Financial Stability Report

FIRST HALF 2004

BANCO CENTRAL
DE CHILE

Financial Stability Report[1]

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[1]/ This is a translation of a document written originally in Spanish. In case of discrepancy or difference of interpretation, the Spanish original prevails. Both versions are available at www.bcentral.cl

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[2/] The closing date for statistics included in this *Report* was 23 July 2004, except for data in figures I.1 and II.12, from 11 August 2004.

Preface

According to the Basic Constitutional Act of the Central Bank of Chile, the purpose of the Central Bank of Chile is to "look after the stability of the currency and the normal functioning of domestic and foreign payments". These objectives are not independent. The well functioning of the payment system requires currency stability as well as market discipline, regulation and supervision and a sound infrastructure. The Bank monitors developments in international capital markets and the domestic financial sector, seeking to identify those that could have relevant effects, in the short or medium term, on the financial stability of the economy or the functioning of the payments system.

Financial stability refers to safeguarding the primordial functions of credit intermediation and saving in general, the provision of payment services and the allocation of risks, carried out by markets and financial institutions. In this area, designing and implementing suitable policies for regulating, supervising and guaranteeing financial transparency play a major role in strengthening the capacity of the economy and its financial system for dealing with disturbances from different sources, whether domestic or external.

This *Report* analyzes developments in the macroeconomic and financial environment in Chile and abroad that are relevant to the stability of its financial system; the evolution of borrowing by and the payment capacity of the main users of credit in the economy, including households, non-financial firms and the consolidated government sector; conditions affecting non-bank financial intermediaries, including pension funds, insurance companies and mutual funds; and the impact of these developments on the banking system and the Chilean economy's international financial position.

The *Financial Stability Report* is a bi-annual publication based on public information, which analyzes conditions in the financial system as a whole, and not those of individual financial entities. This work complements that of other supervisory agencies responsible for these entities or groups of institutions with similar characteristics.

The Board expects that the publication of this *Report* will contribute to the analysis and public discussion of matters relevant to the development and stability of the Chilean economy.

The Board

I. Report summary

Table I.1

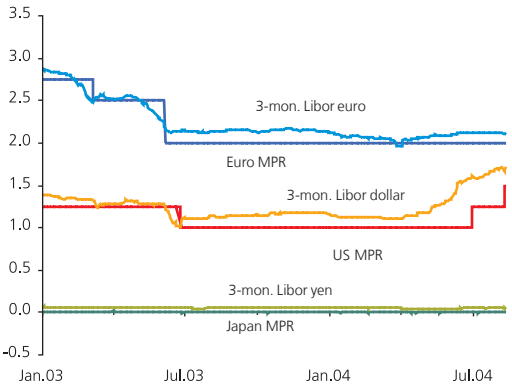
Growth of most developed economies and projections
(percent, 12-month change)

	2003	I.2004	2004 (f)	2005 (f)
United States	3.1	4.8	4.5	3.8
Japan	2.5	5.6	4.2	1.8
Euro zone	0.6	1.3	1.9	2.1

Sources:
Central Bank of Chile.
Consensus Forecast.

Figure I.1

Monetary policy rate and 3-month Libor
(percentage points)



Sources:
Federal Reserve Bank.
European Central Bank.
Bank of Japan.
Bloomberg.

More rapid global economic growth is pushing international interest rates to normalize

The world economy entered an expansionary phase this year, while the monetary policy rates in industrialized economies have remained at historic lows (table I.1 and figure I.1). In the US, signs of recovery began to push monetary policy toward normalization, with two consecutive 25 basis point (bp) increases in the Federal Reserve's target rate, in late June and early August. Meanwhile, share indices for the industrialized economies have fluctuated significantly, but without turning around the recovery posted in the second half of last year, when a stronger global performance was expected. Risk premiums on corporate debt have remained at all-time lows. During the second quarter, the higher prices for emerging economy asset prices (shares, currencies and bonds) from the second half of 2003 turned downward somewhat, amidst expectations that US monetary policy would tighten. Nonetheless, external financing premiums have remained historically low for most of these economies. In this favorable global environment, international banks' and other intermediaries' financial position has tended to strengthen and the financial conditions facing emerging economies have improved. Similarly, analyses by different international institutions agree that today the risks to the global economy's financial stability have decreased, at least in the short term.

Despite the above, some threats to global financial stability remain. These mainly have to do with the future trends in international interest rates and the corrections to imbalances in the US economy, combined with risks associated with international geopolitical conditions. Interest rates have risen in the US since late March for every maturity and reflect expectations that the monetary policy rate will rise gradually in the coming months. Although recent trends in the US economy reaffirm the likelihood of gradual interest rate increases, significant imbalances in its fiscal and external accounts introduce some uncertainty about the future behavior of international interest rates. These imbalances may gradually work themselves out, but more complex scenarios, in which markets push for a sharper correction, hurting international financial stability and global growth, cannot be ruled out. Similarly, recent trends in the oil price have become an additional risk factor in the environment currently faced by Chile's economy.

Other risk factors relevant to Chile have tended to subside in recent months. In particular, the likelihood of an abrupt correction to China's economic growth has faded and with it the risk of slower growth of the

world's economy and lower international prices for copper and other commodities.

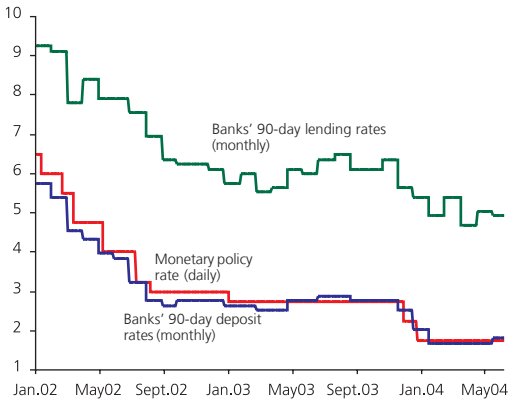
Favorable external conditions and expansionary monetary policy are driving economic growth

In Chile, the economy has also started to enjoy stronger growth in 2004, while inflation has remained under the 3% annual target. In the most recent issue of the *Monetary Policy Report* (May 2004), Central Bank growth projections ranged from 4.5% to 5.5% for this year, the result of better external conditions, lower interest rates and the monetary policy impulse. Fiscal accounts and the balance of payments current account should close the year with a surplus and inflation is projected to gradually move toward the 3% target rate over the next 24 months. Between last December and January, the Central Bank cut its policy rate by 100 bp, to reach 1.75%. Short- and long-term market rates fell by similar magnitudes and since then have held relatively steady. During the second quarter of 2004, 90-day deposit rates averaged 1.7%, 90-day lending rates reached 4.9% while those for five-year BCPs averaged 4.5% (figure I.2). During the first quarter of the year, the peso depreciated against both the dollar and a basket of currencies for Chile's trading partners, a trend that deepened during the second quarter. In the medium term, the local market is looking ahead to increases in the monetary policy rate, but somewhat more slowly than what is expected in the US. Likewise, the differentials between domestic and external rates are consistent with a flat trayectory for the peso, notwithstanding its usual volatility.

Figure I.2

Short-term interest rates

(annualized rates)



Sources:
Central Bank of Chile.
Asociación de *Bancos e Instituciones Financieras* (bankers' association).

Recent trends in the domestic and international economies have helped to strengthen the financial situation of many agents, including households, firms and the government, along with banks and other financial intermediaries. Macroeconomic projections suggest that this tendency will continue in the near future. The external risk factors identified above, however, could affect these favorable macroeconomic and financial conditions. Implications for Chile's financial stability are analyzed below.

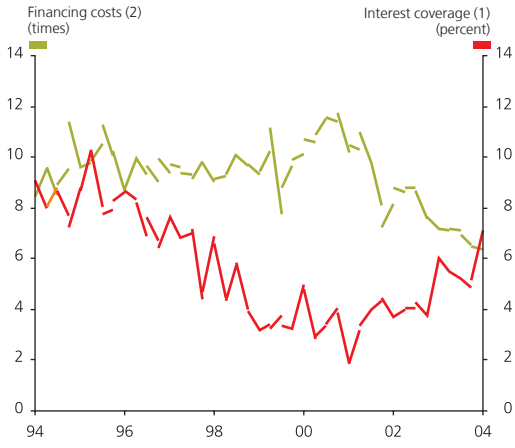
Company results and payment capacity have improved

Interest rate reductions, higher economic growth and improved export prices have helped to strengthen domestic firms' ability to meet their financial commitments. For corporations reporting to the Superintendence of Securities and Insurance (SVS) profits over equity reached annualized rates of 8.8% in 2003 and 11.7% in the first quarter of 2004, their highest since 1997. These levels reflect lower financial costs thanks to interest rate cuts, a modest recovery in operating results and the positive impact of the terms of trade, especially during the first quarter of this year, which affect mining firms and other tradable goods producers.

Through the first quarter of this year, the percentage of companies facing losses in the past 12 months was under 21%, without weighting, and 10.6% when weighted according to the value of their debt, well down from the 24% and 14.7% posted in the same quarter of 2003. Today, the majority of companies reporting to the SVS are posting cash flows well above their financing costs (figure I.3). Likewise, most of these firms show moderate exposure to unexpected changes in interest rates or the exchange rate.

Figure I.3

Financing costs and interest coverage



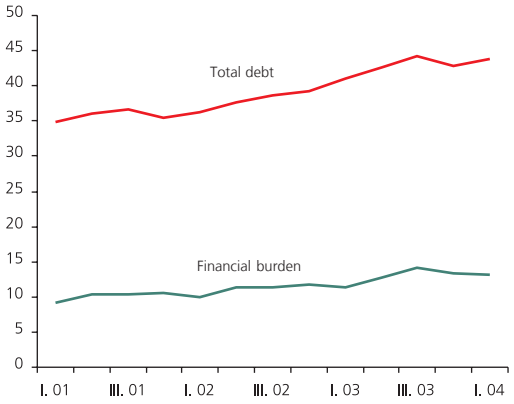
(1) Defined as EBITDA over financing costs.
(2) Calculated as financing costs over interest-paying debt.

Source: Prepared using information from the FECUs.

Figure I.4

Household debt and debt service, as a percentage of disposable income

(percent)

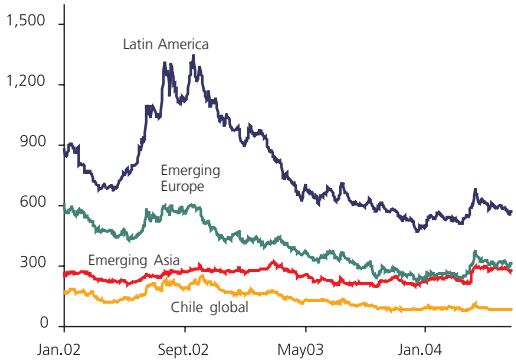


Sources:
Central Bank of Chile.
Superintendence of Banks and Financial Institutions.
Superintendence of Securities and Insurance.

Figure I.5

Premiums on emerging economies' sovereign bonds

(basis points)

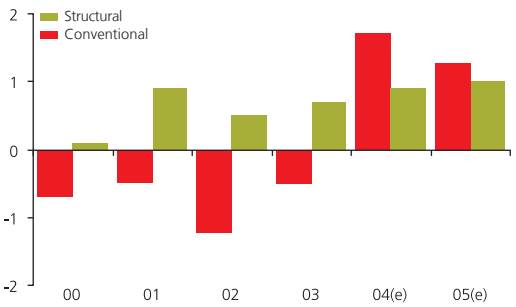


Source: JP Morgan Chase.

Figure I.6

Central Government conventional and structural balance

(percentage of GDP)



(e) Based on own estimates.

Sources:
Ministry of Finance.
Central Bank of Chile.

Despite the improvement in results and ability to pay, the company sector's total borrowing has remained stable in the past 12 months, although undergoing some significant changes in composition. In 2003, companies with an A or higher risk rating continued to replace bank debt and external financing with debt instruments issued in the local market and abroad. So far this year, however, bank financing has recovered more as companies boost their investment in fixed assets, a trend that should continue in coming quarters.

Households make the most of lower interest rates and increase their borrowing

In recent years, households have significantly increased their borrowing at rates that exceeded the growth rate of disposable income over the same period, a trend that has strengthened in recent months. This partly reflects the increased supply of financial services to segments of the population which were not offered these products before. At the same time, the supply of products and competition by other financial intermediaries attracted by higher relative spreads in the marketplace have both risen. In the past 12 months the average spread on banks' consumer credits has fallen by 86 bp, generating more demand. At the end of the second quarter, bank consumer credits had risen by 17% year on year, while mortgages had risen by 11% year-on-year. Today, household debt stands close to 44%, which compares to 34% at the end of 2000. Nonetheless, the financial burden on households, measured as interest and amortization over disposable income, has remained relatively stable thanks to lower interest rates actually being paid (figure I.4). In the medium term, however, consumers are somewhat more exposed to rising interest rates or employment problems.

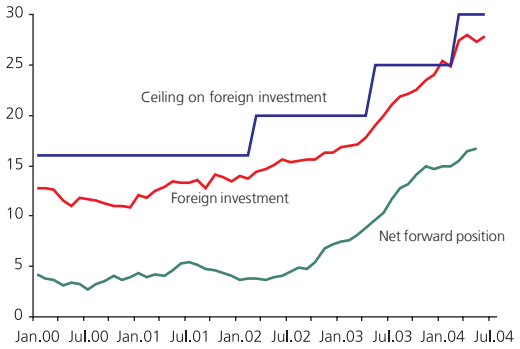
Today, the banking system's exposure to household risk is lower, quantitatively speaking. Consumer loans account for less than 10% of total bank loans and although for some banks this figure approaches 80%, these entities account for less than 1% of the system's assets. Household borrowing will probably continue to rise in the future, on account of the growth of the economy and private disposable income on one hand, and the fact that debt to income ratio of the household sector in Chile is far below those observed in most developed economies, on the other.

Fiscal stability and the projected surplus for 2004 and 2005

The prospects for public finances are favorable for the next two years. Last January, *Standard & Poor's* gave Chile a better risk rating, while FITCH published a favorable report on Chile. Through the first half of 2004, the sovereign premium as measured by the EMBI Global index averaged 90 bp, falling to an all-time low of 79 bp in April (figure I.5). Considering recent trends in tax revenues and the copper price, net fiscal financing needs are unlikely this year and next. In this sense, and using the baseline scenario from the latest *Monetary Policy Report* (May 2004), the fiscal surplus is projected to reach 1.6% of GDP for 2004 and slightly higher than 1% for 2005 (figure I.6). The revenues from bonds issued in 2004 (US$600 mn internationally and US$200 mn on the domestic market) have gone to refinancing or amortizing debt issued at higher interest rates.

Figure I.7

Pension funds foreign investment ceiling and hedging
(percentage of fund)



Sources:
Central Bank of Chile.
Superintendence of Pension Fund Managers.

In any case, and although fiscal surplus projections are sensitive to changes in the copper price, even in considerably more adverse scenarios than the expected, it is unlikely that this sector's financial standing would deteriorate severely or that the international risk rating would become less favorable. In fact, at the close of 2003, the gross debt of the Consolidated Government sector stood at 34% of GDP, below the average for countries with the same or better risk ratings. As long as fiscal policy holds true to its structural surplus rule, its trajectory should remain sustainable.

Institutional investors are seeking better returns and diversifying more

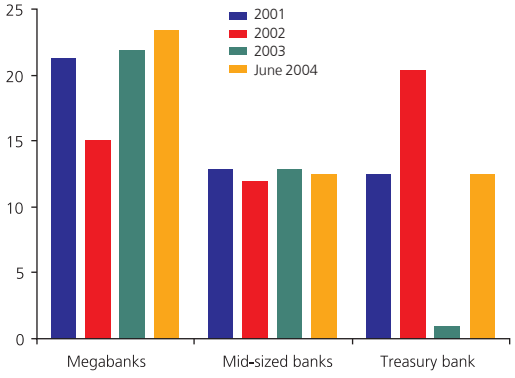
In a low interest rate and low credit risk environment, some institutional investors such as pension funds and life insurance companies have reallocated their investment portfolios in pursuit of higher returns. These investors' holdings of low-risk instruments, such as state-issued bonds, fell by US$1.75 billion in 12 months through March 2004. Time deposits held have been steady by amount, but have fallen as a percentage of the total. Investment in domestic company bonds rose US$1.65 billion and investment in shares, net of revaluation, rose by more than US$1 billion in the same period.

Pension fund investments abroad, meanwhile, rose US$5.6 billion in the past 12 months, to account for 28% of total funds under management and approaching the legal ceiling of 30% (figure I.7). Exposure to foreign exchange risk remained stable, however, at about 10% of equity, through foreign exchange sales on the forward market. The banking system has taken advantage of this supply to replace other assets in foreign currencies or increased its financing abroad, without changing its exposure to foreign exchange risk.

In the first half of 2004, mutual fund assets rose 30%, to total the equivalent of a little over US$10 billion. This brought their equity levels up from those of 2003, prior to the Inverlink case events. Most of these resources were captured by banks as time deposits, which has increased the share of wholesale financing sources within the banking system.

Figure I.8

Return on equity by type of bank (*)
(percent)



(*) Profit over base capital.

Source: Superintendence of Banks and Financial Institutions.

The financial position of the domestic banking system remains solid

Recent trends in the macroeconomic environment have also favored the financial indicators for Chile's banking system. During the first half of 2004, the annualized return on capital reached 18% for the system as a whole and over 20% for the largest banks, both figures above the average in recent years (figure I.8). Spending on provisions for loans has fallen, on average, by more than 7% over the same period last year and the proportion of non-performing debt over total loans has fallen to its lowest point in the past five years. Likewise, the banking system enjoys solid equity. Through May of this year, the system's actual equity to risk-weighted assets stood at 13.7% and no individual bank has a ratio of less than 10%. Positive views of the local banking system's solidity and prospects are also reflected in the stable risk ratings its obligations receive and favorable trends in the share prices of those banks trading on the exchange.

Banking system financing depends more on wholesale sources

The structure of local banking system financing has also undergone some relevant changes. The importance of wholesale financing has risen, which tends to be more sensitive to shifting interest rates and other changes in market conditions. Banking system financing from mutual fund deposits currently stands at 19.5% of total time deposits, percentage that can reach up to 60% in the case of some small banks. Similarly, during this year bank obligations abroad have risen by more than 30% year-on-year, although they still account for less than 6% of the system's total liabilities. This has helped to offset lower demand for bank deposits from other institutional investors.

In principle, these changes in banking system structure and financing sources could lead to more liquidity needs in the case of some specific banks, as a result of unexpected changes in interest rates or other shifts in market conditions, or the appearance of situations or stress scenarios, as occurred in March 2003. However, to date most of these entities hold significant amounts of liquid financial investments, which should help them to absorb unexpected drops in some of their wholesale financing sources. Further, it should be noted that in April of this year new rules on maturity matching adopted by the Central Bank and the Superintendence of Banks included a set of elements to encourage prudent management and the use of "best practices" to manage banking liquidity risk, in line with recommended international standards.

Bank exposure to households has risen

In recent years, the banking system has increased its loans to retail clients. Loans to households have risen at an average annual rate of about 8% in the past three years, reaching almost 11% in 2003 and 13.5% in 2004. Loans to companies fell on average 0.1% year-on-year in 2003, then rose 3.8% on average during the first half of this year. Competition to grant credits to households rose significantly, as reflected in campaigns and credits at bargain rates, and the creation of new financial entities, oriented primarily to granting consumer credits, credit cards and loans to small and medium-sized firms. At the same time, household borrowing has risen faster than disposable income and in the case of mortgages, credit operations requiring less of a down payment or at variable interest rates have risen more quickly, which could potentially increase medium-term risk for this kind of lending.

Given the current dynamism of credit to households, it is important to maintain and increase the transparency of financial information for this type of customers. The availability of consolidated information on household borrowing contributes to the integrity and quality of credit evaluation processes, particularly taking into account that this tendency to provide more bank credit to retail clients should continue in the coming years. In Chile, bank credit (consumer loans and mortgages) to households accounts for almost 30% of total lending, while in developed economies it can reach or even surpass 50%.

Bank exposure to macroeconomic risk is limited

The solid equity and limited exposure to financial risk of Chile's banks would allow this sector to suitably deal with possible adverse scenarios

resulting from changes in the macroeconomic and financial environment. This is apparent in stress tests, which evaluate the impact of shocks on bank results and equity. The relevant risks from the macro-financial environment have to do with interest rate and exchange rate increases, and a rise in credit risk that could occur if domestic activity slows. The results of these exercises indicate that currently interest rate risk represents the main source of bank exposure, while exposure to exchange rate fluctuations is lower for most institutions. Similarly, these exercises indicate that profit, capital and provision levels are suitable to deal with declines similar to those observed in recent years in the quality of the credit portfolio, associated with lower growth scenarios.

High level of international liquidity and current account surplus for 2004

The Chilean economy as a whole has a solid financial position facing the exterior. On one hand, its immediate requirements for external financing are limited. For this year, the current account surplus should reach 1.1% of GDP, the result of a temporary rise in the terms of trade. At the same time, the Chilean economy's international financial integration has continued to grow, particularly given the rise in pension fund foreign investment. At the same time, the Central Bank enjoys a solid international liquidity position, with international reserves well above short-term external financial requirements (foreign debt coming due in one year or less minus the current account balance), and that when measured as a percentage of output, imports or financial assets are similar or higher than those of other economies with similar risk ratings.

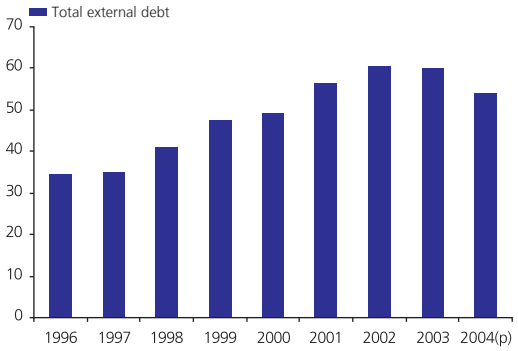
Total foreign debt as a percentage of output fell slightly in 2003, a tendency expected again this year (figure I.9). Domestic firms have held their external borrowing stable in the first half of 2004 compared to the same period of the previous year, while the government and banks have reduced it. Foreign direct investment flows reached US$3.5 billion in 2003 and US$2.2 billion through June 2004.

