**TABLE OF CONTENTS**

**PREFACE**

2

**SUMMARY**

7

I. **RECENT TRENDS IN INFLATION** 13
II. **WORLD ECONOMY** 19
III. **FINANCIAL MARKETS** 27
IV. **DEMAND AND SUPPLY** 35
V. **BALANCE OF PAYMENTS AND EXTERNAL FINANCIAL POSITION** 49
VI. **FOREIGN INFLATION** 53
VII. **SPECIAL FACTORS INFLUENCING INFLATION** 55
VIII. **FUTURE INFLATION SCENARIOS** 59

**REFERENCES** 71

**Boxes**
- Measuring core inflation 16
- World scenario vulnerability to oil price 26
- Fiscal impulse 46
- Productivity, potential output and output gap 47
- Oil price impact on domestic prices 58
The main objective of the Central Bank of Chile’s monetary policy is to keep inflation at a low and stable level—defined as a range of 2% to 4% per annum— in the medium term. Controlling inflation is the means by which monetary policy contributes to people’s well being. Low and stable inflation helps the economy to function better and contributes to higher economic growth, at the same time as it prevents the erosion of personal income. Furthermore, the focus of monetary policy on an inflation target helps to limit fluctuations in employment and domestic output.

The main objectives of this Monetary Policy Report are: (i) to support the process of monetary policy articulation by the Board of Governors of the Central Bank with a medium-term framework; (ii) to inform and explain to the general public the Board’s views on recent and expected inflation and its consequences for the conduct of monetary policy; and (iii) to orient economic agents’ expectations regarding future inflation and output trends.

The report is published three times a year, in January, May and September. A team of Central Bank staff, under direct guidance by the Board of Governors, is responsible for its preparation. The first section of the report focuses on recent inflation developments. The second part examines the main factors that influence the future path of inflation, including the international environment, domestic financial conditions, supply and demand conditions, the external financial position, international inflation affecting Chilean imports, and trends in specific prices. Finally, the third section reviews the implications of this analysis for the prospects and risks for inflation and economic growth over the next eight quarters. The report includes several boxes with more detailed information on issues relevant to evaluating inflation and monetary policy.

The May 2000 Report reflects the Board of Governors’ analysis of the economy and its prospects, developed during meetings in late April and early May, including the Monetary Policy Meeting held on 9 May 2000.¹

¹ This report contains data available up to 5 May 2000, but the analysis includes further developments through 9 May 2000, which were examined during the monetary policy meeting.

The Board of Governors
SUMMARY

• Since last January, the Chilean economy has continued along a path of continuous growth and low inflation. Core inflation remains stable and under 3% annually. Inflation, as measured by the CPI, rose between January and April due to price increases in oil, energy and transportation, but there is no sign of acceleration in other consumer prices. Wholesale prices declined during the same period, while the rate of growth of nominal salaries increased slightly.

• World economic activity has evolved satisfactorily, with more growth expected than in 1999, at rates slightly above 4% annually for 2000 and 2001. Chile’s terms of trade should rise about 5% for the same period, assuming an average copper price of 80-85 cents per pound. The external scenario favors Chilean economic growth.

• The international price of oil dropped significantly in late March, but since then until the closing date of this report, oil prices have fluctuated considerably. The base scenario of this report assumes an international oil price of around US$23 per barrel in upcoming quarters, with a tendency to fall slightly toward 2001, which is consistent with market projections.

• International inflation will rise moderately compared to 1998 and 1999. Similarly, foreign inflation measured in dollars should rise even more, reflecting expectations that the US dollar will depreciate in international markets as the world experiences more balanced growth between the US and other developed economies.

• Conditions in the world’s financial markets remain tight with no significant improvements expected for the next few quarters. International interest rates are likely to rise again during what remains of the year, reflecting tighter monetary conditions in industrial economies. Similarly, the more volatile conditions prevailing in international financial markets during recent months will probably continue to pressure the premiums paid by emerging economies upward. These factors tend to make foreign financing expensive for domestic firms.

• In Chile, monetary conditions have also become less expansionary since last January. The monetary policy interest rate was raised twice during the first quarter of the year to ensure that temporary cost pressures, like those associated with oil prices, did not affect inflation trends and expectations of economic agents. Currently, the policy interest rate is set at 5.5% (UF)\(^1\). The projections included in this report are

\(^1\) UF refers to Unidad de Fomento, a CPI-indexed accounting unit.
based on the working assumption that the policy rate will remain at the current level from now through the first quarter of 2002, the end of the projections horizon.

• Domestic long-term interest rates fell slightly from January to April, but rose in recent weeks, given increasingly volatile world financial markets. Overall, long-term interest rates have remained rather high, above 6.5% (UF) in the case of the Central Bank’s eight-year Indexed Promissory Notes Payable in Coupons (PRC). This situation reflects the higher level reached by foreign interest rates and the reduced availability of foreign financing. Similarly, the spread that private firms pay over and above Central Bank instrument rates also remains high. Both factors have kept domestic credit expensive and contribute to slowing private investment recovery.

• The rate of growth of monetary aggregates and credit slowed from January through March when compared to the previous four months, as did most indicators for sales and output during the same period, when seasonally adjusted. Levels of more liquid components, such as currency and demand deposits, fell during this period, although one must bear in mind that balances were particularly high in late 1999 as the concern about Y2K increased the demand for liquidity. The reduction in liquidity from January through March also responds to the higher short-term nominal interest rate. Only in April did broader monetary aggregates and credit to the private sector exhibit higher growth.

• The peso appreciated by almost 4% against the dollar between early January and the end of March, and 6% against the basket of main currencies included in the multilateral exchange rate (TCM5). However, since then, and through the closing date of this report, the peso has remained virtually unchanged compared to TCM5, although it depreciated against the dollar. The difference is the result of euro depreciation against the dollar during the same period. Thus, for the ten working days before this report’s closing date (may 9th), the average level of the TCM5 reached 114.4 (January 1998=100), while the observed dollar averaged Ch$ 513.7. This tendency of the peso to depreciate accompanied more volatile international financial markets and the drop in Chile’s nominal interest rate beginning in April, due to a lower expected change in the Unidad de Fomento. Similarly, prices in forward exchange contracts during the last ten working days before this report’s closing date, were in line with a 4% depreciation of the peso against the dollar over the next 12 months and a 6% depreciation against the main currencies (TCM5).

• The base scenario of this report assumes that the nominal exchange rate follows an intermediate path between the trend implicit in futures prices and the one compatible with a stable real exchange rate. This implies a real exchange rate depreciation of 2 to 3% during the projection horizon as compared to the level of the first quarter of this year.
• The fiscal policy stance will change from expansionary during 1997-1999 to restrictive this year. This is in line with the National Budget approved for 2000, which places a 3.6% cap on public spending growth for the year, and with the new government’s expressed intention of gradually moving back to the fiscal surplus of 1% of GDP toward the end of the projection horizon. If the tax burden remains unchanged, public spending will have to grow at a slower rate than GDP over the next two years.

• Within the base scenario, inflation of imported goods is expected to rise over the next two years, as a result of higher international inflation combined with the projected exchange rate trend.

• With the adjustments made in February and March to the reference values for the Oil Stabilization Fund (Fondo de Estabilización del Petróleo), domestic fuel prices are relatively well aligned with foreign levels. In the medium term no significant changes in fuel prices are anticipated although there could be some short-term fluctuation. Nor are significant changes in public transportation fares or other regulated prices expected within the projection horizon. In any case, changes to these prices mainly affect short-term inflation, not core inflation.

• Economic recovery continues, and prospects for world trade and activity tend to reinforce this trend. GDP grew at an annual 3.9% during the last quarter of 1999 and about 5.5% annually in the first quarter of 2000. Domestic demand also grew during the first quarter of the year for the first time since the end of 1998, adding to the dynamism already observed in foreign demand. Unemployment has fallen significantly from slightly over 11% in mid-1999 to 8.2% last March. To date, recovery of domestic demand has been restricted to private consumption and inventory accumulation, with no signs of recovery in fixed investment as of yet. At the margin, available indicators show that the economy continued to grow during the first quarter of this year over the previous quarter, but more slowly compared to the exceptional pace observed at the end of last year.

• Annual GDP growth is expected to reach 6.2% annually for the next eight quarters. This implies rates of growth around 5.9% for 2000 and 6.2% in 2001. Domestic demand, on the other hand, should grow just over 9% annually on average. Improved prospects for international activity and terms of trade favor the growth of foreign demand during the projection horizon. Similarly, improved indicators for consumer confidence and higher employment support the ongoing recovery of private consumption, which can be added to the temporary impact of inventory accumulation. In contrast, prospects for investment recovery are weaker, at least for the rest of the year, given long-term interest rates, excess installed capacity, and the foreseen contraction in public investment. Furthermore, higher levels of household debt over income, more expensive foreign financing, and a more restrictive fiscal policy will dampen the push from domestic demand. These factors could be
offset by somewhat more expansionary monetary conditions, on average, than those prevailing during the previous decade and by greater growth in net exports.

- Growth in aggregate supply over the next two years will be negatively affected by the lower investment rate in 1998 and 1999 and the weak recovery expected for this year. This outcome will also be influenced by lower growth in mining over the next two years, expected to be around 2% annually instead of the 9% annual average observed from 1995 to 1999.

- Regarding future inflation, the trend in price growth is expected to remain at about 3% annually. Excess capacity in domestic markets will be the main factor containing inflationary pressures over the next two years, offsetting the greater push resulting from higher demand and imported prices.

- Inflation projections are presented as a probability distribution for annual inflation for the projection time horizon, which runs from the second quarter of 2000 to the first quarter of 2002. These refer to changes in the average quarterly price index compared to the same quarter of the previous year. The Board of the Central Bank of Chile pays special attention to future trends in the consumer price index that excludes fuel, fruit, and vegetable price variations as a measurement of core inflation (CPIX), but also provide CPI projections. For the first quarter of 2001, the CPIX is expected to reach an annual rate of about 3.2% (quarterly average) and nearly 3.7% for total inflation as measured by the CPI. The difference between these measures is due to the impact of increases already observed in fuel prices. For the four quarters that follow, the price effects from fuel prices will disappear and CPI inflation will quickly drop towards 3% annually, while CPIX inflation will hold steady at around 3% annually. In the short term, inflation measured over 12 months, as measured by both the CPI and the CPIX, is likely to pick up, due to the carry-over effect of specific price rises that occurred between January and April. The central projection for average CPIX inflation for the fourth quarter of 2000 is an annual 3.6%, with CPI inflation projected to be 4.2% (Figures for CPIX projections and CPI projections).

- The balance of risks is also relevant for the assessment of monetary policy. In broad terms, the risks for inflation projections are considered to be balanced, although there is a relevant margin of variability that could result in future changes to monetary policy in either direction. The volatility of foreign financial markets has increased and will probably remain high for the coming quarters. Furthermore, US economic growth may slow more quickly than expected reducing growth in the world and in Chile. Under these circumstances, demand pressures for inflation are likely to subside in Chile, particularly in the medium term. Another risk factor is the future evolution of the price of oil. If it rises steadily above the level assumed in the base scenario, domestic prices may rise, thus increasing inflation projections, especially in the short term. The
impact of these particular risks, along with other standard sources of volatility, are reflected in the confidence intervals that accompany the base inflation projection for CPIX and CPI. Under scenarios of a sustained deviation of inflation from 3% per annum, monetary policy would have to be adjusted accordingly to stabilize projected inflation around its target level.

• In conclusion, the Board considers the current monetary policy stance as consistent with trend inflation in line with the medium-term target, while economic growth will be around 6% annually for the next two years. Monetary policy will remain flexible enough to preserve an environment of low and stable inflation, required for maintaining vigorous, sustained growth in economic activity and employment.
This section analyzes recent price level trends. It examines and interprets the behavior of different inflation indexes, their trends and their main components.

Inflation as measured by the Consumer Price Index (CPI) picked up somewhat during the past four months, reaching 3.5% for the twelve-month period through April 2000, over one point above where it stood at the end of 1999. This is wholly due to energy and transportation costs, which rose between January and April. This period also experienced the accumulated effects of a higher tax on gasoline, realignment of domestic prices with international fuel prices, and a one-off increase in public transportation fares (Figure I.1 and Table I.1).

The Board of Governors of the Central Bank of Chile pays special attention to trends among the different core inflation indexes in order to evaluate medium-term price performance (Box I.1). The gap between inflation as measured by total CPI and some alternative indexes widened between January and April. By April, core inflation (CPIX), which excludes perishable and fuel prices, had increased 2.8% for the 12-month period, and was higher than at the end of 1999. This increase was associated with higher transportation fares, included therein. Likewise, CPIX1 rose 1.8% for the 12 months through April, reaching a level similar to last December. This index excludes perishables and fuel from inflation projections, along with regulated public transportation fares and those affected by specific taxes (for example, cigarettes, property taxes, and annual car licenses).

Inflation, excluding fuel and transportation prices, remained in the lower half of the medium-term target range.

These trends indicate that with the exception of oil there has been no sign of accelerating inflation for the past four months and core inflation remains in the lower half of the medium-term target rate of 2% to 4% (Figure I.2 and Table I.2). However, specific price shocks are recent and it is possible that inflationary effects may spread to other prices in the coming months through the channel of higher costs or indexing mechanisms based on past inflation.

**Table I.1**

<table>
<thead>
<tr>
<th></th>
<th>CPI</th>
<th>CPIX</th>
<th>CPIX1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>3.9</td>
<td>6.3</td>
<td>9.1</td>
</tr>
<tr>
<td>II</td>
<td>3.7</td>
<td>7.8</td>
<td>7.2</td>
</tr>
<tr>
<td>III</td>
<td>5.3</td>
<td>4.5</td>
<td>4.1</td>
</tr>
<tr>
<td>IV</td>
<td>5.7</td>
<td>6.3</td>
<td>4.1</td>
</tr>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>1.5</td>
<td>3.5</td>
<td>4.0</td>
</tr>
<tr>
<td>II</td>
<td>2.6</td>
<td>2.5</td>
<td>3.4</td>
</tr>
<tr>
<td>III</td>
<td>2.0</td>
<td>0.6</td>
<td>-0.1</td>
</tr>
<tr>
<td>IV</td>
<td>3.2</td>
<td>1.8</td>
<td>1.0</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>6.0</td>
<td>6.6</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: National Statistics Bureau.

**Table I.2**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Food</th>
<th>Ind. goods</th>
<th>Fuels and tr.</th>
<th>Public serv.</th>
<th>Pers. serv.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999 Dec.</td>
<td>2.3</td>
<td>1.0</td>
<td>0.4</td>
<td>12.8</td>
<td>-1.1</td>
<td>3.3</td>
</tr>
<tr>
<td>2000 Jan.</td>
<td>2.8</td>
<td>2.7</td>
<td>0.4</td>
<td>14.6</td>
<td>-1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Feb</td>
<td>3.3</td>
<td>1.8</td>
<td>0.4</td>
<td>21.2</td>
<td>1.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Mar</td>
<td>3.4</td>
<td>1.5</td>
<td>0.0</td>
<td>23.1</td>
<td>2.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Apr</td>
<td>3.5</td>
<td>1.6</td>
<td>-0.9</td>
<td>25.0</td>
<td>2.7</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: National Statistics Bureau.
Tradable goods inflation

Inflation for goods traded internationally, whose prices are more closely linked to the behavior of imported prices and the exchange rate, rose slightly more than one percent from December to April. This was wholly due to oil-related increases: gasoline and others, which account for almost 8% of the tradable goods basket. Inflation for other tradable goods, in contrast, has been stable, rising just 0.3% for the 12 months through April (Figure I.3).

The strengthening of the peso during the first quarter helped to decompress commercialization margins on tradable goods.

In 1999, domestic prices for tradable goods clearly rose less than the exchange rate. As a result, last January there was concern that adjustments to commercialization margins could create temporary inflationary pressures during the current year. However, the recent behavior of importable goods prices reveals no evidence of inflationary pressure from this source. In fact, so far this year, net importable goods prices have fallen due to lower clothing prices, typical at this time of year, combined with lower prices for durable goods, among them electronic goods, furniture and household appliances. This is partly due to appreciation of the peso during the first quarter, which helped to decompress commercialization margins on tradable goods. Furthermore, some specific indicators suggested that new investment in this sector had increased competition at the end of the retail chain.

Non-tradable goods and services inflation

Inflation for non-tradable goods and services, whose performance is linked more to domestic market conditions, has also increased so far this year, to 4.2% for the twelve months through April. This is almost one and a half percent more than at the end of 1999. Non-tradable inflation, which is included in domestic core inflation (CPIXN), also ended April higher than in December (Figure I.4).

The increase in non-tradable goods inflation is due to higher prices for regulated services.

The recovery in non-tradable goods inflation is associated with higher prices for regulated services (12.3%), mainly public transportation fares, which rose 19% during the first four months of 2000. Higher water and telephone charges also contributed. The former were the result of a tariff review recently conducted in that sector, while the latter were the result of the rise in the Wholesale Price Index (WPI) in late 1999, because

---

1 Tradable goods, according to studies by the National Statistics Bureau (Instituto Nacional de Estadísticas, INE), represent somewhat less than half the CPI basket (47.7%). This index includes manufactured items like clothing, house furnishings and cars, as well as gasoline and other oil-based fuels, tobacco and other goods.

2 Non-tradable goods and services account for slightly over half the CPI basket, according to the definition used by the National Statistics Bureau (INE), with its main components including: housing; basic services like telephone, water and public transportation; personal services like education, health and recreation; as well as perishable foods. Its behavior is influenced to a large degree by domestic factors, including conditions on final goods markets and the job market.
this index being used as a reference point in the readjustment formula for basic telephone charges. These factors should not recur in the quarters ahead.

Inflation for personal services has remained stable since late 1999, rising 3% for the 12-month period ending in April 2000. Nominal wages have also grown at a steady pace, slightly over 5%, while monthly margin readjustments have risen slightly in recent months.

Finally, perishable prices, which to a large degree are included in the non-tradable goods basket, showed a net drop during the first part of the year, compared to the same period last year.

**Wholesale prices**

From December to April, the Wholesale Price Index (WPI) fell 1.3%, rising 9.9% for the twelve months through April (Figure I.5). This decline reflects the strengthened peso during the first quarter, and the international oil price's fall last April.

The recent fall in the WPI reflects the appreciation of the peso during the first quarter and a decline in the international oil price.

In spite of this recent slowdown, over the past year the accumulated increase in the WPI was significantly higher than that for consumer prices for the same period. However, there are some relevant conceptual differences that weaken the empirical link between the CPI and the WPI. In fact, wholesale prices reflect the structure of domestic production, with prices measured at the producer's stage, two factors that distort their relevance to the CPI basket. Copper, for example, weighs heavily on the WPI given its importance to GDP, but is considerably less significant when it comes to consumer basket costs; the oil price, which is registered directly through international prices, doesn't reflect the operation of domestic stabilization tools like the Oil Stabilization Fund (Fondo de Estabilización del Petróleo); and the imported goods WPI reflects any change in the exchange rate immediately and completely, even when its impact on final good prices is usually gradual and incomplete. These kinds of factors explain the WPI's higher volatile behavior when compared to the CPI, weakening the correlation between the two. Once factors common to both indexes are subtracted, as is the case with the exchange rate and fuel prices, the WPI is not a good predictor of short- and medium-term fluctuations in the CPI.

