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IEF

Financial Stability Report

BANCO CENTRAL DE CHILE

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DE CHILE

Contents[1/]

[1]/ The statistical closing date of this *Financial Stability Report* was 23 November 2010.

Preface

As established in its Basic Constitutional Act, the Central Bank of Chile must "safeguard the stability of the currency and the normal operation of internal and external payments." To carry out these tasks, the Central Bank of Chile is vested with diverse legal powers, such as extending emergency credit and determining regulations in matters affecting the financial system and international trade operations.

The Central Bank's focus in the area of financial stability is centered mainly on the proper functioning of the system and the Chilean economy's access to the international financial markets. The Central Bank's tracking of financial stability is complementary to that undertaken by the specialized supervisory entities; it serves as an independent element of analysis with respect to the supervisors' powers and functions in relation to the entities subject to their oversight.

The objective of the Financial Stability Report is to provide information, on a half-yearly basis, on recent macroeconomic and financial events that could affect the financial stability of the Chilean economy, such as the evolution of the indebtedness of the main credit users, the performance of the capital market, and the ability of the financial system and the international financial position to adapt sufficiently to adverse economic situations. In addition, the Report presents the policies and measures that support the normal operation of the internal and external payments system, with the objective of promoting general knowledge and public debate with regard to the Bank's performance in fulfilling this function.

The Board

Summary

The intensity and speed of developments in Ireland reflect global economic and financial fragility. As we stated in the last *Report*, several advanced economies are facing a complex scenario, and their performance depends on the interaction of financial systems whose balance sheets are still showing deteriorated assets, weak fiscal conditions and slow growth. In this sense, any events that may add uncertainty in some of these dimensions have the potential to create disruptions with severe repercussions on the financial markets. Ireland is a case in point. Real estate problems eroded banking assets and, given the government measures to support the financial sector, led to a fast and serious deterioration of the fiscal accounts.

The contagion seen in Europe over the past few weeks is the result of the aforementioned vulnerabilities being present, to different extents, in several economies. Although some progress has been made in the fiscal consolidation process, economic growth is heterogeneous and both indebtedness and the need for public financing are still high. Meanwhile, the deteriorated financial situation in Europe is related to uncertainty regarding the euro area's capacity to coordinate support to bigger economies, and to investors' cost of credit restructuring after 2013.

Growth prospects in the United States are relatively constrained. While at the beginning of the year there were signs that the recovery would be faster compared with earlier recessions, nowadays a slower recovery is expected and with a number of downside risks. Banks, especially the smaller ones, are still cleaning up their balance sheets, holding back the economic rebound. Deleveraging of households and firms has intensified. The proportion of mortgage debts higher than their backing assets is still high and, in general, doubts persist with respect to the recovery of housing demand. Finally, the banking sector is dealing with legal questionings of their foreclosure policies.

By contrast, emerging markets and some smaller advanced economies are on a trend of higher growth. Economic activity in emerging economies, especially in Asia and Latin America, has increased strongly and, although a deceleration from 2010 on is in forecast, they are still expected to grow more than their developed counterparts in 2011. Accordingly, emerging economies have already begun withdrawing their fiscal and monetary stimulus packages. That, combined with low interest rates in the main developed economies, has translated into growing capital inflows to emerging economies.

Going forward, the relative stability of emerging economies will largely depend on whether international financial stress continue or intensify, on their capacity to remain on the present path of growth in the presence of a weak scenario for advanced economies and, finally, on the proper management of the potential effects of said capital inflows.

Gross capital flows to Chile have increased substantially. Gross capital inflows posted significant growth in their FDI and portfolio investment components. In the specific case of gross portfolio investment, debt issues have been high by recent historic standards and compared with other economies in the region and Asia. The banks' external debt increased by some 20% with respect to the last *Report*, while its average maturity also increased. Complementarily, since the last *Report* non-residents' holdings of local assets in pesos fluctuated widely through the foreign exchange derivatives market, thereby increasing the long position in pesos and driving up t**he** domestic interest rate in dollars. Meanwhile, residents' assets overseas have continued to increase, largely due to changes in pension fund portfolios. **Thus, and despite a significant increase in capital flows into Chile, net capital inflows have remained bounded.**

Local debt markets have appeared robust facing the recent external instability. A tightened money market since the last *Report* was basically linked to institutional investors' portfolio management. Since the last *Report*, the prime-swap spread has been quite volatile, first rising significantly and later reversing. These fluctuations reflect pension fund portfolios being rebalanced from time deposits to higher-return assets overseas. Moreover, type-1 mutual funds reduced their managed portfolio around the revaluation process during July.

Regarding the prices of other domestic assets, the stock price index has shown an important increase this year and, while it has tended to stabilize recently, is higher than the estimates of some asset valuation models. Notwithstanding, the magnitude of such deviations, combined with information of stock leveraging at households and firms, suggests that financial instability risks associated with a potential correction of these prices are, for the time being, limited.

At the statistical closing date of this *Report*, and consistently with developments in other emerging economies, **the prices of other domestic financial assets have not been materially influenced by events in the euro area.** Nonetheless, and as it is warned in this *Report*, there is a high degree of uncertainty regarding where the current external turbulences are headed to, so domestic asset prices could drop, within a context of increased risk aversion among international investors.

Because of the level of uncertainty and challenges facing the normalization of the external economy, this *Report* identifies as the main risk scenario one where financial problems in Europe are aggravated. This would lead to a further contraction of global output and a drop in the supply of foreign capital. In Chile, such a contraction in supply could translate into higher costs of or constraints to foreign borrowing, coinciding with a drop in demand for our exports. In addition, there might be reductions in consumption and investment due to a higher uncertainty in this scenario. A second risk scenario could be created by a significant deceleration of developing economies. Some of the factors that might push in that direction are a stronger than expected economic slowdown in China—originated in anti-inflationary policies—or that the U.S. economy remains weak still for some time.

Even if the risk scenarios just described do not materialize, **emerging economies still face a number of challenges associated with the abundance of foreign capital.** The biggest one is preventing the incubation of financial vulnerabilities due to the misalignment of key asset prices, the overheating of the economy, or the increased exposure to exchange rate risk and liquidity risk in foreign currency.

Despite the greater supply of external credit, no significant variations have been seen in indicators of currency mismatches, liquidity, payment capacity and profitability of larger firms. A study on a wider set of firms—which includes small and medium-size firms—shows that the behavior of external debt has not been reflected in changes of similar magnitude in the exchange rate hedging positions, and some mismatches at particular firms cannot be ruled out. Nonetheless, the increase in firms' external borrowing has been mainly focused in the tradable sector.

Among households, the levels of indebtedness and financial burden have remained fairly stable and close to those of 2007. Private consumption has posted a strong recovery during this year. Meanwhile, the growth rate of household debt has been increasing since the end of 2009 however not reaching the levels of the past years. A dissimilar trend across components of household debt has been observed, with credit card borrowing being the most dynamic. Overall, household credit risk indicators remain in low levels.