Although the ratio between foreign debt and Chile's GDP is greater than that of other emerging economies with similar levels of sovereign risk, it is important to consider its composition when evaluating the impact on external financing. Just 22% of external debt is public and 12% banks', which normally constitute the most critical components of external financing. Borrowing by non-financial companies accounts for 66%. Of total private external debt, 56% is by subsidiaries of foreign companies, whose borrowing from their own head offices reaches 23% (figure I.10). Similarly, residents' assets abroad have risen and these offer a source of flows and liquidity in foreign currency and coverage of foreign exchange risk.

Finally, within the current monetary policy stance the exchange rate is the adjustment variable for changes in international financial conditions. The analysis in this Report indicates that foreign exchange mismatches apparent in the different financial intermediaries' balances and those of companies are very limited, which reduces their financial vulnerability to fluctuations in this variable.

Figure I.9

Chile's total external debt
(percentage of GDP)

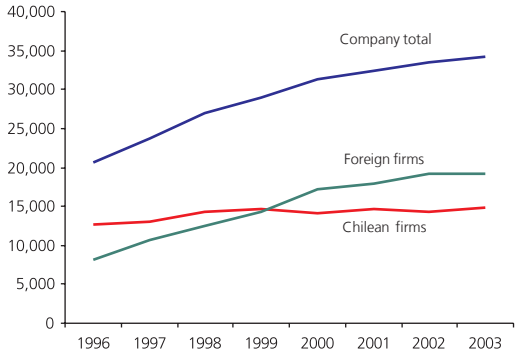


(p) Provisional figures.

Source: Central Bank of Chile.

Figure I.10

Private sector external debt by creditor's nationality
(US$ million)



Source: Central Bank of Chile.

World Bank FSAP-FMI Mission completed evaluation of Chile's financial system

During the first semester, an IMF-World Bank mission evaluated Chile's financial system as part of its Financial Sector Assessment Program (FSAP),[1/] by invitation from the Chilean government. The mission's evaluation of the solidity of the financial system and its ability to overcome a variety of adverse macroeconomic and financial scenarios such as those occurring in recent years was positive, particularly in the area of regulation and supervision of the banking system. The mission also noted the more rigorous conditions faced by the life insurance industry as a result of pressures from competition and the updating of mortality tables, along with the need to strengthen the regulation and supervision of the securities market.

Likewise, it pointed to some areas where the country could continue to improve the efficiency of the financial system, including the cautious relaxation of some limits on pension fund investment, the encouragement of competition in this sector, the advantages of adapting the prudent regulatory system to the growing sophistication and integration of financial services and markets, the need to introduce infrastructure improvements to the securities market, and the need to provide more credit to several sectors.

In this context, several initiatives are being developed in the different bodies involved in financial sector supervision and the Central Bank, along with those included in the second draft capital market reforms, currently before the legislature, which are headed in that direction, particularly those dealing with changes toward supervision based on risk management, the creation of risk capital financing mechanisms and the modernization of the payment system and the securities market.
The risks to the normal functioning of the Chilean economy's domestic and external payments are low.

The risks to the normal functioning of the Chilean economy's domestic and external payments are low

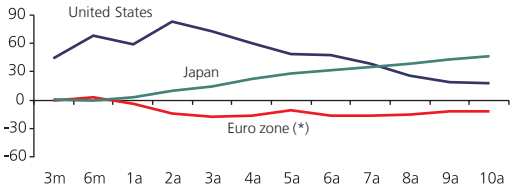
In conclusion, the prospects for financial stability and the normal functioning of domestic and external payments in the Chilean economy are satisfactory. The stronger performance for the global economy, lower interest rates prevailing on international markets and the local market, and the faster pace of economic expansion in Chile have helped to strengthen the financial position of most domestic agents and financial intermediaries. The projections available suggest that this tendency will continue in the near future. How quickly and in what way interest rates return to normal in international markets remains one of the main risk factors for the coming quarters. Analyses done to date indicate that the economic sectors covered in this Report will keep their exposure due to this risk factor under control. In any case, it seems necessary to pay special attention to actual changes in external interest rates over the coming months and their effects on different financial markets in Chile and abroad, in order to respond in a timely manner to alternative scenarios that could involve a decline in the overall macro-financial outlook for the Chilean economy.

[1/] Box VI.2 proves a summary of the mission's report.

II. Macroeconomic and financial environment

Figure II.1

Change in the zero coupon bond yield curve
(July/04 – December/03)
(basis points)

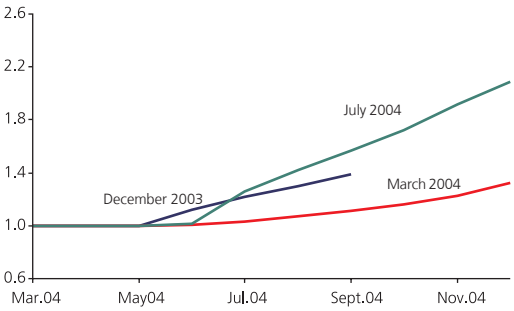


(*) The Euro zone is approximated using Germany's sovereign bonds.

Source: Bloomberg.

Figure II.2

Federal fund 30-day future rate curve
(percent, end of month)



Source: Bloomberg.

Table II.1

Growth of most developed economies and projections
(percent, 12-month change)

	2003	I.2004	2004 (f)	2005 (f)
United States	3.1	4.8	4.5	3.8
Japan	2.5	5.6	4.2	1.8
Euro zone	0.6	1.3	1.9	2.1

(f) Projection.

Sources:
Central Bank of Chile.
Consensus Forecast.

II.1 International outlook

II.1.1 Recent developments

Interest rates are starting to return to normal in the US, while those of the euro zone and Japan remain stable, in line with the cyclical position of these economies

At the end of last June, the Federal Reserve in the US started to correct its short-term target interest rate upward, raising it 25 basis points. In early August, it raised it again, bringing it to its current level of 1.5% annually. This monetary policy correction had been expected since the beginning of the second quarter, after activity and employment indicators revealed that the US economy was performing better. In the second quarter, markets started to move up the date when the US policy rate was expected to rise, from the end to the middle of the year, while signals from the monetary authorities reinforced these expectations and long-term rates in the US began to rise significantly (figure II.1). After some initial volatility, expectations for monetary policy settled on a moderate and gradual rise in the interest rate, consistent with slack in capacity and employment, and with stable core inflation.

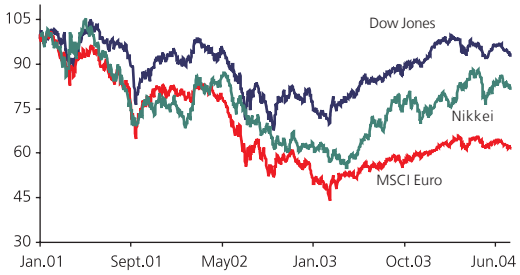
The latest figures for activity and prices have confirmed expectations that the interest rate will rise gradually (figure II.2). In fact, as this Report closed, interest rate futures were pointing to a 50 to 75 basis point rise in the US policy rate toward year's end.

In Japan, short-term rates have remained stable in this semester, but medium- and long-term rates have risen. Thus, since mid-March, the rate of return on 10-year government bonds rose by about 50 basis points to reach 1.8% in late July. In the semester, the structure of zero coupon return rates on sovereign bonds gradually rose more for longer term maturities, the result of economic indicators signaling a rise in activity and employment. In the euro zone, meanwhile, the rate of return on 10-year sovereign bonds remained relatively stable in this half of the year, while the medium-term tranche fell about 15 basis points, mainly due to weaker signs of economic recovery and expectations that the region's expansionary monetary policy would last somewhat longer (figure II.1).

These movements are consistent with projections from investment banks and Consensus Forecasts, which are forecasting annual growth of 4.5% for the US, 4.2% for Japan, and 1.9% for the euro zone in 2004. Projections for next year stand at 3.8%, 1.8% and 2.1% respectively for these economies (table II.1).

Figure II.3

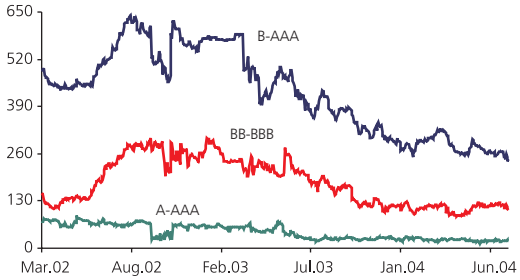
Stock indices of most developed economies
(1 January 2001 = 100)



Source: Bloomberg.

Figure II.4

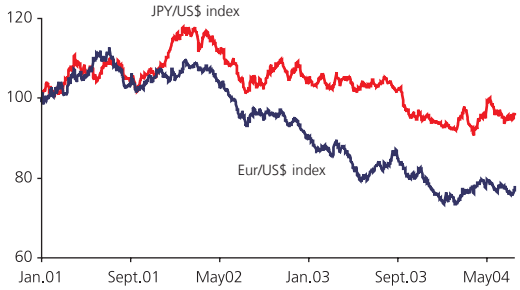
US corporate bonds: gap between risk ratings
(basis points)



Source: Bloomberg.

Figure II.5

Most developed economies' nominal exchange rate index
(1 January 2001 = 100)



Source: Bloomberg.

The rise in US interest rates had little impact on the price of risky assets –exchanges and company bonds– in developed economies

Stock indices for the most developed economies were more volatile in the second quarter of this year, mainly associated with uncertainty about how quickly interest rates would return to normal in the US. Nonetheless, once indicators for activity and prices confirmed expectations of a gradual rise in policy rates, stock markets tended to stabilize. The Dow Jones ended up rather below the start of the year, as did the euro zone, while Japan's Nikkei closed the semester up 10%, in line with the significant change in that economy's growth prospects (figure II.3).

The same factors were behind trends in premiums on company bonds in the main financial markets. On average, these held steady throughout the semester. This behavior was balanced for the full spectrum of risk ratings, from B through AAA, favoring companies with lower ratings (figure II.4). The relative stability of corporate premiums in this half reflected expectations of an orderly adjustment of interest rates, with sharp rises not very probable in the short term, combined with rising company profits, generating a sense that credit risk is stable.

The dollar's tendency to depreciate, apparent since 2002, turned around in the first half of the year (figure II.5). The dollar has appreciated almost 2% against the yen so far this year. The dollar appreciation against this and other currencies mainly reflected expectations that interest rates would rise in the US, and triggered a portfolio reassignment in favor of lower risk assets in the US economy. Between April and May, this made it possible for Asian central banks to suspend interventions in the foreign exchange market, begun in 2002 to prevent the appreciation of their currencies. In June and July, however, they again intervened, although to a lesser degree than in the past. Future changes in the dollar will always be sensitive to the US' high current account deficit, a factor that will pressure for its depreciation in the medium term. Finally, the international portfolio reorganization caused nominal exchange rate indices to become more volatile, particularly in the case of the yen in April and May, when there was more uncertainty about future interest rate changes (figure II.6).

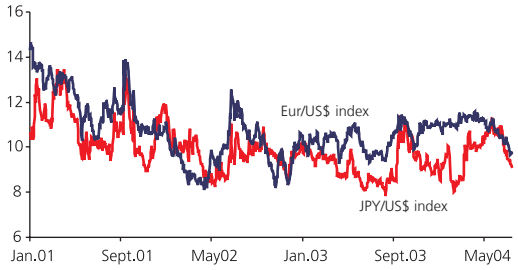
The rise in interest rates in the US has triggered moderate increases in the sovereign premiums of emerging economies, a decline in share values and a depreciation of their currencies

Both uncertainty and the earlier than expected increase in US interest rates influenced the behavior of markets in emerging economies, particularly those more exposed through their level of external borrowing. Encouraged by expectations of an early rise in US rates, sovereign premiums for these economies, which had been falling since mid-2002, partly turned around, in contrast with the behavior of corporate bonds in the most developed markets. Thus, bonds of Latin America and emerging Europe rose by almost 80 basis points on average from January to July, while emerging Asia's sovereign bonds increased by about 40 basis points (figure II.7). The premium on Brazil's sovereign debt rose from an average of 490 basis points in December to around 630 basis points in early July, in response to risks associated with the political scenario and foreign

Figure II.6

Volatility implicit in nominal exchange rates in the most developed economies

(percent)

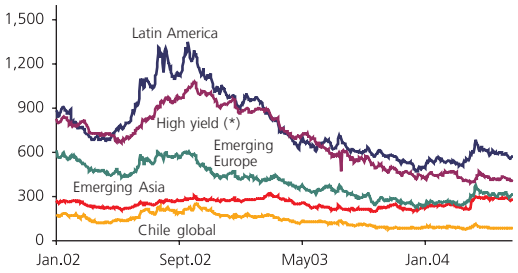


Source: Bloomberg.

Figure II.7

Premiums on emerging economies sovereign bonds

(basis points)



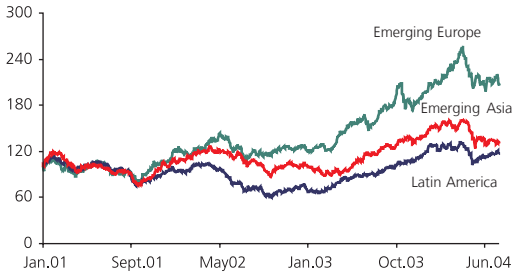
(*) High yield refers to bonds with a lower than investment grade (BB to CCC) risk rating, according to S&P.

Source: JP Morgan Chase.

Figure II.8

Stock indices of emerging economies

(1 January 2001 = 100)



Source: Morgan Stanley Capital International.

debt. Similar considerations, along with geopolitical risk factors, caused Turkey's sovereign premium to rise too.

Stock markets in emerging economies fell significantly at the start of the second quarter. Share prices in Latin America, emerging Europe and Asia fell almost 20% between mid-April and mid-May, recovering only slightly in the last month (figure II.8). This apparently reflected expectations of a rise in interest rates, which increased the perception of risk in emerging economies. Similarly, currencies experienced net depreciation amidst greater volatility, as international capital flows out of emerging economies increased, in favor of the most developed countries, and investment funds' liquid asset holdings denominated in the main currencies rose.

The most recent evidence on capital flows as they affect emerging economies confirms these developments. Data on investment funds specializing in bonds and shares from these economies show a decline in financial flows into these markets. This situation represents a reversal of first quarter trends, when investment funds continued to increase their positions, although mostly in the countries of emerging Europe at the expense of emerging Asia and Latin America (figure II.9).

In conclusion, external financing conditions for emerging economies have become slightly less positive in the first half of the year, but remain favorable from a historical perspective.

II.1.2 Risks

The baseline scenario foresees a gradual rise in US interest rates, with a similar rise toward normalcy coming more slowly to other developed economies,[1/] while world economic growth should average 4.5% annually over the next two years.

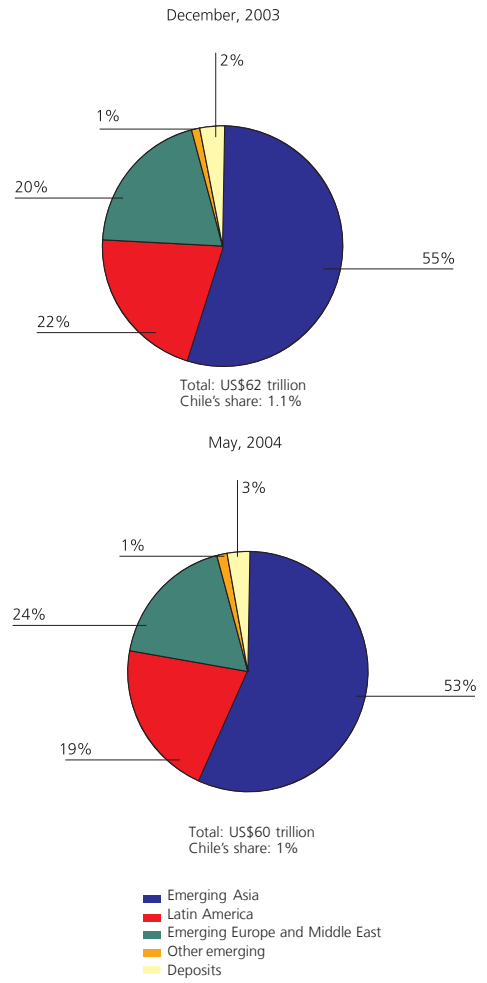
The main risk in the baseline scenario would involve a cycle of interest rate increases in the US at a faster pace than expected. Materialization of this risk scenario will depend on changes in inflation in the US economy. A cycle of interest rates rising faster than expected could boost external financing flows to the US, causing the dollar to appreciate more against the currencies of other developed economies. This risk would also reduce the prospects for medium-term world growth, since it would force corrections to spending in other regions.

Similarly, a delay in more active policies for reducing the US fiscal deficit would leave monetary policy less free to gradually correct interest rates, due to the expansionary effect this would have on aggregate demand. The risks for the baseline scenario could be amplified by an overreaction among international investors to an unexpected cycle of more rapid interest rate increases in the US, significantly affecting the liquidity and availability of external financing for emerging economies, especially those most in debt.

[1/] In the United Kingdom, interest rates have been corrected upward.

Figure II.9

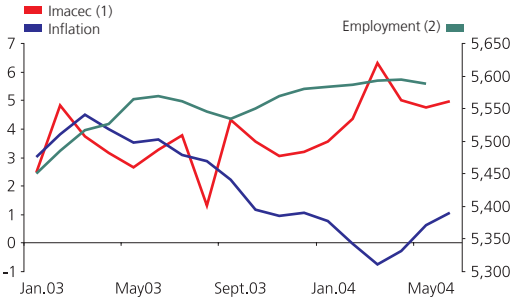
Investment funds' positions in emerging economies
(percent)



Source: Emerging Portfolio Fund Research .

Figure II.10

Macroeconomic indicators
(percent, thousands of people)



(1) 12-month growth rate.
(2) Seasonally adjusted series.

Sources:
Central Bank of Chile.
National Statistics Bureau.

Elsewhere, another risk factor involves the application of policies to cool the Chinese economy stricter than those already adopted, because of the impact that an abrupt correction to that economy would have on those of the region and on commodity markets. Nonetheless, this risk looks less likely than in the first quarter of this year, because the measures applied have tended toward a gradual correction. It should also be noted that the longer the oil price remains high, the more of a risk it will pose to world economic performance and inflation. Finally, geopolitical risk and risks associated with terrorist attacks remain, which could generate instability in financial markets.

II.2 The domestic scenario

II.2.1 Recent developments

In Chile, inflation is rising toward the target range, while economic growth has averaged just under 5% annually so far this year

The Chilean economy is expanding and will probably see annual growth of 5% of GDP, while inflation is rising toward the target of 3% annually. In the first quarter of this year, output rose at an annual rate of 4.8% and, in the second, the Imacec (a monthly measure of economic activity in Chile) averaged 4.9% annual growth. The recovery in the terms of trade has contributed substantially to improving the climate for growth. Last June, 12-month inflation reached 1.1%, its highest point this year, and it should continue to move toward the target range (figure II.10). Employment, in contrast, has grown more moderately, posting 12-month growth of 1.5%, on average, between January and May; down from an average 2.9% year-on-year in 2003, while the unemployment rate has risen in recent months reflecting a rise in the labor force and slower job creation.

According to the last *Monetary Policy Report* (*Informe de Política Monetaria*, IPoM) projections from the Central Bank, GDP growth this year should range from 4.5%-5.5%, while inflation should reach about 2.1%. Agents' expectations remain similar to those contained in the IPoM, according to the Central Bank's monthly survey of expectations (table II.2). However, indicators for consumer and business confidence have slipped in recent months.

The main risks in Chile's macroeconomic environment are associated with external factors (Section II.1), particularly trends in international interest rates and their impact on global growth, as well as the financial conditions facing emerging economies. A scenario involving sudden increases in international interest rates could reduce capital flows into emerging economies. This would pressure interest and the local foreign exchange rate upward. Moreover, a high international interest rate scenario would slow world economic activity, hurting Chilean export prices. The price of oil represents another macroeconomic risk factor, but its eventual effects on the financial situation of credit users and intermediaries would be less significant.

Table II.2

Expectations about macroeconomic variables

(values to December of each year, actual and July 2004 survey)

Specification	2003 (1)	2004	2005
		(percent)	
12-month inflation	1.1	2.4	2.8
Monetary policy rate	2.3	2.0	3.25
GDP growth	3.3	5.0	5.0
BCU-5 rate	3.2	2.5 (2)	3.1 (3)
		(level)	
Dollar $/US$	599	632 (2)	640 (3)

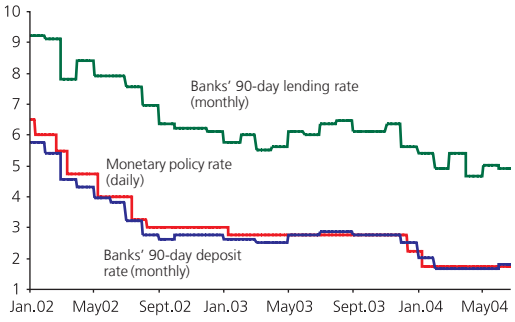
(1) Actual value.
(2) Through September 2004.
(3) Through June 2005.

Source: Central Bank of Chile survey.

Figure II.11

Short-term interest rates

(annualized rates)

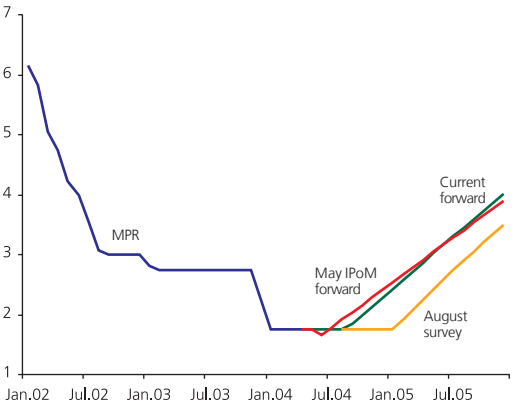


Sources:
Central Bank of Chile.
Asociación de Bancos e Instituciones Financieras (bankers' association).

