the goal of keeping inflation within the target range over a one or two-year horizon.

- *Companies*

Companies too are influenced by the effects of changes in the policy rate on market interest, asset prices and the exchange rate. However, the size of this impact depends on the nature of the business and its sources of financing. Here again the analysis focuses on the direct effects of a shift in monetary policy, assuming other factors remain constant and leaving the indirect impacts on aggregate demand for further analysis below (in spite of the fact that these may be more important).

An increase in the policy interest rate and its impact on market rates will directly affect all those companies using bank financing or something similar as their working and investment capital. Higher interest reduces these companies' profits and increases the returns that owners demand on investment, thus reducing new project startups. Higher interest rates affect inventory costs, given that these too are often financed by bank loans. Higher financial costs also make it less likely that these companies will hire more personnel, and in fact increase the likelihood of layoffs or reduced working hours.

Some companies may be less adversely affected by the direct impact of changes in short-term interest rates. This may be due to the fact that they have very few short-term loans and/or fixed assets, or their short-term liquid assets and liabilities are very similar, so that changes in short-term interest do not affect their cash flow very much. Even so, however, every time they use the capital market to finance long-term investment, they may suffer the consequences of the impact of policies on higher long-term interest rates.

The cost of capital is an important factor in company's investment decisions. As mentioned, monetary policy changes affect the interest on long-term bonds only indirectly. Their impact on the costs of financing capital goods is also indirect and hard to predict. Thus, there is no simple link between policy interest rate changes and the cost of capital. Moreover, in the case of large companies and multinationals with access to international capital markets, their financing costs are not very affected by changes in short-term domestic interest rates.

For many companies there is a very close relationship between their liquidity and their investment decisions. These companies prefer to finance themselves primarily using internally generated funds (undistributed profits), followed by bank credits and lastly, bond and share issues. This way, due to imperfections in financial markets, these firms' investment may be sensitive to the availability of different kinds of financing, especially those closest to their own funds and bank credit. During

the first round of effects following an increase in the monetary policy rate, some companies could find themselves forced to reduce spending beyond the effect of higher interest if their access to bank loans is restricted for risk reasons. Empirical evidence indicates this effect is relevant in Chile.

Changes in asset prices also influence companies' behavior in different ways. Loans provided by banks to firms (especially small ones) are normally supported by assets, so a drop in the prices of these may become an obstacle to obtaining credit, as the company's net worth falls too. When interest rates are low and asset valuations high, companies can show healthier balances and thus gain easier access to financing for capital goods purchases. The amplifying effect that financial factors have on cycles is known as the "financial accelerator".

Changes to the exchange rate that may result from a shift in the policy rate also significantly affect many companies. This is the case, for example, of a Chilean firm with many of its costs denominated in pesos, but producing goods facing competition in Chile or abroad from companies whose costs are expressed in other currencies. A (real) appreciation in the peso would worsen the position of the Chile-based company for some time, generating lower profit margins or sales, or both. Producers of export goods and those goods competing with imports would certainly be affected. This would also affect services, like tourism, and some activities that rely intensively on imported supplies.

A change in the value of the local currency would also affect companies that produce goods for the domestic market that are not directly related to international trade (non-tradables, to use the technical term), if a significant share of those companies' debt is contracted in foreign currency and there is no suitable exchange rate hedging. This situation, called exchange rate mismatch, may affect companies' financial solvency, reducing their credit ratings and increasing credit costs (and access to same). This would also lead to a probable contraction in investment, and eventually employment, in these firms. Events in Chile in 1998-1999 provide a clear example of this effect.

The impact of monetary policy changes on companies' expectations regarding the future path of the economy also influences their investment decisions. Once made, fixed capital investments are difficult if not impossible to reverse, so future demand projections and risk evaluations are vital to decisions on new investment. A decline in future demand tends to reduce spending on investment projects. It is hard to predict the effect that any change in the policy rate would have on companies' expectations. However, there is little doubt that it could be very significant, particularly in terms of investment.