Banking credit is moderately recovering. The credit contraction that took place in late 2008 has reversed, giving way to a somewhat stronger growth in loans to households and firms. This scenario of higher activity has been accompanied by narrowing lending spreads, in line with more flexible lending standards reported in the Credit Conditions Survey.

Although indicators of banking liquidity showed a narrowing of gaps up to September, they began returning to historic levels in October. Consistently with the recovery of credit in the past several months, the more liquid banking assets reduced their relative weight with only a partial reversal very recently. At the same time, short-term liabilities increased substantially. On one hand, sight deposits continue to grow above 25% and, on the other, short-term time deposits increased their share significantly. Accordingly, at the statistical closing of this *Report,* liquidity indicators reveal that short-term mismatches are around average, and every bank has the necessary leeway to properly comply with regulatory limits.

Since the last *Report*, banks have maintained low and stable currency mismatches. While exposure to currency risk increased in the balance sheet, because of indebtedness abroad rose in the past three months, the banking system simultaneously increased its long position in foreign currency derivatives. This currency matching is also observed at short terms, which mitigates the exchange rate risk if abrupt and substantial changes occur in long or short positions in foreign currency.

For particular segments of the banking industry, the challenge remains to diversify funding sources. As in the last *Report*, concerns persist because of the high dependence of some banks to wholesale deposits. The new valuation system of type-1 mutual funds might result in shorter terms for time deposits and/or a contraction of portfolios managed by mutual funds, putting pressure on the funding structure of certain banks during the transition. However, once the measure is fully in place, it should contribute to the stability of banking credit by reducing the probability of sharp changes in the administered funds.

Finally, the solvency of the banking system, measured through the banking industry's capital adequacy index, remains around 14%. Banks' profits have increased, driven by reduced loan loss provisions, stronger lending and higher inflation. Stress tests show that the current level of capitalization of the banking industry will permit it to absorb an episode characterized by a slowdown in GDP, higher financing costs in pesos and a depreciation of the peso, which is consistent with the risk scenario described above.

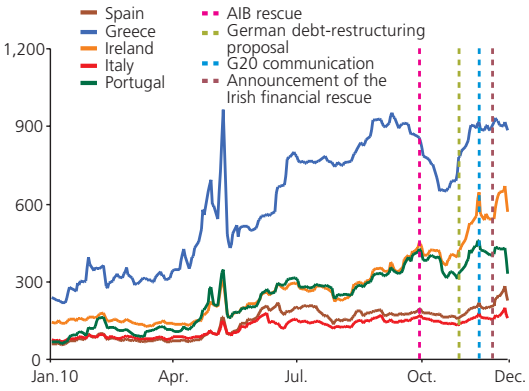
The baseline scenario assumed in this *Report* foresees that capital flows toward emerging economies will continue, as a consequence of asymmetries in the pace of world economic recovery. The risk persists, however, that the European financial conditions may worsen. Deteriorated external financial conditions and the global slowdown would have a damaging effect on the Chilean economy. Although the analysis in this *Report* suggests that the Chilean financial system is well prepared to deal with this more contractionary external environment, it is important that credit users and financial intermediaries internalize these risks in their consumption, investment and funding decisions.

I. Financial environment and risks

Figure I.1

Spreads in the European periphery (*)

(basis points)



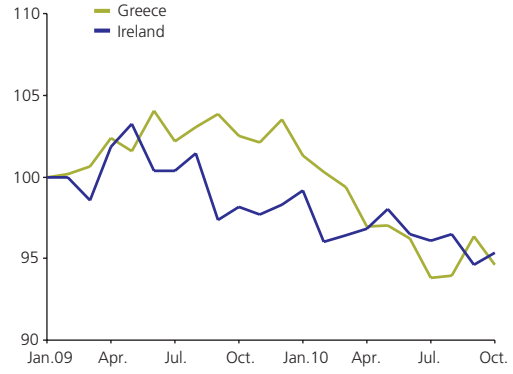
(*) Ten-year sovereign spreads over German bonds.

Source: Bloomberg.

Figure I.2

Bank deposits in Ireland and Greece

(baseline index Jan.09=100)



Sources: Bank of Greece, Central Bank of Ireland, and CEIC data.

The international scenario is characterized by a high degree of uncertainty, especially in the advanced economies. In this context, economies with a better relative performance are recording substantial capital inflows.

Evolution of the international financial situation

The latent threat of financial problems in Europe remains…

As discussed in the last *Report*, the macrofinancial position of the European peripheral countries represents a risk for the international financial situation. The most recent period of volatility confirms that the combination of a difficult fiscal position, a weak financial system, and a fragile economic recovery has made these countries vulnerable. It could lead to a vicious cycle, in which low growth hinders the countries from reaching their fiscal targets, thereby increasing their financing needs and sovereign risk. This, in turn, affects the economic recovery. It also has both an indirect impact on the financial system through lower growth and a direct impact through exposure to sovereign debt and the value of state guarantees.

In addition, the single currency imposes limitations on the weaker countries of the euro area. On one hand, the lack of an independent monetary policy limits their ability to stimulate domestic demand. On the other, the single currency, the importance of intra-area trade, and the relative strength of some economies limit the role of the exchange rate in stimulating external demand.

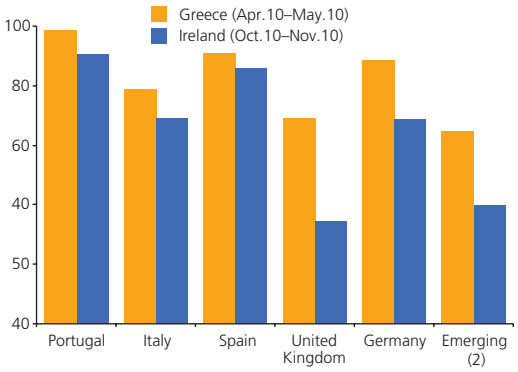
…and has recently materialized in Ireland…

The above factors are partially reflected in the case of Ireland, which faced an increase in the fiscal deficit following the rescue of the Anglo Irish Bank (AIB) in September (figure I.1). The magnitude of support to the banking system and the contraction of economic growth led to forecast that the fiscal deficit would reach 32% of GDP in 2010[1]/.The subsequent announcement of mechanisms involving holders of public bond securities in a restructuring process, combined with the reduction in Ireland's sovereign risk rating, heightened the uncertainty and volatility in the European public debt

[1]/ In 2005-08, Ireland recorded an average deficit of 0.7% of GDP, whereas the financial system support program deteriorated the fiscal accounts by approximately 14 percentage points in 2010. The sharp impact of the support measures is explained by both the coverage of the measures and the size of the banking system, at nearly three times GDP. Another factor is the impact of lower tax revenues associated with the output contraction.