In summary, during the first four months of the year, inflation has risen more than expected as a result of higher domestic fuel prices and a one-off increase in public transportation fares. Nonetheless, core inflation indexes suggest that once the impacts of specific prices are subtracted, inflationary pressure from demand remains controlled within the medium term range.
Central Bank monetary policy is oriented to meeting inflationary targets within the medium term, that is over a 12- to 24-month horizon. For this reason, building inflation indicators that reflect series trends and that can be affected by monetary policy within a reasonable period is crucial to correctly evaluating these instruments. The goal is to be able to identify if changes in inflation over a given period are the result of temporary movements or specific sectors, or reflect more permanent changes or shifting trends.

Factors affecting inflation include supply and demand shocks. The former can significantly alter prices, although in general these affect inflation only temporarily. Changes in fuel and perishable prices are examples of supply shocks exogenous to the balance between available and used resources. Demand shocks, in contrast, reflect persistent imbalances between spending trends and the economy’s potential growth. These can modify price trends in a lasting manner; thus, controlling them to ensure price stability falls within the sphere of monetary policy initiatives.

### Alternative methodologies for estimating core inflation

The usefulness of an index for measuring core or trend inflation is widely accepted, given that this kind of index plays a significant role in most central banks’ methods for analyzing monetary policy. However, in spite of the importance of this concept, there is no consensus about the best way of measuring core inflation.

The simplest approach and the one most commonly used defines core inflation by excluding certain price categories from the total index, specifically those that show very high short-term volatility, independently of factors associated with monetary policy. The commonest exclusions are food and energy. Similarly, it is also common to discount the impact of indirect tax changes or regulated tariffs administered over prices, factors that don’t depend on demand. Finally, price changes directly linked to monetary policy and interest rates, for example the payment of credits for housing in countries where a floating interest rate is usually applied to mortgages, are also excluded.

Recently new approaches to measuring core inflation have been developed, which place more emphasis on the statistical properties of price changes. Some of these focus on the cross-sectional distribution of price changes for a given period, eliminating the impact of extreme movements in individual prices in order to refine the measurement of “normal” price changes. This kind of method is usually referred to as “pruned means”. One example is the weighted median of individual price changes. Other methods focus on the properties of inflation time series and other related variables, which soften variations using statistical filters to separate permanent from temporary components.

Inflation indexes based on these kinds of statistical procedures are used less than indexes based on the exclusion of components, due to difficulties involved in interpreting their movements that make them less transparent and, in the case of pruned means, make them tend to under-represent CPI trends, with a bias that is hard to estimate beforehand.
Measurements in this Report: CPIX and CPIX1

For the purpose of this report, core inflation is calculated by excluding certain goods and services. The CPIX is an index constructed on the basis of excluding perishables and energy, but including the price of public transportation. Perishables include all fresh vegetables and fruit considered in the basket, and fuel involves products like gasoline, kerosene and natural gas. The National Statistics Bureau (INE) has been calculating this index since January 1999. Consistently with this indicator, core inflation for tradables (CPIXT) and non-tradables (CPIXN) eliminate the corresponding categories of perishables and energy from each.

A second indicator of core inflation is the CPIX1, which corresponds to a more restricted basket than the CPIX, excluding not only fruit, vegetables and fuel, but also goods and services subject to significant discretionary changes through administrative decisions or regulatory changes independent of demand. These include the prices for services with regulated charges, among them public transportation, water, electricity and telephone; others administered by the State, like the subway and the post office; and other articles whose prices are affected by changes in indirect taxes, like car licenses, road tolls, property taxes and cigarettes. The main usefulness of this index is its closer link to demand conditions prevailing in the economy (Figure I.6).

Statistical properties of the CPIX and the CPIX1

One factor illustrating the usefulness of core inflation benchmarks like the CPIX or the CPIX1 is their greater short-term stability when compared to inflation measured by total CPI. Nonetheless, their medium- and long-term performance is consistent with total CPI.

The monthly rate of change in core indexes does not reflect extreme fluctuations in CPI, especially those produced by higher oil prices (1991) and strong variations in perishable prices (1992, 1993, 1997 and 1998) (Figures I.7 and I.8). However, series’ performance over a one- or two-year horizon is practically identical (Figure I.9). Analysis of their statistical properties over different evaluation horizons confirms these observations. The means are virtually identical but in the short term for a month or quarterly period, core indexes are significantly less volatile than total CPI. There are no significant differences in changes over horizons of one year or longer (Table I.3). Similarly, there are no major differences between CPIX and CPIX1 in terms of their volatility.

Another way of looking at the usefulness of core inflation indexes is to examine their persistency compared to fluctuations in the CPI. An empirical exercise based on a bivariate autoregressive system (Vector Autoregressive, VAR) for the CPIX and the index for fuel and perishable goods prices, which are excluded from the CPIX, was carried out. It revealed that the response of total inflation is significantly different given changes in price trends for perishables or fuel as compared to changes in the CPIX. In the case of the former, a temporary acceleration in prices as measured by the CPI occurs, followed by a slowdown. Meanwhile, in the case of the latter the acceleration of the CPI is more lasting (Figure I.10). In quantitative terms, while the impact of perishables and fuel on CPI inflation disappears almost completely after three months, in the case of core inflation shocks (CPIX), 20% of its initial value remains one year after the shock began.
Table I.3
Statistical Properties of CPI, CPIX and CPIX1 Inflation (April 1989-February 2000)

<table>
<thead>
<tr>
<th>Horizon</th>
<th>CPI</th>
<th>CPIX</th>
<th>CPIX1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-month</td>
<td>0.90</td>
<td>0.90</td>
<td>0.89</td>
</tr>
<tr>
<td>mean</td>
<td>0.83</td>
<td>0.64</td>
<td>0.66</td>
</tr>
<tr>
<td>standard dev.</td>
<td>0.92</td>
<td>0.71</td>
<td>0.74</td>
</tr>
<tr>
<td>variability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-month</td>
<td>2.73</td>
<td>2.71</td>
<td>2.71</td>
</tr>
<tr>
<td>mean</td>
<td>2.10</td>
<td>1.74</td>
<td>1.74</td>
</tr>
<tr>
<td>standard dev.</td>
<td>0.77</td>
<td>0.64</td>
<td>0.64</td>
</tr>
<tr>
<td>variability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-month</td>
<td>11.35</td>
<td>11.39</td>
<td>11.57</td>
</tr>
<tr>
<td>mean</td>
<td>7.12</td>
<td>6.80</td>
<td>6.62</td>
</tr>
<tr>
<td>standard dev.</td>
<td>0.63</td>
<td>0.60</td>
<td>0.57</td>
</tr>
<tr>
<td>variability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-month</td>
<td>23.48</td>
<td>23.79</td>
<td>24.46</td>
</tr>
<tr>
<td>mean</td>
<td>13.63</td>
<td>13.37</td>
<td>13.39</td>
</tr>
<tr>
<td>standard dev.</td>
<td>0.58</td>
<td>0.56</td>
<td>0.55</td>
</tr>
<tr>
<td>variability</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Central Bank.

An error correction model within the autoregressive system that includes said variables provides additional evidence of the relationship between CPI and CPIX. In the first place, the two indexes show a long-term, stable relationship that indicates that although there are some differences in their respective performance, these are temporary. Secondly, when there’s a gap, it is the CPI that moves to close it, speeding up or slowing down while the CPIX holds steady. This is evidence that the volatility of the CPI component excluded from the CPIX is not trend-related.

Figure I.10
CPI Inflation Response (monthly inflation, percent)

Source: Central Bank.
This section analyzes recent price level trends. It examines and interprets the behavior of different inflation indexes, their trends and their main components.

Inflation as measured by the Consumer Price Index (CPI) picked up somewhat during the past four months, reaching 3.5% for the twelve-month period through April 2000, over one point above where it stood at the end of 1999. This is wholly due to energy and transportation costs, which rose between January and April. This period also experienced the accumulated effects of a higher tax on gasoline, realignment of domestic prices with international fuel prices, and a one-off increase in public transportation fares (Figure I.1 and Table I.1).

The Board of Governors of the Central Bank of Chile pays special attention to trends among the different core inflation indexes in order to evaluate medium-term price performance (Box I.1). The gap between inflation as measured by total CPI and some alternative indexes widened between January and April. By April, core inflation (CPIX), which excludes perishable and fuel prices, had increased 2.8% for the 12-month period, and was higher than at the end of 1999. This increase was associated with higher transportation fares, included therein. Likewise, CPIX1 rose 1.8% for the 12 months through April, reaching a level similar to last December. This index excludes perishables and fuel from inflation projections, along with regulated public transportation fares and those affected by specific taxes (for example, cigarettes, property taxes, and annual car licenses).

Inflation, excluding fuel and transportation prices, remained in the lower half of the medium-term target range.

These trends indicate that with the exception of oil there has been no sign of accelerating inflation for the past four months and core inflation remains in the lower half of the medium-term target rate of 2% to 4% (Figure I.2 and Table I.2). However, specific price shocks are recent and it is possible that inflationary effects may spread to other prices in the coming months through the channel of higher costs or indexing mechanisms based on past inflation.

### Table I.1
**Annualized Quarterly Inflation**

<table>
<thead>
<tr>
<th>Year</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>3.9</td>
<td>7.8</td>
<td>4.5</td>
<td>4.1</td>
</tr>
<tr>
<td>1999</td>
<td>1.5</td>
<td>3.5</td>
<td>2.5</td>
<td>3.4</td>
</tr>
<tr>
<td>2000</td>
<td>6.0</td>
<td>6.6</td>
<td>3.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: National Statistics Bureau.

### Table I.2
**Breakdown of Inflation**

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Food</th>
<th>Ind. goods</th>
<th>Fuels and tr.</th>
<th>Public serv.</th>
<th>Pers. serv.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec.</td>
<td>2.3</td>
<td>1.0</td>
<td>0.4</td>
<td>12.8</td>
<td>-1.1</td>
<td>3.3</td>
</tr>
<tr>
<td>2000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan.</td>
<td>2.8</td>
<td>2.7</td>
<td>0.4</td>
<td>14.6</td>
<td>-1.0</td>
<td>2.5</td>
</tr>
<tr>
<td>Feb.</td>
<td>3.3</td>
<td>1.8</td>
<td>0.4</td>
<td>21.2</td>
<td>1.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Mar.</td>
<td>3.4</td>
<td>1.5</td>
<td>0.0</td>
<td>23.1</td>
<td>2.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Apr.</td>
<td>3.5</td>
<td>1.6</td>
<td>-0.9</td>
<td>25.0</td>
<td>2.7</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Source: National Statistics Bureau.
Tradable goods inflation

Inflation for goods traded internationally, whose prices are more closely linked to the behavior of imported prices and the exchange rate, rose slightly more than one percent from December to April. This was wholly due to oil-related increases: gasoline and others, which account for almost 8% of the tradable goods basket. Inflation for other tradable goods, in contrast, has been stable, rising just 0.3% for the 12 months through April (Figure I.3).

The strengthening of the peso during the first quarter helped to decompress commercialization margins on tradable goods.

In 1999, domestic prices for tradable goods clearly rose less than the exchange rate. As a result, last January there was concern that adjustments to commercialization margins could create temporary inflationary pressures during the current year. However, the recent behavior of importable goods prices reveals no evidence of inflationary pressure from this source. In fact, so far this year, net importable goods prices have fallen due to lower clothing prices, typical at this time of year, combined with lower prices for durable goods, among them electronic goods, furniture and household appliances. This is partly due to appreciation of the peso during the first quarter, which helped to decompress commercialization margins on tradable goods. Furthermore, some specific indicators suggested that new investment in this sector had increased competition at the end of the retail chain.

Non-tradable goods and services inflation

Inflation for non-tradable goods and services, whose performance is linked more to domestic market conditions, has also increased so far this year, to 4.2% for the twelve months through April. This is almost one and a half percent more than at the end of 1999. Non-tradable inflation, which is included in domestic core inflation (CPIXN), also ended April higher than in December (Figure I.4).

The increase in non-tradable goods inflation is due to higher prices for regulated services.

The recovery in non-tradable goods inflation is associated with higher prices for regulated services (12.3%), mainly public transportation fares, which rose 19% during the first four months of 2000. Higher water and telephone charges also contributed. The former were the result of a tariff review recently conducted in that sector, while the latter were the result of the rise in the Wholesale Price Index (WPI) in late 1999, because

---

1 Tradable goods, according to studies by the National Statistics Bureau (Instituto Nacional de Estadísticas, INE), represent somewhat less than half the CPI basket (47.7%). This index includes manufactured items like clothing, house furnishings and cars, as well as gasoline and other oil-based fuels, tobacco and other goods.

2 Non-tradable goods and services account for slightly over half the CPI basket, according to the definition used by the National Statistics Bureau (INE), with its main components including: housing; basic services like telephone, water and public transportation; personal services like education, health and recreation; as well as perishable foods. Its behavior is influenced to a large degree by domestic factors, including conditions on final goods markets and the job market.
Recent trends in inflation

This index being used as a reference point in the readjustment formula for basic telephone charges. These factors should not recur in the quarters ahead.

Inflation for personal services has remained stable since late 1999, rising 3% for the 12-month period ending in April 2000. Nominal wages have also grown at a steady pace, slightly over 5%, while monthly margin readjustments have risen slightly in recent months.

Finally, perishable prices, which to a large degree are included in the non-tradable goods basket, showed a net drop during the first part of the year, compared to the same period last year.

Wholesale prices

From December to April, the Wholesale Price Index (WPI) fell 1.3%, rising 9.9% for the twelve months through April (Figure I.5). This decline reflects the strengthened peso during the first quarter, and the international oil price’s fall last April.

The recent fall in the WPI reflects the appreciation of the peso during the first quarter and a decline in the international oil price.

In spite of this recent slowdown, over the past year the accumulated increase in the WPI was significantly higher than that for consumer prices for the same period. However, there are some relevant conceptual differences that weaken the empirical link between the CPI and the WPI. In fact, wholesale prices reflect the structure of domestic production, with prices measured at the producer’s stage, two factors that distort their relevance to the CPI basket. Copper, for example, weighs heavily on the WPI given its importance to GDP, but is considerably less significant when it comes to consumer basket costs; the oil price, which is registered directly through international prices, doesn’t reflect the operation of domestic stabilization tools like the Oil Stabilization Fund (Fondo de Estabilización del Petróleo); and the imported goods WPI reflects any change in the exchange rate immediately and completely, even when its impact on final good prices is usually gradual and incomplete. These kinds of factors explain the WPI’s higher volatile behavior when compared to the CPI, weakening the correlation between the two. Once factors common to both indexes are subtracted, as is the case with the exchange rate and fuel prices, the WPI is not a good predictor of short- and medium-term fluctuations in the CPI.

In summary, during the first four months of the year, inflation has risen more than expected as a result of higher domestic fuel prices and a one-off increase in public transportation fares. Nonetheless, core inflation indexes suggest that once the impacts of specific prices are subtracted, inflationary pressure from demand remains controlled within the medium term range.
Central Bank monetary policy is oriented to meeting inflationary targets within the medium term, that is over a 12- to 24-month horizon. For this reason, building inflation indicators that reflect series trends and that can be affected by monetary policy within a reasonable period is crucial to correctly evaluating these instruments. The goal is to be able to identify if changes in inflation over a given period are the result of temporary movements or specific sectors, or reflect more permanent changes or shifting trends.

Factors affecting inflation include supply and demand shocks. The former can significantly alter prices, although in general these affect inflation only temporarily. Changes in fuel and perishable prices are examples of supply shocks exogenous to the balance between available and used resources. Demand shocks, in contrast, reflect persistent imbalances between spending trends and the economy's potential growth. These can modify price trends in a lasting manner; thus, controlling them to ensure price stability falls within the sphere of monetary policy initiatives.

**Alternative methodologies for estimating core inflation**

The usefulness of an index for measuring core or trend inflation is widely accepted, given that this kind of index plays a significant role in most central banks’ methods for analyzing monetary policy. However, in spite of the importance of this concept, there is no consensus about the best way of measuring core inflation.

The simplest approach and the one most commonly used defines core inflation by excluding certain price categories from the total index, specifically those that show very high short-term volatility, independently of factors associated with monetary policy. The commonest exclusions are food and energy. Similarly, it is also common to discount the impact of indirect tax changes or regulated tariffs administered over prices, factors that don’t depend on demand. Finally, price changes directly linked to monetary policy and interest rates, for example the payment of credits for housing in countries where a floating interest rate is usually applied to mortgages, are also excluded.

Recently new approaches to measuring core inflation have been developed, which place more emphasis on the statistical properties of price changes. Some of these focus on the cross-sectional distribution of price changes for a given period, eliminating the impact of extreme movements in individual prices in order to refine the measurement of “normal” price changes. This kind of method is usually referred to as “pruned means”. One example is the weighted median of individual price changes. Other methods focus on the properties of inflation time series and other related variables, which soften variations using statistical filters to separate permanent from temporary components.

Inflation indexes based on these kinds of statistical procedures are used less than indexes based on the exclusion of components, due to difficulties involved in interpreting their movements that make them less transparent and, in the case of pruned means, make them tend to under-represent CPI trends, with a bias that is hard to estimate beforehand.
Measurements in this Report: CPIX and CPIX1

For the purpose of this report, core inflation is calculated by excluding certain goods and services. The CPIX is an index constructed on the basis of excluding perishables and energy, but including the price of public transportation. Perishables include all fresh vegetables and fruit considered in the basket, and fuel involves products like gasoline, kerosene and natural gas. The National Statistics Bureau (INE) has been calculating this index since January 1999. Consistently with this indicator, core inflation for tradables (CPIXT) and non-tradables (CPIXN) eliminate the corresponding categories of perishables and energy from each.

A second indicator of core inflation is the CPIX1, which corresponds to a more restricted basket than the CPIX, excluding not only fruit, vegetables and fuel, but also goods and services subject to significant discretionary changes through administrative decisions or regulatory changes independent of demand. These include the prices for services with regulated charges, among them public transportation, water, electricity and telephone; others administered by the State, like the subway and the post office; and other articles whose prices are affected by changes in indirect taxes, like car licenses, road tolls, property taxes and cigarettes. The main usefulness of this index is its closer link to demand conditions prevailing in the economy (Figure I.6).

One factor illustrating the usefulness of core inflation benchmarks like the CPIX or the CPIX1 is their greater short-term stability when compared to inflation measured by total CPI. Nonetheless, their medium- and long-term performance is consistent with total CPI.

The monthly rate of change in core indexes does not reflect extreme fluctuations in CPI, especially those produced by higher oil prices (1991) and strong variations in perishable prices (1992, 1993, 1997 and 1998) (Figures I.7 and I.8). However, series’ performance over a one- or two-year horizon is practically identical (Figure I.9). Analysis of their statistical properties over different evaluation horizons confirms these observations. The means are virtually identical but in the short term for a month or quarterly period, core indexes are significantly less volatile than total CPI. There are no significant differences in changes over horizons of one year or longer (Table I.3). Similarly, there are no major differences between CPIX and CPIX1 in terms of their volatility.

Another way of looking at the usefulness of core inflation indexes is to examine their persistency compared to fluctuations in the CPI. An empirical exercise based on a bivariate autoregressive system (Vector Autoregressive, VAR) for the CPIX and the index for fuel and perishable goods prices, which are excluded from the CPIX, was carried out. It revealed that the response of total inflation is significantly different given changes in price trends for perishables or fuel as compared to changes in the CPIX. In the case of the former, a temporary acceleration in prices as measured by the CPI occurs, followed by a slowdown. Meanwhile, in the case of the latter the acceleration of the CPI is more lasting (Figure I.10). In quantitative terms, while the impact of perishables and fuel on CPI inflation disappears almost completely after three months, in the case of core inflation shocks (CPIX), 20% of its initial value remains one year after the shock began.
An error correction model within the autoregressive system that includes said variables provides additional evidence of the relationship between CPI and CPIX. In the first place, the two indexes show a long-term, stable relationship that indicates that although there are some differences in their respective performance, these are temporary. Secondly, when there’s a gap, it is the CPI that moves to close it, speeding up or slowing down while the CPIX holds steady. This is evidence that the volatility of the CPI component excluded from the CPIX is not trend-related.
This section examines recent trends and prospects for the world economy over the next two years, developing a profile of the external conditions facing the Chilean economy, among them, trends in world economic activity, international inflation, the terms of trade, and general international financial conditions.