Figure II.12

Monetary policy rate (MPR), expectations and forward curve

(percent)



Source: Central Bank of Chile.

Interest rates in the domestic market remain historically low

The Central Bank cut the monetary policy rate by 100 basis points between last December and January and it has remained constant at 1.75% since then. Short-term rates in the financial system followed changes in the policy rate and, in the first half both these and bank 90-day deposit and lending rates fell 72 basis points (figure II.11). The expectations implicit in the forward curve reflect the rises expected in the monetary policy rate of 80 basis points to six months and 120 basis points to nine months (figure II.12).

Long-term policy rates fell in the first quarter of the year, then rose somewhat in the second quarter, coinciding with changing expectations about monetary policy in the US. In early July, the rates on 5- and 10-year bonds in UF stood at 2.5% and 3.8%, respectively. Yields on mortgages and corporate bonds, meanwhile, behaved similarly to Central Bank bonds, with no particular tendency in the premiums paid over these, despite more volatile long-term interest rates in the second quarter (figures II.13 and II.14).

Firms continued to issue bonds in the private market, offering more in the first half of 2004 than one year earlier. This rise reflected the issue of long-term (25-year) bonds by a public works concessionaire (figure II.15), and the Treasury's ongoing domestic issues of 20-year indexed bonds (BTUs), begun in 2003, which involved US$200 million in the first half of this year. At the same time, the Central Bank started to issue 10-year nominal bonds in June of this year, which represented significant progress toward extending the nominal yield curve and helped to further nominalize the domestic financial market. It should be noted that the 6.5% rate at which these bonds are auctioned off suggests inflation expectations that validate the credibility of the target established by the Central Bank.

Share price indices were volatile during the first six months of this year, although in net terms they posted no relevant change. The general share index (IGPA) accumulated nominal profitability of 2.5% in this period, while the selective index (IPSA) fell –0.1%. This contrasted with the second half of 2003, when both indicators showed profitability rates of 21% and 24%, respectively. Price corrections apparent in the second quarter coincided with declines in the exchanges of other emerging economies.

Despite these corrections, the price-to-earnings ratio remained relatively high in historical terms, bringing some companies to make public offerings and issue new shares. Between January and June almost 400 billion pesos in shares and closed-end fund quotas were registered, more than five times the issues in the same period of the previous year[2/] (figure II.16).

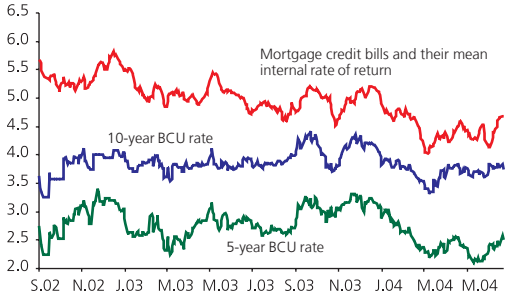
Similarly, intermediation on secondary share and bond markets has risen significantly, favoring the depth and liquidity of these instruments and facilitating risk management by financial intermediaries. Fixed income transactions in the secondary market rose by almost half during the first

[2/] Excluding an extraordinary issue from one electric sector firm in June 2003, for more than 1.3 billion pesos.

Figure II.13

Long-term interest rates

(annualized daily rates)

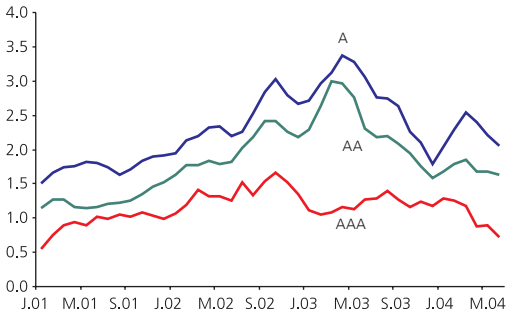


Source: Central Bank of Chile.

Figure II.14

Corporate bond spreads

(percentage points)

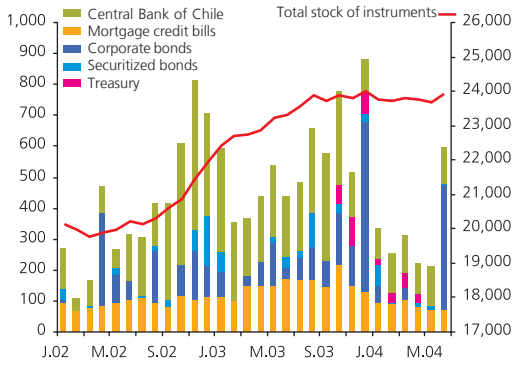


Source: Central Bank of Chile.

Figure II.15

Long-term, fixed income instrument issues

(billions of current pesos)



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

six months of the year over the same period in 2003, driven mainly by larger transactions involving Central Bank securities, which were up by more than 90% over the previous year. The growing volume of fixed income instruments traded largely reflected changes in the composition of institutional investors' portfolio (chapter IV). Trading on stock exchanges as a percentage of stock equity has also risen, with the monthly average up 3.3% over 2003 in the first half de 2004.

The peso depreciated in the first half of the year, with the dollar's value against the peso rising from an average 574 pesos in January to 644 pesos in June, in contrast to appreciation experienced the previous year. Trends in the exchange rate reflected lower short-term interest rates in Chile and changing expectations about monetary policy in the US, and the impact this had on most emerging economies. In the first quarter of 2004, the exchange rate became increasingly volatile compared to historic levels, but later fell to about 10% annually (figure II.17).

The volume of foreign exchange hedging went up significantly, due to pension fund managers' increased investment abroad. Both buy and sell forwards by non-banking agents in the domestic and external markets reached US$32,618 million in May 2004, representing 12-month growth of 56% (figure II.18). Banks, which handle most institutional investors' contracts and moreover, execute contracts abroad, saw their asset and liability positions reach US$51,379 million through last May, posting 29% growth in 12 months.

II.2.2 Stress tests

This issue of this *Report* includes the results of stress tests carried out for different agents to evaluate the impact that an extreme adverse shock to macroeconomic variables could have on their current financial situation. The exercises are static in nature, in the sense that they do not include the feedback effects caused by the results from the initial shock.

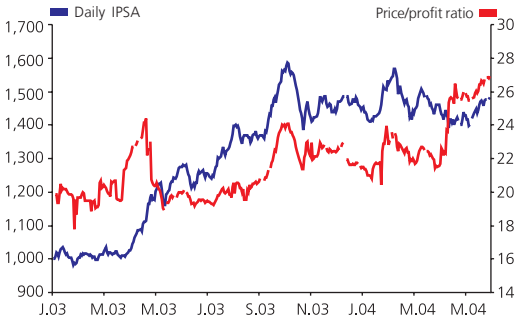
The use of extreme adverse shocks does not in any way imply that there is a significant probability of that scenario occurring. On the contrary, the exercise seeks to establish the impact of extreme scenarios on agents, even when their likelihood is reduced. Nonetheless, a completely impossible scenario would render the exercise useless. Because of this and to maintain some degree of plausibility for the extreme scenario, the values for key variables are determined in relation to the observed historical maximums or minimums, or to the tails of the statistical distributions for these variables.

According to the analysis in this chapter, risks are posed by a larger than expected rise in interest rates, due to adjustment in the US economy. Turbulence in international financial markets would affect the Chilean economy, if this involves a decline in external financing and falling terms of trade. Both factors would push the exchange rate towards its depreciation.

The size of the shock is determined in relation to the time span that this could negatively affect different agents. This horizon is determined by the time that specific agents would take to cover or change their exposure to the variable that is being shocked. In the exercises we assume that for

Figure II.16

IPSA and price/profit ratio

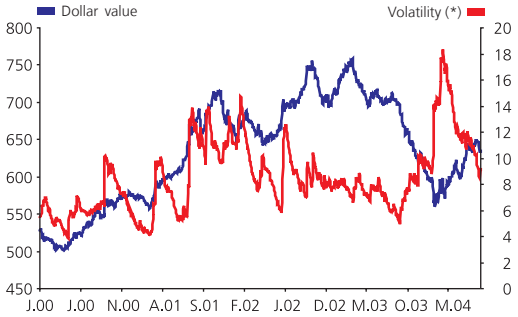


Source: Santiago Stock Exchange.

Figure II.17

Level and volatility of the nominal exchange rate

(pesos per dollar, percentage points)



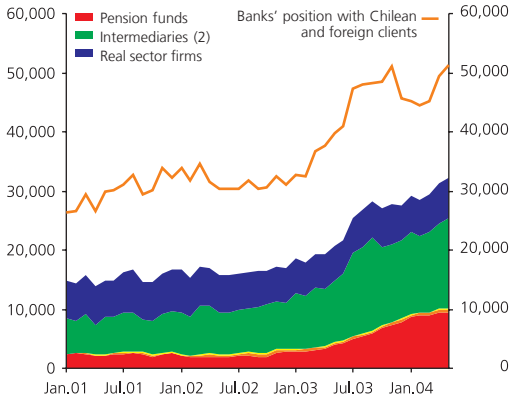
(*) Risk Metrics Method.

Source: Central Bank of Chile.

Figure II.18

Local and external market foreign exchange hedging: open interest (1)

(current US$ million)



(1) Open interest is the sum of agents' asset and liability positions.
(2) Investment banks, agents and security brokers.

Source: Central Bank of Chile.

all agents it is costly to change their exposure to interest rate risk, so the relevant shocks are determined as a function of observed annual changes. On the exchange rate, it is normal to assume that banks can change their position relatively quickly, so best practices recommend applying shocks related to changes observed in periods of ten days. Nonetheless, because these are systemic stress tests, in which all banks would be trying to cover their positions in the same direction at the same time, we assume that coverage would take longer, so we apply shocks related to quarterly changes. A similar horizon is used for companies, while for the consolidated government we use shocks related to annual variations.

Thus, for the stress tests we assume a large shock triggered by a higher interest rate in Chile and abroad (a 550 basis point rise in the monetary policy rate over one year) and an extreme devaluation equivalent to 1% of its distribution (14% quarterly and 30% annually, both higher than observed historic maximums). This rise in the interest rate would reduced GDP growth from 5% to 1% in 12 months, according to Central Bank macro model projections. Moreover, we assume a shock to the copper price of 1.5% in the distribution of expected changes over the current level. This shock would involve a price of 66 cents per pound. According to the standard methodology for these exercises, we assume the shocks occur once and persist throughout the year.

III. Real sector

III.1 Non-financial companies

Non-financial companies are the main destination for the financial flows intermediated by banks and institutional investors established in the country, along with banks and other foreign investors. Banking sector lending to non-financial companies accounts for two-thirds of their total loans. Bonds and shares issued by these companies represent 23% of institutional investors' portfolios, and their debt with foreign creditors accounts for three-quarters of total foreign debt. These indicators illustrate the importance of companies' financial health to the stability of the financial system as a whole.

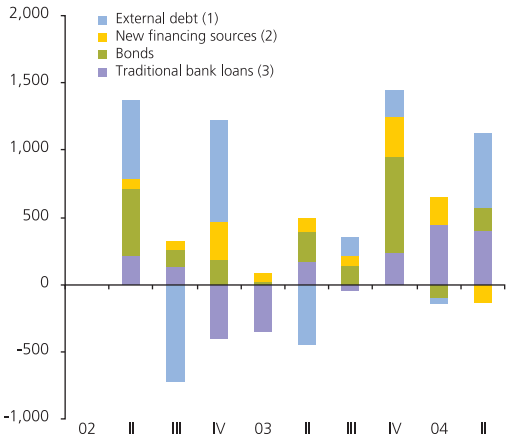
The analysis of the company sector is dealt with from two perspectives: first, describing trends in total sector borrowing using information from the main issuers of credit and debt markets; second, analyzing company borrowing compared to other components in their financial statements. This second perspective is limited to those companies that regularly publish their financial statements. Companies required to do so are included in the Superintendence of Securities and Insurance' securities register (*Registro de Valores*, RV),[1/] which make quarterly reports (FECUs)[2/] to this body.

While small in number, the importance of the companies registered is high. Altogether they account for almost 18% of banks' commercial loans and 19% of companies' time deposits. At the same time, by definition they represent all companies issuing public offerings on the local market and almost 50% of companies' outstanding external debt.

The rest of the business sector is hard to cover, since it is not required to publish financial statements. This group includes most medium and small companies, but also some larges ones. Nonetheless, banking system information will allow us to expand this analysis to include some groups of these companies, particularly those with important relations with the financial system.

Figure III.1

Trends in financing sources
Changes in stocks
(billions of pesos)



(1) External debt is converted to pesos using the average exchange rate for the period.
(2) Includes: securitized bonds with non-banking core, leasing, factoring and bills of trade.
(3) Includes commercial and foreign trade loans.

Source: Prepared using information published by the SVS, SBIF and ACHEF.

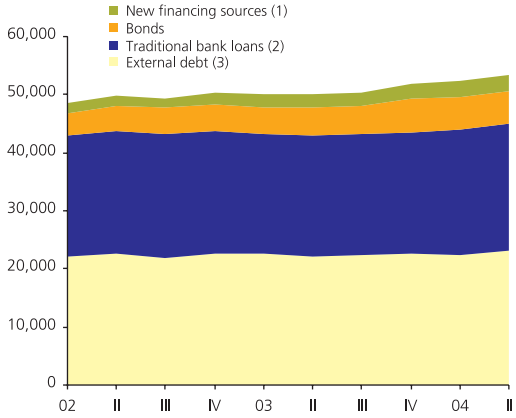
[1/] Through May 2004, 530 companies were currently registered with the securities register of the Superintendence of Securities and Insurance (SVS).

[2/] *Ficha Estadística Uniforme Codificada*. This contains the following financial statements: balance sheet, statement of results and cash flow statement, with their respective notes.

Figure III.2

Trends in financing sources

(billions of pesos)



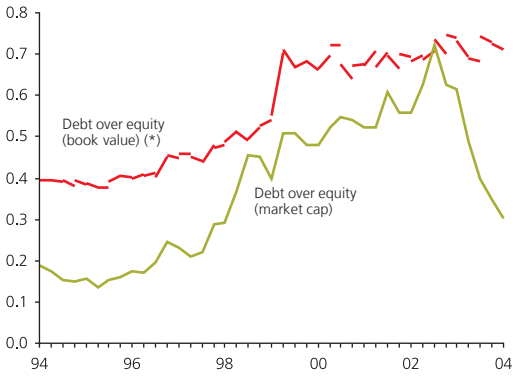
(1) Includes: securitized bonds, leasing, factoring and bills of trade.
(2) Includes commercial and foreign trade loans.
(3) External debt is converted to pesos using the average exchange rate for the period.

Source: Prepared using information published by the SVS, SBIF and ACHEF.

Figure III.3

Debt over equity ratio

(times)



(*) The broken line for this series represents the paired sample methodology used in its preparation. This consists of maintaining a constant sample of firms from one quarter to the next, to be able to break down variations between changes in the sample (which explains the gaps in the line) and the tendency in each period, represented by the slope of each tranches.

Source: Prepared based on information from the FECUs and the Santiago Stock Exchange.

III.1.1 Sector borrowing

Companies' overall borrowing rose in the first half of the year

Bank debt, the main source of domestic company borrowing, had accumulated 12-month growth of 4.5% through June 2004, mainly reflecting loans in the first half of this year. As a whole, bank loans to companies reached a little over 23.4 billion pesos at the end of the second quarter, 46% of the sector's debt financing. Within this, the strong performance of some new types of financing, particularly factoring and leasing, should be noted. These are particularly relevant for small and medium firms. According to industry sources,[3/] trends in bank loans reflected the rise in credit applications from companies and better conditions.

Like bank credit, company borrowing through bonds and other debt securities performed well in the first half of the year, in line with favorable interest rates and premiums observed during this period. New bond issues[4/] in the first six months of the year came to just over 390 billion pesos, up 31.8% from the same period the previous year, and went mostly to financing infrastructure projects and, to a lesser degree, refinancing liabilities. Similarly, loans in the form of bills of trade rose, as did negotiable short-term debt and securitized bonds[5/] (figures III.1 and III.2).

In contrast with the strong performance noted on the domestic market, in the first half of this year, the stock of financing from abroad did not change significantly. Through June 2004, companies' foreign debt of US$ 33.241 billion was similar to that observed in late 2002. The stronger performance of credits associated with foreign trade and bond issues on the external market during this period was offset by a decline in subsidiaries' borrowing from foreign head offices and bank loans from abroad.

Overall, borrowing by non-financial companies picked up in the first half of the year, rising 1.6% over December 2003. In the case of companies registered with the SVS, their borrowing levels measured over the book value of their equity did not change significantly in the first quarter of the year, and remained similar to levels observed since 1999, at about 0.7 times (figure III.3). Domestic firms' debt levels are moderate compared to international parameters. Thus, for example, the proportion of domestic company debt operating in different economic sectors is lower than that of their Mexican and Brazilian peers, and well below that of American companies (figure III.4).

III.1.2 Companies included in the SVS securities register

Company profitability has risen, driven by better external conditions and lower financing costs

In the first quarter of 2004, the return on equity[6/] of companies publishing financial statements was 11.7% annually, its highest since early 1997, and

[3/] Sixth Survey of Bank Credit, May 2004, Central Bank.

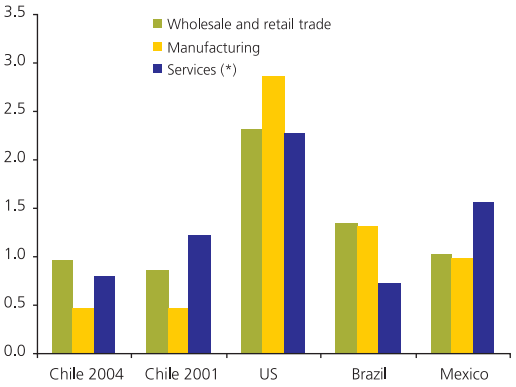
[4/] This figure does not include securitized bond issues.

[5/] This includes only those instruments whose core comes from non-financial companies.

[6/] Measured by return over equity.

Figure III.4

Debt over equity ratio, international comparison
(2001, times)

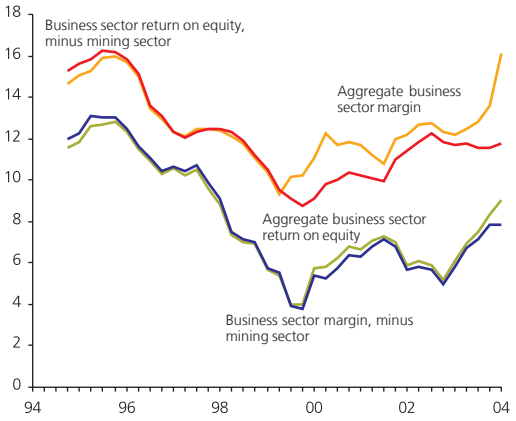


(*) Services includes the following sectors: electric power generation, transmission and supply, telecommunications, air, sea, rail and bus transportation.

Source: Prepared using information from the FECUs and Bravo and Pardo (2004), "*Análisis comparativo de estructuras financieras de cuatro industrias base en Latinoamérica y Estados Unidos*," draft, FACEA, University of Chile.

Figure III.5

Business sector profitability and margins
(four-quarter moving average, percent)



Source: Prepared using information from the FECUs.

their operating margin[7/] reached 18.2% of sales, its highest point since 1994. This favorable trend mainly reflected better results from the mining sector and the higher copper price in international markets (figure III.5). Results from other sectors also improved, although more moderately, particularly in manufacturing, where returns reached 10.9%. Financing costs for domestic firms continued to fall in the first quarter of 2004, in line with trends in domestic and foreign interest rates, and, in the case of companies registered with the SVS, these reached 6.4% annually, their lowest point in the past decade.

Indicators for domestic firms' financial capacity have improved

The recovery of operating margins, combined with lower financing costs and the stability of total debt has brought improvements to the financial position of SVS-registered companies. The interest coverage indicator,[8/] which measures how well the slack in companies' flow generating capacity will cover their financial obligations, reached 7.1 times in the first quarter of the year (figure III.6). These companies' liquidity, measured using the acid test,[9/] also recovered during this period (figure III.7). The percentage of SVS-registered firms posting losses fell from 24% to 21% in the same quarter (figure III.8), while the proportion of firms falling in the lower quintiles of both profitability and liquidity and the upper quintile of indebtedness fell from 9% to 5% in the same period (figure III.9).

The trend in these financial indicators is consistent with changes in the number of companies filing for bankruptcy, which in the first half of this year fell 31.3% compared to the previous year. Similarly, risk ratings associated with company-issued debt instruments remained practically stable in this period (table III.1).

Table III.1

Trends in risk ratings (1)

	N° companies	% over number of companies	% over outstanding debt (2)	Average change (3)
Rating dropped	1	1.5	0.2	1
Rating maintained	62	95.4	99.6	
Rating raised	2	3.1	0.2	1

(1) Estimate for 03 December to 04 May.
(2) Debt for set of firms with risk rating.
(3) Changes measured in notches.

Source: Prepared using information published by the SVS.

III.1.3 Prospects and stress tests

The stronger performance from domestic demand and exports suggests that companies' profits and operating margins will continue to improve in the coming months. This is consistent with business expectations, as measured by the monthly confidence index (IMCE).[10/] Although markets

7/ Defined as operating income minus operating costs.

8/ Defined as EBITDA over financial costs.

9/ Defined as (current assets minus inventories) over current liabilities.

10/ *Índice mensual de confianza empresarial.*

Figure III.6

Financing costs and interest coverage

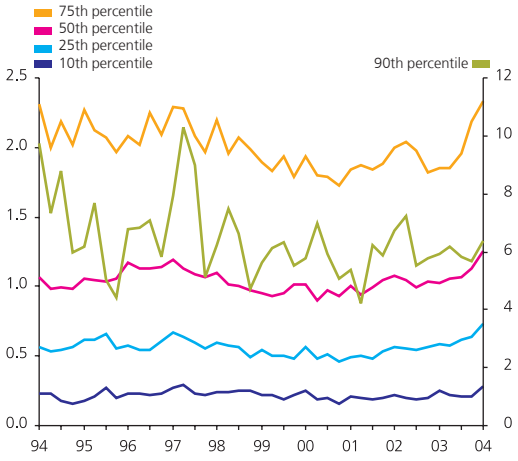
(1) Calculated as financing costs over interest-bearing debt.
(2) Defined as EBITDA over financing costs.