Figure I.3

Risk of contagion: Greece versus Ireland (1)



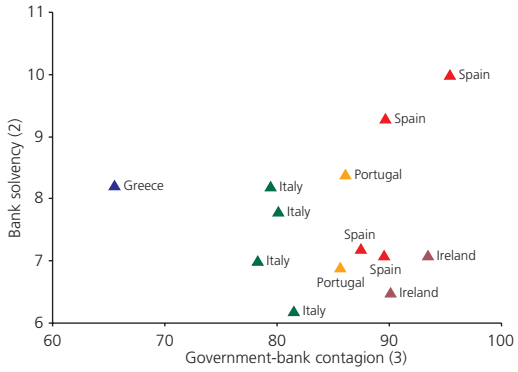
(1) Correlation between five-year sovereign CDS from each economy and CDS from Greece and Ireland in a two-month window prior to the announcement of aid from the EU, ECB and IMF.
(2) Brazil, Chile, China, Colombia, South Korea, Indonesia, Malaysia, Mexico, and Thailand.

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

Figure I.4

Risk of contagion in the European periphery: banks versus governments (1)

(percent)



(1) Sample of banks: Allied Irish Banks (Ireland), Alpha Bank (Greece), *Banco Comercial Portugués* (Portugal), *Banco de Sabadell* (Spain), *Banco Espirito Santo* (Portugal), *Banco Popolare Group* (Italy), *Banco Popular Español* (Spain), BBVA (Spain), Governor & Co Bank of Ireland (Ireland), *Intesa San Paolo* (Italy), *Monte dei Paschi di Siena* (Italy), *Santander* (Spain), and *Unicrédito* (Italy).
(2) Tier 1 as a percent of risk-weighted assets, under an adverse scenario and sovereign shock, reported in European stress tests on 23 July 2010.
(3) Correlation between five-year bank CDS and the respective five-year sovereign CDS between August and November 2010.

Source: Central Bank of Chile, based on data from Bloomberg and CEBS.

markets, causing an increase in the cost of bank financing. Moreover, bank deposits were declining, especially in Ireland and Greece (figure I.2).

In response to this situation, the European Union and the IMF approved an €85 billion support program for Ireland, with contributions from Denmark, the United Kingdom, and Sweden. At the same time, the Irish government proposed a fiscal adjustment of €15 billion to reduce the public deficit to 3% by 2015.

…with an ongoing risk of contagion in Europe

The high degree of financial integration in Europe and the systemic importance of Spain for other markets are factors that could contribute to increasing the risk of contagion. A large share of the cross-border credit of Portugal, Ireland, Italy, Greece, and Spain (PIIGS) is in Europe (75%). In Portugal and Greece, in particular, 88 and 81% of their cross-border loans, respectively, are held by European countries. At the same time, 59% of the peripheral countries' external bank debt comes from Europe. Ireland and Italy have the highest concentration of bank debt in European loans, while Portugal has the highest concentration in the PIIGS countries.

Table I.1

Cross-border bank exposure in Europe (1)

(percent of cross-border assets or liabilities for each country, as indicated)

	Europe		European periphery	
	Assets (2)	Liabilities (3)	Assets (2)	Liabilities (3)
European periphery	75	59	10	10
Portugal	88	62	38	37
Italy	74	68	7	6
Ireland	70	69	7	14
Greece	81	35	14	1
Spain	75	50	9	10
Other European countries	60	50	13	13
Germany	61	60	17	18
England	56	29	19	9
France	46	60	5	22
The Netherlands	61	55	7	12
Belgium	82	63	3	27
Austria	91	44	43	8
Denmark	76	91	3	9
Sweden	57	75	2	2
Rest of world	61	49	9	7

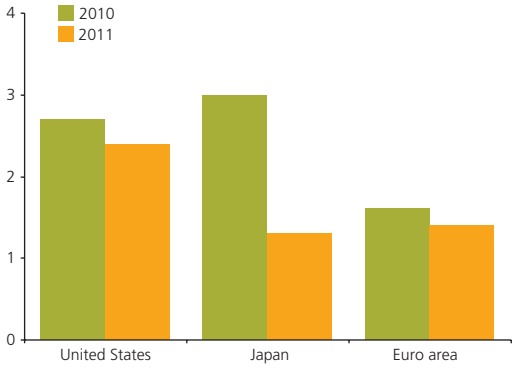
(1) Data for June 2010.
(2) Percent of the country's bank credit in the respective region.
(3) Percent of the country's bank debt that comes from the respective region.

Source: BIS.

Nevertheless, in this episode, financial contagion has been less intense and more heterogeneous than it was in May (Greece). In particular, contagion to countries outside the periphery has been lower (figure I.3). For banks in the peripheral area, however, contagion has been generalized and independent of the solvency of the respective institutions. This confirms, to some extent, the importance of the link between the real, public, and financial sectors (figure I.4).

Figure I.5

Growth forecasts for advanced economies (*)
(percent)

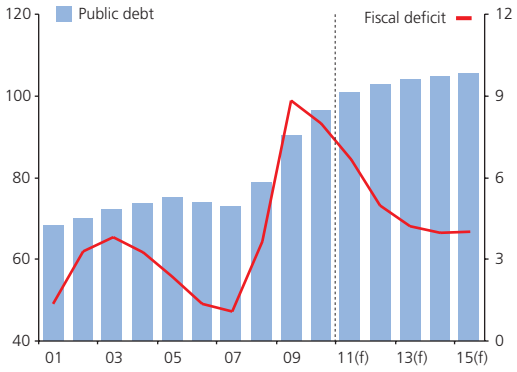


(*) September 2010 forecast.

Source: Consensus Forecast.

Figure I.6

Fiscal deficit and public debt in advanced economies (*)
(percent of GDP)

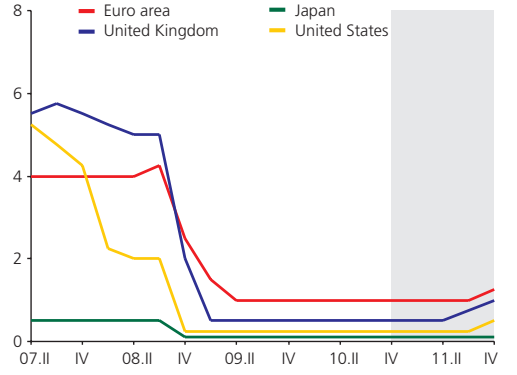


(*) Australia, Canada, the euro area, Japan, Sweden, Switzerland, the United Kingdom, and the United States.
(f) Forecast.

Source: IMF (2010).

Figure I.7

Monetary policy rate in advanced economies (*)
(percent)



(*) The gray area shows quarterly market forecasts through December 2011.