The prospects for world activity have improved in recent months. GDP growth for most of the world’s regions has rebounded and forecasts for the next two years have noticeably improved. Furthermore, prices for Chile’s main export commodities have risen. All this favors faster growth for the Chilean economy, although some risk factors, examined below, exist.

International credit conditions nonetheless remain tight and projections don’t contemplate any substantial improvement in this situation. Interest rates for the main economies are rising to prevent potential inflationary risk. International capital flows have been going to finance the significant current account deficit of the United States and volatile stock markets have pushed financial risk premiums upward, including sovereign risk spreads paid by emerging economies like Chile’s.

**World growth**

In 1999, world economic growth recovered. Weighted by GDP measured at purchasing power parity (PPP), it reached 3.5%. The United States and emerging Asian countries led world growth, while the Japanese economy showed weak signs of recovery, and growth in the euro area slowed somewhat. Latin America, in contrast, experienced a strong slowdown, with virtually zero growth.

Projections for world growth this year have risen steadily as evidence of increased activity has accumulated. The base scenario considered in this report assumes that world output will grow slightly over 4% per annum over the next two years, thus returning to growth rates prior to the 1998 crisis and almost one percentage point higher than average growth during the nineties. This projection is about half a percentage point higher than last January’s and about one percentage point more than in September 1999 (Figure II.1).

Similarly, the prospects for world trade are also favorable. According to IMF projections,¹ the volume of world trade will rise 7% to 8% per annum this year and next, three percentage points above average growth for 1998-1999.

As with previous years, world economic activity has been sustained by the exceptional performance of the United States’ economy. Growth in US productivity has been outstanding, about 3% per annum over the past four years, which has led to a record pace of expansion with no

---

¹ International Monetary Fund, World Economic Outlook, April 2000.
Forecasts for world growth in 2000-2001 are slightly above 4% per annum, almost one percentage point more than average growth during the past decade.

Given this expansionary scenario for world economic activity, the prospects for demand for Chilean exports are clearly positive. This has been confirmed by their performance during the first quarter of 2000. In line with initial estimates, weighted growth for Chile’s main trading partners (approximately 94% of total exports) is projected to reach 3.5% in 2000 and 4% in 2001.

<table>
<thead>
<tr>
<th>Average 1990-1998</th>
<th>1998</th>
<th>1999 (e)</th>
<th>2000 (f)</th>
<th>2001 (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>World (1)</td>
<td>3.2</td>
<td>2.4</td>
<td>3.5</td>
<td>4.3</td>
</tr>
<tr>
<td>United States</td>
<td>2.9</td>
<td>4.3</td>
<td>4.2</td>
<td>4.6</td>
</tr>
<tr>
<td>Europe</td>
<td>2.0</td>
<td>2.6</td>
<td>2.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Japan</td>
<td>1.8</td>
<td>2.5</td>
<td>0.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Rest of Asia (2)</td>
<td>8.0</td>
<td>2.4</td>
<td>6.3</td>
<td>6.8</td>
</tr>
<tr>
<td>Latin America (3)</td>
<td>3.1</td>
<td>1.9</td>
<td>-0.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Trading Partners (4)</td>
<td>3.1</td>
<td>1.9</td>
<td>2.3</td>
<td>3.7</td>
</tr>
</tbody>
</table>

1. Weighted regional growth by share (PPP) of world GDP. 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. Countries included account for 94% of total exports.
5. Estimates.
6. Projections.
partners reached 2.3% in 1999. Based on Consensus Forecasts and IMF projections, Chile’s main trading partners’ weighted annual growth rate will be about 3.5% this year and next. This figure is strongly influenced by higher growth rates expected for Europe and Latin America, regions that receive 30% and 20% of Chilean exports respectively, and continued favorable conditions in Southeast Asia.

The outlook for world growth over the next two years is favorable, but some risk factors must not be ignored. The main one concerns the future of the United States economy and the continuity of its growth. The sharp decline in unemployment in the US, record asset prices, a significant fall in private saving and the high current account deficit are all factors deserving attention. Under certain conditions they could introduce elements of uncertainty into growth projections for the US economy, particularly for 2001. Domestic demand would fall more quickly than assumed in the base scenario if the Federal Reserve faced with higher inflation, responds more drastically than expected, or there is a strong correction in share values. Alternatively, if productivity gains observed in recent years are maintained and spread into other regions the prospects for world growth would be even more favorable than base projections assume. In summary, the outlook is not completely clear and this is reflected in fragile expectations with regard to the American economy’s development in the short term and the volatility that stock markets have shown in recent weeks. Trends in the US economy in the coming quarters will have to be monitored particularly closely, along with its financial and real impacts on the rest of the world.

Other less significant, risks for world growth include the weak performance of the Japanese economy and the continued vulnerability of some Latin American economies.

**Commodity prices and terms of trade**

World growth has stimulated demand for commodities, resulting in a gradual recovery of their prices. Prices of Chile’s exports have improved slightly since the end of 1999, with higher levels expected to continue or even rise somewhat during the rest of the year.

The price of copper on the international copper market hovered around 80 cents per pound (Figure II.2) from January through to mid-May. The projection for this year’s average price is 81 cents per pound, rising to 85 cents per pound in 2001 (Table II.2). These figures take into account higher inventory levels, averaging over 700,000 metric tons (mt) in April, compared to 228,000 mt in 1997. World consumption, on the other hand, is projected to reach 500,000 mt this year, similar to the increase in supply once Chile’s Pelambres and Indonesia’s Batu Hyan mine become fully operational.

Other export commodities are also expected to rebound in 2000. The price of pulp rose 11% from last December to May, with prospects

---

3 Weighted world growth at purchasing power parity (PPP) is higher than weighted growth for Chile’s main trading partners due to differences in Asia’s share. This is because China, with high growth, weighs significantly more in world GDP based on PPP than on Chile’s exports. Japan, on the other hand, which is growing considerably less, weighs twice as much on Chilean exports as it does on world GDP using PPP.
looking optimistic, as a result of falling inventories and cutbacks to world supply. Similarly, Europe, which is the destination for 40% of pulp shipments, and Asia (except Japan), which receives 30% of pulp shipments, are expected to perform well during 2000, leading to higher prices for this raw material. Fishmeal prices have remained constant with a slight rise likely, given recovery in world supply and the fact that the Japanese economy, the main consumer of this product, will grow just 1% in 2000 (Figure II.3).

Copper prices are expected to average 81 cents per pound in 2000 and 85 cents in 2001.

Higher oil quotas agreed upon by OPEC in late March, along with signs of fragmentation of the oil cartel with Iran’s departure, should lead to a significant decline in price, after they peaked at US$30 per barrel (Brent) (Figure II.4). In addition, OPEC established a price band with a target range of US$22 to US$28 per barrel, with automatic stabilizers increasing or decreasing the production quota when the international price reaches the outer limits of the band for 20 days straight. Nonetheless, since late March international prices have fluctuated significantly. Overall, the base scenario assumes the price will average US$23 per barrel, assuming it averages US$24 per barrel this year and US$22 per barrel toward 2001 (Table II.3), according to projections from Consensus Forecasts and oil futures markets. Thus, medium-term projections for the oil price have remained higher than the historic mean to the degree that the cartel has managed to consolidate its policy. This is consistent with evidence that except at times of war, the oil price has shown no tendency to revert (quickly) to its historic mean.


Overall, the terms of trade for Chilean goods should rise by 2.5% in 2000. Although this is an improvement over projections prepared one year ago, it remains lower than historic averages. Thus, it seems reasonable to expect a similar improvement in 2000.

The risks described above for world economic activity are also relevant to the future price of copper and other export commodities and could eventually lead to less favorable conditions for Chile’s main exports. Furthermore, in the short term, a higher oil price is possible with it moving towards the ceiling of the OPEC band, which is considerably above the level assumed in the base scenario.

**International inflation**

According to Consensus Forecasts, inflation will rise slightly in the industrialized economies and Asia (except Japan) as a result of increased demand and rising commodity prices. The average trend inflation for industrialized economies should remain at 2%, except for Japan, which will see no growth in prices. Meanwhile, also according to Consensus Forecasts, inflation for Latin American and Eastern European economies will fall in response to more stable exchange rates.
This situation has already affected price indexes this year. The 12-month CPI in the United States rose 3.7% through last March, mainly due to high fuel prices. In fact, if food and energy are excluded, this indicator reaches just 2.4%. Nonetheless, this is above the 1999 average, contributing to the volatility of international financial markets. In the euro area, inflation went from an annual rate of 0.8% during the first quarter of 1999 to 2.1% by March of this year, slightly above the upper limit of the medium-term target, although core inflation remained closer to 1.5%.

Inflation in industrialized countries (except Japan) is forecast to increase slightly, with foreign inflation measured in dollars rising more noticeably.

Foreign inflation, measured in dollars, affecting Chile’s trading partners, rose during the first quarter of this year. This was the result of appreciation of the yen and emerging countries’ currencies against the dollar, which was only partially offset by euro depreciation. This rising trend for foreign prices measured in dollars will intensify over the next two years, the result of expectations that the dollar will depreciate on global markets as growth becomes more balanced between the United States and the rest of the world’s economies. In contrast, if the oil price rises more than projected in the base scenario, world inflation rates will probably be somewhat higher (Table II.4).

<table>
<thead>
<tr>
<th></th>
<th>Average 1990-1998</th>
<th>1998</th>
<th>1999 (e)</th>
<th>2000 (f)</th>
<th>2001 (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>3.1</td>
<td>1.6</td>
<td>2.2</td>
<td>2.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Europe</td>
<td>3.5</td>
<td>1.5</td>
<td>1.4</td>
<td>1.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Japan</td>
<td>1.4</td>
<td>0.6</td>
<td>-0.3</td>
<td>-0.2</td>
<td>0.1</td>
</tr>
<tr>
<td>Rest of Asia</td>
<td>8.3</td>
<td>6.5</td>
<td>1.2</td>
<td>1.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Latin America</td>
<td>421.9</td>
<td>10.8</td>
<td>9.8</td>
<td>9.2</td>
<td>8.1</td>
</tr>
</tbody>
</table>

(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.

International interest rates

Central banks in most industrialized countries have begun to raise their policy interest rates in response to more dynamic economies and to prevent their inflationary consequences, a process likely to continue for the rest of the year.

Markets are expecting the US Federal Reserve to continue to raise its target interest rate throughout 2000. Implicit market expectations assume an increase of 50 to 100 basis points to occur during the rest of the year, in addition to the 50 basis points applied during the first quarter. The base scenario assumes that the US policy rate will rise 75 basis points above the 6% rate prevailing in mid-May.
Similarly, better prospects for economic growth in the euro area this year will push the interest rate upward to ensure that inflation behaves consistently with the region’s target of under 2% per annum. Thus, expectations implicit in futures markets and bond yields over ten years are consistent with an increase that would bring the policy rate to 4.25% up from today’s 3.75%, which already includes a 75 basis point increase applied earlier this year (Figure II.5).

Further interest rate increases are expected in both the US and Europe.

Market interest rates, particularly long-term bond yields, moved upward during the first two months of the year. However, preventative action by both the Fed and the ECB have held inflation expectations in check, leading to a decline in long-term interest rates. In effect, interest on 10-year US treasury bonds, which increased to 6.6% in January, fell to around 6% in April, but rose again in early May by 30 to 40 basis points, amidst growing expectations of a significant rise in the policy rate.

The yield on ten-year euro bonds performed similarly, rising during the first quarter to 5.5%, then falling 30 basis points after policy interest rates rose during the first quarter. However, in mid-May the yield on this instrument had also risen 20 basis points. Finally, unlike the above, the yield on the Japanese government’s 10-year bonds remained relatively stable during the first quarter, at around 1.8% (Figure II.6).

Consensus Forecasts and futures prices foresee an appreciation of the euro and other currencies against the dollar, partly turning around euro depreciation since its launching. This forecast is consistent with the gradual slowdown expected for the US economy, higher interest rates expected in both the US and the euro area, and favorable prospects for growth in other regions around the world, including the euro area, Asia and Latin America (Figures II.7 and II.8).

**Emerging financial markets**

The cost of credit for emerging countries reflected in sovereign spreads fell from the first quarter of 1999 through to year’s end, returning to levels similar to those prevailing before the Russian debt moratorium. This remained steady during the first quarter, but in March and April emerging countries’ sovereign spreads began to rise, including that applied to Chilean bonds. The Emerging Markets Bond Index (EMBI) for Latin America, which measures the premium on the region’s sovereign bonds compared to US Treasury bonds, rose slightly more than 100 basis points, while the premium on Chilean bonds rose by almost 50 basis points during the same period (Figure II.9).

Sovereign spreads for emerging economies, including that on the Chilean bond, rose during March and April.

Higher sovereign spreads have been accompanied by a general rise in risk and liquidity discounts, in response to the growing volatility of asset markets. This volatility has triggered a shift to positions in fixed income assets, preferably those traded on safer markets, and is reflected in falling yields on longer term instruments in both the US and the euro.
area, while sovereign and corporate spreads have increased, and share values have fallen. This recent increase in sovereign spreads occurred even though the fundamentals of emerging economies have done well, as reflected in risk rating reviews by international agencies.

In the context of better conditions around the world as described in the base scenario, it is possible that sovereign spreads and international financial conditions for emerging countries will continue to improve as they were doing until last February. As a result, sovereign spreads could fall below last April’s levels and capital flows toward these economies could increase over previous months’, but always within a context of less international liquidity compared to the years before the 1997 and 1998 episodes. Higher international interest rates, fragile asset markets and the enormous current account deficit in the US will limit foreign capital pressures on emerging economies.

A moderate recovery in capital flows toward emerging economies is expected, along with a slight drop in sovereign spreads from their current level.

According to projections by international analysts, capital flows toward emerging countries this year will rise 17% compared to 1999, but will remain well below net flows experienced before the Asian crisis. Flows into Latin America are expected to recover and rise 25% over 1999 levels, thus concentrating more than 40% of total flows toward emerging markets (Figure II.10).

In summary, prospects indicate world growth and improvements in Chile’s terms of trade. Solid international growth led by the United States and emerging Asia should result in an annual world growth rate of 4% during 2000 and 2001, one percent more than the annual average during the nineties. Chilean terms of trade will rise about 5% during this same period. The international oil price had dropped significantly by late March, but fluctuated significantly from then until mid-May. The base scenario assumes an international oil price of US$23 per barrel for the coming quarters, declining somewhat toward 2001. Inflation is expected to rise slightly in industrialized countries (except Japan) although more restrictive monetary policies in the US and Europe will keep it under control. Foreign inflation in dollars will rise more due to dollar depreciation on world markets. International financial conditions are more restrictive than a few months ago. Higher international rates, the size of the US current account deficit, and the recent instability of financial markets abroad will keep liquidity in check, at least for the short term. In spite of a generally favorable outlook, significant risks remain, especially given the likelihood of a faster deceleration of growth in the US, which would bring less expansion worldwide in 2001, as well as a scenario less favorable to Chile’s main export prices. The recent volatility of international financial markets will probably continue. Finally, the possibility that the oil price may remain higher than the base scenario for longer than predicted cannot be ignored.
Since early 1999, rising oil prices have caused some concern with regard to their impact on world economic activity and inflation. Empirical evidence, however, suggests that in recent decades the world economy has become less vulnerable to fluctuations in the price of this fuel. In fact, oil consumption as a percentage of GDP in constant dollars has fallen systematically, especially in the G7 countries (Table II.5). This was particularly evident in the eighties, when high fuel prices led to the development of new sources of energy and more efficient use of oil.

Although there has been some decline in exposure to oil price fluctuations, and oil consumption’s share of gross domestic product has also fallen, for developing countries, including Chile, this trend has been less pronounced than in developed countries.

Oil’s declining importance as an energy source has reduced its impact on both inflation and growth. According to OECD projections, a ten-dollar increase in the price of crude represents a quarter of a percentage point less in world economic growth and half a point more in inflation one year later. Its impact on growth is more significant in those countries that are more dependent on oil imports like Japan, and its impact on inflation is greater where markets are more rigid in terms of relative wages and prices, like Europe’s.

---

4 OECD Economic Outlook, December 1999.
This section reviews recent trends in Chile’s financial markets, particularly monetary policy, interest rates, the exchange rate, monetary aggregates, credit, and the price of other financial assets.

Interest rates and monetary policy

Monetary Policy

The Central Bank of Chile’s monetary policy relies on an interbank interest rate target, called the monetary policy rate (MPR). The Board raised the MPR by 25 basis points on 27 January and again on 16 March of this year, to bring it to its current level of UF + 5.5% (UF or unidad de fomento, an inflation-indexed account unit). From January to April, market interbank interest rates lined up with the target rate.

Increases to the monetary policy rate were based on the need to prevent inflationary pressure from costs and to gradually bring growth in aggregate demand into line with potential output growth. The Central Bank reviewed prevailing conditions in the international fuel market and foreseeable corrections to domestic prices and decided to take preventative measures. The Bank also concluded that these cost pressures were temporary, but that early, opportune action would help limit the risk of spreading them to inflationary expectations and other prices. Thus, the Bank was able to maintain a scenario of low, stable inflation and a process of vigorous sustained growth, reducing the likelihood of later, more dramatic corrections. The market anticipated these movements in the MPR.

The Central Bank’s approach to monetary reserve policy during the first quarter focused on absorbing excess liquidity generated during the last quarter of 1999 by expanding the quotas for PRBC90 note auctions once the Y2K challenge was dealt with satisfactorily.

The Monetary Policy Rate (MPR) rose 50 basis points during the first quarter.

Yield Curve

The impact of the monetary policy rate on the cost of credit depends on its influence on the expectations of financial agents and the yield curve. Financial expectations are implicit in the prices for Central Bank notes, in what is known as the future interest rate curve (forward curve).\(^1\)

Since mid-1999, the curve’s slope has been positive, indicating expectations that the MPR would rise. The slope became steeper toward the end of last year, mainly because Y2K concerns punished longer-term securities, then declined in early 2000. Throughout the first quarter of this year, the forward curve dropped for every time frame, except the shortest term where it followed the MPR. This drop was even more pronounced after the second increase to the policy rate (Figure III.1).

---

1 The structure of future policy rates is calculated using the structure of effective interest rates observed on the market. The methodological reference is in Svensson (1994) and for Chile’s case in Herrera and Magendzo (1997) and Lefort and Walker (1999).
Recent movements in the yield curve indicate that expectations of a further increase in the MPR have weakened. A similar conclusion arises from surveys of market participants and analysts. Last April, surveys revealed that agents expected a MPR of UF + 6% toward year’s end and UF + 6.25% for late 2001, 25 basis points lower than expectations surveyed in early March. This is consistent with less concern about inflation risk in light of monetary policy decisions, and has been confirmed by a drop in nominal one-year interest rates and direct soundings of inflationary expectations.