To summarize, many companies depend at least partially on bank financing in pesos, particularly over the short term, and are directly affected by changing interest rates. If interest is high, the financial position of companies depending on these short-term credits worsens (all else remaining equal). At the same time, shifts in companies' financial position can lead to changes in employment and investment plans. To put it more generally, changes in the returns demanded on investment mean that higher interest rates tend to lead to the postponement of investment and inventory reduction. Policy changes also alter expectations regarding the economy's future performance. This affects investment spending beyond the direct effect exercised by interest rates, asset prices and the exchange rate. It's important to remember that companies' tendency to reduce spending is exactly what the higher policy rate strives to achieve, based on the idea that this adjustment is necessary to keep inflation within the medium-term target range and to ensure sustainable growth in economic activity over time.

- Second round effects: How changes in spending decisions affect GDP and inflation

Individuals' and companies react to a higher policy rate by reducing spending (investment, inventories and consumption).[8,9] The resulting change in aggregate spending will tend to affect

[8] Total or aggregate domestic expenditure is by definition equal to the sum of private consumption expenditure, state consumption expenditure, and investment expenditure, including current investment in inventories. Total domestic expenditure added to the balance of trade for goods and serves (net exports) reflects aggregate demand within the economy and is equal to Gross Domestic Product (GDP) at market prices.

[9] It is worth remembering, once again, that the higher policy rate that generates these reactions in individuals and companies is based on a Central Bank analysis that the economy is growing beyond what is prudent or beyond resources. The monetary authority is trying to keep the economy on a path of stable prices that will facilitate economic growth and progress in the medium and long term.

other agents, even when the financial effects of monetary policy change do not reach them directly. In other words, a company that wasn't directly touched by changes in interest rates, asset prices or the exchange rate resulting from a change in the policy rate, could still be affected by changes in consumer spending or demand for supplies from third party firms. For example, a company producing cement may suffer from a drop in demand for houses. Moreover, the fact that these indirect or second round affects are foreseeable means they can also influence expectations. Thus, it is likely that any induced change to aggregate spending will alter the conditions in which the private sector produces for the domestic market, which in turn affects the suppliers of these companies. The very nature of cycles in economic activity means that while the cycle is peaking, many sectors expand together and there is a general increase in confidence and growth expectations, which translates into higher spending *per se*. As the cycle bottoms out, many suffer from similar slowdowns and, as a result, growth expectations fall, reinforcing a more cautious approach to spending. This means that individuals and companies more directly affected by policy rate changes (first round) won't necessarily be the most effected by the overall impact of monetary policy change (first and second round combined).

Finally, the relationship in many companies between available liquidity and investment ensures that, during second round effects, if their profits suffer due to lower demand following a more restrictive monetary policy stance, their investment spending may suffer even more. This is a result of the reduced availability of liquidity for investment, which can't be completely offset by new bank credits or security issues. Once again, this result must be evaluated in light of the view that (before authorities raised the policy rate) companies' spending was growing more than was prudent.

- Delays affecting monetary policy operations

The effects of changing the policy rate take some time to make themselves fully apparent throughout the economy. A change in monetary policy quickly affects very short-term interest rates, the exchange rate and financial asset prices, but its impact on some longer-term rates can take a long time to make itself felt. In certain cases, weeks may pass before a higher policy rate influences payments on new bond or mortgage issues (or those received by the holders of savings deposits). Even more time may pass before these changes in financial payments generate shifts in consumer spending by individuals. Changes to individual consumer spending levels that have not been fully foreseen by companies affect retail inventories and this, in turn, leads to changes in orders to distributors. These orders will affect producers' inventories, and once they grow or shrink abnormally, production will shift. Changes in production, in turn, generate modifications in employment and profit levels. The next stage brings shifts in employment and profits that will cause more changes in consumers' buying levels. All this takes time.

Empirical evidence indicates that in Chile on average it takes three to five quarters for a change in monetary policy to have the most impact on demand and production, and four to six quarters more for these changes in activity to have the maximum impact on inflation. However, these average delays are surrounded by a great deal of variation and uncertainty. The exact effect will depend specifically on many other factors, among them companies' and consumers' perceptions regarding the immediate future and how these respond to the policy change, the point in the economic activity cycle, the exchange rate regime, events in the world's economy, and expectations about future inflation. Thus, the impact will be felt more or less quickly depending on how settled are expectations about medium-term inflation. These factors are beyond the direct control of monetary authorities but are important enough not only to produce a delay in the adjustment of the main monetary variables when faced with monetary policy changes, but also to make them more variable and uncertain.