Source: Bloomberg.

At the close of this *Report*, the European Central Bank announced that it will extend its liquidity support programs to the banking system, while also increasing the purchase of sovereign bonds in countries with the highest relative risk. Spain has also announced additional fiscal adjustment measures. Taken together, these efforts suggest that despite the uncertainty regarding the fiscal and political capacity to support the larger countries, the region's governments and institutions are determined to make substantial adjustments in order to strengthen the economic recovery in Europe.

In general, the recovery of output in the developed economies remains weak…

The recent episode of turbulence adds to concerns that have arisen since mid-year regarding the vitality of the advanced economies. The growth outlook for the United States and Japan, in particular, is limited (figure I.5). Whereas in early 2010 there were signs of a similar or even faster recovery than in previous recessions, the current forecast is that the recovery in the United States will be slower[2]/.

There are several risk factors for the U.S. economic performance. The smaller banks are still cleaning up their balance sheets, which restricts credit and hinders the reactivation of the economy. Credit demand has dropped significantly as households and firms continue the deleveraging process, and the recovery of prices in the U.S. real estate sector has been weak[3]/. Finally, doubts remain about the recovery of housing demand, and, most recently, the banking sector is facing legal questionings on its foreclosure practices.

…so monetary policy is expected to continue being expansive in these economies

The fiscal position of the advanced economies has deteriorated significantly as a result of countercyclical measures and the financial sector support programs implemented during the subprime crisis (figure I.6). Not only does this imply that there are scarce resources for fiscal stimulus programs, but it also generates greater pressure to reduce the fiscal deficit and the growing financial burden.

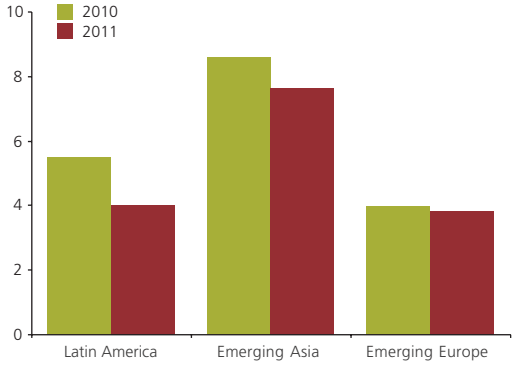
The advanced economies have therefore extended their monetary stimulus plans, and their monetary policy rates are expected to remain low in 2011 (figure I.7). In early November, the U.S. Federal Reserve announced a new purchase of US$600 billion in U.S. Treasury bonds, while the Bank of Japan announced the additional purchase of assets totaling ¥5.0 trillion in the coming year.

[2]/ Empirical evidence shows that the macroeconomic consequences of large financial crises are deep and the impact is strong (Reinhart and Rogoff, 2009).

[3]/ Empirical evidence at the international level suggests that the deleveraging process in the United States could continue (BIS, 2010a).

Figure I.8

Growth forecasts for emerging economies (*)
(percent)

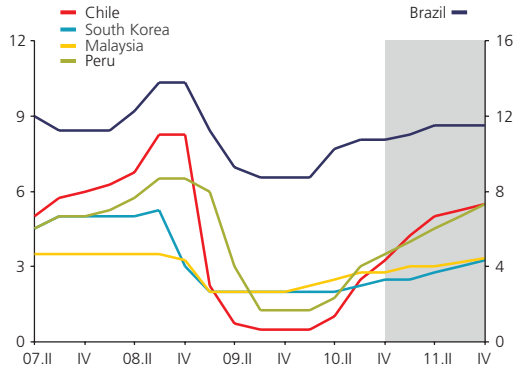


(*) September 2010 forecast.

Source: Consensus Forecast.

Figure I.9

Monetary policy rate in emerging economies (*)
(percent)

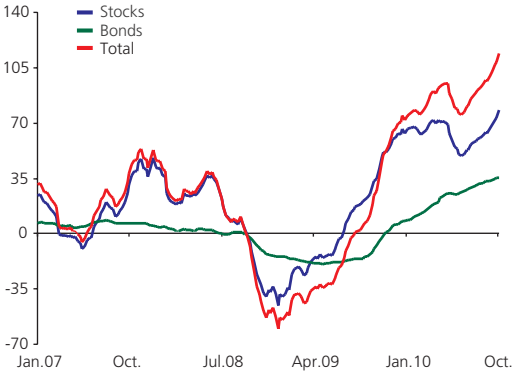


(*) The gray area shows quarterly market forecasts through December 2011.

Source: Bloomberg.

Figure I.10

Capital flow indicators for emerging economies (*)
(US$ billion, accumulated in 12 months)



(*) Sample of portfolio flows from Africa, Asia (excluding Japan), emerging Europe, Latin America, Middle East, and global investments in emerging economies.
Source: Emerging Portfolio Fund Research.

In contrast, the emerging markets and some smaller advanced economies have returned to a higher growth path

The emerging economies, especially in Asia and Latin America, grew strongly in 2010, and their growth forecasts for 2011 are higher than in the developed economies (figure I.8). China and India are the larger economies with high growth exhibiting growth rates for the year, at 10.7 and 6.0%, respectively. This higher relative growth could be explained by dynamic intraregional trade—especially in emerging Asia—and faster growth of domestic demand.

In response to this trend, the emerging economies have begun to normalize their macroeconomic incentives, withdrawing the fiscal stimulus and raising their monetary policy rates (figure I.9). This implies, among other things, a larger interest rate differential on short-term instruments in emerging economies, even after correcting for sovereign spreads.

The asymmetry between developed and emerging economies has prompted a new wave of capital inflows

Capital inflows to emerging economies have grown significantly in both foreign direct investment and portfolio investment (stocks and bonds), with some countries recording historical peaks (figure I.10). A number of countries have reacted to the capital inflows and their possible consequences by adjusting their international reserve accumulation programs, introducing controls on capital inflows, and/or modifying their financial regulations (box I.1).

The evolution of these inflows is highly dependent on the relative position of the emerging economies. Factors that could stem the flows include the intensification of financial tensions (flight to safety) or simply the deceleration of the economic dynamism due to lower external demand from the more advanced economies. In this regard, world trade showed some signs of a slowdown in September 2010[4]/.

Main external threats to the financial stability of the Chilean economy

The baseline scenario of this *Report* assumes that capital inflows to the emerging economies will continue as a result of asymmetries in the recovery of world activity, with slow growth in the advanced countries and faster growth in the emerging economies. It further assumes that the financial tensions in Europe will be addressed so as to contain the problems in Ireland and Greece and prevent contagion to other peripheral economies.

[4]/ CPB Netherlands Bureau for Economic Policy Analysis (2010).