Interest on the Central Bank’s 90-day indexed notes (PRBC-90) remained constant during February and early March at around 5.7%, but after the rise in the MPR on 16 March three-month yields dropped by almost ten basis points. Long-term interest rates (PRC8) also dropped at first, by about 25 basis points. Nonetheless, from mid-April to mid-May, short- and long-term interest rose about ten basis points in light of more volatile markets abroad.

Real long-term interest rates (PRC8) are about 110 basis points over the MPR and from mid-1999 to the present, the premium reached 150 basis points. Thus, while since June of last year the MPR has been lower than the average for the nineties, long-term interest rates have remained the same as the average for that period and even slightly higher. This moderated monetary policy’s expansionary effect on aggregate demand (Figure III.2).

Long-term interest rates have remained relatively high at UF + 6.5% in the case of the Central Bank’s eight-year indexed Promissory Notes (PRC8).

Given how important long-term domestic interest rates are for investment financing, some factors influencing their recent behavior will now be reviewed. These could remain the same or weaken in coming months. Short-term factors include expectations of a sharp increase in the MPR, present in recent months, which tended to fade, permitting an initial decline in long-term interest, although concern about greater instability of international financial markets recently turned this around. However, along with market expectations regarding short-term interest rates, other relevant factors could have a more lasting impact on long-term interest, among them those influenced by international arbitrage and foreign interest rates, as well as institutional factors affecting the supply and/or demand of these kinds of instruments.

Among international factors, financial conditions remain restrictive, although they are better than in 1998 and 1999, but less abundant than in previous years. Real interest rates on long-term papers of the United States have been rising since 1997. Thus, in the case of indexed 10-year US treasury bonds, their yield rose from an average 3.4% in early 1997 to 4.2% in March of this year, although they dropped back to 4% in April because of the volatility of international markets and higher demand for safe assets. Reduced availability of external financing and higher sovereign risk spreads have had a similar impact. The latter was 170 basis points on average during the first quarter and 226 basis points on average in April. In fact, recently the correlation between the real long-term US interest rate (corrected for taxes and sovereign risk) and PRC8 interest is rather high (Figure III.3). Furthermore, suspension of the exchange-rate band in early September 1999 probably pushed the market
to assign a higher risk factor to the currency, widening interest rate differentials deriving from arbitrage conditions. All these factors suggest higher long-term domestic interest rates, in spite of lower short-term domestic rates. Reducing the rate of the encaje (a reserve requirement) on foreign credits to 0% as of October 1998 has partially offset these factors.

Regarding domestic factors, the tendency to deposit institutional saving abroad and the recent fiscal deficit both deserve attention. In particular, private pension funds (AFPs), which hold 70% of the domestic market’s long-term securities, pushed their investment abroad up by about US$2.7 billion between the first quarter of last year and the same period this year.

This fiscal deficit is being partly financed by withdrawals from previous government deposits in the domestic financial system, including the Central Bank, a trend offset by increased demand from banks for alternative financing sources, thus generating positive pressure on domestic interest rates. The Government’s expressed intention to reverse this situation should reduce this pressure in the future, to the degree in which the market perceives reduced public spending has remained in line with these announcements.

Finally, there has been more competition among the different private bodies issuing bonds on the domestic market. The balance of bonds issued by the private non-financial sector and placed on the domestic market had been declining since late 1997, as companies made greater use of resources abroad, but since then, net issues on the domestic market have risen to almost US$780 million (Figure III.4). These developments have probably been partly offset by lower immediate demand for net financing from companies and households.

Recent regulatory changes regarding interest rate, maturity and currency matches within the banking system may have helped to reduce prices of long-term instruments during the transition toward compliance with these new banking regulations.

Financial System Interest Rates

Broadly speaking, current interest rates in the financial system tend to follow the lead of Central Bank instrument interest, although in the short term the differential may fluctuate significantly. Thus, during the last quarter of 1999, domestic market interest rates tended to rise slightly, making the average cost of credit in Chile more expensive. 90-day to one-year interest rates remained persistently higher than the policy rate just before the change of century, when there was a noticeable increase in the preference for liquidity. Later, short-term market interest rate became closer to the MPR, although it remained higher during January and February in anticipation of changes to the Central Bank policy rate. In March, these expectations weakened and 90-day deposit rates dropped (Figure III.5).

The spread between lending and borrowing interest rates returned to normal in late 1998 and has remained constant since at average levels common from 1996 to mid-1998. This indicates credit risk levels are returning to normal, an outcome confirmed by the steady decline in banks’ non-performing loans since May 1999 and a similar drop in financial provisions.
Interest rates on long-term fixed income instruments issued by the private sector (mortgages and company bonds) have remained high throughout the past year, due to both the general level of interest on the fixed income market and the surcharge paid by companies. In fact, the differential between interest on these instruments and PRC8 remains higher than in 1998. However, the differential between mortgages and PRC8 dropped by almost 15 basis points between January and April of this year, which can be associated with a slowdown in demand for mortgages as the DFL2 tax incentive to stimulate the purchase of new housing was gradually reduced. The differential between bank bonds, companies and PRC8 rose again in 2000 and is averaging close to 100 basis points more than in 1997 (Figure III.6).

Nominal Interest Rates

Nominal short-term interest rates have behaved rather unpredictably in Chile as a result of arbitrage involving changes in the UF. Nominal interest rates fell in November and December, but increased during the first quarter of this year with the Consumer Price Index and the associated rise in the UF. From April on, reduced expectations regarding changes to the UF made it possible to reduce nominal interest rates. These shifts tend to provoke changes in the pace at which money circulates, especially demand deposits, and trigger shifts in the exchange rate because of changes in the relative costs of taking positions in domestic versus foreign currency.

Nominal interest rates over longer terms tend to reveal inflation expectations. The difference between nominal and indexed interest on instruments with similar characteristics and maturity dates indicates the inflation premium, which in turn suggests the inflation expected for the same period, although this differential also includes a risk premium. In the case of notes maturing in one year, in late April the differential between PDBC-360 and TAB-360 had reached about 3.9%, almost half a point lower than it was in February and March. Given that risk associated with future inflation is uncertain and variable, it is hard to specify expected levels and changes in inflation. Nonetheless, the cost associated with inflationary risk ranges from 50 to 100 basis points, so the expectations implicit in nominal one-year interest rates indicate stable inflation for the next 12 months (Figure III.7).

Similarly, according to the Central Bank’s survey of the expectations of market agents and analysts, in March and April of this year private agents’ inflationary projections hovered around 4% by the end of 2000 and 3.5% by the end of 2001.

The exchange rate

The peso appreciated during the first quarter of this year. The multilateral exchange rate, defined respect five main currencies (TCM5)2 averaged 114 (based on January 1998=100) toward the end of March, 6% less than in early January. For the same period the peso-dollar parity fell 4%, from around 525:1 to under 505:1. From April to mid-May, the peso depreciated against the dollar but remained virtually stable against the

2 The TCM5 reflects the peso’s value against a basket of currencies, including the US dollar, the euro, the yen, the pound sterling and the Canadian dollar.
FINANCIAL MARKETS

TCM5, which reached 114.4 in the last ten working days before this report went to press. Depreciation against the total multilateral exchange rate (TCM), which includes a broader set of currencies, was also lower (Figure III.8). Similarly, the real exchange rate index, which measures the relationship between the prices of trading partners and Chilean product prices, appreciated by 6.9% from December to last March, but remains 4.5% higher than the average from 1997 to mid-1999 (Figure III.9).

From April to mid-May the peso depreciated against the dollar but remained steady against a broader set of currencies (TCM5 and TCM).

Factors influencing peso appreciation during the first quarter included the disappearance of Y2K-associated risk, along with more stable conditions on emerging markets expressed in the form of lower risk premiums and appreciating currencies. In Chile the higher nominal interest rate also contributed as an immediate factor (Figure III.10), the result of higher inflation as measured by the CPI for February and March. These financial factors occurred in the context of a current account surplus and better prices abroad. From mid-April on, however, international financial markets have become more volatile and Chile has tended to reduce the nominal interest rate to the degree that expectations of a higher UF have also declined.

Dollar futures prices during the first ten working days of May reached 531 pesos for December 2000 and 533 pesos over one year. These amounts reflect nominal interest rate differentials between Chile and the US over similar periods (Figure III.10) and indicate market expectations, although they also incorporate an exchange-rate risk premium. The monthly survey of expectations for early April, when the dollar stood at 505 pesos, indicated expectations that the price would reach 521 pesos by year’s end, 540 pesos by the end of 2001. World futures markets are consistent with appreciation of the yen and the euro against the dollar, which will bring additional peso depreciation against these currencies. Based on operations in different currencies on the futures market during the first ten working days of May, the future TCM5 index should reach 120 toward year’s end, 122 in a year’s time.

The more flexible exchange rate regime has marginally increased volatility since the band’s suspension. In a floating exchange system like this one, fluctuations in the exchange rate can be significant. From September 1999 to March 2000 the peso’s volatility against the dollar reached 5.5% per annum, when measured as the standard deviation of annualized weekly changes. Nonetheless, market projections foresee more volatility, in fact almost double, as can be deduced from the prices of Chilean peso options. These may also reflect financial surcharges given the derivatives’ market’s lack of depth (Figure III.11). In any case, the peso’s variability was less than that of other currencies also ruled by a floating exchange regime (Table III.1).

3 Calculated based on standard deviation for weekly fluctuations in the observed exchange rate.
Developments regarding monetary aggregates are relevant when evaluating the economy’s overall progress and the impact of monetary policy on it, even though the Central Bank has no explicit or implicit goals regarding these aggregates.

During the first quarter, real money balances dropped in the case of both money in circulation and private money (M1A). More liquid indicators returned to normal after the change of century, when liquidity levels were higher than usual, as can be seen by comparing currency demand in late 1999 to previous years (Figure III.12). Higher short-term nominal interest rates in February and March also contributed to a lower demand for money. Excluding the impact of nominal interest rates, the real annual growth of M1A reached 9.5% during the first four months of 2000.

There is a high statistical correlation between trends in more liquid monetary aggregates and domestic output. Empirical evidence shows that at least in the short term, private money (M1A) tends to lead output by one or two quarters, thus indicating consumers’ and companies’ operational needs ahead of time (Figure III.13). M1A showed signs of recovery starting in April 1999, well ahead of recovery in economic activity, which only picked up during the third quarter of last year. During this period, real money balances increased due to lower inflation and nominal interest rates during this period, and the impact of Y2K at year’s end. Recent slower growth in private money largely reflects the turnaround in both factors, but also coincides with slower growth in other monetary and real indicators (Figure III.14).

Growth in monetary aggregates slowed between last December and March.

A slowdown in monetary aggregates transcends the performance of money in circulation or demand deposits. Growth of broader measurements like M2A or M7, which should experience little or no impact from the Y2K effect or nominal interest rates, also slowed during the first quarter although less so (Figures III.15), while credit to the private sector performed similarly to broader monetary aggregates. Only in April did growth recover somewhat for both variables. Taken together, these figures indicate that domestic spending has not accelerated.
The volume of total credit and credit to companies and individuals has undergone little change since the end of last year.

The changing dynamics of total credit have been ruled by the performance of credits to companies (Figure III.16). Identifying whether conditions are led by demand or supply in a specific market is complex. In the case of recent trends in Chile’s credit market it’s natural to expect that under conditions of excess capacity, demand for investment and fresh credit should be less dynamic. Similarly, recent performance of fixed-income instrument differentials suggest that the interest rates charged to companies have risen, indicating a more restrictive supply of credit to companies, although this is not reflected in higher charges within the financial system.

Figures for personal credit indicate that growth of housing credit has slowed slightly, after it increased toward the end of the last year, when tax incentives for buying DFL2 properties were at their highest level. Similarly, consumer credit has remained virtually constant since September of last year.

In summary, the main financial variables, interest rates, exchange rate, money and credit remain consistent with recovery in demand and output during 2000, although the tendency for international monetary conditions to expand weakened during the first four months of the year.

**Prices of other financial assets**

Stock market asset prices varied little during this first quarter. From December 1999 to April 2000, the IPSA (an index based on selected stocks) dropped 4.5%, compared to a 14% rise during the last quarter of 1999. Price trends for assets in Chile have followed those of stock markets abroad, particularly shifts in the prices of Latin American Depositary Receipts (ADRs) (Figure III.17).

In summary, the higher monetary policy rate during the first quarter worked as a preventative measure that sought to bring growth in aggregate demand into line with potential output growth and avoid the spread of cost-related inflationary pressures. The expansionary tendency of other financial variables like market interest rates and the exchange rate has also weakened, as has growth of monetary aggregates and private sector credit.
This section analyzes recent and prospective trends in economic activity and the labor market, in order to examine their impact on future inflation. First, a summary of the prospects for economic growth is presented, followed by a review of the factors affecting aggregate demand, aggregate supply, and job market conditions.

**Prospects for economic growth**

In 1999, GDP fell 1.1% and domestic demand fell 9.9%. From the third quarter on, however, signs of recovery began to accumulate and by the last quarter of 1999, GDP had grown 3.9% over the same period of the previous year. Initial figures for the first quarter of 2000 indicate that the economy has continued to recover, with increases in output and employment, and some improvement in domestic demand as well. The base scenario assumes this tendency to recover will consolidate over the next eight quarters, led by domestic demand and non-copper exports.

The base scenario projects GDP growth will reach 6.2% over the next eight quarters, that is, from the second quarter of this year to the first of 2002. Growth for 2000 should reach 5.9%, 6.2% in 2001, while domestic demand should grow a little more than 9.5% in 2000, 9% in 2001. As a result of the strong recovery expected in imports and less growth of copper exports, net foreign demand will grow less than output both years, (Table IV.1).

**Table IV.1**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic Demand</td>
<td>9.1</td>
<td>1.9</td>
<td>-9.9</td>
<td>9.6</td>
<td>9.0</td>
</tr>
<tr>
<td>Exports of Goods and Services</td>
<td>9.4</td>
<td>5.9</td>
<td>-6.9</td>
<td>5.3</td>
<td>5.6</td>
</tr>
<tr>
<td>Imports of Goods and Services</td>
<td>12.9</td>
<td>2.1</td>
<td>-14.3</td>
<td>14.0</td>
<td>12.0</td>
</tr>
<tr>
<td>GDP</td>
<td>7.4</td>
<td>3.4</td>
<td>-1.1</td>
<td>5.9</td>
<td>6.2</td>
</tr>
</tbody>
</table>

(1) Projected.
Source: Central Bank.

GDP is expected to grow at an annual rate of 6.2% over the next eight quarters

The pace of growth implicit in these projections is lower than that observed during previous recoveries. This is clear if projections for the next two years are compared to figures for 1988, 1991 and 1994 (Figure IV.1). While reviewing the current growth scenario, along with historic evidence, other data on supply and demand explain these expectations of a more moderately paced recovery.

Relevant supply factors include the significant drop in fixed investment over the past two years, which will limit potential output growth over the next 24 months. Copper mining, for example, is expected to grow less, which could reduce overall growth by up to seven tenths over the next two years, as compared to 1995-1999.
On the demand side, fixed investment is unlikely to recover significantly this year. Long-term domestic and particularly foreign financing is now more expensive and less abundant than in previous years, at the same time as there is excess capacity. Private consumption will grow moderately, given the drop in real salaries, higher unemployment, and higher debt levels accumulated by families. Furthermore, projections incorporate the government’s decision to apply more restrictive fiscal policies, in order to gradually return to a fiscal surplus; this will mean less growth in transfers to the private sector and, at least this year, a contraction in public investment.

Altogether, these factors lead to a moderate projection for growth in total demand over the next two years. In any case, the margin of variability around these projections is a broad one, taking into account the multiple risk factors, both positive and negative, that could affect future economic development. This is why Section VIII presents the prospects for economic growth in terms of confidence intervals and discusses relevant alternative scenarios in more detail. These scenarios include the possibility of a sharper slowdown in demand in the US, which could significantly reduce projections for the Chilean economy’s future growth, especially toward 2001. Section VIII explores this subject in more detail.

The Board will place special emphasis on observing growth in demand, trends in fiscal policy, unemployment, and evidence of changing price and salary trends, to help evaluate the pace at which excess capacity is being absorbed and its impact on inflation.

**Foreign trade**

Net exports led total demand growth in 1999 and remained dynamic in the first quarter of 2000. During 1999, in real terms, goods and services exports rose almost 7%, while imports dropped 14%. In the first quarter of 2000, exports rose almost 23% per annum by value, while FOB imports, excluding fuel, rose by 12% per annum, almost 8% over the last quarter of the previous year. The recent increase in imports mainly affected consumer and intermediate goods, while capital goods remained the same.

The tendency for purchases abroad to recover will grow stronger in the coming quarters. They’ve started at a very depressed level (as measured over GDP, they are more than six percent less than the average for 1996 and 1998) and furthermore they tend to present high elasticity respect domestic demand expansion, as is expected for the next two years (Figure IV.2). Real depreciation in the exchange rate accumulated in 1998 and 1999, will work against import demand expansion, although its impact will be less. Overall, imports should grow about 14% in real terms this year, 12% in 2001. It is worth emphasizing that these trends will not lead to an abnormal current account deficit, given that their starting point is a virtual equilibrium.

Imports should grow almost 14% in real terms during the present year and about 12% in 2001.

Exports’ dynamism throughout 1999 and the first quarter of 2000 is due to a combination of supply and demand factors. Supply factors

---

**Figure IV.2**

*Volume Growth in Imports and Domestic Demand (percentage change over the same quarter of the previous year)*

![Graph showing volume growth in imports and domestic demand](image)

**Source**: Central Bank.

**Figure IV.3**

*Copper Exports by Volume and Price*

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume (1)</th>
<th>Price (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>94</td>
<td>10</td>
<td>2000</td>
</tr>
<tr>
<td>95</td>
<td>15</td>
<td>2500</td>
</tr>
<tr>
<td>96</td>
<td>20</td>
<td>3000</td>
</tr>
<tr>
<td>97</td>
<td>10</td>
<td>2000</td>
</tr>
<tr>
<td>98</td>
<td>15</td>
<td>2500</td>
</tr>
<tr>
<td>99</td>
<td>20</td>
<td>3000</td>
</tr>
<tr>
<td>(f)</td>
<td>Projected</td>
<td></td>
</tr>
</tbody>
</table>

(1) Annual percentage change in export volume.
(2) US$ per ton.
(4) Projected.
Source: Central Bank.
DEMAND AND SUPPLY

include the startup of new copper mining projects (Doña Inés de Collahuasi and Los Pelambres), and methanol production, as well as recovered fish catches and their impact on fishmeal exports. Copper exports rose over 15% in 1999, which won’t happen again in 2000 or 2001 (Figure IV.3). On the demand side, international economic recovery stimulated demand abroad and international prices, particularly for forestry products going to Asia (Figure IV.4). This factor continued during the first quarter, enhanced by rebounding demand from Latin American economies, which favors manufacturing exports. Similarly, methanol exports continue to enjoy strong growth.

The best scenario expected abroad for this year and next would stimulate exports even further.

The best conditions expected for the world’s economy suggest that Chile’s major export markets could expand more, with better prices for export commodities (Figure IV.5). Similarly, accumulated depreciation of the real exchange rate would also stimulate exports, although empirically, the exchange rate’s impact on exports is weak in the short term. Altogether, non-copper exports should grow about 6.5% in 2000 and 6% in 2001. Copper exports will grow much less, about 1%-2% on average, given that increases resulting from new copper mine startups will be much smaller than those of previous years.

Altogether, the contribution of net foreign demand (exports minus imports) to GDP will be negative during 2000 and 2001, the result of imports, which are expected to bounce back.