Source: Prepared using information from the FECUs.

Figure III.7

Trends in the acid test (*)

(times)



(*) (current assets – inventories) / current liabilities.

Source: Prepared using information from the FECUs.

expect domestic and foreign interest rates to rise in coming quarters, this trend will be gradual and moderate, and parallel to improvements in companies' operating flows. Consistent with these expectations, stress tests for companies publishing their financial statements indicate that a rise in interest rates according to market expectations (Section II.2) would bring with it a marginal fall in the interest coverage indicator, from 7.1 to 6.9 times. Overall, credit risk associated with companies should continue to drop for the rest of this year. Together with the rise forecast in private investment, this should push private debt higher in the coming quarters.

Rising interest rates

This analysis quantifies the impact of a rise in the interest rate on the business sector's debt servicing capacity. For the purposes of this exercise, a 550 basis point increase is applied (section II.2). In addition, a 20% decline in operating results is assumed, given that a significant rise in interest rates is usually associated with less economic activity. This decline is obtained using historical correlations, such as the maximum observed for output growth resulting from an interest rate increase. Finally, the impact these changes would have on the interest coverage indicator was quantified individually for the companies in the sample.

For SVS-registered firms, the net effect would be a decline in the coverage indicator from 7.1 times observed in the first quarter of 2004 to 5.2 one quarter later, well above the 1.9 minimum registered in early 2001 (figure III.10). Similarly, the percentage of bank debt concentrated in companies with a weak financial position would rise slightly. Through the first quarter of 2004, just 4.0% of debt maintained by SVS-registered firms with local banks was in firms whose interest coverage stood at less than 1. This percentage would rise to 6.2% due to the effect of the rising interest rate and the fall in operating results, described previously (figure III.11). These credits represent 0.4% of total banking system assets. In the case of bond issuers, some minimum changes in the proportion of debt in the hands of companies with an interest coverage indicator of less than 1 also occurs, with this going from 10.1%[11/] to 11.4%. For external debt, meanwhile, the percentage held by companies with a coverage indicator below 1 would rise from 14.8%[12/] to 20.7%. This rise primarily reflects electric power sector firms whose finances are still tight after the successful conclusion of liability restructuring processes. Finally, the profitability of companies, measured as before-tax profits over assets would fall, in aggregate terms, from 6.3% to 5.9% annually.

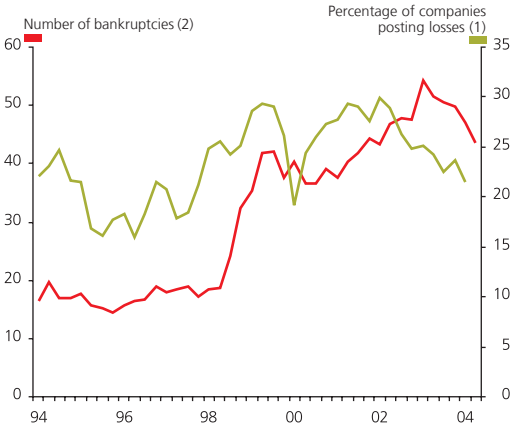
The results of this exercise suggest that a rise in interest rates and a decline in operating results, such as those assumed in this exercise, would not seriously hurt the business sector's overall ability to pay. The effect of this rise would be limited to a small group of companies whose financial position is weaker and whose decline would not become a

[11/] Of this percent, 9.5 percentage points correspond to the bonds of companies involved in major investment plans, whose bonds have an AAA rating.

[12/] Of this percent, 10.7 percentage points correspond to the debt of companies developing major investment plans. In every case the rating on these companies' bonds is AAA.

Figure III.8

Trends in bankruptcies and companies posting losses

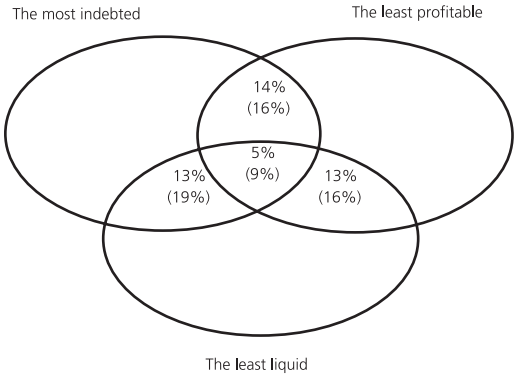


(1) Companies registered with the SVS.
(2) Universe of firms. Quarterly average.

Source: Prepared using information from the FECUs and the Superintendence of Bankruptcies.

Figure III.9

Financial indicators intersection (1) (2) (3)
2003-2004



(1) Percentages for quintiles.
(2) Percents calculated through March 2004. Figures in brackets are for March 2003.
(3) Indebtedness, profitability and liquidity are measured using the following financial indicators, respectively: payables over assets, profit for the period over assets, acid test.

Source: Prepared using information from the FECUs.

systemic risk factor for the banking system and other financial intermediaries.

A rise in the exchange rate

To quantify the impact on the business sector of an exchange rate shock, we used information for assets and liabilities in foreign currency held by companies in the sample, along with foreign currency flows associated with their economic activities. Net foreign currency flows were calculated individually for each company in the sample, using information about exports, imports and financial costs associated with their foreign currency debt. It should be noted that this is an approximation of the effect of a foreign exchange shock on companies, since this could affect them through the impact of changes in the foreign exchange rate on tradable goods prices, for example, without their necessarily being involved in foreign currency operations.

The exercise has been applied to the sample of SVS-registered firms, excluding those who do their accounting in dollars.[13/] The exercise measures the effects of a devaluation on company results and ability to pay, arising from both a net asset and net liability position and the sign of net foreign currency flows. This second effect is assumed to last just one quarter, since by the end of that period the company should have adjusted to the new exchange rate. Thus, the exercise assumes a permanent rise of 14% in the exchange rate, a relevant shock with regard to quarterly changes in this variable (section II.2).

Information from sample balance sheets shows that foreign currency liabilities exceed assets in that currency by almost US$4.7 billion. In terms of flows, meanwhile, foreign currency outflows exceed income in the currency. While this seems to contradict the fact that the business sector overall has exports worth more than outflows in foreign currency, the exports are to be found in a small number of companies, so that for most firms with trade operations abroad, their outflows exceed their inflows in foreign currency.[14/] This suggests that peso depreciation would have a mainly negative impact on this sector. Specifically, a rise in the exchange rate like the one assumed for this exercise would have a moderate impact on the hedging indicator, which would fall from the 5.5 times observed for this indicator in March 2004, to 5.1 times one quarter later.

The redistribution of debt that the shock applied would have in terms of the interest coverage indicator was also examined. The proportion of bank debt held by companies with a coverage indicator of less than 1 would rise slightly, from 4.0% to 4.2% of the total debt that SVS-registered firms maintain with the local banking system. This would also rise slightly for firms issuing bonds in the domestic market, since the percentage of instruments issued by firms with an indicator below 1 would rise from

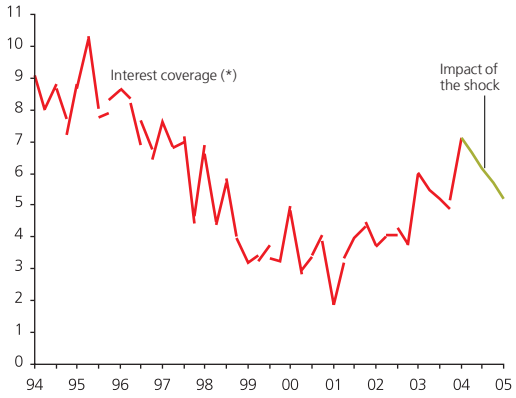
[13/] Companies whose accounting is in dollars are excluded since these are considered to have natural coverage of exchange rate changes, with assets and liabilities whose value depends on the exchange rate.

[14/] Estimates based on information from Customs on exports and imports for 2003, worth over US$10,000. For this set of companies, 72% were only importers.

Figure III.10

Tension exercise for the interest rate: effect on interest coverage

(percent)



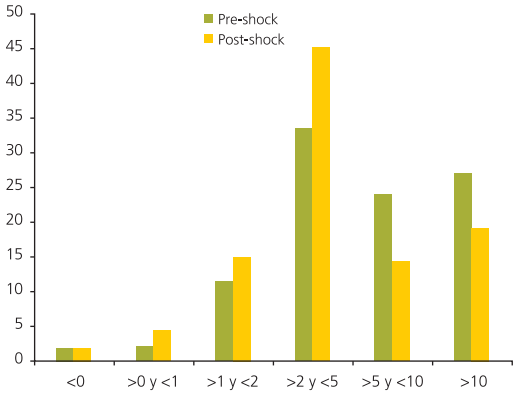
(*) Defined as EBITDA over financing costs.

Source: Prepared using information from the FECUs and the Superintendence of Banks and Financial Institutions.

Figure III.11

Tension exercise for the interest rate: distribution of local bank debt around the coverage indicator

(percent)



Source: Prepared using information from the FECUs and the Superintendence of Banks and Financial Institutions.

10.1% to 11.4%.[15/] Finally, in the case of foreign debt, the percentage held by sample companies posting coverage of less than 1 would rise from 14.7% to 16.0%.[16/]

In terms of the effect of this sort of rise in the exchange rate on sample companies' profitability, this would cause before tax profits over assets to fall from 6.3% to 5.9%. This fall reflects both the impact in terms of flows and the accounting corrections necessary due to the decline that peso depreciation would produce in the balance.

Finally, the simultaneous impact of interest rate and exchange rate shocks on business sector profitability and ability to pay was also examined. In aggregate terms, the ratio for before-tax profits over assets fell from 6.3% to 5.6%, a figure above the minimum of 2.3% observed in mid-1999, and a decline in the coverage indicator from 7.1 to 4.6. In terms of debt, the combined shocks would produce a significant redistribution of the coverage indicator, which would mean that the percentage of debt with local banks held by companies with a coverage indicator below 1 would go from 4.0% to 11.2% (figure III.12). Nonetheless, it should be noted that 65% of this rise would reflect the impact of a single firm.

III.2 The household sector

Total estimated household debt reached 14,000 billion pesos in March 2004, almost 28% of GDP. Of this total, about 70% is bank debt, held by more than 500,000 debtors. Bank exposure to this sector is almost 30% of assets, and with a rising trend.

Total household debt continues to grow more than income and consumer loans are rising at record rates

Through March 2004, total household debt had posted real year-on-year growth of 15.9%, down slightly from the high growth rate posted in December 2003 (table III.2). Consumer debt continued to pick up, reaching a rate of 20.8% year-on-year, while the debt held by most non-bank credit issuers rose by more than that of banks. Mortgages rose 12.2% year-on-year, down somewhat from 12-month growth observed in 2003.

The banks continued to be families' main source of credit, 72% of the total, although its relative importance fell given the rise in other sources of financing, such as life insurance companies, department stores, savings and credit cooperatives, clearing houses *(cajas de compensación)* and car dealerships (table III.3).

Through March 2004, household debt reached 44% of disposable income. This was down from the 118% observed for a sample of developed countries in 2003.[17/] Moreover, the financial burden, consisting of the payment of interest and amortization of capital, was estimated at 13.2% of households' annual disposable income. Despite the sustained rise in

[15/] See note 11.

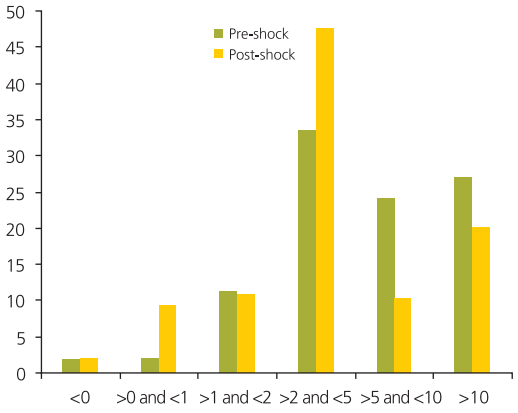
[16/] See note 12.

[17/] The sample includes the United States, Canada, Japan, Australia, the United Kingdom, Germany, France, Holland, Sweden, Norway, Denmark, New Zealand and Spain.

Figure III.12

Tension exercise: distribution of local bank debt around the coverage indicator

(percent)



Source: Prepared using information from the FECUs and the SBIF.

Table III.2

Real percentage change in household debt, by component, over past 12 months

	2003				2004
	Mar.	Jun.	Sept.	Dec.	Mar.
Mortgage debt	12.4	15.3	15.0	14.4	12.2
Bank mortgage	8.4	12.1	12.0	12.4	12.6
Non-bank mortgage	48.8	43.2	40.9	29.8	9.5
Consumer debt	14.6	13.8	16.5	19.3	20.8
Consumer bank	11.5	12.1	15.3	16.7	17.4
Department stores	30.5	27.9	22.1	29.3	30.5
CCAF	11.4	11.6	16.1	22.0	24.3
Savings and credit cooperative	15.6	17.5	21.6	25.0	28.0
Other non-bank (*)	11.0	7.8	11.2	11.4	14.9
Total non-bank	25.5	22.2	23.4	24.1	20.5
Total bank	9.3	12.1	13.0	13.8	14.1
Total	13.3	14.7	15.7	16.5	15.9

(*) Includes university debt, life insurance companies and car credits.

Sources:
Superintendence of Banks and Financial Institutions (SBIF).
Superintendence of Securities and Insurance (SVS).
Superintendence of Social Security (SSS).
Asociación de Cooperativas de Ahorro y Crédito (savings and credit cooperatives association).

borrowing in the past four years, interest rate cuts have reduced the interest payment component, which through last March was estimated at 5.6% of annual income. However, average debt maturity has fallen due to growth in consumer loans, and the capital amortization component has reached almost 7.2% of annual disposable income.

Table III.3

Composition of households total debt

(percentage over total)

	Dec.00	Dec.01	Dec.02	Dec.03	Mar.04
Mortgage debt					
Bank mortgage	55.2	53.9	51.4	49.6	48.7
Non-bank mortgage	n.d.	4.7	5.8	6.5	7.2
Consumer debt					
Consumer bank	25.6	23.8	23.5	23.4	23.9
Department stores	2.5	3.5	5.1	7.6	8.0
Savings and credit cooperatives	1.8	1.9	2.0	2.1	2.3
CCAF	3.5	3.7	3.8	3.9	4.0
Insurance companies	-	-	-	0.03	0.04
University debt	6.0	6.0	5.8	5.2	5.3
Non-bank car credit	-	0.8	0.9	1.2	1.2
Total (billions of pesos Dec. 2003)	9,373	10,276	11,617	13,633	13,914
(%) Household disposable income	33.8	35.4	39.0	43	43.7
(%) non-bank	13.8	20.7	23.4	26.6	28.0

Sources:
Superintendence of Banks and Financial Institutions.
Superintendence of Securities and Insurance.
Superintendence of Social Security.
Asociación de Cooperativas de Ahorro y Crédito (savings and credit cooperatives association).
Ministry of Education.

Macroeconomic conditions favor household access to credit

Better macroeconomic conditions (output and employment growth) and low interest rates have contributed significantly to improving households' access to credit (figure III.13). Interest rates on overdrafts associated with bank accounts, credit cards and consumer credits have fallen in recent months and, to a lesser degree, so have mortgage interest rates. Similarly, risk indicators for bank credit to households both in terms of provisions' outlays and stocks and the monthly indices of arrears, have continued to fall for several months (figure III.14).

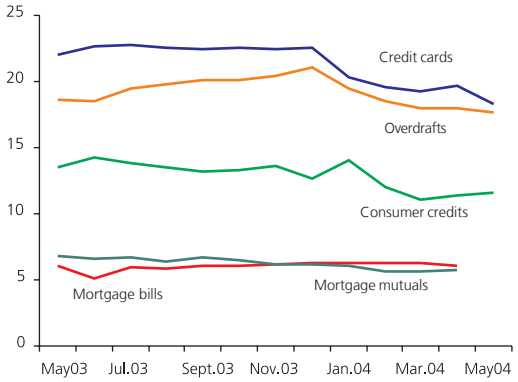
One interesting development in the past year has been the growth in mortgage credits at variable rates. The lack of disaggregate information prevents establishing the exact magnitude of this. However, the accounting category in which these are posted in the banking system (along with mortgage credits other than bills and endorsable mutuals) show a sharp rise in their share of total mortgages since early 2003 (figure III.15). For January-June 2004, this category of credits was behind 90% of the growth in mortgage credits. This development suggests a change in the factors determining the risks associated with this credit portfolio. The interest rate will affect credit risk through this channel.

The financial burden on households has not been significantly affected by changes in the interest rate. The stress test, estimating the effect of a 550-basis point rise in the interest rate on the financial burden of consumer debt (the main component of total financial burden due to its short duration), posted a rise of almost 21 basis points in the annual financial

Figure III.13

Average interest rates (weighted by amount), by type of operation (*)

(percent)



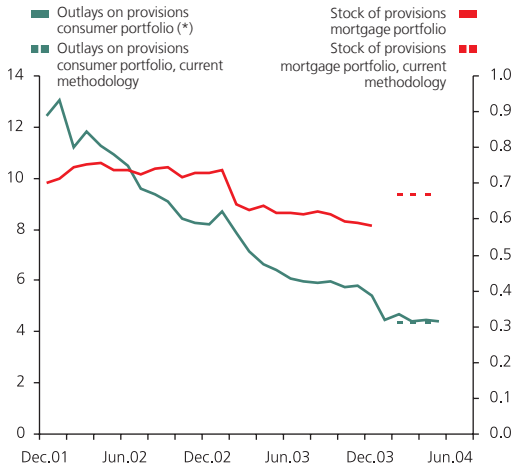
(*) Credit cards, overdrafts and consumer credits refer to the weighted average by amount of unindexed operations in domestic currency to over 90 days, for amounts between 0 and 200 UF.

Source: Superintendence of Banks and Financial Institutions.

Figure III.14

Consumer and mortgage portfolio risk, banking sector

(percent)



(*) This business sector indicator is constructed using a small sample of banks, representative of the consumer credit market.

Source: Superintendence of Banks and Financial Institutions.

burden of consumer debt over disposable income. That is, the financial burden would go from 13.2% to 13.4% of household disposable income.

III.3 Consolidated government

The analysis of the Consolidated Government Sector, which includes the Central Government and the Central Bank, explores the effects that their financial performance would have on trends and the volatility of domestic and external financing available to the Chilean economy and thus, financial stability.

For 2004-2005, a reduction in net Consolidated Government debt is projected

Considering the macroeconomic scenario (chapter II) and the application of the current fiscal structural surplus rule, the financial position of the Consolidated Government should improve this year and next. The high price reached by copper so far this year has significantly boosted Central Government revenues. Based on projections in the May 2004 Monetary Policy Report, net cash flows for the Central Government will post a surplus of about 1.6% of GDP in 2004 and somewhat more than 1% in 2005. This projection assumes that the structural fiscal surplus rule will be met; this involves saving all temporary fiscal revenues, either because actual output is over potential or because the copper price is over the reference or long-term price.

The Central Bank, meanwhile, should post a deficit of around 0.1% of GDP in 2004 and 0.3% in 2005, reflecting the asset and liability structure arising from the financial crisis of the early 1980s and foreign exchange policy of the 1990s. In effect, assets, international reserves and fiscal promissory notes post profits lower than the cost of liabilities, primarily domestic debt issued in UFs and pesos.

The Central Bank deficit, minus resources obtained from rising demand for emission (almost 0.3% of GDP), will bring its net debt as a percentage of GDP to about 0.5% both years. This result, combined with net positive flows projected for the Central Government, make it possible to project a decline in the Consolidated Government's net debt in 2004 and 2005. Nonetheless, this does not mean there will be no new debt issues from the Central Government in future, as these could occur to replace existing liabilities, cover due dates, and/or to manage liquidity (figure III.16).

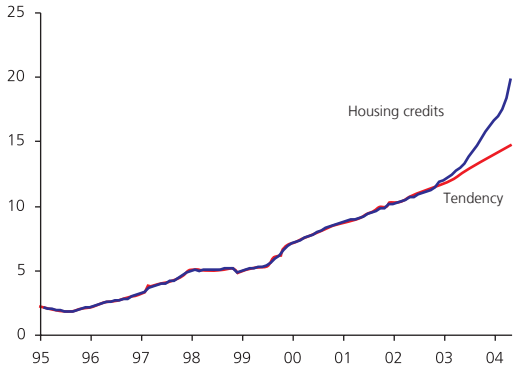
Overall, the Consolidated Government's gross debt will reach 32% of GDP in 2004 and 29% in 2005, and will continue to fall as it has during the past three years. It is lower than that of other countries with similar or lower risk ratings (figure III.17). The same occurs if debt as a proportion of Consolidated Government revenues is compared. The net debt of the Consolidated Government should fall about 2% of GDP in 2004, to reach about 5.2% of output (figure III.18).

Low debt, compliance with the fiscal rule, and improved fiscal revenues have improved perceptions in international financial markets about the status of public finance in Chile. In January 2004, *Standard & Poor's* improved its rating for Chile's long-term debt in foreign currency from A- to A, in recognition of its "prudent economic management that is

Figure III.15

Housing credits other than mortgage bills or endorsable mutuals over total mortgages

(percent)

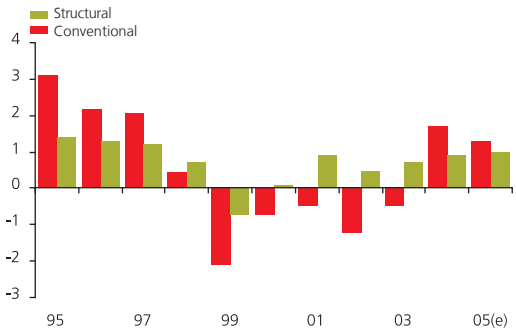


Source: Superintendence of Banks and Financial Institutions.

Figure III.16

Central Government conventional and structural balance

(percentage of GDP)



(e) Own estimates.