- Non-linear and asymmetrical effects

Usually the effects of policy changes are assumed to be linear, that is, proportional to the size of the change in the policy rate. In practice, this may not be so. Thus, a very contractive monetary stance may have proportionately more impact than a more moderate stance. This occurs, for example, because abnormally high interest rates lasting a long time can weaken the domestic payments system and, given the loss of confidence and capital, the financial system may begin a process of credit rationing or become overly cautious in the granting of loans. Furthermore, a very pronounced

shift in the exchange rate can weaken and even break the financial system, touching off a deep recession. This is to say that the effect is more than proportional compared to when the change in the exchange rate is small.

The economy's response can also assume different proportions when faced with increases or declines in the policy rate. If interest is increased a given amount, output may fall less, proportionately speaking, than it would rise if interest were reduced by the same amount, and vice versa. That is, the effects of changes in monetary policy on the economy are not necessarily symmetrical.

- GDP and inflation

In the long run, GDP grows as a result of supply factors, among them technical advances, capital accumulation, the size and quality of the work force. Some public policies may be capable of affecting supply-side factors but in general monetary policy cannot do this directly, at least not enough to raise growth trends within the economy. There is an aggregate output level at which companies operate at normal capacity, when they are not under pressure to change production levels or product prices faster than expected inflation. This output level is known as *potential* or *normal* GDP. When real GDP lines up with potential GDP, production levels are such that they exercise no inflationary (or deflationary) pressures on goods markets. Likewise, employment does not pressure wage growth. There is a balance between domestic product demand and supply.

The difference between real and potential GDP is known as the "output gap". When the gap is positive, very high aggregate demand has pulled effective output above a sustainable level and companies are working beyond capacity. Excess demand is reflected as much in the deficit in the current account of the balance of payments as in an increase in domestic inflationary pressures. For some companies, growth will raise their costs because they're working beyond their most efficient production level. They may feel the need to increase the number of employees and/or the number of working hours to thus sustain higher production. This additional demand for labor and better labor prospects will pressure wages and inflation. Some companies may take advantage of periods of high demand to raise their profit margins and prices by more than the increase in their unit costs. When there is a negative output gap, the opposite generally occurs. Thus economic surges that raise output levels above potential normally precede an acceleration in inflation, while recessions that push output below potential are normally related to reduced inflationary pressure.

Nonetheless, there is no precise way of measuring the output gap. For example, changes in labor supply patterns and industrial structure make it hard to define exactly the point at which producers achieve full capacity and it may change. The Chilean economy is very heterogeneous, so different sectors react differently when faced with, for example, expanding domestic demand. No two economic cycles are identical, so some industries expand more in one cycle than another. Furthermore, the productivity growth rate may change with time. This last is particularly hard to measure before a long time has passed since the original event. As a result, the concept of the output gap, even if it could be measured with precision, bears no single numerical relationship to inflationary pressure. In practice, it really serves to indicate that to control inflation there is a certain level of aggregate activity where aggregate demand and supply reach equilibrium. This is its potential level.[10]

Keeping GDP at its potential level is, in the absence of external shocks, enough to keep inflation on target, when this coincides with the rate expected by economic agents. The absence of an output gap is coherent with any constant inflation rate expected. As a result, if it were possible to keep output at its potential level, this would in theory be equally consistent with high or low stable inflation. However, these two situations are far from equal, from the perspective of social well being. Society loses more with high inflation, even where it is expected, because it represents a more intensive use of a kind of tax that seriously distorts the assignment of resources. Given that the Central Bank's monetary policy actions and the credibility of the established target determine

[10] The difficulties inherent in measuring potential GDP have lead the Central Bank to use a proxy concept, that of trend GDP, calculated using statistical trends for the GDP series resulting from the Hodrick-Prescott filter, as the basis for its econometric-based inflation projections. The concepts of potential and trend GDP are not necessarily equivalent, but their trajectories coincide from a long-term perspective.

the level at which inflation finally stabilizes, a low, stable rate requires clear, decisive action from this institution in order to meet its target. In the short term, when output reaches potential, there can still be obstacles, like those raised by wage indexation, which add certain inertia to inflation.

- *Inflationary expectations and real wages*

Inflation expectations are very important because they influence the setting of prices and wages and therefore feed inflation in the periods that follow.