### Consumption and inventory changes

The overall decline in aggregate demand in 1999 led to a significant contraction in consumption and accumulated inventory. Total private consumption fell 3%, led by purchases of durable goods, while inventories fell compared to the previous year. The figures available from national accounts don’t permit a quarterly breakdown of consumption and inventory changes, but the combined tendency of these aggregates showed clear signs of recovery starting in the last quarter of 1999, and continuing during the first quarter of this year.

Several figures indicate that a recovery in Other demand, which excludes fixed capital investment, has focused mainly on replacing private durable consumption inventories, while the purchase of non-durable goods shows a more moderate rise. From January to March, the main sources of commercial supply, domestic manufacturing sales, and imports rose significantly more than retail sales. Thus, sales of non-durable consumer goods rose 8% over 12 months, while durable consumption rose a little over 16% (Figure IV.6), and imports of consumer goods rose over 28% per annum (Figure IV.7). However, the National Chamber of Commerce reports that retail sales rose 3.2% per annum. Durable goods in particular rose, while supermarket sales remained virtually constant (Figure IV.8).

A look at trends in sales and other related information reveals that the pace of consumer spending has not picked up. Most indicators consistently reveal that purchases during the first quarter remained similar or even declined slightly compared to the last quarter of 1999, even

---

*Figure IV.4*

Pulp Exports by Volume and Price (percentage change over previous year)

*Figure IV.5*

Export Growth by Volume and Main Trading Partner (1) (percentage change over the same quarter of the previous year)

*Figure IV.6*

Seasonally-Adjusted Sales of Durable and Non-Durable Consumer Goods (1) (average 1989=100)
discounting seasonal factors that usually bring a high volume of purchases just before year’s end. This pattern is evident in the behavior of a wide range of indicators, among them supermarket, new car and new housing purchases (the latter the result of a reduction in the tax incentive for buying new DFL2 housing). Currency and demand deposits, which are more directly linked to consumers’ current spending, behaved similarly, as did individual credit, which is more linked to the purchase of durable goods.

The pace of consumer spending did not pick up during the first quarter of the year.

Recent improvements in employment conditions, rising consumer confidence and normalization of families’ financial situations, as can be deduced from falling levels of non-performing and dubious loans, according to the National Chamber of Commerce, indicate that private consumption should continue to expand in the coming quarters. However, it will grow more slowly than it did during recoveries in the eighties and nineties.

Among the immediate factors influencing expansion of private consumption, unemployment and confidence will impact negatively. In spite of improvements at the margin, these indicators compare poorly to their historic averages (Figure IV.9). Similarly, more restrictive fiscal policy will also slow growth in government transfers, which are also more directly linked to private consumption. The 2000 budget allows for 3% to 5% growth, significantly less than the average for the previous five-year period, which was about 8% per annum. This should continue for the next two years, given the government’s announcements in this sense.

Among ongoing factors, slower growth in credit to households, the result of higher levels of indebtedness building up over recent years, stands out. Household debt to the financial system, measured over income from work, rose notoriously in the nineties. Furthermore, there’s indirect evidence that this also occurred in the case of direct credit from stores (Figure IV.10). Although there’s still some room for growth in consumers’ debt margin, expansion will be slower than in the past.

**Fixed investment: construction, machinery and equipment**

Fixed investment contracted sharply during 1999, falling 17.1%. Machinery and equipment declined the most, but investment in construction and other works also fell significantly (more than -10%) (Figure IV.11). Incomplete data for the first quarter of 2000 reveals that construction works picked up somewhat, while purchases abroad of machinery and equipment remain depressed. Fixed investment overall is expected to fall slightly over the same quarter of last year.

Gross capital formation contracted strongly in 1999, with no recovery in sight during the first quarter of this year.
The decline in fixed investment over the past year reflects the powerful impact of global crisis on the Chilean economy. In 1999, export-oriented projects were postponed due to lower export prices and general uncertainty about world economic conditions. Similarly, in 1998 and 1999 projects oriented to domestic markets were delayed in response to a sharp drop in sales and excess installed capacity, combined with higher financing costs facing domestic firms. In the case of construction and real estate development, huge numbers of unsold units accumulated, after significant expansion from 1995 to 1997. This, combined with a pronounced contraction in domestic spending starting in early 1998, led to a significant drop in building permits issued last year, measured by number and area (Figure IV.12).

More recent figures for fixed investment show no signs of recovery as yet, except in housing construction and engineering works. Figures for new housing permits, employment and delivery of construction-related materials began to improve during the last quarter of 1999. This behavior was linked to the strong pickup in sales of new housing, resulting from the tax incentive created by the government in 1999, along with the development of infrastructure projects. However, growth in companies’ installed capacity remained weak, as reflected in the depressed level of permits for non-housing construction (industrial facilities, offices and others), as well as imports of machinery and equipment (Figure IV.13).

Sluggish fixed investment is related to excess installed capacity for the domestic market and the higher cost of long-term credit, both domestic and foreign, which has been observed in the past year and continues to date. The decline in public investment will have a similar impact: according to the national budget it will fall by about 18% in 2000, that is 0.8% of GDP or 4% of total National Accounts fixed investment, even though definitions aren’t completely compatible.

The Capital Goods Corporation’s projects registry is consistent with these trends. Information available suggests no rise in investment projections for the current year, although this should pick up in 2001. For this year, public works-related projects associated with urban road tenders and new sanitary works are expected to rise, along with investment in real estate development and forestry. These increases, however, will not compensate for falling investment in energy and manufacturing, and there’s no sign of a turnaround in investment in other sectors like mining or telecommunications, which in previous years reached very high levels. Prospects for 2001 are better thanks to more mining project developing (Table IV.2).

![Figure IV.10](image1)

**Figure IV.10**
Debt Indicators
(loans as share of working income (1))

![Figure IV.11](image2)

**Figure IV.11**
Seasonally-Adjusted Imports and Sales of Capital Goods (1)
(US$ millions and average monthly index 1990 = 100)

![Figure IV.12](image3)

**Figure IV.12**
Seasonally-Adjusted Sales and Stock of New Housing (1)
(thousands of units)

<table>
<thead>
<tr>
<th>Stock</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2</td>
<td>1.0</td>
</tr>
<tr>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td>0.4</td>
<td>0.2</td>
</tr>
</tbody>
</table>

(1) Mobile quarterly average.
Source: Association of Real Estate Brokers (ACOP).

<table>
<thead>
<tr>
<th>Sector</th>
<th>1998</th>
<th>1999</th>
<th>2000(f)</th>
<th>2001(f)</th>
<th>2002(f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining</td>
<td>2,066</td>
<td>785</td>
<td>666</td>
<td>1,806</td>
<td>1,814</td>
</tr>
<tr>
<td>Forestry</td>
<td>173</td>
<td>78</td>
<td>186</td>
<td>329</td>
<td>549</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>599</td>
<td>341</td>
<td>252</td>
<td>316</td>
<td>460</td>
</tr>
<tr>
<td>Energy</td>
<td>2,149</td>
<td>1,200</td>
<td>387</td>
<td>596</td>
<td>758</td>
</tr>
<tr>
<td>Ports</td>
<td>44</td>
<td>72</td>
<td>23</td>
<td>77</td>
<td>27</td>
</tr>
<tr>
<td>Real Estate</td>
<td>1,902</td>
<td>1,600</td>
<td>1,753</td>
<td>1,742</td>
<td>1,837</td>
</tr>
<tr>
<td>Public Works</td>
<td>695</td>
<td>728</td>
<td>1,235</td>
<td>1,432</td>
<td>1,122</td>
</tr>
<tr>
<td>Telecommunications</td>
<td>796</td>
<td>715</td>
<td>667</td>
<td>179</td>
<td>41</td>
</tr>
<tr>
<td>Other</td>
<td>74</td>
<td>33</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>8,498</td>
<td>5,551</td>
<td>5,182</td>
<td>6,476</td>
<td>6,615</td>
</tr>
</tbody>
</table>

(f) Projected.
Source: Corporation for Technological Development of Capital Goods (Corporación de Desarrollo Tecnológico de Bienes de Capital).
At the margin, investment fundamentals have improved, particularly in terms of general conditions abroad and prices for Chile’s main exports, most noticeably mining and forestry products; recovery of domestic consumption; a marked decline in real estate inventories; and more private sector optimism regarding economic growth, according to recent surveys. In contrast, external credit remains scarce and Chile’s sovereign spread has risen in recent months along with those of other emerging economies.

Fixed investment will grow in 2000 and 2001, but excess installed capacity and the higher cost of domestic and foreign credit will limit its recovery.

Overall, the data suggests a gradual turnaround in fixed investment over the next two years. For the current year, investment should reach 26.5% of GDP, 27.5% in 2001 (measured in constant pesos). These rates are lower than before the Asian crisis, which will mean slower expansion of potential output over the next two years.

Fiscal Policy

In 1999, fiscal policy had an expansionary effect on aggregate demand. The balance of fiscal accounts deteriorated as a result of a 5.6% fall in tax revenue, more than expected, and expenditures that rose at rates similar to previous years. This generated a fiscal deficit for the year of 1.5% of GDP (Figure IV.14).

Public absorption, understood as public expenditure directly affecting aggregate demand, which accounts for slightly over 20% of domestic spending, rose by about 5.7% in 1999. In contrast, current fiscal income fell 3.3%, mainly due to reduced tax revenues from sectors associated with the economic cycle: VAT, import duties and income tax (Figure IV.15). This decline was partially offset by withdrawals equivalent to 0.7% of GDP from the Copper Compensation Fund (Fondo de Compensación del Cobre, FCC). The combined impact of fiscal income and expenditure on aggregate demand, as measured by the fiscal impulse indicator, reached about 1.3% of GDP, indicating an expansionary effect on both the income (which fell more than GDP) and expenditure sides.

Projections point to some improvement of fiscal accounts in 2000 and the consolidation of a surplus of 1% of GDP in the coming years.

Based on the 2000 budget, fiscal prospects are likely to improve. Furthermore, the government has announced its intention to return to a surplus of about 1% of GDP as a medium-term goal of fiscal policy. This means that for the next two years, fiscal policy will be a moderating factor when it comes to overall demand.

Projections for fiscal policy for 2000 are based on the budget approved for the year and assume no significant changes to the tax structure. In

---

1 Public expenditure affecting aggregate demand consists of total public expenditure by the central government, minus interest on public debt, investment in securities, and pension recognition bonds.
the first place, current income should improve, particularly taxes associated with domestic demand. Secondly, public spending will rise less, just 3.2% over the previous year’s approved budget, with a 3.6% ceiling compared to actual spending in 1999. Adjustments concentrate on public investment, which according to the budget will be cut by 18%, while current expenditures may grow as much as 4.8%.

Effective spending growth for 2000 could be lower, given the high degree of budgetary compliance achieved in 1999. Taking income and expenditure together, the fiscal impulse is expected to have a negative impact on domestic demand this year. The Finance Ministry’s official projection is for the fiscal accounts deficit to reach 0.5% of GDP, which includes capital gains associated with the sale of EMOS² (0.7% of GDP) and withdrawals from the Copper Compensation Fund worth 0.5% of GDP. Use of the Oil Fund can also be included; so far this year it has reached 0.2% of GDP. As of press date, there was no information for fiscal performance during the first quarter of this year.

Regarding prospects for 2001, the Executive has announced that its fiscal situation will improve by then, advancing toward a surplus of 1% of GDP, excluding the impact on the government’s balance of temporary fluctuations in copper prices and the economic cycle. This announcement suggests that fiscal policy will continue to moderate aggregate demand. However, a longer-term evaluation of fiscal policy can only be carried out once the national budget for the next fiscal year has been approved (Table IV.3).

In summary, projections for fiscal policy are based on government announcements expressing a commitment to achieving a fiscal surplus in coming years. Success in meeting this goal would break with the expansionary trend apparent in fiscal policy in previous years and would therefore be a relevant issue affecting the economic scenario over the next 24 months. In fact, less fiscal impulse in the coming years would be consistent with more relaxed monetary conditions that in turn would stimulate other components of overall demand, including consumption, private investment and exports.

### Temporary supply factors

Along with demand, supply factors also influence output in the short term. Recently, a return to normal hydroelectric supply has contributed positively to output. In fact, the 1998 drought hurt GDP growth during the first half of last year, affecting agricultural output and hydroelectric generation, which in turn led to rationing of electricity. Calculations indicate this reduced output growth by about 0.9% during the first half of 1999. The importance of this factor weakened during the second half, as rainfall returned to normal. For this year, hydroelectric production, which returned to normal during the fourth quarter of 1999, combined with the normal water supply expected for the first half of 2000, will contribute about 0.4% to GDP growth during the year.

This year and next, copper mining’s contribution to economic growth will fall significantly. In fact, growth should average about 2% per annum for 2000 and 2001, well below average growth of 9% per annum from

---

2 Santiago’s main water utility, recently privatized.
Employment and unemployment

Employment recovered quickly during the fourth quarter of last year, the result of seasonal factors, special municipal employment programs, and economic recovery. This process continued during the first quarter of 2000. From January to March, national employment was 5.2% higher than the average for the third quarter of 1999, when unemployment peaked. This increase represented 266,000 new jobs and was associated with seasonal factors and special employment programs, along with increased demand and economic activity (Figure IV.16). At the margin, the pace of overall employment creation slowed compared to the exceptional growth at the end of last year, due to seasonal factors and special employment program jobs being replaced by new employment in the private sector.

During this same period, national unemployment as measured by the National Statistics Bureau (INE) fell steadily and quickly from 11.5% for the mobile quarter ending in August 1999, to 8.2% for the mobile quarter ending in March 2000. This last figure was slightly higher than the previous mobile quarter, mainly due to seasonal factors. In fact, the seasonally adjusted unemployment rate for both men and women fell slightly during the last two mobile quarters (Figure IV.17).

Other figures confirm these trends. On one hand, according to the University of Chile’s employment survey, unemployment in Greater Santiago fell from 15.4% in June 1999 to 12.4% in December, but had risen to 13.1% in March. This marginal increase in unemployment occurred mostly in the secondary workforce, mainly in personal and municipal service sectors, reflecting reductions in special employment programs and the seasonal effect mentioned above. Primary workforce employment continued to rise, indicating the economy continues to create jobs. This is confirmed by figures from the Asociación Chilena de Seguridad (the Chilean Occupational Health and Safety Association): among companies affiliated to this organization employment rose 2.4% for the quarter December 1999-February 2000 compared to the same quarter of the previous year.

Since late 1999, employment has recovered quickly.

Employment will probably fall during the second and third quarters of 2000, due to seasonal factors. However, these aside, employment should continue to rise in the coming quarters, in line with economic growth, especially during the second half of 2000 and, to a lesser degree, during 2001. This recovery will be linked to higher growth expected for industry and construction, sectors that account for almost all the decline in aggregate employment during 1998 and 1999 and which, since last September, have accounted for 40% of net employment creation. Employment in municipal programs will gradually drop throughout the year, being replaced by new jobs in the private sector, while no significant changes are expected in the service and retail trade sectors (Figure IV.18).
Growth of the workforce has remained stable and proportional to the increase in the economically active population. Although participation has remained constant, higher female participation rates within the workforce contrast with a sustained decline in male participation (Figure IV.19).

Overall, the expected increase in employment and declining unemployment are unlikely to lead to excessive demand on the labor market or sub-sectors thereof. For the coming quarters, employment should continue to grow more than the workforce without pressuring wages. There is no evidence of an acceleration in the growth of real wages, and the unemployment rates for most economic sectors, regions and occupations remain above historical averages.

Utilization of productive resources

The degree and intensity to which productive resources are put to use is a sign of latent inflationary pressures within the economy. Pressures tend to rise when resource utilization is high, because prices and wages rise faster, while underutilization produces the opposite result.

Estimates for the output gap and for the evolution of trend GDP are subject to some margin of error. This uncertainty, among other elements, is built into the confidence intervals developed around growth and inflation forecasts. At the same time, trends in prices and labor costs must be monitored constantly to detect the impact of resource restrictions on inflation. In fact, monetary policy is guided by inflation targets and not by a specific goal for GDP growth. If productivity and potential GDP grow faster than expected, inflation becomes less likely, allowing for the relaxation of monetary conditions and faster growth of demand; the opposite will occur when productivity and potential output growth declines.

In spite of uncertainty about the respective degree of effective use of resources, alternative indicators lead to the conclusion that over the past two years, there has been a significant level of underutilization of productive resources, which should help to moderate future inflationary pressures.

Utilization level indicators include the output gap and unemployment. The output gap seeks to quantify the difference between actual and potential or trend output. Potential output consists of the maximum output level sustainable without increasing inflationary pressures. In this sense, potential or trend output is unknown, so in practice statistical measurements are used and their validity, for the purpose of this report, depends on how well they correlate with inflation trends.

One of these measures is the Hodrick and Prescott filter (Box IV.1), which consists of a statistical breakdown of a series, separating trend from the cyclical fluctuations around it. This filter is consistent with inflation over the past 15 years, as episodes of accelerated inflation have been associated with expansion of cyclic activity and vice versa (Figure IV.20).
Recent estimates indicate that due to the contraction in economic activity from mid-1998 on, the accumulation of underused resources increased, reversing the surpluses accumulated during the previous period. Today, these figures provide evidence of the accumulation of a negative gap. That is, in late 1999, actual output was about 4% below its statistical trend. The general conclusion regarding the existence of a negative output gap is robust, although alternative statistical methods may provide different results in terms of its magnitude. Thus, for example, a linear time trend may yield a larger estimated gap. This, however, does not alter its implications for the future behavior of inflation.

Over the past two years, there has been a significant accumulation of underused resources within the Chilean economy.

Another indicator of undercapacity is the unemployment rate, which provides a similar view. In fact, in late 1999 total unemployment was almost 4% above its historic average and it remains 2% higher to date. Unemployment for men between 35 and 54 years of age, which is less distorted by cyclical fluctuations in the workforce, points to the same conclusion. This rate is also 2% above historic levels and shows a close correlation with the output gap estimated using statistical methods (Figure IV.21). In addition, the fact that special municipal employment programs affect INE’s unemployment rates must be considered. These accounted for almost 100,000 jobs by the end of 1999, and 60,000 at the end of February 2000, that is, 1.1% of the workforce. Some of those signed up for these employment programs are available to join the workforce, so the real undercapacity is somewhat larger than what the open unemployment rate indicates.

Apart from measuring the current output gap and inflationary pressures, it would be interesting to project their future performance, and thus evaluate the potential for demand-driven inflationary pressure. This requires projecting the evolution of trend GDP. For 1999, the HP filter yields GDP growth of about 4%, below average for the nineties. This observation coincides with other evidence pointing to a slowdown in the Chilean economy’s trend growth over last two years (See Box IV.1). For the future, the gradual recovery of trend growth is expected, with it reaching almost 6%. This figure takes into account mining’s reduced contribution to GDP this year and next, and the slower pace of fixed investment observed in 1999, and expected in 2000. Thus, trend growth in GDP should reach about 5.5% in 2001, 6% towards 2002. Growth in demand over the next two years will mainly be offset by more use of installed capacity and employment, so this pace of growth should not become a source of inflationary pressure.

Wages and unit labor costs

Nominal wages’ growth rate slowed during 1999, although not as fast as inflation measured by both the CPI and the CPIX, yielding stable growth in real wages of 2% to 3%. This is similar to previous years, but higher than growth in mean labor productivity in 1998-1999. During the first three months of 2000, growth of nominal wages picked up slightly, but both CPI and CPIX inflation accelerated even more, so that average quarterly growth in real wages fell to 1.7% per annum, according to INE (Figure IV.22). Other figures for wages, among them those from the Asociación Chilena de Seguridad or pension funds, reveal similar trends (Figure IV.23).
Labor costs were a source of inflationary pressure (or reduced margins) during 1998-1999, given the contrast between stable growth in real wages and deceleration of mean labor productivity growth, although this indicator is distorted by cyclical factors (Figure IV.24). At the margin, this has begun to correct itself, as real wages have grown more slowly and productivity has risen.