Under this scenario, the biggest risk for the economies receiving the capital inflows is the development of financial vulnerabilities, which could show up in the form of price distortion in key assets, the overheating of the economy, the increase of credit risk in domestic financial intermediaries, and greater exposure to exchange rate risk and foreign currency liquidity risk.

The trends for indicators such as inflation, the growth of the monetary aggregates, and the economic growth forecast for the coming year do not suggest a generalized pattern of overheating in emerging economies. As highlighted in the last *Report*, however, the evolution of the prices of financial assets and consumer goods in China has led to a tighter credit policy, which raises the risk that the country's demand will ease up faster than forecast. At the same time, the United States could experience lower economic growth than assumed in the baseline scenario, given its household debt position and weaknesses in its real estate sector. In either case, Chile could see a slowdown in its external demand, which constitutes one of the risk scenarios for the Chilean financial system.

A second, more severe international risk scenario involves a worsening of the fiscal problems in Europe. If this risk were to materialize, there would be an increase in risk aversion among international investors, a rise in the cost of external financing, and a significant contraction in world output. This scenario would not only reduce external demand for Chilean products, but also generate a drop in consumption and investment in the face of heightened uncertainty.

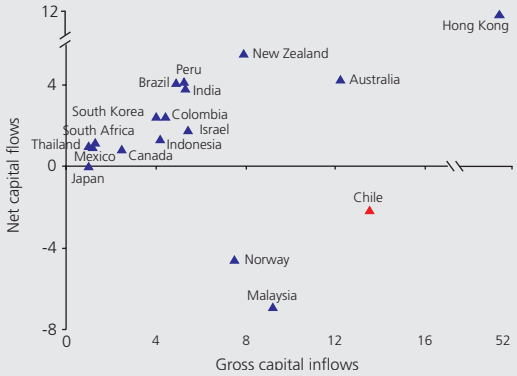
Given these external risk scenarios, it is particularly important to monitor and, where necessary, address the vulnerabilities that could arise in the current context of abundant external capital.

Box I.1: **Capital inflows and policy responses**

Since mid-2009, capital flows have varied widely across countries. In some countries—for example, Brazil, Colombia, India, and Peru—both gross and net capital inflows are positive, while in others, such as Chile, Norway, and Malaysia, capital inflows have been more than offset by the increase in overseas assets (figure I.11).

Figure I.11

Net versus gross capital flows (1)
(percent of GDP) (2)



(1) Capital flows accumulated between July 2009 and June 2010.
(2) For Brazil, Colombia, India, Malaysia, and Norway, data on capital flows are available through the first quarter of 2010.

Source: Central Bank of Chile, based on data from the Reserve Bank of Australia and IMF.

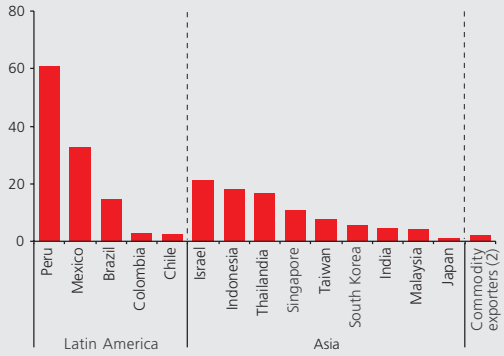
Historically, greater external capital inflows have brought both benefits and costs. On one hand, the greater availability of external capital represents an additional source of financing. On the other, this greater availability of resources can overheat the receiving economy, causing a loss in competitiveness and/or creating financial vulnerabilities[5]/. Consequently, the authorities in several countries have expressed concern regarding the challenges that massive capital inflows could raise for monetary policy and financial stability.

This box describes the policy responses adopted by several economies, starting in mid-2009, to address the entry of capital. These include the following: (1) reserve accumulation, (2) controls on capital inflows, and (3) changes in financial regulations.

The accumulation of international reserves has been very heterogeneous. Figure I.12 shows the change in international reserves as a share of the monetary aggregates (M2) between June 2009 and October 2010[6]/. Some countries with strong net capital inflows have accumulated significant reserves, as is the case of Peru and Brazil, while other countries with net inflows have not done so to the same extent (for example, Colombia and India). Countries with net outflows have recorded low reserve accumulation (Chile and Malaysia).

Figure I.12

International reserve accumulation (1)
(percent change over M2)



(1) Accumulated between June 2009 and October 2010.
(2) Simple average. It includes Australia, Canada, Norway, New Zealand and South Africa.

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

[5]/ In previous episodes, capital inflows have been associated with larger foreign currency mismatches, a misalignment of asset prices, and the risk of sharp capital flow reversals.

[6]/ Given that countries maintain vastly different reserve levels, the normalization using the size of the monetary aggregates makes growth rates more comparable.

Table I.2 summarizes the controls on capital inflows and changes in financial regulations adopted by emerging countries in Asia and Latin America to address the capital entry. In general, the countries that have received the largest net capital inflows (figure I.1) have tended to respond more actively.

In emerging Asia, countries like South Korea, India, Indonesia, Thailand, and Taiwan have modified their capital control policies in several ways. Thailand and South Korea have reinstated the capital gains tax on foreign-held local bonds. India, in turn, has placed limits on external loans, while Indonesia has restricted the minimum duration of investments in Central Bank instruments[7]/. In Latin America, Brazil initially imposed a 2% tax on capital inflows in the form of bonds and stocks and later raised the tax on bond flows to 4%.

Several countries have also introduced changes to financial regulations aimed at mitigating the consequences of massive external capital inflows. For example, Peru revised the reserve requirements on foreign currency operations originated overseas, and South Korea limited the banking system's foreign exchange derivative transactions with the exterior.