Wage increases over and above the labor productivity growth rate reflect the combined effect of expected positive inflation and a (positive or negative) component that results from demand pressure on labor markets. Wage increases that do not go beyond productivity growth do not raise production unit costs and as a result are unlikely to get passed on to the prices companies charge for their products. However, wage increases that incorporate inflationary expectations or demand pressures do raise unit labor costs and companies may try to include them in their prices. Thus, even though there is no excess demand for labor, there will be a tendency for unit costs to rise according to the expected inflation rate, simply because workers and companies negotiate real wages. To a greater or lesser degree, this increase in unit costs can be transferred to prices for goods. This is why, when the GDP has reached its potential level and there is no significant surplus in labor demand or supply, the effective inflation rate coincides with the expected one. This will only equal target inflation once the target is credible.

- *Imported inflation*

So far, this description has covered the process by which changes to the policy rate modify domestic demand and how the gap between domestic demand and potential output defines inflationary pressure, as well as considering the exchange rate's impact on net exports, given its impact on the competitive position of domestic firms compared to foreign companies and demand for locally produced goods and services.

Changes in the exchange rate also impact more directly on domestic inflation. This occurs because changes in the exchange rate affect the domestic prices of imports, which become decisive factors in the costs of many companies, and the retail prices of many goods and services. Peso depreciation triggers an increase in the domestic prices of imported goods, while appreciation can reduce them.

However, many months may pass before any of these effects reach end prices. In fact, the first impact of depreciation will be on wholesale prices of imports, expressed in pesos. How, when and how much of these increases get passed on to end consumers of these goods depends on intermediates' price policy, the degree of competition existing at different points in the distribution chain, including retail sales, and the strength of domestic demand. If changes in the exchange rate are eminently temporary, then intermediates' price policy may opt for not passing these peso price changes on to imported goods (to avoid unnecessarily altering customers' behavior) and for covering shifts in their earnings with the appropriate financial mechanisms. The same policy may indicate that a peso depreciation will only translate into a peso price increase on the imported good once those involved conclude the shift will last. The degree of competition involved in intermediates' activity will also influence this decision, because the greater the competition, the riskier it may be for a single intermediate to quickly pass on a depreciation in an import's peso price. In fact, the intermediate may lose market share if other competitors do not raise the peso price and absorb the depreciation for longer by charging it to their profits. Finally, the strength of domestic demand for the import is also relevant, given that this feeds the importer's margin and that of all the participants all the way along the distribution chain. A rapidly growing economy will show strong demand for imports in general, so that a depreciation in this context may be passed on to end peso prices more quickly with little risk of intermediates being affected by substantial losses to amounts sold. In contrast, where overall demand is depressed, intermediates will find it hard to pass depreciation on to consumers without facing a severe drop in the amount demanded. In this case, intermediates' sales margins and activity in general will clearly suffer, which is consistent with the general economic situation.

The passthrough coefficient for depreciation in domestic inflation can be empirically estimated, but varies over time, according to the economic cycle and the development of domestic

intermediation markets. Chile's experience indicates that this coefficient has dropped in recent years[11] and it may drop even further. This will make the domestic private sector more familiar with exchange rate volatility associated with a floating exchange rate regime and will stimulate the development of a deeper, more liquid exchange rate hedging market.

Finally, the relationship between the exchange rate and domestic prices is not one way. For example, an increase in the exchange rate triggered by changes to US monetary policy will generate increases in domestic prices, while increases in domestic prices caused by higher domestic demand will influence the exchange rate. Both the exchange rate and domestic price levels are certainly indicators related to the same element, that is, the value of domestic money (the peso). The exchange rate is the peso's value against other currencies and the price level measures the domestic value of the peso against a basket of goods and services.

By way of a brief conclusion

This document reveals the fundamental importance of price stability to the Central Bank, which views it as an essential requirement for Chile to enjoy sustainable growth and progress. Price stability is expressed in low, stable inflation of 2%-4% annually, centered on 3%, which it aspires to maintain over time within the perspective of a medium-term horizon.

Along with describing how monetary policy is applied to meet this goal, this paper also details the channels along which changes to the policy rate are transmitted to the rest of the economy until they affect inflation trends. Although the direction of the effects of a shift in monetary policy can often be foreseen without great difficulty, their size and how they evolve over time vary widely. However, Central Bank credibility, in terms of its commitment to price stability and the technical solidity of its diagnoses and actions, reduces this uncertainty and strengthens the effect of monetary policy. A technically appropriate and credible diagnosis also leads to preventive monetary policy that suitably allows for the delay between the moment a shift in the policy rate occurs and when it actually affects inflation, acting ahead of events to avoid imbalances and tardy responses. In this context, the intention of this paper is to contribute to the transparency of Central Bank actions so that, when combined with the Report on Monetary Policy, it supports the effort to maintain price stability.