Initial increases agreed upon during collective bargaining were much lower in 1999 than in previous years, according to statistics provided by the Labor Bureau (Dirección del Trabajo). For the first three quarters of 1999, these adjustments rose half as much as in previous years, in response to higher unemployment and falling productivity, as well as falling inflation. This trend turned around somewhat in the last quarter of 1999 (the latest data available), amounting to a real increase of 1%, not reached since early 1998. These figures are compatible with the slight recovery in the growth of nominal wages mentioned above and could be influenced by the gradual increase in inflation expected in 2000, as well as declining unemployment and marginal recovery of growth in labor productivity.

In this sense, nominal wages may grow faster in response to a significant but specific rise in CPI-measured inflation, observed during the first quarter. Because the information available on wages only goes up to March, the full impact of price shocks accumulated from February through April remains partially unmeasured to date.

Growth in real wages has slowed and productivity is on the rise.

Finally, regarding institutional factors, year-end wage increases for public sector employees should be moderate and consistent with the government’s stated fiscal policy. The minimum wage will rise 10% in May, as agreed upon in 1998. Although this increase in the minimum wage will tend to push up other wages within the economy, empirical evidence shows that this effect will not be substantial, even among less skilled groups.

To conclude, wages are exercising weaker inflationary pressure, but will require special attention in the future, particularly with regard to the impact of recovering employment and inflationary shocks during the first four months of the year.

In summary, recent economic developments and prospects for growth in 2000 and 2001 confirm that the economy is headed for recovery, led by domestic demand and non-copper exports. Growth is expected to reach 6.2% over the next eight quarters. Recovery in domestic demand will probably be weakened by a combination of more restrictive fiscal policy, less abundant and more expensive foreign capital, higher levels of domestic indebtedness, and excess capacity that will prevent a sudden rise in investment over the short term. Similarly, growth in potential supply will be limited by lower levels of investment over the past two years, particularly in mining, and the decline in productivity growth observed in indexes. In the short term, demand has considerable room to grow to close current gaps in productive resource utilization. These gaps will close only gradually and will therefore not become a source of inflation, at least within the projection horizon considered here. In any case, the pace of recovery of demand and shifts in price and wage indicators must be monitored closely to evaluate the speed at which gaps are closing, as well as their impact on inflation.
The fiscal impulse (IF) indicator is a descriptive analytical tool used to evaluate the degree of neutrality of fiscal policy regarding aggregate demand, that is, whether it has assumed an expansive, neutral or contractive stance.

The IF indicator is calculated to the first difference in the so-called Budget Cyclical Effect (ECP).

\[ IF_t = \Delta \left( \frac{ECP_t}{Y_t} \right) \]

where

\[ ECP_t / Y_t = \frac{G_t - T_t}{Y_t} + \tau_o - (g_o - \eta_o) \frac{YP_t}{Y_t} \]

where \( G \) and \( T \) represent public spending and government tax and non-tax revenue, \( Y \) and \( YP \) are actual and potential GDP respectively, \( g_o \) and \( \eta_o \) represent public spending and non-tax revenues as a percentage of potential GDP for a year or given horizon (neutral), and \( \tau_o \) is tax revenue as a percentage of effective GDP for the same year or horizon. Equation (2) can also be broken down into the cyclical effect of spending (ECG) and income (ECI), by separating the expressions related to expenditure in one term and other income-related items into another.

The ECP indicator assumes that tax revenues are neutral when they grow proportionately to effective or observed output and contractive (expansive) when they grow more quickly (slowly) than GDP. Expenditures and non-tax revenues are considered neutral in cyclical terms if they grow proportionately to potential GDP and they are considered contractive (expansive) if they grow more slowly (quickly) than potential GDP. That is, for one case effective GDP is used and for the other potential GDP is the reference point.\(^3\)

If the effective budgetary balance is less than projected from a neutral budget, fiscal policy is considered expansive and vice versa, independently of whether the difference responds to discretionary factors or those beyond the control of fiscal authorities.

Similarly, it must be emphasized that the ECP indicator, so the IF as well, attribute the same ability to affect aggregate demand (make it contract or expand) to changes in income and expenditure. Although it is recognized that households and firms may respond differently to taxes and public expenditure, in practice this simplifying assumption is used to make projections.

Calculations in Chile’s case

Specifically in the case of the Chilean economy, tax and operating revenue items are included as cycle-related tax revenues and other items as non-cycle-related items, except for copper income accounts and capital inflows, which are not included in the calculation. This, because the calculation only considers items that can directly affect domestic demand.

For expenditures, all items are included except accounts associated with debt servicing, payment of pension recognition bonds and investment in securities. This last because the calculation only considers items directly affecting domestic demand.

Finally, CPI-deflated real expenditure and revenue series are used. The quarterly IF is calculated using changes for the previous quarterly 12-month change, and as a neutral reference base average expenditure (\( g_o \)) and income (\( \tau_o \) and \( \eta_o \)) coefficients for 1993-1998 are used.

\(^3\) Non-tax (not cycle-related) income receives similar treatment to expenditure.
How the gap between potential demand and supply evolves plays an important role in estimating future inflationary pressures. This Box reviews several factors influencing potential supply trends within the economy.

**Productivity and the economic cycle**

The concept of potential product is not directly observable, at least not in the short term. Employment, investment and output are measured imperfectly, introducing random factors into the short-term evolution of mean labor productivity or total factor productivity, corresponding to the difference between total growth and that part of growth resulting from the accumulation of resources. Furthermore, these measurement problems are also correlated with economic cycles. Because of this, productivity performance cannot be evaluated using short-term developments, but rather its historic trend, even though this can change over time.

In Chile, mean labor productivity grew vigorously from 1990 to 1997, but slowed significantly in 1998-1999, and has only reverted very recently. Similarly, there has been an absolute fall in total factor productivity (Table IV.4).

**Table IV.4**

<table>
<thead>
<tr>
<th>Period Average</th>
<th>GDP</th>
<th>Employment (1)</th>
<th>Capital</th>
<th>Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>(percentage change over 12 months)</td>
<td>(percentage change over 12 months)</td>
<td>(percentage change over 12 months)</td>
<td>(percentage change over 12 months)</td>
<td>(percentage change over 12 months)</td>
</tr>
<tr>
<td>1987-1989</td>
<td>8.2</td>
<td>7.3</td>
<td>2.7</td>
<td>0.8</td>
</tr>
<tr>
<td>1990-1994</td>
<td>7.4</td>
<td>2.9</td>
<td>5.5</td>
<td>4.3</td>
</tr>
<tr>
<td>1995-1997</td>
<td>8.5</td>
<td>1.6</td>
<td>8.5</td>
<td>6.8</td>
</tr>
<tr>
<td>1998-1999</td>
<td>1.2</td>
<td>-0.7</td>
<td>7.7</td>
<td>2.0</td>
</tr>
</tbody>
</table>

(1) Employment excluding emergency programs, seasonally adjusted.
Source: Central Bank.

This kind of measurement is especially sensitive to the evolution of the economic cycle, given that the intensity of use of productive resources such as labor and capital follows the cycle, thus tending to accentuate productivity oscillations. Similarly, adjustments in the composition of production and employment can also affect productivity measurements, but in the opposite direction: during periods of contraction, those units and products that are less efficient and profitable are eliminated, thus raising mean productivity; the opposite occurs during periods of expansion. Because of this it’s hard to quantify how much of the slowdown in productivity will permanently affect economic potential and how much will dissipate as demand begins to expand more quickly.

Aside from these cyclical factors, the behavior of labor productivity depends on two basic causes: a higher stock of labor-complementary productive resources and improvements in the efficiency with which these resources are used. International experience indicates that the second factor is increasingly important and is associated with innovation and the introduction of new technology and products, and more efficient markets (in the sense of openness, competition and regulation), and other structural factors. In general, these last variables are reflected in the growth of total factor productivity, that is, the part of economic growth that cannot be explained by more intensive use of labor and capital. This trend can shift over time and occasionally rather suddenly, as seems to have occurred recently in the case of the US economy and information-technology related innovations.

Taking into account the measurement problems described above and difficulties in predicting shifts in total factor productivity, the estimate for the pace of productivity growth is based on empirical tendencies like the Hodrick and Prescott filter, described below, corrected for other factors that could imply shifts in it, like changes in investment rates.
Potential output

For the recent two-year period, physical capital grew significantly less due to strong contraction in fixed investment. The available projections show signs of moderate recovery, especially for the item machinery and equipment. All this implies a drop in potential growth in 1999, 2000 and 2001. This effect will be obvious in copper mining growth, because its contribution to GDP growth over the next two years is calculated at 0.2%, that is 0.7% less than in 1995-1999. The impact of slower investment in other sectors is harder to specify but they are headed in the same direction. In contrast, total factor productivity will probably rebound in the coming quarters, but it is hard to calculate its precise intensity. At the margin, this trend, based on the Hodrick and Prescott filter, is positive and grows at about 4%.

This information points to projected growth rates for installed capacity that are lower than those observed in the nineties, with supply growing at about 5% in the short term and almost 6% toward the end of the projection horizon. In any case, this factor is not considered an obstacle to growth in demand, because there is undercapacity to be filled in terms of both installed capacity and unemployment.

However, inevitably there is significant uncertainty regarding this kind of estimate, as the surprising growth of the US economy over the past four years has demonstrated, since it went far beyond growth for the past thirty years. The use of new information and communications technology can make productivity rise above historic rates. Similarly, economic activity in sanitary services and transportation services (roads, urban areas and ports) can grow faster as a result of seasonal changes made in these areas. Because of this, evaluating the economy’s productive potential requires ongoing monitoring of the relevant indicators, unemployment, prices and wages, in order to detect any market bottlenecks.

Output gap estimates and the Hodrick and Prescott filter

The output gap represents the difference between the actual product and its long-term trend. To estimate this trend there are a number of procedures, including the widely used Hodrick and Prescott filter.4

This filter consists of estimating trends for the series in question (for example GDP) using a statistical procedure that minimizes squared differences between the estimated trend and the effective series, but also penalizes changes in the trend’s pace in order to forecast the medium- and long-term behavior of the series.

One particular case of this filter is the linear trend, which doesn’t allow changes in the trend’s pace, thus tending to reduce its practical use. This was relevant to recent developments, when several factors indicated that potential growth rose more slowly during 1998 and 1999, but a linear filter does not detect this (Figure IV.25).

On the other hand, although this filter is widely used, it has some limitations. The main one is the fact that the estimated trend is sensitive to observations located at the beginning and the end of the sample. For example, during a cyclical contraction like the current one, the filter may underestimate the trend because at the end of the sample it is affected by depressed economic activity. Running an iterative process using estimates of future growth to include values from outside the sample and thus re-estimate recent trends and the size of the gap can offset this problem. This kind of procedure does not change the conclusions presented in this report.5

---


This section reviews recent developments in and projections for the current account and capital account of the balance of payments. Similarly, from a comparative perspective foreign solvency and liquidity indicators are examined in order to evaluate the soundness of the Chilean economy’s external position.

Current account

In 1999, the balance of trade reached a surplus of just under US$1.7 billion, while the current account ended the year practically balanced (the deficit stood at 0.1% of GDP). Revised projections in Sections II and IV regarding international prices, exports, and imports suggest that the balance of trade surplus will fall to half this amount this year, while the current account deficit will reach almost 2% of GDP, 3% in 2001. The increase in the current account deficit when compared to 1999 is mainly due to recovery in domestic demand, which will lead to an increase in imports. In fact, import volumes are likely to rise 14% in 2000, 11% in 2001 (Figure V.1).

The current account deficit will reach 2% of GDP this year and almost 3% of GDP in 2001.

Exports by volume will grow more slowly than in 1999, rising about 5% for the year. In 2001, they are forecasted to grow 4%. These results are based on smaller expected growth in copper production in the coming years, after a significant increase in 1999 with the startup of new deposits. Non-copper exports will perform strongly however, with volumes expected to rise about 6.5% in 2000 and 5.5% in 2001 in response to the expected recovery of the world’s economy.

In dollar terms, exports should grow more than 14% in 2000, mainly the result of improved commodity prices, particularly for copper and pulp. In 2001, the value of exports should rise about 8% for the year.

During the first quarter of this year, the current account ran a surplus of US$496 million, mostly the reflection of a positive trade balance. Higher copper prices (up 27% for the first quarter of 2000 over the first quarter of 1999) and higher volumes for other exports contributed to this outcome. These factors were partly offset by a higher value for oil imports, reflecting higher prices, as well as an increase in the volume of non-oil imports, in response to more dynamic domestic demand (Table V.1).

### Table V.1

<table>
<thead>
<tr>
<th></th>
<th>1998 (f)</th>
<th>1999 (e)</th>
<th>2000 (f)</th>
<th>Total 2001 (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CURRENT ACCOUNT</strong></td>
<td>-4,143.9</td>
<td>-78.1</td>
<td>495.5</td>
<td>-1,300.0</td>
</tr>
<tr>
<td>Trade Balance</td>
<td>-2,516.7</td>
<td>1,664.4</td>
<td>867.6</td>
<td>1,750.0</td>
</tr>
<tr>
<td>Exports</td>
<td>14,829.6</td>
<td>16,664.4</td>
<td>4,843.2</td>
<td>17,650.0</td>
</tr>
<tr>
<td>Imports</td>
<td>17,346.3</td>
<td>13,951.2</td>
<td>3,975.6</td>
<td>17,000.0</td>
</tr>
<tr>
<td>Non-financial services</td>
<td>-114.8</td>
<td>-314.7</td>
<td>-23.4</td>
<td>-300.0</td>
</tr>
<tr>
<td>Financial services</td>
<td>-1,975.3</td>
<td>-1,880.9</td>
<td>-446.5</td>
<td>-2,300.0</td>
</tr>
<tr>
<td>Unilateral transfers</td>
<td>463.0</td>
<td>453.1</td>
<td>97.8</td>
<td>550.0</td>
</tr>
</tbody>
</table>

(e) Estimates.
(f) Projections.
Source: Central Bank.
Capital account

As the counterpart to the current account surplus, the net capital flow in the first quarter was negative, because of net outflows due to foreign direct and portfolio investment, as well as short-term capital. These last were mainly related to foreign trade, particularly the seasonal nature of fruit exports. These outflows were partly offset by positive inflows from medium- and long-term credits from abroad (Table V.2).

Given the recovery expected in domestic demand and the projected current account deficit, combined with a solid external financial position, net capital inflows are expected for this year. Sources of financing include net earnings from direct investment, portfolio investment, medium- and long-term credits. In addition, the strong outflows of short-term capital experienced in 1999, the result of the accumulation of foreign assets by the private and banking sector are not expected to occur again this year. Outflows of pension fund capital like those occurring last year are not expected either.

Table V.2
Capital Account
(US$ million)

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>1999 (e)</th>
<th>2000 (e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPITAL MINUS RESERVES</td>
<td>3,253.9</td>
<td>-763.5</td>
<td>-205.9</td>
</tr>
<tr>
<td>Foreign investment</td>
<td>1012.3</td>
<td>4,496.1</td>
<td>-484.9</td>
</tr>
<tr>
<td>Direct investment</td>
<td>1841.6</td>
<td>4,365.8</td>
<td>-716.6</td>
</tr>
<tr>
<td>Portfolio investment</td>
<td>-829.3</td>
<td>100.3</td>
<td>-313.3</td>
</tr>
<tr>
<td>Other Capital</td>
<td>2,241.6</td>
<td>-5,259.6</td>
<td>279.0</td>
</tr>
<tr>
<td>Medium- and long-term capital</td>
<td>3,312.5</td>
<td>65.0</td>
<td>494.4</td>
</tr>
<tr>
<td>Short-term capital</td>
<td>-1070.8</td>
<td>-5,324.6</td>
<td>215.4</td>
</tr>
<tr>
<td>ERRORS AND OMISSIONS</td>
<td>-1176.1</td>
<td>158.3</td>
<td>-382.6</td>
</tr>
<tr>
<td>BALANCE OF PAYMENTS</td>
<td>-2,066.1</td>
<td>-683.3</td>
<td>-93.0</td>
</tr>
</tbody>
</table>

(e) Estimates.
Source: Central Bank.

Indicators of Chile’s external financial position

Among foreign liquidity indicators for the Chilean economy requirements for short-term financing, credits and debt amortization maturing in less than one year are significant, and have reached only 34% of foreign currency reserves. This reflects a solid external financial position, which compares favorably to other emerging economies. Other solvency indicators for the Chilean economy, like foreign debt over GDP or exports, and foreign liquidity indicators, like M2 over foreign currency reserves or the relative volume of short-term debt, also compare favorably to other emerging economies (Table V.3).

Foreign solvency and liquidity indicators show the Chilean economy’s solid external financial position.

This solid foreign solvency and liquidity position is reflected in the relatively low sovereign spread Chile pays on its foreign debt. In 1999 this spread stood at around 200 basis points on average, while the
surcharge for the rest of Latin America was well above 1000 basis points.\(^1\) Chile’s good foreign indicators are also reflected in its risk rating from Standard & Poor’s, which has remained constant at A-, at the head of emerging economies.

**Table V.3**

External Vulnerability Indicators for Emerging Markets

<table>
<thead>
<tr>
<th>Country</th>
<th>S&amp;P rating</th>
<th>Total foreign debt (% PIB) (%)</th>
<th>Foreign debt (% exports) (%)</th>
<th>Short-term foreign debt+ amortizations (% NIR) (%) ((2))</th>
<th>M2 (% NIR) (%) ((3))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chile</td>
<td>A-</td>
<td>47</td>
<td>152</td>
<td>34</td>
<td>236</td>
</tr>
<tr>
<td>Argentina</td>
<td>BB</td>
<td>51</td>
<td>391</td>
<td>99</td>
<td>162</td>
</tr>
<tr>
<td>Brazil</td>
<td>BB</td>
<td>37</td>
<td>337</td>
<td>176</td>
<td>554</td>
</tr>
<tr>
<td>Colombia</td>
<td>BB+</td>
<td>43</td>
<td>212</td>
<td>196</td>
<td>212</td>
</tr>
<tr>
<td>Mexico</td>
<td>BB+</td>
<td>29</td>
<td>91</td>
<td>153</td>
<td>669</td>
</tr>
<tr>
<td>Peru</td>
<td>BB</td>
<td>56</td>
<td>327</td>
<td>99</td>
<td>145</td>
</tr>
<tr>
<td>Venezuela</td>
<td>B</td>
<td>33</td>
<td>115</td>
<td>54</td>
<td>160</td>
</tr>
<tr>
<td>China</td>
<td>BBB</td>
<td>15</td>
<td>61</td>
<td>29</td>
<td>898</td>
</tr>
<tr>
<td>Korea</td>
<td>BBB</td>
<td>27</td>
<td>69</td>
<td>95</td>
<td>384</td>
</tr>
<tr>
<td>Philippines</td>
<td>BB+</td>
<td>63</td>
<td>103</td>
<td>100</td>
<td>333</td>
</tr>
<tr>
<td>Indonesia</td>
<td>CCC+</td>
<td>78</td>
<td>230</td>
<td>131</td>
<td>350</td>
</tr>
<tr>
<td>Malaysia</td>
<td>BBB</td>
<td>43</td>
<td>32</td>
<td>38</td>
<td>270</td>
</tr>
<tr>
<td>Thailand</td>
<td>BBB-</td>
<td>55</td>
<td>95</td>
<td>61</td>
<td>403</td>
</tr>
<tr>
<td>Taiwan</td>
<td>AA+</td>
<td>14</td>
<td>29</td>
<td>28</td>
<td>532</td>
</tr>
<tr>
<td>Poland</td>
<td>BBB</td>
<td>37</td>
<td>56</td>
<td>31</td>
<td>242</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>A-</td>
<td>45</td>
<td>64</td>
<td>96</td>
<td>297</td>
</tr>
<tr>
<td>Russia</td>
<td>SD</td>
<td>75</td>
<td>162</td>
<td>279</td>
<td>448</td>
</tr>
</tbody>
</table>

\(^{1}\) Projections for 2000.