Sources:
Ministry of Finance.
Central Bank of Chile.

modernizing Chile's public institutions and strengthening its financial profile".[18/] For its part, Fitch and Moody's have also noted the country's solid fiscal management, although maintaining the risk rating (table III.4). In line with these favorable perceptions about Chile, the sovereign premium has remained relatively stable, at historical lows (80 to 90 basis points), since the end of last year.

Table III.4

Sovereign bond ratings

	2003				2004			
	Domestic		External		Domestic		External	
	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term	Short-term	Long-term
S&P	A-1+	AA	A-1	A-	A-1+	AA	A-1	A
Moody's				Baa1				Baa1
Fitch		A+	F1+	A-		A+	F1+	A-

In January of this year, the Government took advantage of favorable conditions in international financial markets to place a four-year sovereign bond worth US$600 million, for a 43 basis-point premium. Similarly, since the end of last year, the Central Government has started to issue part of its debt in the domestic market through UF-denominated bond issues to 20 years. In the fourth quarter of 2003, US$360 million worth was issued, and so far in 2004, somewhat less than US$200 million has been issued in domestic bonds (BTU20).

The financial position of the Consolidated Government is robust and resistant to adverse changes in macroeconomic conditions

Changes in the copper price are the main source of fluctuations in Central Government projections.[19/] With current export volumes, for every cent that the copper price rises, fiscal revenues rise by about US$40 million (0.04% of GDP). Another important factor is the exchange rate. The Consolidated Government has a surplus in dollars, both in terms of flows and the composition of its net assets. In terms of flows, both the Central Government and the Central Bank have positive net foreign currency flows. In terms of stocks, the Consolidated Government is a net creditor in dollars, since the creditor position of the Central Bank more than offsets the debtor position of the Central Government. Given both these factors, 10% appreciation in the exchange rate would raise the Consolidated Government's net debt by almost 0.8% of GDP, which breaks down into a reduction of 1% of GDP in Central Government net debt and a rise of 1.8% of GDP in the Central Bank's net debt.

To evaluate the impact on the Consolidated Government's financial situation of an extremely adverse scenario, the scenario described above (section II.2.2) was applied, that is, with a simultaneous rise in the

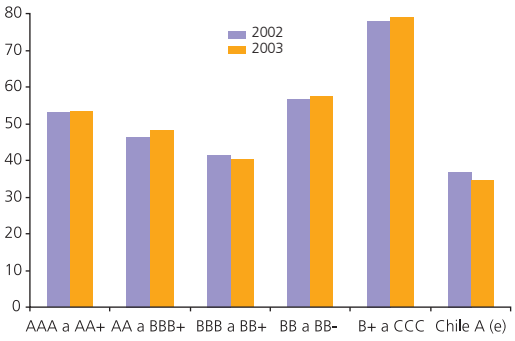
[18/] "Chile: Highly Rated but Lonely," *Standard & Poor's Research*, June 2004.

[19/] The copper price affects public finances through income transferred from Codelco to the Central Government as surpluses and income tax. Moreover, the Central Government also receives income from copper through the *Ley Reservada del Cobre* (which go directed to the armed forces), and in the form of tax revenues from mining companies.

Figure III.17

Gross debt over GDP

(percent)



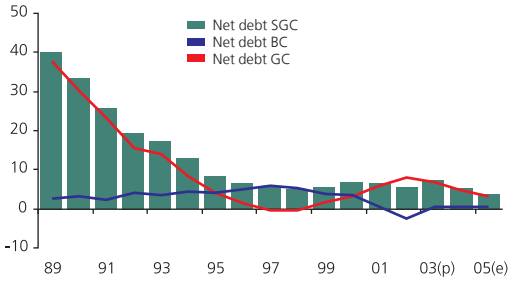
(e) Based on own estimates.
Countries included in each group are:
AAA a AA+: Germany, Australia, Austria, Belgium, Canada, Denmark, Spain, Finland, France, Holland, Ireland, Luxemburg, New Zealand, Norway, Singapore, Sweden, Switzerland, United Kingdom, United States.
AA to BBB+: Saudi Arabia, Bahamas, Bahrain, Barbados, Bermuda, Botswana, Czech Republic, Chile, China, Cypress, South Korea, Slovakia, Slovenia, Estonia, Greece, Hungary, Italia, Iceland, Israel, Japan, Kuwait, Latvia, Lithuania, Malaysia, Malta, Poland, Portugal, Qatar, Taiwan, Trinidad and Tobago.
BBB to BB+: Bulgaria, Croatia, Egypt, El Salvador, Kazakhstan, Mexico, Oman, Russia, South Africa, Thailand, Tunisia.
BB to BB-: Colombia, Costa Rica, the Philippines, Guatemala, India, Jordan, Morocco, Panama, Peru, Romania, Vietnam.
B+ to CCC: Belize, Bolivia, Brazil, Dominican Republic, Ecuador, Indonesia, Jamaica, Lebanon, Pakistan, Papua New Guinea, Turkey, the Ukraine, Uruguay, Venezuela.

Sources:
Moody's and Standard & Poor's.

Figure III.18

Net debt GC, BC and SGC (*)

(percentage of GDP)



(*) The consolidation (SGC) of figures between the Central Government (GC) and the Central Bank (BC) eliminate those items representing liabilities (assets) for the Central Government and assets (liabilities) for the Central Bank. These are promissory notes and fiscal deposits in the Central Bank.

Sources:
Ministry of Finance.
Central Bank of Chile.

domestic interest rate (550 basis points) and in the exchange rate (30% peso depreciation), combined with a decline in the copper price (to 66 cents per pound) and output growth (to 1%)[20/] in one year. This scenario would affect the Central Government and the Central Bank very differently. Thus, the Central Government would be particularly hard hit by changes in the copper price and output growth, with its net flows falling by more than 3% of GDP. In contrast, the Central Bank's situation would improve due to depreciation, which would have a positive impact worth more than 5% of GDP, on both net flows and net debt. Overall, the assumptions of the tension scenario point to a rise in the Consolidated Government's net debt of 1.7% of GDP over the baseline scenario. Nonetheless, given that the baseline scenario for 2004 calls for the net debt level to fall 2.1% of GDP over that of the previous year, the tension scenario suggests net debt would be 0.4% of GDP lower than it was at the end of 2003.

Given the magnitude of the decline assumed in the adverse macroeconomic scenario, the effects on fiscal accounts are relatively modest. This leads us to conclude that, as long as the government continues to apply the fiscal rule, it is unlikely that a decline in fiscal revenues could negatively affect the financing conditions of other agents or financial intermediaries in the Chilean economy.

[20/] Given Central Government revenues' share of GDP, if economic growth were one percentage point lower, the surplus would fall by about 0.2% of GDP. Thus, GDP has a procyclic effect on net Consolidated Government Sector inflows.

IV. Non-banking financial sector

This sector includes pension funds, life insurance companies and mutual funds. These non-bank financial institutions manage resources worth about 90% of GDP, similar to the total value of banking system assets. These are an important source of financing for the State, households, companies and banks, as these institutions demand most of the instruments publicly supplied on the domestic market (table IV.1). The analysis of this sector focuses on their portfolio decisions, since they affect these sectors' access to financing and, ultimately, financial stability.

The resources managed by the non-banking financial sector rose 5.6% in the first quarter of 2004

In the first quarter of the year, assets managed by the non-banking financial sector rose by almost 2,500 billion pesos (table IV.2). This rise reflected both deposits of additional funds obtained by institutional investors and a revaluation of their investment portfolio. Mutual funds captured most of these new resources (65%) while new resources going to pension funds and life insurance companies remained similar to levels from the previous year. Within the total, funds from voluntary pension saving rose 63 billion pesos in the first three months of the year, to total 607 billion pesos.

Table IV.1

Non-bank financial sector agents and instruments
(March 2004, billions of pesos, percent)

Investment	Mutual fund (FM)	Life insurance company (CSV)	Pension fund (FP)	Non-bank financial sector (SNFB)
Total investment	6,016	9,995	30,747	46,757
Investment (percentage of GDP)	12%	20%	60%	92%

Market share	Mutual fund (FM)	Life insurance company (CSV)	Pension fund (FP)	Stock
Bank deposits	19%	0%	29%	18,385
Mortgages	7%	30%	42%	6,099
Corporate bonds and commercial paper	8%	42%	33%	6,909
Banco Central	7%	3%	38%	13,284
Treasury (*)	0%	21%	37%	292
INP (recognition bonds)	0%	11%	13%	12,339

(*) Does not include sovereign bonds.

Sources:
Central Bank of Chile.
Superintendence of Securities and Insurance.
Superintendence of Banks and Financial Institutions.
Superintendence of Pension Fund Managers.
Instituto de Normalización Previsional (pension institute).

Table IV.2

Non-bank financial sector (IFNB) stock and flows
(billions of pesos from the period)

Investment stock	2003 Mar.	Jun.	Sept.	Dec.	2004 Mar.
FM	3,622	4,239	4,676	5,001	6,016
CSV	9,021	9,355	9,593	9,772	9,995
FP	26,267	27,736	28,791	29,506	30,747
Total	38,909	41,330	43,060	44,279	46,757
Non-bank financial sector flows					
Portfolio changes	322	2,421	1,730	1,219	2,478
Revaluations	546	1,357	984	488	1,042
Net non-bank financial sector flows	-224	1,064	747	731	1,437

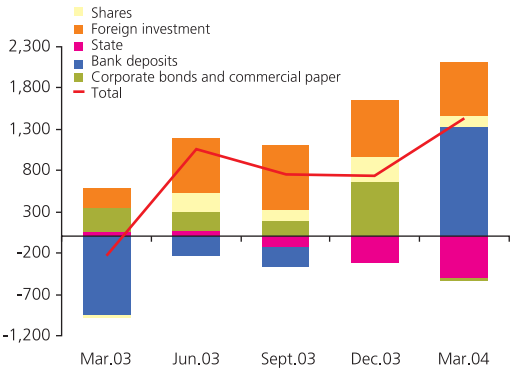
Source: Prepared using information from SVS and SAFP.

Portfolio revaluation in the first quarter of 2004 was also high compared to previous quarters. The profitability of pension fund foreign investment, 7.7% annualized,[1/] accounted for 57% of the funds' total revaluation in that period.

The non-bank financial sector increased its investment abroad and in time deposits, while reducing its state bond holdings

Figure IV.1

Net quarterly purchases of non-bank financial institutions (IFNB)
(billions of pesos)



Source: Prepared using information from SVS and SAFP.

Changes in the sector's investment portfolios reflected the search for returns and greater diversification in a climate of low interest rates. The most noteworthy changes in portfolios occurred in the first quarter, while figures available through June, which do not include life insurance companies, showed less changes. The main changes in investment allocation were the decline in the holdings of State documents, the rise in bank deposits, and the rise in foreign investment (figure IV.1).

The decline in state instrument investments began in mid-2003, reflecting pension funds' decisions. Mutual funds, meanwhile, have made the most of the larger supply of State securities, increasing their holdings and extending the maturities of this type of assets in their portfolio. Through March 2004, non-bank financial sector holdings of these instruments, including revaluations, had fallen 8% over June 2003.

Non-bank financial sector foreign investment continued to rise in the first quarter of 2004, because of the higher ceiling on pension fund foreign investment applied last March. It should be noted that of the 5% rise in foreign investment in this period, as a percentage of the fund, 2.3 percentage points reflected revaluation of this investment. However, the effect of these corrections on the foreign exchange market has been neutral, because at the margin, pension funds have maintained their net positions in foreign currency unchanged, through the use of hedging instruments.

Unlike 2003, bank deposits of the non-bank financial sector have grown strongly in the first quarter of 2004. Banks hold net resources of this sector worth just over 1,300 billion pesos, slightly more than the drop

[1/] Taking into consideration the effect of foreign exchange hedging.

accumulated the previous year. Investment in company bonds, in contrast, rose slightly, the result of lower issues during the period in question.

IV.1 Pension funds

Returns are lower in 2004, and so is their dispersion among fund types

In the first half of 2004, pension funds grew at a real rate of 5.6%. Annualized profitability of funds reached 7.0% in this period, down from 10.8% in 2003. Moreover, this varied widely, with annualized returns over 20% in the first two months of the year, and negative results in April and May.

Type A and B funds continued to increase their share of the total (from 24% in December 2003 to 27% in June 2004), bringing a rise at the margin in the system's possibilities for investing in higher risk instruments. Differences in the profitability of the different funds have tended to smooth out this year as compared to last, when A and B funds captured the rise in the stock market (table IV.3). This year, maximum differences in annualized returns do not exceed 1.5 percentage points, whereas in 2003 they reached 18 and 29 percentage points in the first and second halves, respectively.

Table IV.3

Real profitability by fund
(annualized percent)

Fund	2003 Jan.-Dec.	2004 Jan.-Jun.
A	26.9	7.1
B	16.0	6.3
C	10.6	7.2
D	8.9	7.0
E	3.3	7.8
System	10.8	7.0

Source: Prepared using information from SAFP.

Foreign-oriented investment portfolio hurt low-risk, fixed income papers

Last March's rise in the ceiling on foreign investment, combined with that of May 2003, generated significant changes in pension fund portfolios. In the first half of 2004, these generally followed the trend established in 2003 of taking full advantage of new limits on foreign investment and reducing investment in state securities. Foreign investment's share of the portfolio rose 3.2% in the first quarter, while that of state instruments fell 2.6% (table IV.4). Unlike 2003, time deposits saw their share of the total portfolio rise 3.5% in this period, but did not recover to early 2003 levels.

Table IV.4

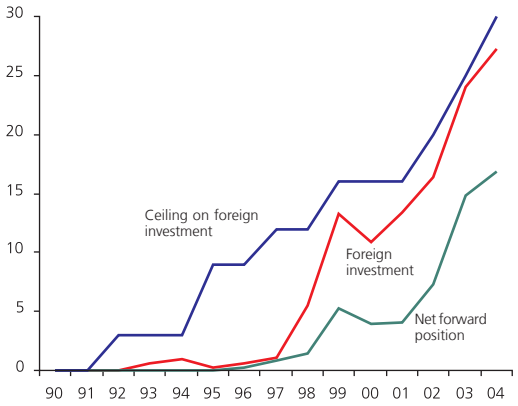
Pension fund portfolio by instrument
(percent, in billions of current pesos)

Instrument	2002 Dec.	2003 Dec.	2004 Mar.	2004 Jun.	Change Dec.03-Jun.04
State	30.0	24.7	22.1	21.2	-3.5
Financial institutions deposits	21.2	15.0	17.1	18.2	3.2
Bank bonds	1.8	1.3	1.3	1.0	-0.4
Mortgages	11.1	8.9	8.3	8.3	-0.6
Corporate bonds	7.1	7.7	7.3	6.2	-1.5
Commercial paper	0.0	0.1	0.1	0.1	0.1
Shares	9.9	14.5	14.2	14.3	-0.2
Foreign investment	16.1	23.8	27.0	27.5	3.7
Other	2.6	4.1	2.6	3.3	-0.8
Total (billions of pesos)	25,522	29,506	30,747	30,784	

Source: Superintendence of Pension Fund Managers.

Figure IV.2

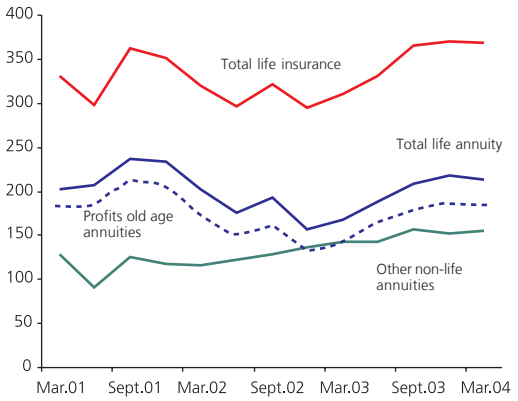
Foreign investment ceiling and hedging
(percentage of fund at period's end)



Sources:
Central Bank of Chile.
Superintendence of Pension Fund Managers.

Figure IV.3

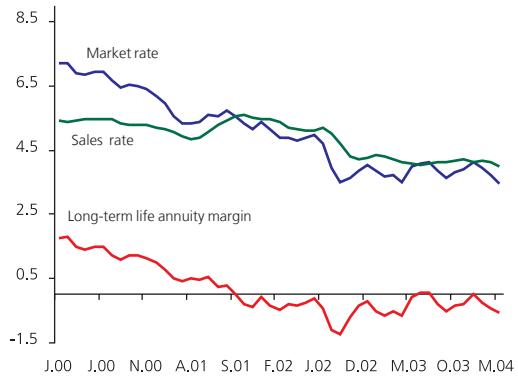
Gross quarterly premium of life insurance companies
(billions of pesos, March 2004)



Source: *Asociación de Aseguradores de Chile* (Chile's association of insurers).

Figure IV.4

Long-term profit margin for life annuity sales
(percent)



Source: Superintendence of Securities and Insurance.

Despite the rise in foreign investment, this investment category's risk exposure held steady at between 8% and 11% of the fund, thanks to the purchase of foreign exchange hedging instruments (figure IV.2). Interest rate exposure, measured by portfolio maturity, did not change much either, with the decline in foreign investment maturities offset by a rise in those for the company bond portfolio. Credit risk, measured using the risk ratings for the instruments composing the investment portfolio, improved marginally in the first quarter of 2004, indicating lower credit risk for the rated part of the long-term portfolio.

IV.2 Life insurance companies

More competition in the life annuity (rentas vitalicias) market

In the first quarter of 2004, sales of life annuities remained similar to the previous quarter, with the pace of recovery apparent in 2003 tending to slow (figure IV.3). Life annuities are life insurance companies' main product, accounting for almost 60% of their premium income and 90% of their technical reserves. Some regulatory changes, such as the new electronic auction system, the inclusion of banks as intermediaries for life annuities and the establishment of a maximum commission of 2.5% over the pension fund[2/] will tend to increase competition in the market place. Commissions moved closer to the ceiling established by the law prior to its implementation. The reform will also raise the requirements for early retirement, which could reduce the sales of life annuities; nonetheless, its gradual application should help buffer negative effects.

Investment portfolio seeks higher returns

Life insurance investment portfolios have tended to focus on higher risk instruments since early 2003 (table IV.5). This change is mainly apparent in their fixed income holdings, where the share of company promissory notes and bonds has risen to about 30% of the portfolio in March of this year, for an increased investment of 660 billion pesos in 12 months. In the first quarter of 2004, the share of investment in state instruments remained stead, braking a downward tendency apparent in recent years.

Life insurance companies' risk rating has not changed in 2004, reflecting perceptions that they are financially stable. The last significant change occurred in April 2003, when rating agencies applied a general downward correction of one level to company risk ratings. This was based on lower volumes of premiums sold, the applications of riskier investment strategies to offset low market rates, and the uncertainty involved in starting up new business.

Low market rates have generated a strongly competitive climate, bringing companies to reduce their long-term margins[3/] (figure IV.4). Similarly,

[2/] Nonetheless, higher commissions are allowed when charged to the insured person himself.

[3/] One indicator of this is the difference between average market returns on Central Bank papers over eight years (market rate or TM) and the sales rate offered on life annuities (TV).

cost rates used to constitute reserves fell on average by 24 basis points in the first quarter of 2004 over the average for 2003. The marginal decline in this indicator has meant that companies' obligations are discounted at a lower rate, and therefore the cost of selling life annuities has risen. At the same time, the technical reserves required due to corrections to mortality tables are expected to rise, which will involve more demands for capital.

Table IV.5

Life insurance company portfolios by instrument

(billions of pesos, percent)

Instrument	Dec.02	%	Sept.03	%	Dec.03	%	Mar.04	%	Var. % Dec.03-Mar.04
State	1,650	19.3	1,768	18.4	1,727	17.7	1,811	18.1	0.4
Financial institution deposits	165	1.9	119	1.2	113	1.2	88	0.9	-0.3
Bank bonds	677	7.9	781	8.1	736	7.5	744	7.4	-0.1
Mortgage bills	1,757	20.6	1,932	20.1	1,826	18.7	1,807	18.1	-0.6
Mortgage mutuals	879	10.3	993	10.3	995	10.2	1,008	10.1	-0.1
Corporate bonds and commercial paper	2,099	24.6	2,512	26.2	2,874	29.4	2,923	29.2	-0.2
Shares	239	2.8	282	2.9	290	3.0	281	2.8	-0.2
Real estate investment	594	7.0	694	7.2	704	7.2	723	7.2	0.0
Foreign investment	208	2.4	197	2.1	188	1.9	222	2.2	0.3
Other	273	3.2	316	3.3	317	3.2	389	3.9	0.6
Total investment	8,541	100.0	9,593	100.0	9,772	100.0	9,995	100.0	

Source: Superintendence of Securities and Insurance.

The main indicators for solvency, profitability and efficiency show an improvement in the general situation of life insurance companies last year (table IV.6). Returns on investment have also improved, reaching 8.1% in 2003. Nonetheless, the trend toward lower interest rates and a less profitable stock market reduced the yield on investment in the first quarter of 2004.

Table IV.6

Life insurance management indicators

(percent, number)

Indicators	Dec.02	Sept.03	Dec.03	Mar.04
Solvency and profitability				
Profitability investment	6.5%	8.2%	8.1%	6.9%
Debt / Equity	8.7	7.8	7.6	7.5
Capital / Assets	7.7%	8.4%	7.9%	7.8%
Capital / Technical reserves	8.8%	9.8%	9.3%	9.1%
Illiquid assets / Assets	10.5%	10.9%	11.5%	10.9%
Operations				
Administrative expenditures / Gross premium	13.9%	14.3%	14.6%	13.7%
Intermediate costs / Gross premium	3.2%	3.2%	3.2%	3.7%
Gross premium / Employees	32,299	36,015	35,655	35,743

Sources: *Asociación de Aseguradores de Chile* (association of Chilean insurers).