Table I.2

Policy responses

Country	Intervention	Type of measure	
		Control on capital inflows	Changes in financial regulations
Latin America			
Brazil	20 October 2009: A 2% financial transaction tax (FTT) was imposed on foreign capital destined for investment in fixed- and variable-income instruments. On 5 October 2010, the tax on capital going to fixed-income investments was raised to 4% and two weeks later to 6%. The FTT was also extended to the constitution fof initial and maintenance margins required by the securities, commodities, and futures exchanges.	x	
	September 2010: Liquidity was tightened through an increase in minimum bank reserve requirements in national currency, to 30%.		x
	3 December 2010: Reserve requirements were raised from 8 to 12% for checking accounts and from 15 to 20% for time deposits. Controls on consumer loans were also tightened, through an increase in capital requirements for banks with loans between 34 and 60 months.		x
Peru	12 September 2010: The reserve rate for foreign currencies was increased from 65% to 75% for foreign liabilities maturing in less than 2 years. The legal minimum reserve rate for foreign currencies was increased from 8.5 to 9.0%. These measures apply to financial firms and banks.		x
	August 2010: The commission on the sale of Central Reserve Bank of Peru securities to nonresidents was raised from 0.01 to 4.00%.	x	
Emerging Asia			
South Korea	18 November 2010: The capital gains tax on treasury bonds was reinstated for foreign investors.	x	
	12 June 2010 (announced on 9 June): The maximum derivative exposure was set at of 50% of capital for local banks and 250% for affiliates of foreign banks. Foreign currency futures transactions were also limited for local companies, to 100% of earnings.		x
Hong Kong and Singapur	Financial supervision was intensified, with restrictions on prudential limits on capital, liquidity, and debt. Changes were also introduced to stress test and corporate governance.		x
	Upper limits were imposed on the percent of mortgage loans financed and provisions for real estate loans were increased.		x
India	January 2010: Liquidity was tightened through an increase in minimum bank reserve requirements in national currency.		x
	Controls on capital inflows, through limits on external loan operations.	x	
Indonesia	7 July 2010 (announced on 16 June): A holding minimum period (one month) on treasury bonds was set for foreign investors, and hedging these purchases is prohibited.	x	
	June 2010: Changes were introduced to the limits on currency derivative operations by banks.		x
Thailand	12 October 2010: The 15% tax on capital gains and distributions from foreign-held local bonds was reinstated, after being suspended due to the crisis.	x	
Taiwan	October 2009: Controls on capital inflows, to prevent nonresidents from opening short-term deposit accounts.	x	

Source: Central Bank of Chile, based on data from central banks, finance ministries, and the press.

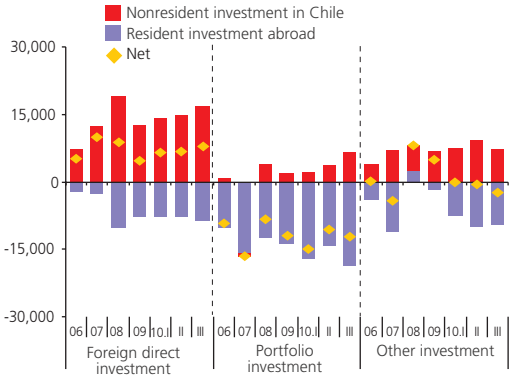
[7]/ At the same time, the Indonesian Central Bank announced the issue of nine- and twelve-month certificates of deposit, to promote investment at longer maturities.

II. External financing

Figure II.1

Financial account flows (*)

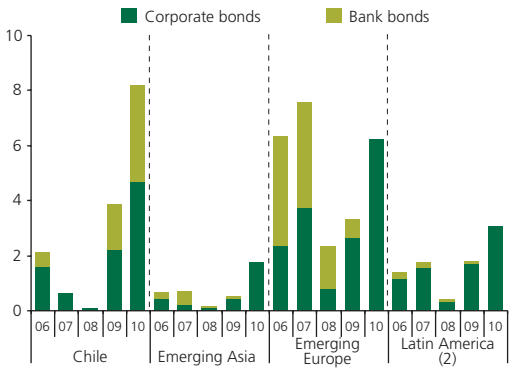
(US$ million)



(*) Accumulated flows, moving year.
Source: Central Bank of Chile.

Figure II.2

Long-term debt securities issued overseas by emerging economies (1)



(1) Data for 2010 include issues through 22 November.
(2) Excluding Chile.
Source: JP Morgan Chase.

Given the scenario described in chapter I, gross capital inflows to Chile have been significant, but the economy's liquidity and solvency position remains robust.

Conditions for access to external financing

Gross capital inflows have grown substantially since the last Report

In the third quarter of 2010, gross capital inflows reached US$10.9 billion. This is mainly explained by foreign direct investment flows of US$5.5 billion and portfolio flows of US$4.0 billion. In the case of the latter, gross nonresident portfolio investment was significantly greater than in the last several years, mainly tied to bank and public sector bond issues (figure II.1) (chapters IV and V). This greater external debt through bonds is not an isolated phenomenon, but rather is also found in other emerging economies in 2010 (figure II.2).

In historical terms, gross capital inflows increased significantly as a share of GDP in 2009–10 relative to the last inflow period (2003–07) (table II.1). In terms of composition, and excluding foreign direct investment (FDI), a comparison of the two periods reveals a significant increase in the share of inflows via portfolio debt, with a drop in direct debt with overseas banks (other investments). This has generated a substantial increase in the duration of the foreign currency liabilities of the banks and firms that issue the bonds (chapters IV and V).

At the same time, residents have increased their foreign asset holdings

Since the last *Report*, there has been a significant gross outflow of portfolio investment, which reached nearly US$8.0 billion. An important share of this outflow corresponds to the increase in external assets held by the pension funds and higher foreign fixed-income investment by the public sector—approximately US$1.5 billion. In the last quarter, there were net capital inflows of US$226 million, versus a net outflow of US$5.9 billion accumulated to September[1]/.

[1]/ In the period from January to September 2010, the current account reached nearly US$1.32 billion and the capital account nearly US$5.64 billion. The effect of the earthquake has been a net increase in external assets recorded in the financial account of around US$4.2 billion, an increase in transfers through the capital account of approximately US$5.6 billion, and inflows from transfers of US$1.5 billion, recorded in the current account.

Table II.1

Historical composition of investment flows

(percent)

	Average 2003-07	Average 2009-10
Liabilities		
Foreign direct investment (1)	61.9	50.0
Portfolio investment (1)	7.9	15.5
Equity securities	3.5	2.6
Debt securities	4.4	12.9
Other investment (1)	22.2	19.1
Total liabilities / GDP (2)	10.3	16.8
Assets		
Foreign direct investment (3)	14.2	28.7
Portfolio investment (3)	55.6	54.9
Other investment (3)	30.2	16.4
Total assets / GDP (2)	11.8	16.2

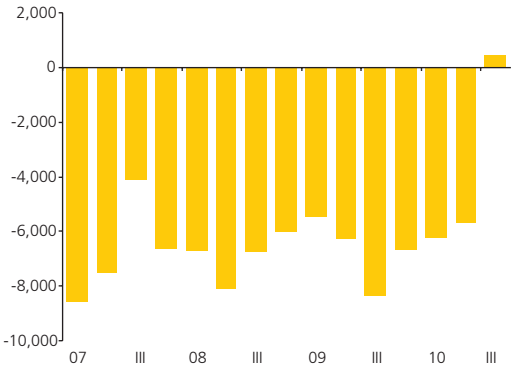
(1) Percent of total liabilities.
(2) GDP in current U.S. dollars.
(3) Percent of total assets.

Source: Central Bank of Chile.

Figure II.3

Net derivatives position of nonresidents (*)

(U.S. million)



(*) Sales minus purchases.

Source: Central Bank of Chile.