\(^{3}\) Latest information available.


*Net international (foreign currency) reserves.

Nonetheless, the rise in Chile’s foreign debt since the mid-nineties to its current level of 51% of GDP (Figure V.2) should be noted. This increase could bring higher foreign financing costs for local agents and lower inflows of foreign capital in the coming years. However, foreign debt net of foreign currency reserves has reached 28% of GDP and has climbed in a context of rising Chilean investment, both direct and portfolio, abroad.

\(^{1}\) See Emerging Markets Bond Index (EMBI), JP Morgan.
This section analyzes inflationary pressures from imported goods or those goods competing with imports. These pressures arise from recent and expected international inflation, commodity prices and the exchange rate. Some domestic developments affecting the intensity and pace at which the above pressures affect domestic prices must also be considered.

Foreign inflationary pressures will rise in the next two years. Faster world growth will push average inflation in the industrialized economies up by almost half a percent. In a context of more balanced growth among different regions and monetary areas, the dollar will probably depreciate against other currencies. This tendency for international inflation to rise, along with the performance of the exchange rate, as described in Section VIII with regard to future inflation scenarios in Chile, point to a moderate increase in inflation affecting imported goods over the next two years. The accumulated increase in oil and other commodity prices over the past year will also affect domestic production costs, as well as some specific prices within the CPI, as occurred with fuel and public transportation prices between February and April.

### Commodity prices

Commodity prices began to rise in mid-1999 and continued to do so through the first quarter of this year, pushed by rising energy prices. However, in mid-March prices began to drop, the result of the performance of oil prices and industrial products. In net terms, the Commodities Research Bureau (CRB) basic price index rose 3.6% from December to April (Figure VI.1).

In Chile, a lower oil price and the appreciation of the peso during the first quarter were reflected in a drop in the WPI between December and April.

The CRB commodity price index rose 2% between January and April.

In terms of the future behavior of commodity prices, market projections anticipate a crude oil price of US$23 per barrel and the base scenario for this report is consistent with that profile. Other basic food and manufacturing products could rise to the degree that world economic activity, particularly in the Asian economies, picks up speed, generating more demand. Nonetheless, the link between these prices and their Chilean equivalents is only partial, because many operate within price stabilization bands, among them wheat, sugar and grains, whose current prices are well above their international import prices.

### Inflation for importable manufactured goods

During the first quarter of 2000, the foreign price index measured in dollars (FPIX) rose 3% over the first quarter of 1999, and 0.9% over the previous quarter. Wholesale prices abroad have been rising, albeit slowly, and are very linked to oil. Asian and Latin American currencies have appreciated against the dollar during the first quarter of this year, which means that imports from these markets have tended to grow more
expensive when measured in dollars. This development has been weakened by the euro’s depreciation against the dollar, which has tended to reduce dollar prices for imports from countries belonging to the European Monetary Union, but this situation is expected to reverse (Figure VI.2).

The import unit value index (índice de valores unitarios de importación, IVUM) has also risen. In effect, the figures show it rose throughout 1999 and estimates indicate it rose 6.3% during the first quarter. However, if oil is excluded, the index fell 0.5% (Figure VI.3).

Forecasts for the main scenario assume faster growth in foreign inflation measured in dollars for imported manufactured goods, consistent with observations in Section II. This situation, combined with projections for the exchange rate, will increase imported inflationary pressures over the next two years.

The main scenario assumes foreign inflation measured in dollars will rise for imported manufactured goods.

In Chile, tradable goods inflation within the CPI increased during the first four months of the year, due to rising fuel prices. However, inflation for other importable goods has been virtually zero, in spite of the fact that final sales, especially of durable goods, have shown signs of normalization. The stronger peso observed during the first quarter and the reduction of trade tariffs helped to decompress commercialization margins for importable goods and reduced inflationary pressures that had been building up since late 1999 (Figure VI.4).

In recent weeks, the peso depreciated against the dollar but remained virtually constant against a broader range of currencies. This indicates that in spite of the recent behavior of the price of the dollar, imported inflationary pressures have not risen.

The eventual recovery of commercialization margins on importable goods has been an important issue during debates over the prospects for inflation. The extent of this pressure is hard to define, because the importance of these particular changes to overall margins is a very complex issue, as is the question of whether these shifts are temporary or permanent. Thus, tradable goods inflation did not accelerate during 1999, in spite of the fact that the peso depreciated about 6% between 1998 and 1999, as measured using the TCM. On one hand, this was the result of the economic cycle and falling domestic sales, which limited retail prices, thus compressing commercialization margins for some importable goods. On the other, foreign prices for some goods fell significantly, among them household furnishings (appliances and electronic goods), compensating for the weaker peso. In addition, investment in the retail sector has heightened competition in end markets, which could permanently reduce commercialization margins. Overall, economic recovery is expected to accelerate prices for tradable goods during 2000, although these pressures will be weaker than expected last January (Figure VI.5).

In summary, rising international inflation, along with the exchange rate included within the base scenario, suggest a modest rise in inflation for imported goods over the next two years.
This section reviews some specific factors that will influence inflation in the short term, independently of prevailing supply and demand conditions.

**Fuel prices**

During the first four months of the year, domestic fuel prices (gasoline, kerosene, liquefied gas and diesel) rose almost 20% (Figure VII.1). This increase reflected the realignment of domestic prices with international values following two increases in the reference values for the Oil Stabilization Fund (Fondo de Estabilización del Petróleo). Thus, if the international price of crude reaches US$23 per barrel in the coming quarters, as assumed in the base scenario, no significant changes in domestic fuel prices are expected within the projection horizon, as they were approaching their foreign equivalents in mid-May.

No major changes in domestic fuel prices are expected for the projection horizon.

However, if the foreign price of crude rises continually toward the upward limit of the price band announced by OPEC, that is, closer to US$28, domestic prices will probably rise as well. In the short term, this could be cushioned by the Oil Fund, but not if the situation continues over time.

**Indirect taxes**

During the first quarter, basic import tariffs and the specific gasoline tax changed. Gasoline prices were affected by a change in the specific tax rate, which rose from 4.4 UTM/m³ to 5.2 UTM/m³ (the UTM is an accounting unit), that is, 18 pesos, to offset a 1% drop in import tariffs. This increase amounted to 0.2% growth in CPI. The gasoline tax will rise again in January 2001.

The tariff reduction has helped to decompress the margins on imported goods and this will happen again in January of next year. Unlike the fuel tax, it is harder to identify the specific impact of lower tariffs on CPI, because it is very slight but affects a broad range of goods. However, in general terms the effects of higher fuel taxes and lower tariffs will probably cancel each other out as far as the projection horizon is concerned.

**Perishable foods, public transportation and utilities**

In 1999 and 2000 to date, perishable goods relative prices have followed historic, seasonal patterns, with a net reduction observed during the first part of the year and also as compared to the same period last year (Figure VII.2). Forecasting their future performance is particularly difficult,
due to their specific nature and to changes in the composition of this group introduced as part of the adjustments to the CPI basket. The working assumption is that in future the prices for this group will not vary significantly from the rest of the CPI basket, that is, they will behave neutrally for the purpose of inflation.

In 2000, proposed and actual public utility rates have risen more than the inflation trend.

The price of services whose fees are regulated (telephones, public transportation, electricity, drinking water, among others) rose more than inflation during the first quarter. Of these, transportation fares and charges for drinking water particularly influenced the CPI. In effect, public transportation fares rose 20% from January to April, accounting for an increase of 0.6% in the CPI. This was the result of higher diesel prices plus a fare increase associated with the introduction of automatic ticket machines. Higher costs led to a new agreement between the government and transportation associations that boosted the fare to 250 pesos, as well as modifying some of the conditions for adjusting fares. The main change to the formula refers to a new cost base replacing the one set in October 1998 (when bus lines started to compete for the right to operate specific routes using a tender system). The weight of each cost item within the formula was also corrected, with diesel fuel given more relative importance, bringing it up to 26% of total costs after the change. The base scenario foresees no more significant fare increases for public transportation, given that costs are far from the level at which the 10-peso increase formula would come into effect.

Drinking water rates, meanwhile, rose 6.5% in March, and are expected to reach almost 12% for the year as a whole. This is expected to account for 0.15 additional percentage points of inflation during 2000. In the future, new increases are expected, particularly toward the end of the projection horizon, once new water treatment plants begin their operation.

Telephone service charges have risen according to a new tariff formula established in August (an adjustment polynomial), with indexation to domestic and imported WPI accounting for almost two-thirds of the readjustment formula. This effect was felt during the first quarter, when the higher fare accounted for 0.17 percentage points in the CPI. No new increases are expected, given that the WPI fell between December and April. These charges should also fall in August, as a result of the 1999 tariff resolution.

Finally, electricity charges could rise by about 2%, as a result of a 3% adjustment to the generation node price, set for May. Their impact on CPI is, however, extremely small.

---

1 The main change to the perishables group was going from 23 to 39 products included in the basket, including products for which there is no historic information.

2 In August 1999, a new tariff resolution governing local telephone tariffs reduced fixed and variable service costs by about 5% over the next five years. This means that from August 2000 to August 2003 inclusive, fixed and variable costs will fall proportionately until they reach the total above.
In summary, with the increases in regulated service charges during the first quarter, no changes to oil-related prices (fuel and transportation) remained pending, provided that the international oil price remains around US$23 per barrel in coming months, as expected. Other factors like drinking water and telephone charges, which contributed to inflation during the first quarter, should remain stable for the rest of this year.
BOX VII.1: OIL PRICE EFFECTS ON DOMESTIC PRICES

In the long term, the price of fuel in Chile depends on the international oil market and the exchange rate. Fuel prices affect CPI directly through the price of gasoline, kerosene and others, and indirectly, through their impact on the price of other goods and services, especially public transportation.

In the short term, however, the international price’s influence on domestic prices is cushioned by the Oil Stabilization Fund, which operates as a price band for each fuel (among them, car gasoline, kerosene, liquefied gas and diesel oil). Thus, changes to the Oil Fund will establish a symmetrical band. If the import price for a given fuel exceeds the upper limits of its respective band, a subsidy equal to 100% of the difference is applied. Similarly, if the import price falls below the band floor, a 100% tax is applied to that difference. Thus, when fuel prices change sharply, as they have recently, the Oil Fund cushions their impact on inflation in Chile. This effect, however, is temporary, given that in the face of persistent misalignment between foreign prices and Fund reference prices resources will either run out or over-accumulate, making it necessary to correct reference parities so this won’t occur.

Aside from foreign prices and Fund operation, specific taxes affect consumer gasoline and diesel prices. At current prices, these taxes account for about 50% of the retail price in the case of gasoline and 30% in the case of diesel.

Shifting fuel prices mainly influence CPI through the price of private and public transportation (gasoline and diesel) and household fuels (domestic kerosene and liquefied gas). Gasoline, liquefied gas and kerosene account for 3.6% of the CPI basket. Public transportation accounts for almost 2.8% of the CPI basket, but fuel prices represent a small fraction of carriers’ costs, as these also include labor and replacement costs. In the case of public transportation, diesel represents almost 26% of reference costs used to set fares, but readjustments occur only occasionally, when changes have accumulated enough to justify a 10-peso fare increase, which in turn would represent 0.15 percentage points in both the CPI and core inflation.

Fuel prices can also trigger a series of second round effects on inflation: the result of fuel increases affecting prices not directly linked to them. This contagion may reflect direct (raw materials) or indirect (wages) cost pressures, automatic price and wage increases due to indexation and, eventually, expectations of rising inflation. The quantification of these second round effects is complex, given that the links are indirect and their intensity depends on factors like the economy’s cyclic position and the credibility of monetary policy. Moreover, when significant fuel increases occurred in the past, for example in the early nineties, no significant contagion to other prices within the economy seems to have occurred. This, in spite of the fact that inflation was much higher and more volatile at that time (Figure VII.3). This could be due to policy adjustments designed to minimize the pressures caused by this kind of phenomena. Clear signals from monetary authorities in terms of preventing inflationary effects of these higher prices may also help to avoid this kind of contagion.
This section presents the Board of Governors’ evaluation of the prospects for the Chilean economy over the next two years, as analyzed during the Monetary Policy meeting on 9 May 2000. It contains projections for inflation and economic growth and examines the most significant risks involved. These projections assume the monetary policy rate will remain at UF + 5.5% during the projection horizon, the rate set by the Board meeting on 16 March. Apart from this assumption, projections are conditional on a series of events that make up the base or most probable scenario. New information will modify this scenario and the associated projections. The prospects are presented as confidence intervals in order to reflect the risks that monetary policy will face in the future.

**Base scenario: Main assumptions**

**International Scenario**

From last January to the present, the scenario of international activity has become more favorable. Prospects for world economic growth have improved, and export commodity prices are also likely to rise. World output over the next eight quarters is projected to grow at just over 4% per annum, compared to the 3.7% expected in January. The same is true for the weighted growth of Chile’s export markets. Similarly, international trade should grow about 7.5% per annum this year and next.

Projections for the terms of trade have also improved as a result of higher non-copper commodity prices, like pulp, and due to the recent fall in the international price of oil in April. The copper price is expected to reach 80 to 85 cents per pound over the next two years, while other export prices should rise an average of 5% in 2000 and 3% in 2001. Altogether, the terms of trade will rise 2% to 3% per annum in both 2000 and 2001. Possible deviations from this scenario are analyzed below in the subsection Risk Forecast.

World growth is projected to be slightly above 4% per annum over the next two years.

International credit conditions remain restricted and projections assume no substantial improvement over the current situation. From January to mid-May, the cost of foreign credit increased moderately, the result of tighter monetary policies in the main industrialized economies. Although this development was expected, monetary policy rates are now expected to undergo further corrections. In the case of the US, market projections suggest that the Federal Reserve will raise its target rate 75 basis points this year, while the European Central Bank will increase it half a percentage point over the same period. In addition, rising volatility in share prices on the world’s main markets has come with higher financial surcharges on corporate and emerging countries’ bonds, regardless of the solid evolution of those economies’ fundamentals. The premium paid on Chilean bonds has also risen, about 50 basis points from late March to mid-May. In the short term, surcharges paid by emerging bonds could fall and capital inflows into these economies could rise, but foreign liquidity is expected to remain tight. The US’ hefty current
account deficit will continue to absorb a significant share of international financial saving at the same time as the expected recovery in demand in other regions will reduce the global supply of saving.

After peaking at over US$30 per barrel (Brent) the international oil price fell significantly, following OPEC’s announcement that it would increase production quotas, and Iran’s leaving the cartel. Since late March, international prices have fluctuated significantly. The projections in this report assume the price will remain around US$23 per barrel in coming quarters, with a slight tendency to drop toward 2001, according to market projections. However, the threat of the price rising above this value remains, and is analyzed in the subsection on risk.

The oil price is expected to remain around US$23 per barrel in coming quarters.

Prices for Chile’s imports have risen since mid-1999, even when the impact of the oil price is discounted. For the next two years, projections indicate this upward trend should continue. Trend inflation in Europe and the US is projected to be slightly higher than in 1999 at around 2%, while for Japan stable indexes are expected. Projections for foreign inflation measured in dollars are higher, as consensus forecasts and currency futures values anticipate depreciation of the dollar on world markets.

Interest Rates and the Exchange Rate
Regarding monetary conditions in Chile, the base scenario assumes the monetary policy rate will remain stable for the projection horizon, at UF + 5.5% where it was set last March. This is not a projection for the rate’s behavior but rather a working assumption that permits evaluation of the coherency of current monetary policy with regard to the medium-term target inflation rate that guides it. In fact, markets anticipate further rises in the policy rate over the next eight quarters to reach UF + 6-6.25%, as can be deduced from the curve of future interest rates and the Central Bank’s survey to determine the expectations of market agents and analysts.

The base scenario’s working assumption is that the monetary policy rate will remain stable at UF + 5.5% for the projection horizon.

Developments in the nominal exchange rate and foreign inflation influence the prices of importable goods and conditions of external competitiveness. For the ten working days prior to the closing date of this report, the multilateral exchange rate for the main currencies (TCM 5) averaged 114.4 (January 1998=100). This was the starting point for developing exchange rate projections in the base scenario.

Many procedures exist that can provide a reference to the future performance of the exchange rate, but none stands out above the rest in terms of its forecasting power and its economic coherence. These procedures include looking at the trajectory that can be deduced from foreign interest rate differentials (futures prices), market expectations, and econometric equations that consider short- and long-term
determinants of the real exchange rate. However, evidence indicates that in the short term these procedures are unable to predict the exchange rate’s future performance any better than simpler procedures like, for example, projections based on its most recent value.

As a result, the scenario for the future exchange rate was developed by averaging a projection based on the most recent value for a constant real exchange rate and the trajectory indicated by interest rate differentials. This information led to the projection of depreciation in the real exchange rate of some 2% to 3% within the projection horizon, compared to its level during the first quarter of this year.

The scenario for the future exchange rate provides a referential framework for inflation and economic growth projections described below. However, it is important to emphasize that these projections are not based solely on this trajectory, but rather on a range of alternative scenarios. In fact, the margin of variability around this base trajectory is a broad one, as confidence intervals developed for inflation and GDP projections reflect. Similarly, there is no direct, mechanical relationship between the different values for the exchange rate and these projections, given that changing values are usually associated with changes to other relevant variables.

Although it is likely that the exchange rate will fluctuate significantly in the future, as market estimates of its volatility reflect, broadly speaking risks are considered to be symmetrical. On one hand, as the Chilean economy moves toward internal equilibrium and the terms of trade improve, pressures could lead to real appreciation. However, at the same time rising imports, the growth expected in the external deficit, and higher foreign interest rates could generate pressures in the opposite direction.

Fiscal Policy
Projections for the next two years include the new authorities’ expressed intention to go back to a fiscal accounts surplus of about 1% of GDP in the coming years (Central Government) as well as projections based on the budget approved for this year. This indicates that fiscal policy will remain restrictive during the projection horizon. According to announcements, the Government’s goal is to maintain the tax burden unchanged, so fiscal saving efforts will have to maintain moderate growth in government spending. This does not mean that aggregate demand will fall, but rather that its composition will shift toward net exports and private sector expenditure. In effect, implementation of the government’s announcements could lead to a moderately expansionary monetary policy stance and depreciation in the real exchange rate, which would stimulate of other demand components.

The base scenario assumes that the fiscal surplus will gradually converge on the goal of 1% of GDP, as announced by the new government’s authorities.

Potential Output
Developments in the gap between demand and potential output play a significant role in evaluating future inflationary pressures. However, potential supply is not a directly observable concept. The exact magnitude
of underused resources is not known; productivity measurements for these resources show significant limitations in the short term; and they are not independent of the economy’s cyclical position. Because of this, evaluation of productivity and potential output is based on historic trends, adjusted for factors that could change them, such as variations in investment rates.