[11] This phenomenon was observed in several countries simultaneously during the late nineties.

B. CENTRAL BANK ACCOUNTS

The management of fiscal cash flow, higher interest rates abroad, and steady depreciation in the exchange rate affected the results of the Central Bank last year. Although fiscal accounts balanced, the government's net amortization of foreign debt made it necessary to resort to domestic financing, and this was reflected in the decline in fiscal deposits in the Central Bank, above and beyond the sum paid over for the fiscal debt to the Central Bank itself. This net use of funds amounted to about US$400 million less than in 1999, when, unlike 2000, the State had access to positive financing from abroad.

The net withdrawal of fiscal funds in 2000 was mainly in local currency, and consisted of withdrawals from the Oil Price Stabilization Fund, which were paid out in pesos to the Bank. Thus, the government's fiscal deficit had an expansive impact on the monetary base and to a lesser degree on international reserves. As in the previous two years, these reserves were, however, affected by banks' withdrawal of overnight deposits, a factor that is now coming to an end given the reduced size of these deposits.

This reduction in the withdrawal of foreign currency funds by both the state and the banking sector, and higher interest rates on international reserves, explain the improvement of close to US$900 million in the balance of payments for 2000 compared to 1999. This larger accumulation of reserves, despite an otherwise unfavorable domestic and external context, helps explain exchange rate depreciation in 2000, which allowed the Central Bank to reverse its accounting deficit of previous years for the second year in a row.

Sterilization, by issuing promissory notes for local currency withdrawals carried out by the government, brought the outstanding balance of these notes from 31.4% of GDP in 1999 to 32.4% in December 2000. Lower domestic interest and the recovery in economic activity helped slow this increase.

Foreign exchange operations to date in 2001 have been limited to minor currency purchases and sales for government departments, which lack the administrative structure to carry out such operations in the market. In this context, fluctuations in the monetary base respond almost entirely to credit operations in local currency; of these, contractions resulting from the normal servicing of fiscal notes and those acquired in the regularization of the subordinated debt are the most significant.

The rest corresponds almost entirely to the effect of the instruments the Central Bank uses to manage monetary policy, i.e., the issuing and redemption of promissory notes and liquidity lines and deposits, as a result of which the balance of Central Bank promissory notes over GDP has fallen. By the end of 2001 the ratio of promissory notes to GDP should fall even further and continue to decline as economic growth rallies, excluding possible direct intervention by the Bank in the coming months to cushion the turbulence affecting the exchange rate as a result of the crisis in Argentina.

Another way the Argentine crisis of recent months is affecting Central Bank accounts has been the Chilean peso's more rapid devaluation in recent months. Currency mismatch in accounts, due to excessive foreign currency activity, has produced a substantial accounting profit, enough to reverse the negative equity affecting accounts since 1997. It is not enough, however, to amortize the asset for deferred losses accepted as part of normalizing the subordinated debt.

The possible sale of international reserves together with an issue of exchange-rate-indexed liabilities will help reduce the current mismatch between assets and liabilities, allowing the Central Bank to achieve greater stability in terms of its equity capital and reserves, and thus help make its policies more effective. The nominalization of monetary policy will have a similar effect, helping to bring domestic interest more into line with rates abroad, and also making short-term monetary policy more effective as exchange rate movements become more predictable.

C. MAIN MONETARY AND CREDIT MEASURES IN 2001

JANUARY

18 In its monthly monetary policy meeting the Board of the Central Bank decided to cut the reference interest rate by 25 basis points, from UF+5.0% to UF+4.75%. Rates on the tranches of the liquidity lines of credit were also cut by 25 basis points, to UF+4.75%, UF+6.75% and UF+8.75%. The rate for the liquidity deposit was cut to UF+3.75%.

18 Investment restrictions on private pension funds were modified to allow them to invest up to 5% of Type 1 funds in mutual fund quotas. They may also invest a higher proportion of such funds (40%, up from 37%) in open limited companies and in open limited real estate companies (40%, up from 10%).