IV.3 Mutual funds

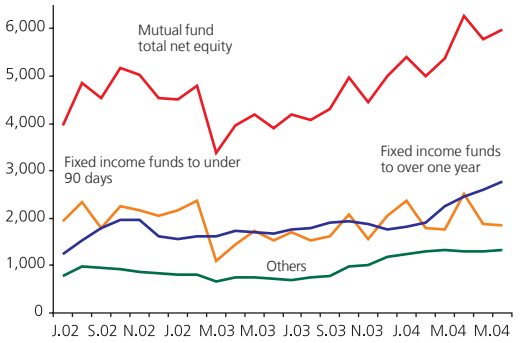
Mutual funds continued to grow strongly in 2004

The mutual fund industry has continued to grow vigorously in the first six months 2004. The resources managed rose 30% in this period, to

Figure IV.5

Trends in net equity by type of fund

(billions of current pesos)

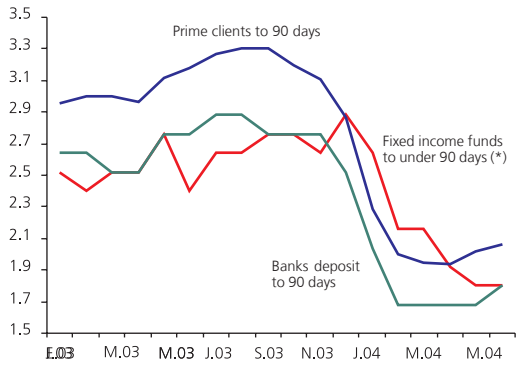


Source: Superintendence of Securities and Insurance.

Figure IV.6

Monthly return rate compared

(annualized rates)



(*) Profitability of mutual funds denominated in pesos.

Sources:
Superintendence of Securities and Insurance.
Central Bank of Chile.

over 6,500 billion pesos in June. Fixed income funds to less than 90 days and to more than one year accounted for most of total net equity (78% through June), while fixed income to more than one year and structured funds saw their equity grow the most in the first half, 58% and 117%, respectively (figure IV.5). This positive trend was also reflected in the growth in the number of funds and the number of participants. According to industry statistics, through June 2004, there were 473 funds with 507,137 shareholders. Thus, the industry successfully overcame the impact of the Inverlink case in early 2003, when net equity fell 30% between February and March of that year.

Low interest rates offered by banks have led depositors to seek out attractive alternatives for their liquid investments. Mutual funds to less than 90 days offered an average annualized return of 2.1% in the first half of 2004 (figure IV.6). The higher return obtained since December 2003 reflects the greater participation of instruments involving higher returns and slightly higher risks in the funds portfolio (e.g. commercial papers)

Investment portfolio more oriented toward higher returns and risk instruments

This year, mutual funds' investment portfolios have posted an increase in all instruments held, ending as net buyers of them given the large flow of resources they have managed to capture. Nonetheless, in relative terms time deposits' share has fallen as instruments issued by companies and mortgages have risen (table IV.7). This trend reflects the appearance of new higher risk mutual funds and slightly more openness to riskier instruments among traditional funds.

Table IV.7

Mutual fund portfolios by instrument

(billions of pesos, percent)

Instrument	Sept.03	%	Dec.03	%	Mar.04	%	Jun.04	%	Var. % Dec.03-Jun.04
State	608	13.0	755	15.1	917	15.3	1,026	15.8	0.7
Financial institution deposits	2,846	60.9	2,884	57.7	3,507	58.3	3,632	55.8	-1.9
Bank bonds	33	0.7	32	0.6	46	0.8	52	0.8	0.2
Mortgage bills	373	8.0	339	6.8	429	7.1	612	9.4	2.6
Corporate bonds	319	6.8	345	6.9	394	6.5	442	6.8	-0.1
Commercial paper	88	1.9	163	3.3	168	2.8	212	3.3	0.0
Shares	155	3.3	241	4.8	268	4.5	268	4.1	-0.7
Foreign investment	228	4.9	214	4.3	253	4.2	230	3.5	-0.7
Other	25	0.5	28	0.6	31	0.5	37	0.6	0.0
Total	4,676	100.0	5,001	100.0	6,016	100.0	6,511	100.0	

Source: Prepared using information from SVS.

Duration, measured in aggregate and by fund type, fell in recent quarters. At the end of September 2003, the fixed income portfolio was posting maturities of over 500 days, which fell in 2004 to closer to 450. The main decline affected long-term fixed income funds, whose duration fell to more than 100 days and, as a result, so did their exposure to interest rate changes. On the risk rating of instruments in mutual fund portfolios, these have not changed significantly in the past six months.

The risk factors affecting mutual funds include the high sensitivity of their shareholders to the return on their investment. Since in recent months

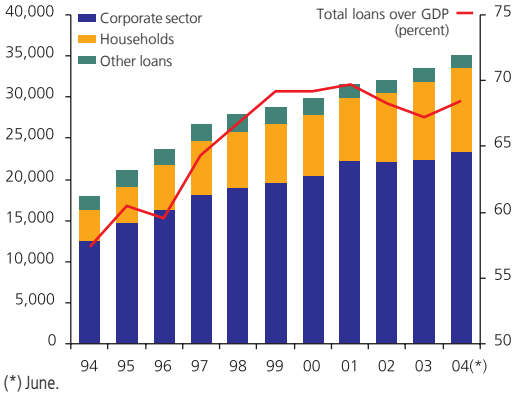
mutual funds have seen the volume of funds they manage grow, a solid rise in market interest rates or the perception of risk could redirect resources to banks. Although this is not a major risk to mutual funds, since the liquidity of their investment portfolio would allow them to face a situation of this nature, it could mean changes in the distribution of resources within the banking system. This issue is covered in the following chapter.

V. Banking sector

Figure V.1

Banking system loans by type of debtor

(billions of December 2003 pesos)



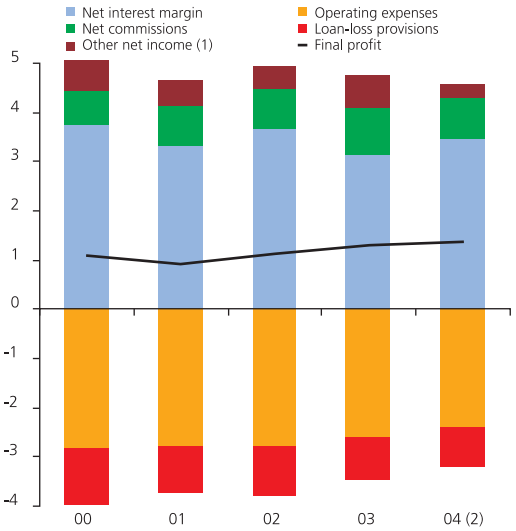
(*) June.

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

Figure V.2

Composition of banking system profits

(percentage of total assets)



(1) Includes results from foreign exchange, due to price differences, other operating results corrected for operations in pesos indexed to the exchange rate.
(2) June.

Source: Superintendence of Banks and Financial Institutions.

This chapter examines elements relevant to the local banking system's financial stability and risk exposure. The banking industry intermediates resources from institutional investors, the corporate sector and households through loans and financial investment equivalent to almost 100% of GDP.

V.1 Recent developments

Recent trends in the macro-financial environment have generated sound conditions for the financial stability of the banking system. The information through June indicated that the local banking system enjoyed a robust financial position, reflected in capitalization and profitability levels above their historic average and favorable evolution of credit risk indicators.

Bank loans growth on the rise

The drop in domestic interest rates combined with more expectations of stronger economic growth has strengthened the expansion of bank credit in the past semester. In January-June, total loans averaged 5.9% growth over 12 months, 4.5% in the past six, reflecting recent, higher growth rates. Through last June, total bank loans had reached more than 35,000 billion pesos, equivalent to about 70% of GDP (figure V.1).

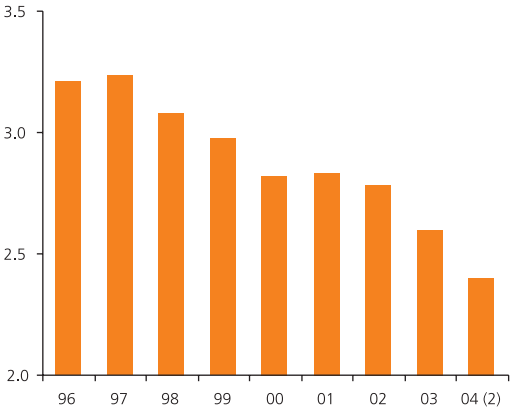
Growth in banking loans occurred primarily in the household sector (consumption and housing), which in the past three years have averaged 8% year-on-year growth. More expectations of stronger economic growth and a reduced financial burden thanks to the drop in market interest rates brought with them more demand for credit from this sector (section III.2). The banking industry, meanwhile, also showed more willingness to grant credit to this segment, favoring the inclusion of new households among bank customers. This has triggered intense competition within the industry and gradually raised bank's exposure to this sector, to almost 30% of total loans today.

Loans to the corporate sector, which include commercial loans, foreign trade, leasing and factoring, have started to show signs of recovery, after falling on average 0.1% year-on-year in 2003. In the first half of this year, bank loans to this sector posted average growth of 3.8% year-on-year, their highest rate in the past two years, following improved expectations for future growth, the good performance recently posted by the corporate sector and strong growth in foreign trade. Without considering changes

Figure V.3

Banking efficiency (1)

(percent)



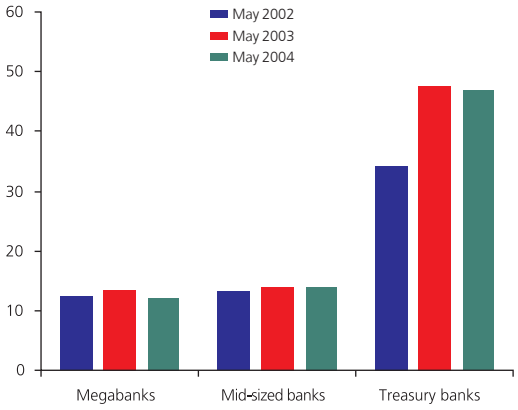
(1) Operating expenses over total assets.
(2) June.

Source: Superintendence of Banks and Financial Institutions.

Figure V.4

Banking capitalization (*)

(percent)



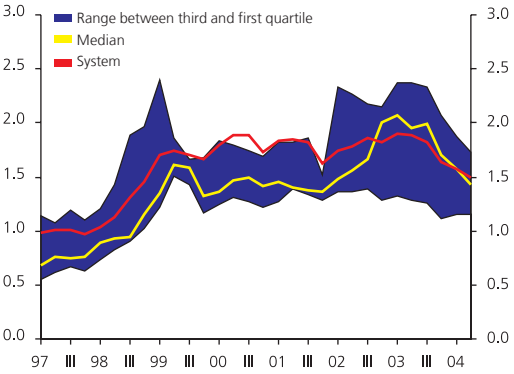
(*) Effective equity over risk-weighted assets.

Source: Superintendence of Banks and Financial Institutions.

Figure V.5

Distribution of non-performing loans (*)

(percent)



(*) Non-performing loans portfolio over total loans.

Source: Superintendence of Banks and Financial Institutions.

in the exchange rate in the past year, more than half the growth registered by loans to the corporate sector reflects the rise in foreign trade credit.

Reduced credit risk and more diverse revenue sources contributed to this sector's higher profitability

The banking system's solid performance is reflected in profits of over US$550 million posted during the first half of this year. This brought the system's annualized return on equity (ROE) to over 18%, an improvement over previous years. Similarly, return on assets (ROA) also rose significantly, to 1.4% (figure V.2).

The banks' main source of income comes from the interest margin generated by the difference between lending and deposit rates. Toward the end of last year, this margin fell almost 60 basis points year-on-year, while it rose 40 basis points during the first half of this year, reaching 3.5% of total assets in June. This recent increase partly reflects the impact of the latest declines in the policy rate, which are passed along more quickly to deposit rates. The more intense competition noted recently in the supply of credit to households and certain segments of the corporate sector should, in any case, maintain downward pressure on the margins applied.

Positive trends in credit risk for the loans portfolio and greater operating efficiency have also contributed to the results obtained by the banking industry in the past year. This has driven down spending on loan-loss provisions and operating expenses, which have hit historical lows of 0.8% and 2.4% of assets, respectively. The rise in operating efficiency is relatively common throughout the industry and reflects the use of new technologies and consolidation of mergers occurring in recent years (figure V.3).

In addition, commissions have gained in importance as a source of operating income, reaching 14.3% last June, up from 12.5% for the same month last year. Similarly, the decline in long-term interest rates has a positive effect on the value of portfolio investment. The results for this item, however, are essentially the product of temporary conditions, and an eventual turnaround in long-term rates could generate the opposite effect.

Solvency remains high and stable

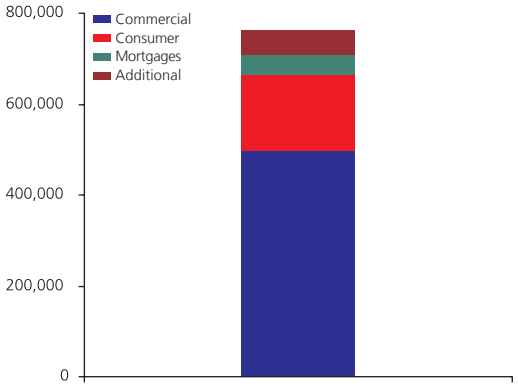
The market continues to view Chile's banking institutions in a positive light. This is reflected in the stability of risk ratings for debt securities and the rise in share values of those banks trading on the exchange.

As of May of this year, Chilean bank capitalization measured using the capital adequacy ratio (tier 2 capital over risk-weighted assets), reached 13.7%, significantly higher than the required minimum and well above the average observed in some of the most developed countries.

It should be noted that today all financial institutions operating in the local market enjoy capitalization levels of over 10%. The group of the largest institutions in the market (megabanks) post a stable capital

Figure V.6

Composition of loan-loss provisions (*)
(millions of pesos)

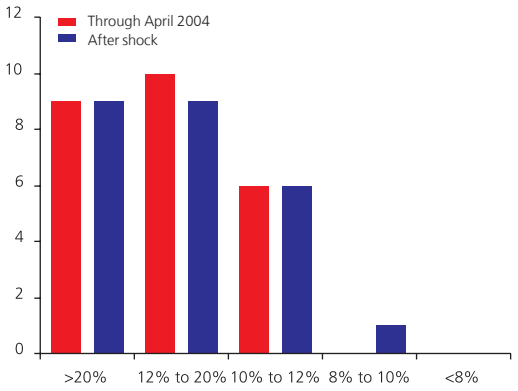


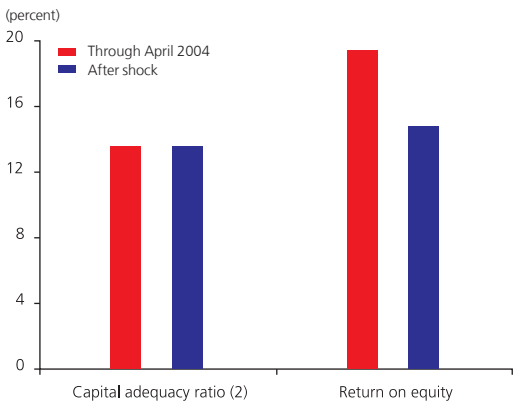
(*) Through May 2004.

Source: Superintendence of Banks and Financial Institutions.

Figure V.7a / V.7b

Stress test for credit risk (1)
(number of banks by capital adequacy ratio)





(1) Impact of a one-off rise to the highest historical level of loan-loss provisions per institution.
(2) Effective equity over risk-weighted assets.

Source: Superintendence of Banks and Financial Institutions.

adequacy ratio of almost 12%, while the group of mid-sized banks were averaging 14% (figure V.4).

V.2 Credit risk

Credit risk indicators have evolved positively

Corporate and household loans form almost 70% of the banks' total assets. Because of this, potential losses associated with the credit risk of these debtors is one of the main sources of risk for the banking system.
Since the second half of 2003, the system's credit risk indicators have steadily improved. As of last June, the non-performing loans ratio stood at 1.5%, its lowest point in the past five years. Similarly, the system's relative exposure to those financial institutions with more than 2% non-performing loans has fallen steadily in the past year to under 25% of total loans (figure V.5).

This year, spending on loan-loss provisions has fallen on average 7% year-on-year. This is consistent with the recovery in domestic economic activity and the drop in real interest rates, which historically have been strongly correlated with lower loan-loss provisioning.

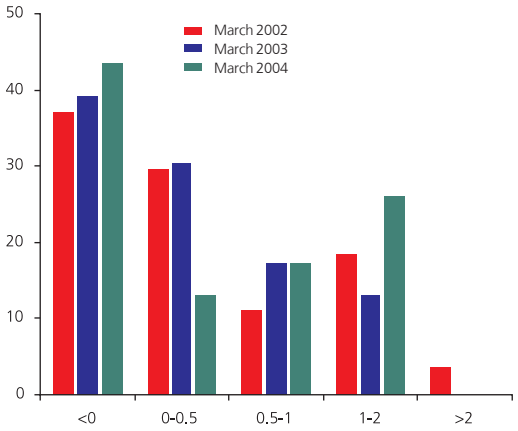
In May 2004, the bank systems' total loan-loss provisions had reached 2.2% of total loans. Of these, 65% were provisions for credit risk arising from loans to the corporate sector (commercial, leasing and factoring), 22% for consumer sector and 7% for housing (figure V.6). The higher relative credit risk, however, is present in consumer loans, for which the system has set up provisions for 4.4%. In the case of corporates and for housing, this ratio stands at 2.0% and 0.7%, respectively.

To evaluate the impact of a potential decline in the quality of loans portfolio, a stress test exercise was applied that consisted of increasing the loan-loss provisions by a significant amount. The shock used was equivalent to the maximum annual rise in loan-loss provisions observed in the past five years.[1/] In this exercise, the rise in credit risk affects the banking system's profitability and capitalization through three channels: the decline in profits resulting from higher spending on provisions, the effect on results of lower revenue received due to interest, and the reduction in risk-weighted assets net of the required provisions. The exercise considered the initial situation last April and its results indicated that the system's average annual profitability would decline from 19% to 15%, while the capital adequacy ratio would remain at 14% on average (figure V.7b). In this scenario, only one, small banking firm would post a decline of its capital adequacy ratio to under 10%, but all would see their capitalization levels remain above the minimum required (figure V.7a). The above reflected the high degree of coverage of provisions over non-performing loans (almost 1.4 times), as well as the profit level of the banking industry, which acts as a shock absorber in the event of unexpected losses.

[1/] In the case of recently created institutions, the maximum growth in average spending on provisions for the banking system was applied.

Figure V.8

Distribution of liquidity ratio to under 90 days (*)
(percentage of number of banks over total)

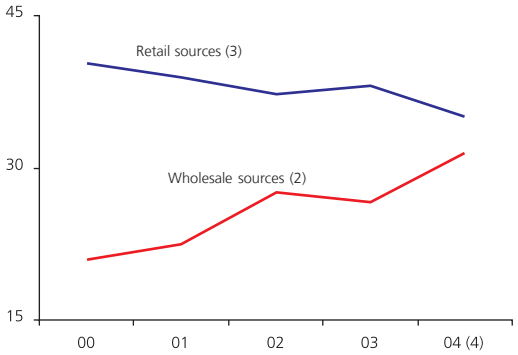


(*) Liabilities to under 90 days minus assets to under 90 days measured against capital.

Source: Superintendence of Banks and Financial Institutions.

Figure V.9

Banking system sources of funding (1)
(percent)



(1) Percentage over total system financing sources.
(2) Includes deposits from pension funds, mutual funds and other banks and obligations from abroad.
(3) Includes deposits by individuals and non-financial firms.
(4) March 2004.

Sources:
Superintendence of Banks and Financial Institutions.
Superintendence of Securities and Insurance.
Superintendence of Pension Fund Managers.

V.3 Liquidity and financial risks

Changes in the composition of sources of bank financing have raised exposure to liquidity risk

In recent years, the Chilean banking system has had to adjust to a series of changes in the financial environment relevant to the development of their operations: the decline in interest rates, a more volatile exchange rate and low inflation.

The decline in interest rates, both domestic and foreign, has contributed to the change the structure of maturities for bank liabilities, with short-term financing sources increasing their share. At the margin this has led to a rise in the sector's potential exposure to liquidity risk. Nonetheless, the mismatches between the banking system's short-term assets and liabilities have remained limited (figure V.8). In this sense, the new rules passed by the Central Bank at the end of last year include elements that aim to encourage prudential management and the use of best practices in managing liquidity risks, in line with international standards and recommendations.

Liquidity risk is also associated with the availability of alternatives to deal with unexpected cuts in bank's financing sources. This is particularly relevant when a bank depends heavily on one or several wholesale sources (in general more sensitive to market conditions); in these cases, liquidity risk tends to rise.

One example of the above involves changes in the relative share of wholesale sources posted in certain banks in some months of last year, when time deposits maintained by mutual funds fell by almost 30% and pension funds' deposits fell about 18% (chapter IV). In some of these episodes the resources partly returned to the system through retail deposits, so some institutions may even have been favored. Where this did not occur, the banks managed the deposit shrinkage by turning to alternative financing sources or liquidating financial investments.

In the first months of this year, participation from wholesale sources in funding the banking sector rose slightly, possibly as a result of changes in investment strategies by some institutions within the non-banking financial sector (chapter IV). Thus, higher demand for deposits from pension and mutual funds has boosted the share of wholesale sources over total sources of bank financing to 25%. Overall, the financing from retail sources, considered somewhat more stable, remains relevant to the structure of bank financing, since it accounts for about 35% of the total (figure V.9).

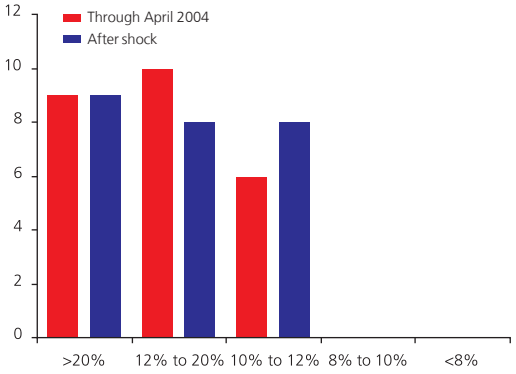
Exposure to exchange rate risk stands at about 2% of core capital

Most banks take a positive net position in foreign currency and their exposion to fluctuations in the value of foreign currencies remain limited and stable. To last May, the gap between assets and liabilities in foreign currency for the system as a whole stood at almost 2% of core capital. The banks with the highest exposure (gaps higher than 10%) were smaller ones oriented mainly to treasury business.