The increase in nonresident holdings of peso-denominated assets has occurred through the derivatives market

An alternative decomposition of capital flows involves disaggregating nonresident purchases of peso- and dollar-denominated assets. Excluding FDI, which reflects long-term considerations as well as the performance of short-term yields, the demand for pesos is made up of gross capital inflows in variable-income securities, nonresident purchases of bonds issued in Chile, the purchase of peso-denominated bonds issued overseas, and changes in the foreign exchange derivative position between residents and nonresidents.

The derivative position between residents and nonresidents has fluctuated the most as a peso investment mechanism for nonresidents. Specifically, nonresidents have traditionally held a long position in nondeliverable forwards (NDFs), which reached nearly US$6.2 billion at the end of the first quarter of 2010 but then briefly became a short position in the third quarter of the year (figure II.3)[2]/.

Capital inflows into variable-income instruments totaled nearly US$600 million in the second and third quarters, versus US$1.0 billion in the first quarter. Resident purchases of American Depositary Receipts (ADRs) have reduced these variable-income inflows in net terms (figure II.4). Finally, the purchase of peso-denominated debt assets (issued in Chile and overseas) totaled US$1.8 billion, of which US$787 million correspond to issues in Chile.

In sum, the magnitudes of investment by type of instrument suggest that portfolio management through foreign exchange derivatives has played an important role as a mechanism for nonresident investment in peso-denominated assets.

The cost of external financing has been stable since the last Report

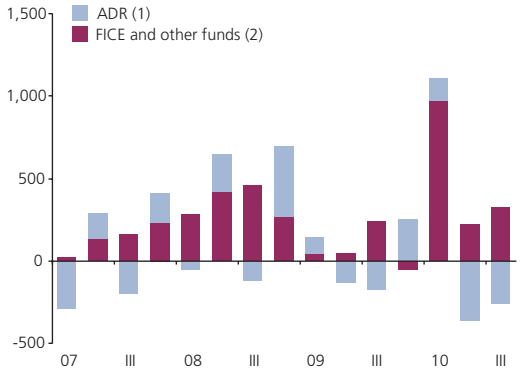
The cost of short- and long-term external financing has been stable around the levels seen in late 2009. The distribution of short-term financing across banks has varied significantly in the past three months (figure II.5). The average maturity of these loans has increased slightly relative to the last *Report* and is now just below the pre-crisis level, at approximately ten months. Maturities have also increased due to the larger share of bond debt (chapter V).

[2]/ The long (short) position of nonresidents consists of foreign exchange derivative investments involving the purchase (sale) of U.S. dollars and the sale (purchase) of pesos.

Figure II.4

Variable-income portfolio liability flows

(US$ million)



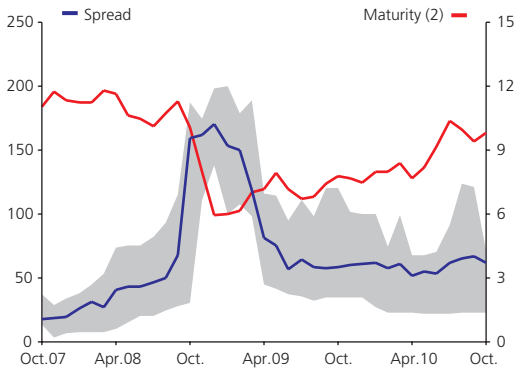
(1) Representative certificates of shares issued by resident firms.
(2) Investments made by foreign capital investment funds.

Source: Central Bank of Chile.

Figure II.5

Short-term external financing costs for resident banks (1)

(basis points, months)



(1) Floating-rate loans from unrelated banks. The gray area represents the interval between the 5th and 95th percentiles of the sample in each month.
(2) Moving quarter average.

Source: Central Bank of Chile.

Liquidity and solvency

The liquidity position has tightened slightly as a result of the increase in residual short-term external debt

Since the third quarter of 2009, the aggregate external liquidity indicators have deteriorated slightly as a result of the increase in residual short-term external debt (table II.2). Nevertheless, the available external financial liquidity is more than adequate to cover the residual short-term external debt (figure II.6). As emphasized in previous *Reports*, the inclusion of resources in the Economic and Social Stabilization Fund (ESSF) improves the external liquidity indicators substantially. Moreover, internal estimates indicate that if residual short-term external debt continues to follow the trend observed in the past several months, the liquidity buffer will remain positive.

Table II.2

External solvency and liquidity indicators

(percent)

	Average	2007	2008	2009	2010		
	2001-06	IV	IV	IV	I	II	III
Solvency (1)							
External debt / GDP	49	34	38	45	42	42	43
Current account balance (moving year) / GDP	0.8	4.5	-1.5	2.6	2.6	1.6	1.2
Current account balance (annualized) / GDP	--	3.8	-4.9	2.5	2.9	0.1	0.4
External debt / exports	133	72	83	119	111	112	111
Net international position / GDP (2)	-33.8	0.4	-14.4	-11.9	-6.0	-7.7	-6.9
Liquidity (3) (4)							
RSTED / external debt	31	40	45	38	38	40	41
RSTED / official international reserves	83	132	124	111	110	125	129
RSTED / unrestricted NIR	112	145	127	110	113	129	133
Financial RSTED / unrestricted NIR	75	90	90	81	77	82	87
RSTED / (NIR + ESSF) (5)	--	72	66	76	77	88	83

(1) Accumulated GDP in twelve months.
(2) GDP at constant real exchange rate (baseline index Sept.10=100).
(3) RSTED: Residual short-term external debt.
(4) Unrestricted NIR: official reserves minus short-term foreign currency liabilities (maturing BCX, BCD, swaps), Treasury deposits with the Central Bank, etc.
(5) ESSF: Economic and Social Stabilization Fund.

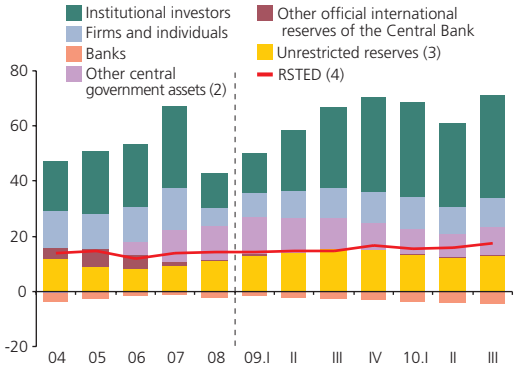
Source: Central Bank of Chile.

In the case of firms, the increase in short-term external debt is explained almost entirely by foreign trade operations. In other words, this greater debt is directly associated with the expansive cycle of the Chilean economy. Short-term bank loans grew in the last quarter, but they are still in levels comparable to those recorded in late 2009. Thus far, the implications of these increases in terms of foreign currency risk exposure are limited (chapters IV and V).