Moreover, as a result of modifications to Law 19,705 and DL3,500 it was also necessary to redefine the limits on private pension fund investment in line with the revised legislation. Restrictions on the different types of investment fund were eliminated, allowing pension funds to invest up to 25% of Type 1 funds in investment and mutual fund quotas.

31 The current norms on swap operations, compensation and clearance of checks and other documents chargeable to other banking entities and financial companies were incorporated as Chapter III. H.1 in the Manual of Financial Regulations, under the heading "Clearing Center for Checks and Other Local Currency Documents in the Country ".

FEBRUARY

12 Financial institutions were authorized to make transfers freely via the endorsement of indexed promissory notes on the Treasury of the Republic, issued in accordance with the conditions of Law No: 19,568 and regulations in Finance Ministry DS No 946, published in the official gazette (*Diario Oficial*) on 28 September 2000, authorizing the intermediation of such documents by financial institutions.

20 Institutions showing a deficit in their current account as defined by clause 8 of Heading II, Chapter III H.2 of the Manual of Financial Regulations, may request funds from monetary operations management between the hours of 16:50 and 17:10, to cover such deficit, to be charged against the liquidity credit line, payable at the rate of the third tranche. Alternatively, institutions may ask, from the same authority and in the same timetable, to buy over-the-counter Central Bank promissory notes with a repurchase agreement to cover the deficit, at the interest rate for the second tranche of the liquidity credit line. These measures form part of the gradual process to set up a real-time gross transaction system (RGTS).

At its monthly monetary policy meeting the Board cut the reference rate by 25 basis points, from UF+4.75% to UF+4.50%. The liquidity credit lines were also modified by 25 basis points, to UF+4.50%, UF+6.50% and UF+8.50%. The liquidity deposit rate was cut to UF+3.50%.

MARCH

02 In a special session the Board of the Central Bank cut the monetary policy rate by 50 basis points, from UF+4.50% to UF+4.0%. The rates on the liquidity credit tranches were also cut by 50 basis points, to UF+4.0%, UF+6.0% and UF+8.0%. The rate on the liquidity deposit was reduced to UF+3.0%.

09 An exceptional authorization, valid until October 9, 2001, was provided to allow the first meeting for the exchange of checks and other documents from bank centers not forming part of

the same group of centers to take place at the beginning of the first bank working day. This authorization does not involve postponing the second meeting of the clearing center, which should take place on the day following the bank working day after the reception of documents to be cleared. The purpose of this is to make it easier to clear documents from other banking centers, without changing the final deadline set by the Central Bank for carrying out this procedure.

20 Savings and credit cooperatives which comply with the capital and other requirements of clause 2.1 of Chapter III C.2 of the Manual of Financial Regulations, and have also obtained the approval of the Superintendent of Banks and Financial Institutions, were authorized to open and maintain savings accounts to purchase housing, as referred to in Chapter III. E.3 of the Manual.

APRIL

10 In its monthly monetary policy meeting the Board of the Central Bank cut the reference rate by 25 basis points, from UF+4.0% to UF+3.75%. Rates on the tranches of the liquidity credit line were also cut by 25 basis points, to UF+3.75%, UF+5.75% and UF+7.75%. The rate on the liquidity deposit fell to UF+2.75%.

MAY

19 The Superintendent of Banks and Financial Institutions was given powers to instruct that in certain centers or groups of centers the settlement of checks and other documents from other centers not belonging to the same group should be realized together with the checks and other documents from the same center or group, as set out in clause 6.1 of Chapter III H.1 of the Manual of Financial Regulations. The purpose of this measure is to reduce the time required to clear checks from other centers, bringing it into line with documents from the same center. Thus funds should become available within 24 hours of presenting the document for settlement, through its deposit in another bank.

JUNE

12 In its monthly monetary policy meeting the Board of the Central Bank cut the reference rate by 25 basis points, from UF+3.75% to UF+3.5%. The rate on the tranches of the liquidity credit line was also cut by 25 basis points, to UF+3.50%, UF+5.50% and UF+7.50%. The rate on the liquidity deposit was reduced to UF+2.50%.

13 Repurchase operations on documents denominated, indexed or payable in foreign currency between banking firms established in Chile no longer have to meet the requirement that credits originating in these operations must be issued in the same denomination as the original instrument. This measure was intended to broaden this type of operation without increasing the risks, which remain covered by matching regulations.