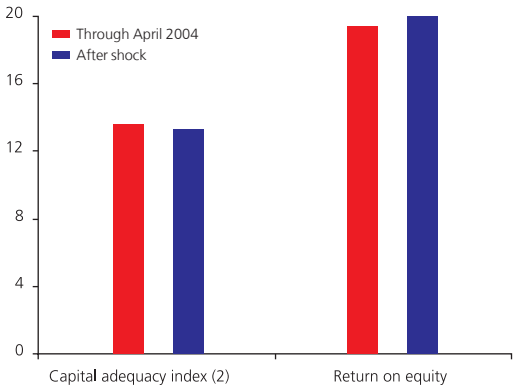
Figure V.10a / V.10b

Stress test for currency risk (1)

(number of banks by capital adequacy index)



(percent)



(1) Impact of a 14% peso depreciation.
(2) Effective equity over risk-weighted assets.

Source: Superintendence of Banks and Financial Institutions.

To evaluate the impact of an exchange rate shock on the strength of banking sector capital, a stress test exercise was conducted in which Chilean peso depreciation reached the upper 1% of the distribution of quarterly depreciations ocurred during the 2000-2004 period (section II.2).

Although one quarter could be considered too long a period to assume that an institution would not correct its exposure to exchange rate risk, the systemic impact of a shock of this nature limits the possibility of correcting positions and therefore this was considered a reasonable period.

The stress test exercise carried out used the partial impact of a movement in the exchange rate on the capital adequacy ratio, through losses and gains generated by the revaluation of the net position in foreign currency, and the revaluation of risk-weighted assets in domestic currency. The results of this exercise indicate that both profitability and the banking system's capitalization level would remain relatively stable (figure V.10a and figure V.10b).

A significant increase in interest rates would have limited effects on the system

Regarding interest rate risk, the structure of the banking system's balance sheets is characterized by the fact that the average duration of assets tends to be longer than that of liabilities. Because of this, any upward movement in the time structure of rates generates a loss in value and therefore affects the system's capital in economic terms.

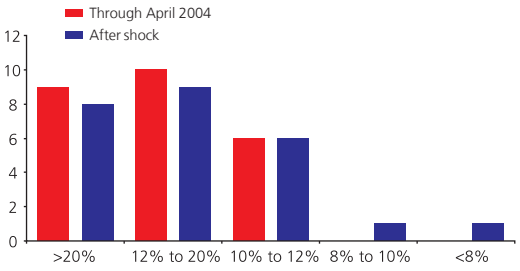
To evaluate interest rate risk, the impact of an upward movement in the yield curve over the capital adequacy ratio and bank profitability was measured, amidst a 550 basis point increase in the short run. In this exercise, this change is transmitted through three ways: the effect on the interest margin (repricing GAPs); the direct effect on results, the result of the change in the price of the investment portfolio (trading book); and the direct effect on capital, as a result of the change in the price of permanent portfolio (banking book). The results obtained indicate that just one small bank would post losses that would drop its capitalization level below the required minimum. In any case, a shock of this magnitude, despite reducing the estimated profitability of the system from 19% to 5% would not be enough to affect the solvency of system equity as a whole (figure V.11a).

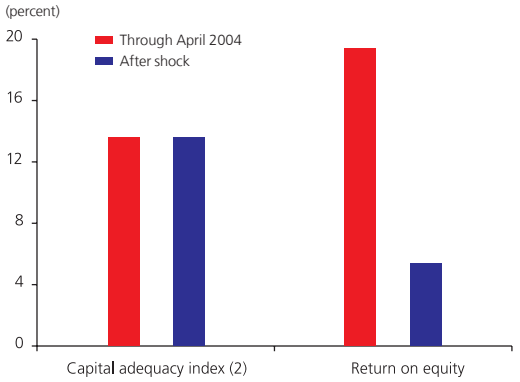
Finally, the impact of an adverse macro-financial scenario was evaluated, which involved the simultaneous occurrence of interest rate, exchange rate and credit risk shocks, in line with the stress tests presented previously. This scenario, despite producing a significant decline in the system's profitability, did not have a major impact on its capital adequacy ratio. Even more important, given that individual exposure to these shocks could lead to compensation in some cases, the result of this scenario is not equivalent to the aggregation of the results of individual shocks. In this case, the post-shock capital adequacy ratio stands at over 10% for all banks.

Figure V.11a / V.11b

Stress test for interest rate risk (1)

(number of banks according to capital adequacy index)





(1) Impact of shift of the yield curve caused by a 550 basis point rise in short-term interest rate.
(2) Effective equity over risk-weighted assets.

Source: Superintendence of Banks and Financial Institutions.

V.4 Prospects

The more aggregate economic activity continues to grow, the more the favorable performance of bank loans to the corporate sector is expected to consolidate. This will increase total loans over and above GDP growth. Moreover, this scenario would help to continue to reduce credit risk, despite the banking system's increased exposure to the household sector. Consumer loans and mortgages should continue to grow at rates similar to those posted in the last while. In this context, solvency and banking system profitability should continue to strengthen.

Box V.1: Modernization of Chile´s payment system

I. The payments system

A payments system consists of the set of instruments, rules and procedures that govern the transfer of funds among economic agents. Payment systems are an essential component of financial sector infrastructure and their efficient, secure operation is a vital part of the healthy functioning of an economy, the stability and development of its financial system, and the effectiveness of monetary policy.

A payments system is considered systemically important when it is the only one available in an economy or when it processes and liquidates critical payments or those of "large value". This is the case with payments associated with interbank operations and transactions in security and currency markets, in which the financial intermediary must receive funds opportunely to in turn be able to meet its own obligations.

The improper functioning of the payments system can involve risks to its participants and its effects may spread to other agents or financial system sectors or the economy as a whole. This possible transmission of "systemic" risk constitutes one of the main reasons for growing concern about the healthy functioning of these systems at the international level.

International recommendations and risks in payments systems

Agents participating in a payment system are exposed to different kinds of risks: of a legal, liquidity, credit and operating nature.

Growing interest in the efficiency and security of payment systems led the Bank for International Settlements (BIS) to organize a working group in 1988 to establish a basic set of principles and recommendations for the design and operation of payment systems of systemic importance. As a result, in 2001, the BIS Committee on Payments and Settlements Systems published the document *Core Principles for Systemically Important Payment Systems*.[2/]

The *Core Principles* are the set of international standards or recommendations for the design and functioning of payment systems from a systemic perspective. In terms of legal risk, these recommendations emphasize the

[2/] *Core Principles for Systemically Important Payment Systems*, Committee on Payments and Settlements Systems, Bank for International Settlements, January 2001. (www.bis.org/publ/cpss43.htm).

need to have a robust legal framework within the pertinent jurisdiction. Similarly, it puts forward the importance of the system operator and participants fully understanding the financial risks to which they are exposed, as well as the need for the system to have clearly established rules and procedures at its disposition.

For the appropriate management and control of credit and liquidity risks, the *Core Principles* emphasize the importance of established procedures specifying responsibilities and obligations of the operator and participants. They also recommend that the systemically important payments system be able to settle operations within the day or at least by day's end, and that the assets used for this purpose should, of preference, take the form of obligations from the respective central bank.[3/] Likewise, they establish that the system should ensure the punctual completion of daily settlements, even if the participant with the largest obligation cannot comply, when using multilateral netting schemes.

With regards to operating risk, the *Core Principles* recommend having systems with a high degree of operating reliability and security, as well as contingency plans, to be able to punctually complete daily processing. Similarly, these systems must offer a practical means for making payments to users that are efficient for the economy as a whole.

Finally, it recommends establishing objective and public criteria for participation, which permit the fair and open access of all participants, as well as ensuring operating rules are effective, responsible and transparent.

It also recognizes central banks' role as overseers and in implementing the *Core Principles,* both for payment systems operating directly and those operated by third parties, due to their contribution to financial stability and the effectiveness of monetary policy.

II. Modernization of large-value payments systems

According to the Basic Constitutional Act of the Central Bank of Chile, this body must "ensure the stability of the currency and the normal functioning of domestic and external payments." In line with this mandate, in 2000 the Board agreed to apply a modernization program to bring the country's payments systems in line with international standards, whose main objective is to increase the efficiency and security of large-value payment systems operating in the country.

Real Time Gross Settlement System (RTGS)

An outstanding feature of the Central Bank's modernization program for the payments system has been the implementation of a Real Time Gross Settlement System (RTGS) last April 2nd.

The RTGS system, operated by the Central Bank with participation from all the banks operating in Chile, is an electronic interbank payment system

[3/] If other assets are used for settlement, these should not be subject to significant credit or liquidity risk.

involving gross settlement in real time, which operates by transferring funds between the accounts that banking entities maintain within at the Central Bank. Before this, obligations associated with large-value transactions were paid through transfers of demand funds within the banking system, as well as through checks and bank drafts, and the actual and final settlement of payments was done daily through settlements or multilateral net payments at day's end.

The concept of real time gross settlement refers to the fact that payment messages sent by participating institutions through high security messaging are processed individually as they come in and as long as funds are available in the respective settlement account. Once carried out, a settlement is definitive and irrevocable.

In the RTGS payments in the domestic currency are settled according to the payment message sent by banks on their own and their clients' behalf, as well as net results from interbank payment clearing houses used by banks and operations between the Central Bank and participants whose settlements require making withdrawals or deposits in accounts in the central bank.[4/]

If a settlement referred to in a payment message cannot be completed for lack of funds in the account of the participant sending the message, this remains pending in a waiting list until the account has enough funds or the instructions are withdrawn by the participant that issued them. Participants can establish priorities and eliminate instructions while they are in the waiting list. Likewise, the RTGS system has automatic mechanisms for inspecting payments in line to resolve potential gridlock, respecting the order of arrival and the priorities established by participants.

To have access to liquid funds and facilitate system operation, participating banks can make use of an "Intraday Liquidity Facility" (*Facilidad de Liquidity Intradía*, FLI) provided by the Central Bank, which operates daily, buying financial instruments with repurchasing agreements on the same day.

The RTGS system meets the standards recommended internationally for payment systems of systemic importance and operates in conditions guaranteeing the utmost security and reliability, including messaging systems that participants use to communicate with the system.[5/] Similarly, an alternative or backup processing site exists as do the procedures necessary to solve possible operating contingencies that could arise within the system and affect its normal operations.

Large-value Clearing House Interbank Payment (CHIP) systems

Notwithstanding the implementation of the RTGS system, the Central Bank recognizes the usefulness of netting systems can provide in

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[4/] Open market operations, regular auctions, buy-backs and financial instruments issued by the Central Bank coming due.

[5/] SWIFT system (*Sistema S.W.I.F.T.*) Fin-Copy in mode "Y", and TCP/IP communications network in the Central Bank.

providing payment settlement services. These must also meet the international standards mentioned above.

The rules regulating the functioning of clearing house interbank systems suffered from some deficiencies, arising from the lack of suitable mechanisms to mitigate the risk of liquidation that a bank faced in the event of a payment not being made opportunely by one party to the next. Because of this, last March, the Board approved rules for operating Large-value Clearing House Interbank Payment Systems (CHIPS or in Chile, *Cámaras de Compensación de Pagos de Alto Valor, CCAV*), which establishes the conditions for the efficient operation and suitable security mechanisms for net settlements, so that these systems also contribute to the stability and development of the domestic financial system.

In terms of controlling liquidation risk under this system, the rules require the establishment of procedures that ensure that the final settlement of net results at the end of each settlement cycle in the RTGS system is punctual, even in the event that the participant posting the largest outstanding balance due does not have the resources necessary.[6/] For this purpose, these Clearing Houses or their operators must be able to carry out more than one settlement cycle during the work day; require that each participant establish maximum bilateral and multilateral limits to cover net debtor positions that may accumulate during a specific settlement cycle; and establish the mechanisms that ensure the availability of resources to carry out the settlement in the event of insufficient funds on the part of one or more participants.

The rules distinguish between two liquidation processes: a "normal" one, that occurs when all participants with a net balance due have sufficient funds in the RTGS system and proceed to make the respective withdrawals and deposits in participants' accounts, thus completing the settlement; and an "exceptional" settlement process, which occurs when one or more participants with a net debt do not have sufficient funds to meet their obligation. In the latter case, the operator must activate the procedures[7/] established in the Clearing House Operating Rules.

It should be noted that in terms of conditions for access, economic as well as operational, the rules establish that these must be general and non-discriminatory, and cannot differentiate in their treatment of participants according to whether or not they are shareholders in the body operating the Clearing House.

Finally, it is important to mention that compliance with the Core Principles is an essential requirement considered by the Central Bank to authorize the functioning of a CHIP.

[6/] The Basel Committee on Payment and Settlement Systems included this condition, known as the "Lamfalussy Principle", in its recommendations for large-value net settlement systems (Core Principle V).

[7/] Management and risk control procedures associated with payment and settlement processes (guarantees, multilateral, bilateral limits).

Figure V.12

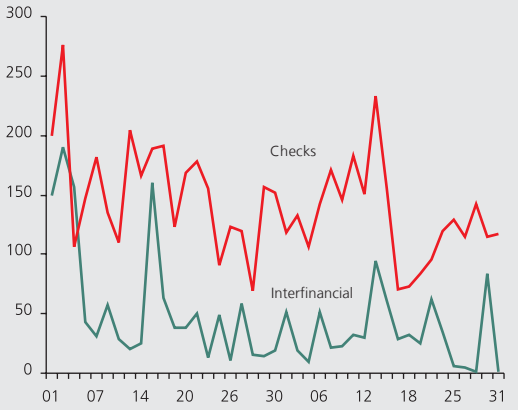
Daily payments settled in RTGS system (*)
(April and May 2004)

(*) Interbank payments and Central Bank of Chile (includes intraday liquidity facility).

Source: Central Bank of Chile.

Figure V.13

Clearing houses, daily net balances due, April and May 2004
(billions of pesos)



Source: Central Bank of Chile.

Migration of payments to the new system

Together with implementation of the RTGS system and the approval of the rules for CHIP functioning, a gradual program for moving large-value payments to the new systems began. This program aims to familiarize banks and the financial market in general with the facilities and opportunities offered by these systems, allowing participants to introduce the necessary corrections to their internal business models and payments operations.

Before implementation of the RTGS system, the payments system was organized into four clearing houses: one involving interfinancial operations, one involving checks and other documents in domestic currency, one for operations in automatic teller machines, and one for operations (checks and other documents) in foreign currency. Because both the interfinancial and the check clearing houses have been handling large-value payments, the Central Bank began to gradually shift payments, in order to leave these clearing houses handling only small-value payments in the near future. This transition is designed to ensure that large-value payments, defined as those with a value equal to or higher than 50 million pesos, migrate to the new settlement systems (RTGS and CHIP) within a reasonable period.

The transition process involves the following:

- Closure of the Interfinancial Operations Clearing House, after some time functioning in parallel with the RTGS system.
- Changes to the rules for the functioning of the current Check Clearing House, so that payments processed this way, involving operations critical to the financial market, gradually migrate to the new CHIPs.
- The gradual elimination of uncollateralized credit facilities (intraday and to one day) to which banks have access in the Central Bank.

Having completed its first two months with the RTGS system in operation, trends in terms of migration are extremely positive. Figure V.12 presents changes in payments dealt with in the RTGS system since it started up last April 2nd. In May, it processed a total of 13,220 operations, worth 52,524 billion pesos, representing a daily average of 661 payments worth 3.9 billion each.

The rapid adaptation by banks participating in the RTGS system has also been reflected in a significant reduction in net balances due registered in interbank settlement clearing houses. Figure V.13 presents changes in net balances due for the Check Clearing House and the Interfinancial Operations Clearing House. In the case of the latter, there has been a significant drop in net balances, which before implementation of the RTGS system averaged 170 billion pesos daily. In April, this plunged, thanks to the migration of these payments (clearing house notes) to the new System.

VI. External sector

This chapter analyzes the Chilean economy's international financial position and the factors influencing the normal functioning of its payments abroad. To do so, it examines the main economic sectors' conditions of access to and debt flows with the rest of the world. It also examines changes in external solvency and liquidity indicators and the risks most relevant to the baseline scenario of this Report. This analysis is consistent with the current framework of Central Bank monetary and foreign exchange policy, which involve an inflation target, a floating exchange rate, an open capital account, and maintenance of an appropriate level of international reserves.

In the first half of 2004, the Chilean economy enjoyed access to external credit markets in particularly advantageous conditions. These were apparent in historically low risk discounts and favorable conditions for bond issues. This scenario has been primarily determined by favorable trends in international financial markets and the Chilean economy's low needs for external financing, as well as its own solid fundamentals. The latter were reflected in the upgrade in Chile's risk rating by one agency.

Notwithstanding the favorable conditions in external debt markets, both the Government and other sectors reduced the pace and lengthened the maturity of their external borrowing. Although there was a substantial rise in short-term trade credits taken by companies, associated with rising imports, at the aggregate level this was more than offset by lower flows of external debt in the form of bonds, loans and credits, on the part of banks, firms and the public sector. Moreover, the average duration of the debt of different sectors rose.

In terms of global financial relations with the rest of the world, the Chilean economy has responded to the favorable economic scenario by increasing saving this year, thus reducing its net liability position with the rest of the world. The increase in saving has taken the form of accumulating external assets worth more than accumulated external liabilities, and has continued the sustained process of international financial integration that the Chilean economy embarked upon in the past decade.

Overall, the slower pace and longer maturities of external borrowing, the accumulating of assets abroad, and the surplus in the current account have all contributed at the margin to improving external solvency and liquidity indicators. No substantial changes are expected in the general situation of external financing in the coming quarters. In the event of risk scenarios occurring, the economy is more than capable of adapting to adverse changes in international conditions, without disrupting the normal functioning of external payments. This is based on its policy framework,

the low level of country risk, and healthy indicators for external solvency and liquidity. All this leads to conclude that the Chilean economy is in a very stable position with regard to external payments.

VI.1 Recent developments and prospects

VI.1.1 Trends in foreign debt

Although the conditions for accessing external financing have become extraordinarily favorable for different sectors, the economy has slowed the pace of its external borrowing

In the first months of the year, borrowing by different sectors has taken place in conditions of high international liquidity. In the first half of the year, the three-month Libor rate averaged 1.2% (section II.1), well below its historic average. The recent upgrade in Chile's international long-term sovereign credit risk rating from A- to A was also significant (section III.3).

The premium on sovereign bonds averaged 90 basis points in the first half of 2004, falling as low as 79 basis points in April. Premiums on Chilean company bonds, meanwhile, have increased gradually since April but have still remained well below their historic and international levels throughout the period. Thus, while in 2003 the monthly average premium on Chilean corporate bonds was 270 basis points, in the first half of 2004 this was just 200 basis points, falling to 192 basis points toward the end of July.

Despite favorable financial conditions, the economy slightly reduced its flow of net external borrowing in the first months of the year, compared to the same period of the previous year. Between January and June of this year, net borrowing flows reached about US$170 million, compared to around US$550 million in the same period in 2003 (table VI.1). This reduction in net external borrowing reflects the decline in net external borrowing in bonds, loans and credits not associated with foreign trade of all sectors of the economy, only partly offset by the large increase in trade credit flows associated with imports by firms.

In terms of the maturities of these flows, in the first months of this year there was a drop in short-term flows of almost US$500 million, compared to the same period in 2003. Long-term borrowing rose by US$150 million over the same period of the previous year. Thus, the aggregate maturity of debt has risen slightly compared to the same period of the previous year. Through December 2003, debt falling due in less than one year accounted for 17% of total debt, while in June of this year it had reached 19%.

Thus, the Chilean economy's total external debt reached US$43.573 billion in June 2004. Of this, 11% had been assumed by the Central Government, 11% by public companies, 12% by banks and 66% by private firms and individuals. Short-term debt by residual maturity had reached 30% of total external debt in December 2003, while in June 2004 it stood at 32% (table VI.2).

Meanwhile, from January to June foreign direct investment rose to US$2.2 billion, up by almost US$500 million over the same period of last year,

Table VI.1

External borrowing of the Chilean economy

January - June 2004

	Jan.-Jun. 2003	Jan.-Jun. 2004	Change
Total external borrowing by sector	542	167	-375
Banks	312	-46	-358
Companies and individuals	-963	-170	792
Public sector	1.193	384	-809
Total external borrowing by maturity	542	167	-375
Short-term	841	332	-509
Trade credits	73	498	425
Long-term	-299	-165	134
Short-term external borrowing	841	332	-509
Banks	81	-179	-260
Companies and individuals	311	728	417
Public sector	449	-217	-667
Long-term borrowing	-299	-165	134
Banks	231	133	-98
Companies and individuals	-1.274	-899	375
Public sector	743	601	-142

Source: Central Bank of Chile.

while foreign portfolio investment fell to US$21 million, down US$190 million from January to June 2003.

Table VI.2

External debt of the Chilean economy

	June 2003	December 2003	June 2004
Gross external debt	41,229	43,396	43,573
Short-term external debt by residual maturity	11,297	12,967	13,842
Original maturity (except trade credits)	2,745	3,810	4,004
Long-term debt falling due (except trade credits)	4,664	5,162	5,371
Trade credits	3,888	3,995	4,467
Short-term external debt by residual maturity	11,297	12,967	13,842
Public sector	179	185	77
Banks	3,187	4,638	4,383
Companies and individuals	7,931	8,144	9,382
Long-term external debt by residual maturity	29,932	30,429	29,731
Public sector	4,355	4,376	4,651
Banks	949	803	983
Companies and individuals	24,628	25,270	24,097

Source: Central Bank of Chile.

Banks and the public sector flows and longer term borrowing have fallen, while companies are expected to borrow more this year

In the first half of the year, the banking sector borrowed US$50 million, well down from the US$300 million it borrowed in the same period in 2003. Banks have been shifting the composition of their external debt, preferring medium-term to short-term and thereby increasing the average maturity of their debt.

Like the banking sector, companies borrowed US$170 million during this half of the year, down from US$960 million in the first half of 2003. However, in this case companies' reduction of their external debt focused on long-term debt, mainly loans, which was only partly offset by more borrowing in the form of bonds and short-term trade credits associated with imports. To date, therefore, companies have continued to reduce long-term external debt, as they have for the past two years.