Growth of physical capital during the past two years fell significantly as a result of strong contraction in fixed investment; furthermore, available projections suggest moderate recovery over the next two years, particularly in machinery and equipment. All this leads to a drop in potential growth in 1999, this year and next. This effect will be evident in the growth of copper mining industry, which will probably have a negative impact in GDP growth for the next years of about 0.7% per annum, compared to 1995-1999. The effects of slower paced investment in other sectors are more difficult to calculate, but are headed in the same direction. Total factor productivity, which fell during the past two years, will probably resume positive growth in coming quarters, although it is hard to predict its intensity.

These figures lead to projections of lower growth in potential output for the next two years than those observed during the nineties. Supply should grow at a pace of about 5% in the shortest term and 6% toward the end of the projection horizon. In any case, this factor is not considered an obstacle to growth in demand, since unemployment and measurements of the output gap reveal underused resources within the economy.

However, inevitably, there is significant uncertainty regarding these kinds of estimates. Because of this, the evaluation of potential output requires ongoing monitoring of data on economic activity, unemployment, price and wage developments, in order to confirm the degree of undercapacity existing in each market.

Temporary Price Factors
The base scenario assumes that domestic fuel prices will not change significantly from current prices, at least over the medium term, except for the impact of the higher gasoline tax scheduled to come into effect in January of next year. On one hand, domestic prices are in line with the projected value of the international oil price in the base scenario. On the other, the Oil Stabilization Fund should absorb the impact of temporary, smaller scale variations on international markets. Nonetheless, there is a persistent asymmetrical risk of sustained increases in international crude prices that could take them above the value assumed in the base scenario. This would have a relevant impact on domestic prices. This is examined in the subsection on risk. Finally, other regulated prices are expected to behave neutrally, as are perishable prices.

Inflation and economic growth in the base scenario

Economic Growth
Available information indicates that during the first quarter of this year, the Chilean economy continued to follow a path of recovery and expansion. Initial estimates for GDP growth for the first quarter were around 5.5% per annum, similar to domestic demand growth for the
same period. Manufacturing growth, stimulated by higher foreign demand and inventory restocking, and commerce, thanks to the turnaround in private consumption, especially of durable goods have led recovery. The electric sector, thanks to normalization of hydroelectric generation, has also contributed significantly to GDP growth, a factor that will remain during the second quarter, while mining’s once rapid expansion has decelerated enormously. Construction shows slim signs of recover, thanks to residential building and the powerful impact of a tax incentive on the purchase of new DFL2 housing (a type of houses whose main characteristics were defined by law) during the second half of 1999. Other components of fixed investment, construction of non-residential buildings, machinery and equipment show no signs of recovery as yet.

At the margin, most indicators for the first quarter of 2000 point to the economy expanding more slowly than the exceptional growth registered during the last quarter of 1999. However, this effect is not apparent in the 12-month growth rate, which has risen as a result of the low basis for comparison in 1999. This factor will also be present in the second quarter and will probably enhance measurements of interannual GDP and demand growth, even if the pace of economic growth compared to the previous quarter remains stable.

A broad range of demand and supply factors influence projections for Chile’s future economic growth. Elements positively affecting the economy’s expected performance include more dynamic foreign demand, better terms of trade, and accumulated depreciation of the real exchange rate since 1998. All these factors boost net foreign demand and investment in the tradable sector. Similarly, monetary policy and its impact on interest rates and monetary aggregates will maintain an inertial effect on domestic demand over the coming quarters, in spite of the fact that at the margin their effects have weakened. The temporary impulse of inventory restocking and the purchase of durable goods postponed during 1998-1999 have impact here, along with the effect of the tax subsidy for purchasing new DFL2 housing, which stimulated the startup of new construction during the second half of last year.

Factors that moderate the prospects for economic growth include the reduced abundance of foreign financing and sustained high long-term domestic interest rates, similar to their historic average or slightly higher, in spite of lower short-term rates. These factors, combined with excess installed capacity indicate that for now the prospects of private investment rebounding remain weak, while this year’s budget implies a contraction in public investment. Information on major investment projects for 2000 confirms this projection, although significant recovery is expected next year.

Regarding consumers, job security and confidence indexes have risen as employment has improved, but unemployment remains high and real wages trend growth has declined in recent months, which will also reduce demand impulse. Similarly, the increase in government transfers, which have a more direct counterpart in private consumption, will be noticeably lower than that observed over the past five years, which will also reduce the dynamism of demand. Finally, the volume of personal, housing and consumer debts maturing suggests that credit will grow more slowly than in previous years, leading to less dynamic demand from households as well.
Finally, demand projections also include exogenous projections for mining and electric generation, sectors that in the short-term experience significant fluctuations due to factors unrelated the economic cycle. Overall, these factors will subtract almost 0.4% from projected GDP growth, compared to if they were neutral, that is, growing at the same rate as other sectors.

Given the above, the base scenario projections for economic growth will remain stable at around 6.2% over the next eight quarters, that is from the second quarter of 2000 to the first of 2002. This implies growth of 5.9% in 2000 and 6.2% in 2001 (Figure VIII.1). Domestic demand, for its part, should grow slightly more than 9% per annum, absorbing unemployed resources and making more use of foreign saving. This projection is somewhat more optimistic than earlier in the year, the result of better prospects for world economic growth, but risks remain similar. This forecast depends on the assumptions reviewed in the base scenario. However, in alternative scenarios the prospects for economic growth would also change.

The consideration of these alternative scenarios is expressed by probability distribution of the future behavior of economic growth, instead of a specific projection. This distribution is reflected in the confidence intervals that accompany the base scenario for economic growth, which takes into consideration historic volatility of supply and demand, combined with risks particular to the current economic situation as discussed below, assuming the monetary policy rate remains unchanged. As a point of reference, the 50% probability confidence interval ranges from 5.6% to 6.9% average growth over the next 12 months and 4.6% to 7.8% for average growth over the next 12 months. Values outside this range are possible, although less likely as they move away in one direction or the other.1

Inflation

The monetary policy stance determines the behavior of inflation in the medium- and long-term, but this relationship is more uncertain and variable in the short term, reflecting the influence of a broad range of factors. Among these are global inflation trends, the trajectory of the exchange rate, labor cost pressures, sales margin trends, competitive conditions in end markets, regulated service tariffs, as well as the probable performance of output and demand pressures.

Monetary aggregates’ recent behavior indicates that nominal spending is not accelerating. Growth in more liquid aggregates during the last quarter of last year accompanied a recovery in retail sales, but during the first quarter these dropped and broader aggregates slowed, coinciding with the more moderate performance of retail final sales. Financial credit also slowed in the first quarter, consistent with the behavior of fixed investment. Only in April did credit growth pick up again, as did broader monetary aggregates.

Growth in nominal wages grew continually weaker throughout 1999, although at a slower pace than inflation and productivity, so that mean labor costs rose between 1998 and 1999. The slowdown in nominal

---

1 The asymmetric distribution around the central value reflects the inclusion of specific risks considered relevant to date. These are discussed below in the subsection Risk Forecast.
wages seems to have peaked during the first quarter of this year. In effect, initial readjustments resulting from collective bargaining augmented, which could indicate future wage trends. Wages in sectors like construction, where employment has been rising quickly, also increased. Overall wages show a slight nominal recovery and it is likely that they will grow faster in the coming months, as a result of readjustments associated with the temporary recovery in monthly inflation observed between February and April, and due to the 10% increase in the minimum wage that went into effect in May. The impact of these developments on future inflation will depend on their consistency with the behavior of labor productivity, which is just beginning to recover from the plunge that occurred between 1998 and 1999.

Imported prices and inflation for tradable goods could also experience an increase in coming quarters as a result of higher foreign inflation, as could the exchange rate within the projection horizon. However, short-term inflationary pressures resulting from a correction in commercialization margins for these kinds of goods have declined since last January’s review. Since then, margins have been able to expand with no need to increase final goods prices, due to the peso’s appreciation during the first quarter of 2000 and a 1% drop in tariffs last January. Furthermore, expansion in the commercial and supermarket sector provides specific evidence of more competitive pressures at the end sales stage, which could be leading to a more lasting reduction in sales margins.

The presence of underused resources within the economy will be the main factor containing inflationary pressure over the next two years, in spite of projections of more pressure from demand. This should lead to wage expansion which, combined with the recovery foreseen for productivity, would hold growth in labor costs in check. Excess installed capacity at the stages of production and commercialization will also limit companies’ capability to raise prices. However, this braking factor will gradually fade as the level of activity approaches its full potential. In the medium term, demand growth should line up with the economy’s potential.

Along with the above factors, which will affect price trends, inflation has increased in recent months due to higher specific prices, particularly for fuel and urban public transportation. The main scenario does not foresee significant shifts in specific prices as occurred during the first quarter of this year. However, evaluations of the future prospects for inflation have considered the possibility that the increases observed during the first quarter could spread to other prices and salaries due to automatic indexing or inflationary expectations that have not settled down as yet. For now, these second round effects have not been detected and short-term expectations for inflation have remained stable or even shown a slight decline in recent months, according to the survey of market agents and analysts. However, it is still early to fully evaluate the response of prices, wages or expectations to specific price increases, so these must be closely monitored.

Altogether, the above elements yield a projection for inflation over 12 months as measured by the CPI and core inflation (CPIX), assuming the monetary policy rate remains constant at UF + 5.5%. Inflation projections from last January, based on a stable rate of UF + 5.25% as set at the meeting held 27 January, are also included. The Board places special
emphasis on the trajectory of the CPIX indicator, as a measurement of core inflation, but for reference sake also shows projections for CPI inflation (Figures VIII.2 and VIII.3). Projections are shown as a distribution of probabilities of annual inflation trends for the projection horizon, that is from the second quarter of 2000 to the first quarter of 2002. These refer to changes in the average price index for each quarter, compared to the same quarter of the previous year.

In general terms, prices trend growth is expected to remain stable at 3% per annum. These projections show an initial recovery in both CPI and CPIX inflation measured over 12 months, due to the pull of price increases from January to April, but then observed and trend inflation should converge toward mid-range in the medium term. Through the first quarter of 2001, CPI-measured total inflation should reach about 3.7% per annum, while inflation measured by the CPIX should reach about 3.2% per annum. The difference between both corresponds to the effect of increases already observed in fuel prices. Over the next 12 months, the impact of fuel prices should disappear and CPI inflation fall to 3% per annum, while CPIX inflation should remain stable. The projection for CPIX inflation through the fourth quarter of 2000 is 3.6% per annum, 4.2% per annum for the CPI.

Once again, it is important to emphasize the variability around inflation projections. In the case of inflation as measured by the CPIX, the 50% probability confidence interval ranges from 2.2% to 4% for results through the first quarter of the first year, and 1.8% to 4.4% for inflation for the following 12 months. Values outside of this range are possible, although less probable as they move further in one direction or another. The breadth of intervals for CPI inflation projections is somewhat larger given the volatility of fuel and perishable prices.

Overall, the CPIX projection remains similar to last January, although in the short term there has been a minor turnaround as a result of the impact of peso appreciation on commercialization margins and the estimates of imported inflation projections. Changes in growth prospects are slight and not relevant to inflation projections. In the case of inflation as measured by the CPI, this increased sooner than expected in January as domestic fuel prices lined up with international prices more quickly than originally foreseen. Current projections call for CPI inflation to decline less, because it is less likely that the oil price will drop to US$20 per barrel in the medium term, as projected last January.

The base scenario assumes trend inflation as measured by the CPIX will reach about 3.2% by the first quarter of 2001 and 3% in two years.

Risk forecast

The base scenario represents the most likely behavior for inflation and economic growth, assuming a specific monetary policy stance and other economic and financial developments. But as emphasized above, risk factors could modify this scenario and the future behavior of inflation and economic growth. This subsection examines some alternative scenarios that could be relevant to the future course of monetary policy.
The main threat abroad is posed by developments in the United States’ economy. The base scenario assumes a gentle slowdown in its growth, but the risk of more abrupt and intense deceleration exists. After several years of vigorous growth, some warning signs have built up within the US economy, among them share price increases that go far beyond the values suggested by traditional pricing models; a decline in private saving and a higher current account deficit to finance investment; and lower unemployment. Recent volatility in stock markets reveals how fragile prices and expectations are at this point and although trends remain unclear, as does their economic impact, special care must be taken to evaluate the prospects of the US economy. The gradual correction in these imbalances, as the base scenario assumes, is possible, but more violent adjustments could also occur. Meanwhile, highly volatile conditions on international financial markets, like those observed in recent weeks, are foreseeable.

There are several possible scenarios. Inflationary pressures could appear in the American economy, triggering more restrictive monetary policy that would raise the cost of international credit, reducing the prospects for world growth and Chile’s terms of trade. Fragile expectations could lead to a significant drop in share prices, which would reduce financial wealth and put a brake on demand, as well as prospects for world growth and terms of trade. In this case, if there were no sign of higher inflation, the Federal Reserve’s monetary policy could relax instead of hardening, as markets expect. However, in a context of violent price corrections and higher financial volatility, it is reasonable to assume that international financial conditions would tighten at least in the short term, although in the medium term they could relax somewhat. The deceleration of the US economy could also be more gradual, although accompanied by the prolongation of recent instability of external financial markets.

These developments and their consequences on the world economy and commodity prices could reduce the growth of the Chilean economy over the next two years, moderating medium-term inflation pressures in Chile. If world economic growth falls 1% in the next year and conditions on international financial markets tighten even more, Chile’s economic growth could fall by several tenths from here to the first quarter of next year and more significantly, one or two percentage points, during the four quarters that follow. Furthermore, this could also produce movement in the value of the peso that would also modify inflationary pressures. Overall, trend inflation would move downward, particularly toward the end of the projection horizon, which would push inflation projections down into the lower half of the medium-term target range.

An alternative scenario would have the US economy’s astonishing productivity growth continue, along with a sustained demand impulse, which could improve the prospects for exports, as well as higher international interest rates, above projections included in the base scenario. This could stimulate more growth in Chile, increasing inflationary prospects in the medium term and thus requiring tighter monetary conditions. Overall, the negative risks of faster deceleration of the US economy are likely to prevail. Stagnation in Japan’s recovery is another risk factor, but a less important one than the above.

Although it has fallen in recent weeks, the international oil price remains a matter for concern. The base scenario assumes that the price will
fluctuate in the lower range of the target band defined by OPEC, but it could conceivably move toward the band ceiling, that is, closer to US$28 per barrel. An international price increase, if sustained, would lead to correction of domestic prices that could also push inflation upward in the short term, but if prices return to expected levels in the medium term, this would have a negative impact on inflation. As a point of reference, if the oil price stabilizes at about US$27 per barrel (Brent) during the second half of 2000, but then falls gradually to US$22 per barrel in the medium term, the CPIX could rise two-tenths to three-tenths within the projection horizon. Projected CPI through the first quarter of 2001 would rise more significantly, almost half a percentage point, but would later fall more quickly toward 3% per annum.

The pace of recovery of domestic demand must be observed closely. Information from the end of last year showed a marked acceleration in most indicators, except fixed investment, but evidence for the first quarter is weaker. Similarly, estimations of available undercapacity within the economy and its impact on inflation are imperfect and thus require paying more attention to the real behavior of inflation and wages in order to evaluate these pressures. For now, the relevant risks are symmetrical.

Overall, the outlook for risk to CPI inflation in gross terms is balanced over the 24-month projection horizon, although risks of a CPI rise over a 12-month projection horizon are higher than the risk of a drop due to the oil effect. Risks to economic growth projections tend to be negative, given that the eventual deterioration in the world’s economy seems more likely than additional improvements.

An estimation of relative risks for trend inflation indicates that they are balanced.

The distribution of probabilities for annual inflation over one to two years, assuming a constant monetary policy rate, appears in Table VIII.1. This Table contains the same information as Figures VIII.2 and VIII.3. In the medium term, the first quarter of 2002, the probability of inflationary projections being above the target range is the same as the probability of it falling below that range. In the short term, however, there's a greater probability that inflation projections, particularly as measured by the CPI, will fall within the upper target range due to the impact of fuel. The distribution of inflation as measured by the CPIX, in contrast, is more balanced for the same period (Table VIII.1).

### Table VIII.1
**Probability Distribution for Projected Inflation (1)**

<table>
<thead>
<tr>
<th>Inflation Range</th>
<th>2% or less</th>
<th>2% to 3%</th>
<th>3% to 4%</th>
<th>4% or more</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inflation measured by CPI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001.I</td>
<td>9</td>
<td>18</td>
<td>28</td>
<td>46</td>
</tr>
<tr>
<td>2002.I</td>
<td>35</td>
<td>18</td>
<td>17</td>
<td>30</td>
</tr>
<tr>
<td><strong>Inflation measured by CPIX</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2001.I</td>
<td>16</td>
<td>26</td>
<td>30</td>
<td>28</td>
</tr>
<tr>
<td>2002.I</td>
<td>33</td>
<td>18</td>
<td>18</td>
<td>31</td>
</tr>
</tbody>
</table>

(1) The table shows the probability that annual inflation for the quarter specified will fall within the corresponding range.
Source: Central Bank.
The working assumption of a fixed monetary policy rate is essential to correctly interpret probability distribution and the risks involved in the base inflation projection. In fact, this distribution reflects the probability of changes in inflation forecasts, not real inflation, since it ignores the impact of eventual monetary policy responses to it. In effect, if future revisions of projections were significant, monetary policy would have to be adjusted to stabilize inflation’s behavior in line with the medium-term target. In this sense, probabilities do not reflect the effective behavior of inflation, but rather an evaluation of the risks relevant to the evolution of monetary policy in the future.

**Other projections**

As an alternative to the assumption that the monetary policy rate will remain fixed, a projection based on market expectations can be developed, using the views expressed in the Central Bank’s survey of independent analysts, which is carried out on a monthly basis. In April, this provided a mean for the monetary policy rate of UF + 5.75% for July of this year, rising to UF + 6% in October, and then reaching UF + 6.25% by the end of 2001. The CPIX inflation projection using this method differs by somewhat less than half a percentage point from the central projection in the base scenario toward the end of the forecasts horizon, which is consistent with less dynamic domestic demand.

Finally, market forecasts, according to this survey, place inflation at around 3.9% by the end of 2000 and around 3.5% for 2001, with dispersion ranging from 3% to 4%. Market expectations do not appear to have internalized the possibility that inflation could fall within the lower half of the target range, that is 2% to 3% per annum.

**Conclusion**

In conclusion, the Board of Governors believes that the current monetary policy stance is consistent with trend inflation in line with the medium-term goal, while economic growth should reach around 6% per annum over the next two years. The main scenario forecasts that CPIX inflation will reach slightly more than 3% in one year and 3% for the second year.

However, these projections are conditional by nature. Currently, some risk factors exist that could influence the future trajectory of inflation, but to what extent is difficult to assess given the information available to date. This requires that at future meetings the Board place special emphasis on evaluating three main issues: first, developments within the US economy and international financial markets and their impacts on world economic prospects, as well as growth and inflation within Chile’s economy; second, trends in international oil prices and their impact on prices and inflationary expectations; third, trends in domestic demand and the degree of utilization of resources in order to evaluate their impact on inflation.

The final purpose of monetary policy is to achieve a climate of low and stable inflation, the precondition for vigorous and sustained growth in economic activity.

• Economic Outlook, OECD December 1999.


• Lefort F. and E. Walker "Caracterización de la estructura de tasas de interés reales en Chile", Catholic University of Chile, mimeo, April 2000.


• World Economic Outlook, International Monetary Fund, April 2000.