JULY

6 Because the Central Bank auctioned off an additional US$1 billion of its promissory notes in dollars (PRDs), the Board decided to suspend auctions of long-term 10-, 12- and 14-year Central Bank indexed promissory notes payable in coupons (PRC), maintaining only those for eight and 20-year notes.

26 The Board decided that starting from the reserve requirement period beginning August 9, the monetary policy rate would be defined in nominal terms, as a percentage of a peso amount and not UF. The same formula to be used for liquidity credit lines and deposits. The Board set the nominal interest rate at 6.5% per annum, replacing the monetary policy rate of UF+3.5% per annum. The rate took into account a target real interest rate of 3.5% and projected inflation of 3%, at the center of the target range for inflation.

AUGUST

9 The Board agreed to include a Chapter IV.C.1, headed "Auction for the Purchase of Central Bank Promissory Notes", in the Manual of Financial Regulations, to regulate open market operations consisting of the purchase of Central Bank notes, before their redemption date, made by the Central Bank itself as part of monetary regulation.

13 To facilitate the financial system's transition to the new system using a nominal monetary policy rate, the Board temporarily increased to 270 days the limit on term matches for asset and liability operations in local currency.

D. MAIN FOREIGN EXCHANGE AND TRADE MEASURES IN 2001

APRIL

19 In the nineties, the Central Bank gradually liberalized foreign exchange regulations, a process that culminated in the elimination of remaining restrictions and implementation of a new Manual of Foreign Exchange Regulations on April 19, this year .

Liberalization was carried out by eliminating a series of requirements over time. Our country has now achieved a financial system with an appropriate level of development and the necessary hedging instruments. The regulatory framework for the bank sector has been perfected and inflation is kept low using a targeting system. There is a floating exchange rate system, fiscal accounts are solvent, international risk rating agencies have given the economy a positive rating, and the level of international reserves is appropriate. These solid fundamentals made it possible for the Central Bank to complete liberalization of foreign exchange operations.

The new regulations eliminate exchange restrictions affecting investment and financing decisions. Among the most important elements eliminated:

1. The prior authorization required for capital inflows in the form of foreign credits, investment, capital contributions, bonds and ADRs.

2. The prior authorization required for capital outflows in the form of capital gains, dividends and other benefits relating to capital contributions and investments, and foreign credit prepayments.

3. The prior authorization required to make capital returns, profit payments and other benefits relating to investments in Chile to residents abroad.

4. Central Bank authorization for special prepayment and accelerated payment clauses on credits abroad.

5. Restrictions regarding risk rating and minimum weighted maturities on bond issues.

6. Limitations on the currencies in which foreign debt may be issued or contracted.

7. Restrictions on ADR issues.

8. The cash reserve requirement (*encaje*) on capital from abroad (then set at zero).

However, despite the elimination of foreign exchange restrictions, accurate information systems are still essential if investment decisions are to be based on a proper evaluation of risks and opportunities. These information systems are also important to the Central Bank as a tool for safeguarding monetary stability and the normal working of domestic and external payments. Because of this, the Central Bank continues to require that specific operations be carried out through the formal exchange market. The exception to this requirement is cash flow operations associated with foreign trade, which may be made entirely through the informal exchange market. In this case the information must be given directly to the Central Bank. Information requirements are specified in the Information Forms and Procedures Manual, which must be used in conjunction with the new Manual of International Exchange Regulations.

This new regulatory framework in a system of controlled risk considerably reduces the transaction costs associated with external financial operations, so individuals and companies can now benefit more easily and efficiently from Chile's financial integration with the world.

JULY

6 In view of the growing instability in international financial markets, which has made the Chilean peso and other regional currencies more volatile and generated higher demand for exchange risk hedging instruments, the Central Bank decided to increase the issue of Central Bank promissory notes in dollars (PRDs) in the second half of the year to meet this demand, announcing the auction of approximately US$1 billion in additional PRDs. The authority also decided to offer an anticipated swap option during the second half for PRDs close to maturity.

AUGUST

16 In a scenario of continuing negative external conditions, and to ensure greater stability in local financial markets, the Board of the Central Bank took the following measures:

1. It decided it would increase the supply of Central Bank promissory notes in dollars (PRDs) by up to US$2 billion over and above the previously announced figure, during the rest of the year.

2. It set aside up to US$2 billion of international reserves to finance possible currency sales in the foreign exchange market.

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