The prospects for companies this year point to a gradual rise in demand for external financing. On one hand, the significant growth in foreign trade will continue to push the use of trade credits associated with imports. On the other, the gradual recovery of companies' investment rates will slowly increase the demand for medium-term financing.

The public sector reduced its flow of external borrowing to one-third of the amount posted during the same period last year. This took the form of smaller issues of sovereign bonds and a reduction in short-term trade credits and loans, which pushed up the average duration of public sector external debt.

Projections for the year indicate a significant rise in public sector saving, mainly thanks to extraordinary revenues associated with the higher price of copper on international markets. This, combined with fewer needs to restructure public sector external debt, suggest lower demand for external financing this year.

Projections indicate that external debt will rise somewhat more slowly toward year's end

In light of the borrowing already apparent and projections for the different sectors, the economy is expected to post slower growth in external borrowing this year than last, for the year as a whole.

Projections for the rest of the year are favorable. Despite the recent rise in interest rates, international financial markets remain very liquid. Similarly, the rise in the terms of trade of the Chilean economy point to a surplus in the balance of payments current account this year and next, configuring an environment more favorable to stability in its financial relations with the rest of the world.

VI.1.2 The Chilean economy's external solvency and liquidity indicators

The economy's external solvency and liquidity indicators are appropriate, given the country's financial integration with the rest of the world

Through December of last year, foreign debt represented 60% of GDP, down from the previous year, marking a change in the gradual rise observed since 1996. This is still slightly above the average for emerging investment grade economies, although well below the levels of the most developed economies.

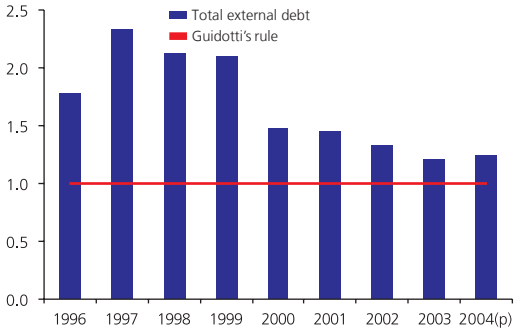
Two aspects that should be noted when evaluating the external solvency of the Chilean economy are, on one hand, the high proportion of the debt contracted by foreigners, and, on the other, the fact that the level of external debt as a percentage of GDP is the natural result of the high degree of financial integration of the Chilean economy. Thus, almost 56% of private external debt in late 2003 had been acquired by foreign firms, of which about one-quarter was direct borrowing from related companies (section VI.2).

On the other hand, the rise in external debt in recent years has occurred amidst a vigorous and sustained process of international financial integration, marked by a rise in Chilean assets abroad. Thus, in late 2003, the sum of international assets and liabilities was about 230% of GDP, well above the average for emerging investment grade economies. Lately, this process of international financial integration has continued to be marked by the increase of Chilean assets abroad. In fact, between January and June the flow of external liabilities reached US$2.4 billion, while that of external assets reached US$5.4 billion, so that despite the rise in external debt, the net liability position of the economy fell and financial integration rose in this period. This is consistent with the projected current account surplus of about 1.1% of GDP for the year, reflecting the economy's increased saving.

In terms of changes in the debt to GDP ratio, considering projections of 4.5% to 5.5% for economic growth in 2004, the exchange rate, and the small increase expected in external debt, this would reach 55% of GDP toward the end of 2004, slightly above the average of other investment grade emerging economies.

Figure VI.1

International reserves / short-term external debt by residual maturity

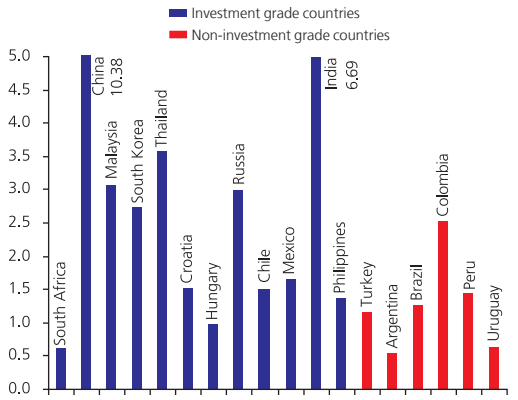


(p) Provisional to June.

Source: Central Bank of Chile.

Figure VI.2

International reserves / short-term external debt by residual maturity

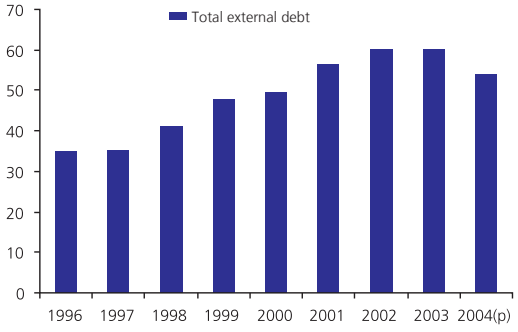


Sources:
BIS-OECD-WB-IMF.
Moody's.

Figure VI.3

Chile's total external debt

(percentage of GDP)



(p) Provisional to May.

Source: Central Bank of Chile.

On the economy's liquidity in foreign currency (figure VI.1), the level of reserves has risen gradually this year, reaching around US$15.9 billion in June. This level of reserves would cover 1.15 times total short-term external debt by residual maturity (obligations abroad coming due in less than one year). The economy's liquidity in foreign currency to manage its short-term obligations is even greater if one considers that one-third of short-term external debt by residual maturity corresponds to trade credits associated with imports. These credits are very short term, are backed by the value of the imports and, in general, their granting and renewal responds to very different considerations from those of other components of external debt with residual maturity, such as bonds, promissory notes and loans.

An international comparison with other investment grade emerging economies with floating exchange rate, indicates that at the end of 2003 the economy was also very liquid in foreign currency (figure VI.2). Likewise, the sum of reserves plus public and private sector liquid international assets stood at around US$21 billion, 1.6 times the economy's financing needs.

In December 2003, the Central Bank gave its creditors the option of replacing US$3.65 billion of dollar-denominated debt payable in pesos with dollar-denominated debt payable in dollars. This could potentially reduce international reserves by 20% toward the end of 2004. As of 1 August, US$1.368 billion had been swapped, with US$1.14 billion left for more swaps. The Central Bank has concluded that the floating exchange rate and policies that have eased international capital flows ensure that the level of reserves will be enough to guarantee the economy a good external liquidity position toward the end of 2004 (box 2).

For the rest of the year, a reduction in the level of reserves is projected, as a result of continuing the program of swaps expressed in dollars, announced by the Central Bank in late 2003, which will only be slightly offset by a rise in reserves as a result of higher deposits of the government's external assets in the Central Bank, due to the higher copper price. Short-term external debt by residual maturity will also rise slightly in 2004, due mainly to companies making more use of trade credits associated with higher imports, partly offset by banks reducing their short-term borrowing. Thus, the indicator for liquidity in foreign currency, measured as the ratio between international reserves and total short-term external debt, could decline in 2004.

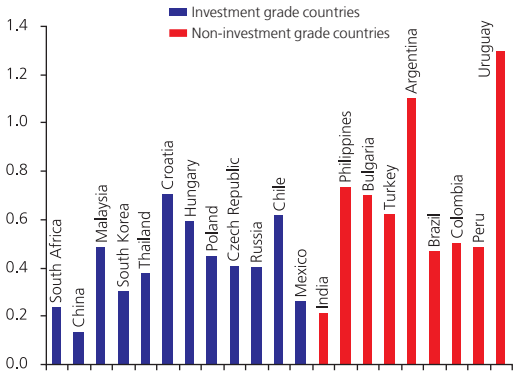
VI.2 The Chilean economy's foreign debt

The economy's external borrowing has risen gradually in recent years, increasing the foreign debt/GDP ratio (figure VI.3). The climbing debt indicator in the two years prior to 2003 reflected both rises in the amounts of external debt and a depreciation of the peso, which reduced the dollar value of GDP. The debt/GDP ratio fell, however, during the year, from 62% at the end of 2002 to 60% at the end of 2003, reflecting a combination of greater GDP growth and peso appreciation, partly offset by a moderate rise in the economy's borrowing.

An international comparison of the debt/GDP ratio with other economies with similar risk ratings, shows that this one is slightly higher than the

Figure VI.4

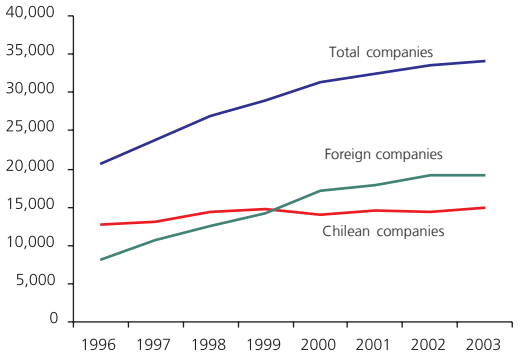
External debt
(percentage of GDP)



Sources:
Institute of International Finance.
Moody's.

Figure VI.5

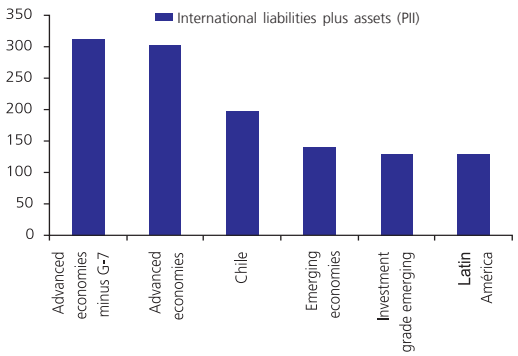
Private sector external debt by creditor's country
(US$ million)



Source: Central Bank of Chile.

Figure VI.6

Financial integration indicator (2001)
(percentage of GDP)



Source: International Monetary Fund.

average for investment grade emerging economies (figure VI.4). However, it is well below that of the most developed economies.

Important to any evaluation of Chile's solvency is the high share of foreign owned firms' obligations within its foreign debt (figure VI.5), since at times of crisis these companies can normally count on financial backup from their head offices. In recent years, domestic agents' private external debt rose modestly from US$13 billion in 1996 to US$15 billion in December 2003, to represent 34% of total external debt. In contrast, foreign-owned firms' private external debt rose significantly, from US$8 billion in 1996 to US$19 billion in 2003, accounting for 44% of total external debt. Likewise, by the end of 2003, 23% of foreign-owned firms' extenal debt was owed to directly related firms.

Through December 2003, of the approximately US$5.5 billion of the banking system external debt (13% of total external debt), 38% was from loans acquired by foreign banks operating in the domestic market. Of these, about one-third were loans assumed by related firms and head offices abroad, a factor that also contributes to the domestic economy's greater external financial stability.

Finally, when evaluating the solvency indicator, the Chilean economy's high level of international assets and the diversification of these assets by type of instrument should also be considered. The Chilean economy's ratio of international assets to GDP is above average for emerging economies, and at a mid-point between these and the most developed economies. The same is true of the ratio for international liabilities over GDP, and the financial integration index (ratio for international assets plus liabilities over GDP, figure VI.6). The availability of high and rising levels of international assets means there is a growing flow of profits, dividends, and interest associated with this foreign investment, which increase the economy's solvency. Moreover, the high degree of diversification of these international assets by type of instrument also contributes to the economy's solvency in the event of any restrictions arising from financial instability. This diversification is apparent in a breakdown of the economy's US$64.3 billion in international assets: 21% involves direct investment abroad, 31% portfolio investment, 23% credits and loans, and 25% the Central Bank's international reserves.

VI.3 Risk scenarios

A steeper rise in interest rates could lead to a moderate tightening of external accounts

The risk scenario in this Report (section II.2) assumes a steeper than expected rise in international interest rates, which would make external financing more expensive. In general terms, higher international interest rates (see section II.2) would make external financing more expensive. Larger capital outflows could also occur, driven by higher interest payments, and the better return on assets abroad, especially in the US economy. The end result would be a combination of peso depreciation and smaller capital flows into the Chilean economy. This risk scenario would reduce the degree of freedom necessary for the Central Bank to

keep monetary policy expansive and could bring a rise in domestic interest rates, to ensure the external financing of the economy.

This risk scenario would imply a larger than expected increase in the interest rates, that could reduce growth in investment, domestic consumption and output. Higher dollar appreciation arising from the greater demand for assets from the most developed economies could encourage exports, but the final effect would depend fundamentally on the effect of higher interest rates on aggregate demand in the US, and on demand for Chilean exports. Imports would also fall, but the final effect of this risk scenario would be a worsening of the current account.

However, the current economic policy framework and the high external liquidity make the economy better able to absorb adverse external events

The Chilean economy is in a position of very high external liquidity to maintain the stability of external payments in the face of adverse changes in the baseline scenario. On one hand, the economy's external financing needs over the next two years are at their lowest, historically speaking, and in an international comparison. This evaluation is based on the current account surplus expected for this year. At the same time, the policy framework defined by a flexible exchange rate backed by sufficient reserves makes it possible to adapt appropriately to changes in the external scenario. For every 100 basis point increase in the interest rate, external debt servicing would increase by about US$230 million, so the direct impact of the risk scenario's 550 basis point rise on the current account would be US$1.3 billion. The economy's external liquidity is enough to absorb the direct effect of this shock (section VI.2).

Similar analyses also show that if the Chilean economy were subject to an extremely adverse risk scenario, which is unlikely in current conditions, for example involving a strong interest rate increase, a sharp drop in the copper price and a substantial increase in the oil price, the economy's external liquidity would make it possible to adapt adequately to this scenario.

Box VI.1: The appropriate level of international reserves

The intensity of the process of international financial integration that has occurred in recent years, combined with a significant accumulation of international reserves in some countries affected by crises at the end of the 1990s, have reopened debate about the optimum level for reserves that a country should maintain. This box contains some of the ideas that have been present in this debate and examines some elements relevant to discussing Chile's optimum reserve level.

I. Reasons to maintain international reserves in a floating exchange scheme

In a system involving a flexible exchange rate, international reserves play two main roles. First, and under specific circumstances, the Central Bank may decide to get involved in the foreign exchange market to attenuate uncertainty and currency volatility. To do so, it must hold a position in foreign currency that allows it to act credibly in this market. Second, international reserves help to preserve the stability of external payments, which increases foreign investors' confidence about currency stability and countries' ability to pay even amidst financial turbulence. This is especially important in a context of considerable international financial integration, in which countries are more exposed to abrupt turnarounds in financial flows caused by liquidity shocks. Finally, a suitable volume of reserves encourages more confidence among investors, who in turn provide domestic agents with access to external financing that is cheaper and more stable over time.

II. Costs and benefits of maintaining reserves

Holding international reserves is costly for a country, since the yield on the instruments in which these are invested is less than their opportunity cost. One approximate measure of this cost is the sovereign premium, which corresponds to the different between the interest rate paid on a country's government bonds and that paid on US treasury bonds. In Chile's case, and using this approximation, the cost of reserves at the end of the first quarter of 2004 was around 0.2% of GDP. This is low compared to that assumed by other emerging economies (figure VI.7), mainly because in recent years Chile's sovereign premium has been very low compared to that of other countries.

One way, although indirect, of measuring some of the benefits from reserves is through the effects these have on the incidence of external

Figure VI.7

Cost of maintaining international reserves
(percentage of GDP)

(*) Calculated using a sample of 27 countries, considering the reserve cost the sovereign spread for each country. Business sector compares average costs for the period 1999-2001.
In Chile's case this reaches almost 0.4% of annual GDP.

Source: Central Bank of Chile.

financial crises or through their effect on a country's financing conditions. Empirical studies have shown that if a country has low reserves the probability of it facing an external financing crisis rises. This is reflected, in turn, in a higher sovereign premium, which makes domestic agents' access to external financing more expensive.

These effects are extremely non-linear and depend on the initial position of fundamental variables that determine a country's vulnerability. Thus, for example, if a country initially enjoys solid fundamentals and is unlikely to face an external crisis, its reserves' contribution to reducing risk is marginal.

In Chile's case, most international studies reveal a country with solid fundamentals and low risk levels, which are reflected in its low sovereign premium. As a result, marginal changes in reserve levels in one direction or another would not have any major impact on our country's international risk. For example, according to Soto et al. (2004),[1/] assuming all else remains constant, a US$1 billion decline in reserves could increase the likelihood of Chile facing an external crisis by somewhere between 4 and 100 basis points, that is, it would rise by 1% at the most. Something similar happens with the reserve effect on the sovereign premium, in which a US$1 billion drop in reserves would raise this premium by 1.5 basis points at the most.

III. The right level of international reserves

Obtaining a measure for the optimum level of reserves based on a cost-benefit analysis raises a series of both analytical and conceptual difficulties. As a result, the practical discussion about the optimum level of reserves focuses on analyzing simple indicators for adjusting reserves.

The adequacy indicators considered by analysts, central banks and international organizations have varied over time. In the past, a suitable level of reserves was thought to be the equivalent of the financing of three or four months of imports. Currently, given that the main source of vulnerability from abroad arises from fluctuations in the financial account, it is more relevant to evaluate the level of reserves in relationship to a country's short-term obligations.

In particular, a practical recommendation that has gained strength in the international debate indicates that reserves should cover external obligations coming due in 12 months, the so-called short-term debt by residual maturity. Through March 2004, Chile's international reserves represented about 1.2 times the country's short-term debt by residual maturity, above the recommended threshold. If we compare Chile's international reserves with those held by other countries using this criteria, the country's position is very similar to that of other similar economies (figure VI.2). In fact, at the end of 2003, Chilean reserves were 1.5 times

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[1/] Soto, C., A. Naudon, E. López and A. Aguirre (2004), *"Acerca del Nivel Adecuado de las Reservas Internacionales* (About the Right Level for International Reserves)", Documento de Trabajo N° 267, July, Central Bank of Chile.

short-term external debt by residual maturity,[2/] while the average for the main emerging economies (except China) was 1.8. However, this indicator shows considerable dispersion among countries. For example, South Africa holds reserves equivalent to just 60% of its short-term debt, while the countries of emerging Asia generally hold almost three times the value of their short-term obligations abroad.

The lack of a clear, undisputed guide in both academic literature and international practice for determining the optimum level of reserves has made the Central Bank periodically review their level in light of a wide range of indicators.

As a consequence of the latest evaluation, on 5 November 2003, the Board of the Central Bank announced a program to swap instruments that involves reducing reserves from their previous level. Holders of dollar-denominated securities payable in pesos (PRD, BCD and CERO) were offered the chance to swap them for securities payable in dollars (PCX, BCX and XERO). Moreover, the Central Bank will not continue to renew dollar-denominated papers coming due between 1 December 2003 and 1 December 2004. This program involves the potential use of up to US$3.65 billion in reserves during this period. As of 1 August 2004, US$1.368 billion had been swapped. Of the US$ 2.202 billion coming due to date, US$1.142 billion was not swapped. There is still room for another US$1.14 billion in swaps.

Finally, it is necessary to clarify that even when the authorities' decisions regarding the necessary level of reserves and foreign exchange market interventions lead to changes in international reserves, not all movements can be directly attributed to the Central Bank. In fact, Chile's international reserves include a series of items, such as government deposits associated with the Copper Stabilization Fund, Codelco's or financial system current account deposits, one-day and monetary reserve deposits that fluctuate depending on the decisions of the respective agents and not the Central Bank. Likewise, the results obtained from the internal management of reserves also change stocks, a phenomenon independent of Central Bank policy.

[2/] BIS figures, which differ slightly from those of the Central Bank of Chile.

Box VI.2: IMF-World Bank evaluation of the stability of Chile´s financial system

In the framework of the International Monetary Fund (IMF) and World Bank Financial Stability Assessment Program and in response to an invitation from the Chilean authorities, a joint mission of these international financial institutions carried out an Evaluation of Financial System Stability from December 2003 to July 2004. This program is designed to assist governments, central banks and countries' supervisory authorities to evaluate the strengths and weaknesses of their financial system and compliance with the relevant international codes and standards.

A summary of the IMF report follows, translated from the English by the Central Bank of Chile.

The Chilean banking system proved to be solid, shock resistant and well supervised. Banks are well capitalized, profitable, internationally integrated and have relatively low levels of non-performing debt. The tension tests indicate that banks could absorb significant macroeconomic shocks and that these would only moderately affect their solvency. Although banking competition remains limited, it has increased significantly in recent years.

Private pension funds are the main institutional investors in the country by a long shot. There is some room to improve their impact on the domestic financial system, through the prudent relaxation of their excessively restrictive investment regime, without damaging their fiduciary function. Moreover, recent efforts to increase competition in this industry should be intensified. The insurance sector presents some insufficiencies in terms of risk provisions, faces more competition and shows some weaknesses in the regulatory framework for problem solving. Both the necessary increase in provisions and the reforms to the supervisory framework must be carefully planned and implemented.

Some important shortcomings in market infrastructure, which limit liquidity and investment, need to be addressed. To do so would require including firmly in the law key concepts regarding the payment and settlement of securities, organization of the security loans market, the introduction of multilateral netting mechanisms, and the formalization of a system of market makers. Methods for valuing and standardizing contrasts in securities markets, along with transparency in the over-the-counter market, need to be improved. International reporting standards should be incorporated into financial statements for firms listed in the exchange and tax rules for the financial sector should be reviewed.

The current, segmented system of financial supervision has functioned all right to date, but should be adapted to the needs of an increasingly

integrated, complex financial system. The reforms should focus on improving cooperation between regulators, in the short term, and filling gaps in systematic monitoring of the market. In the medium term, legal changes would be necessary to support a system of supervision of completely consolidated financial conglomerates. This change should come with further progress away from a rule-based supervisory system toward a risk-based one, combined with strengthening the financial and legal autonomy of supervisory agencies and improving the mechanisms through which they respond for their actions.

The framework for dealing with money laundering the financing for terrorism needs to be strengthened through: (i) a review of the limited enforcement powers of the financial analysis unit *(Unidad de Análisis Financiero)* and its insufficient access to information sources; and (ii) extending the scope of this set of policies to cover external foreign exchange operators, securities brokers and insurance companies.

Note: These missions are designed to evaluate the stability and performance of the financial system as a whole, and not individual institutions. They do not examine risks specific to individual institutions, such as asset quality, legal and operating risk, or fraud.

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