Figure II.6

Net available external financial liquidity

(percent of GDP) (1)



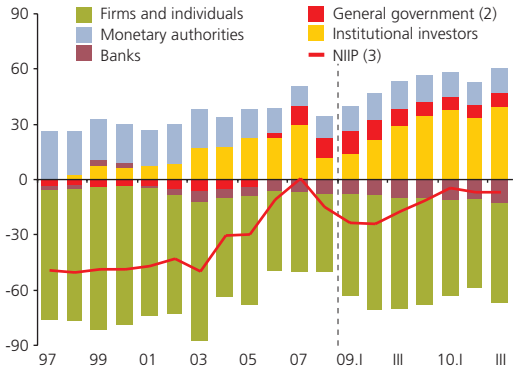
(1) GDP at constant real exchange rate (baseline index Sept.10 =100). External liquidity includes short-term loans, currency and deposits, and portfolio investment. It does not include derivative positions.
(2) Consolidated government minus official international reserves.
(3) Official reserves minus short-term foreign currency liabilities (maturing BCX, BCD, swaps).
(4) Residual short-term external debt.

Source: Central Bank of Chile.

Figure II.7

Net international investment position

(percent of GDP) (1)



(1) GDP at constant real exchange rate (baseline index Sept.10=100).
(2) Central government and municipalities.
(3) Net international investment position.

Source: Central Bank of Chile.

The external solvency position of the Chilean economy has been stable since the last Report

On aggregate, Chile's net international investment position (NIIP) has been constant throughout the year, at historically high levels (figure II.7). In terms of components, the main changes have been associated with the net liabilities of households and firms and the net assets of the institutional investors, primarily the pension funds. Pension fund assets have shifted markedly because of greater investment abroad as well as portfolio valuation.

Consequently, relative to the first quarter, external debt rose 5.2% in the second quarter of 2010 and 12.5% in the third quarter, due to the increase in short-term bank debt, the expansion of commercial loans to firms and individuals, and the growth of long-term government debt (table II.3). Nevertheless, external debt remained stable as a percentage of both GDP and exports (table II.2).

Table II.3

External debt of the Chilean economy

(U.S. million)

	2007	2008	2009	2010		
	IV	IV	IV	I	II	III
Total external debt	55,733	64,318	74,041	74,318	78,212	83,607
Banks	10,408	13,140	15,531	15,478	15,736	18,629
Firms and individuals	41,351	47,944	54,519	54,960	58,616	59,499
Consolidated government	3,974	3,234	3,991	3,880	3,860	5,479
Short-term external debt (*)	10,977	14,619	17,477	16,668	18,903	20,954
Banks	974	3,055	7,508	6,231	6,097	7,959
Firms and individuals	9,987	11,549	9,961	10,432	12,802	12,990
Commercial loans	8,478	8,340	7,591	7,708	9,350	10,181
Consolidated government	16	15	8	5	4	5
Long-term external debt (*)	44,756	49,699	56,564	57,650	59,309	62,653
Banks	9,434	10,085	8,023	9,247	9,639	10,670
Firms and individuals	31,364	36,395	44,558	44,528	45,814	46,509
Consolidated government	3,958	3,219	3,983	3,875	3,856	5,474
Residual short-term external debt	22,370	28,763	28,039	28,260	31,527	34,188
Banks	7,001	10,107	11,717	11,222	12,193	14,687
Firms and individuals	14,467	18,039	16,140	16,893	19,167	19,340
Commercial loans	8,479	8,426	7,591	7,708	9,386	10,108
Consolidated government	902	617	181	146	168	161

(*) Contractual maturity.

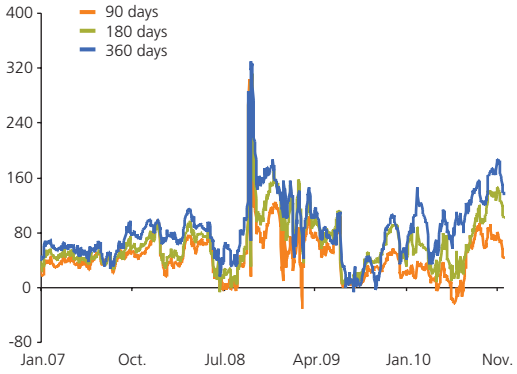
Source: Central Bank of Chile.

III. Domestic financial markets

Figure III.1

Liquidity pressure in the peso money market (*)

(basis points)



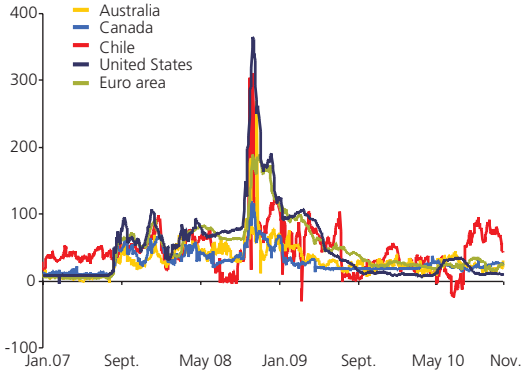
(*) Measured through the average prime-swap spread.

Source: Central Bank of Chile.

Figure III.2

International comparison of liquidity pressure in money markets (*)

(basis points)



(*) Spreads equivalent to the 90-day average prime-swap spread.

Sources: Central Bank of Chile and Bloomberg.

Relative to the last Report, pressure has risen in the money market due to changes in the institutional investors' portfolio. An analysis of asset prices indicates that the trends for the exchange rate and long rates are in line with their economic determinants, while the stock price index has increased more than would be expected based on stock valuation models.

Since the last Report, pressure has risen in the peso money market

Financing conditions have deteriorated in the peso money market since late July, with an increase in the prime-interbank swap spread at all maturities, but especially between 180 and 360 days (figure III.1). As of the statistical closing date of this *Report*, the spread at 90, 180, and 360 days was 43, 103, and 135 basis points, respectively. At these levels, the 90-day spread is around the average for 2005–10, while the 180-day spread is 46 basis points over its average and the 360-day spread is 62 basis points higher for the same period. This contrasts with the trends for similar indicators in other economies, where both the level and volatility have been lower than in Chile (figure III.2).

A large share of the spread dynamics is related to portfolio adjustments by the institutional investors, who have significantly reduced their investments in short-term trading instruments (box III.1). In particular, the pension funds withdrew time deposits totaling more than Ch$1.3 trillion in the third quarter (figure III.3). The mutual funds also reduced their position in time deposits in the third quarter of 2010, as a result of a reduction in type 1 mutual fund portfolios (MF-1) following a revaluation process in late July.

Recently, the mutual funds and pension funds have begun to reverse the cutback in time deposit holdings, in a period of greater external volatility. Consistent with the analysis in box III.1, this portfolio rebalancing has been accompanied by a decrease in the prime-swap spread: since late October, the 90- and 180-day spreads have both fallen 33 basis points, while the 360-day spread has dropped 49 basis points.

The portfolio adjustments by the institutional investors are part of their search for yield process…

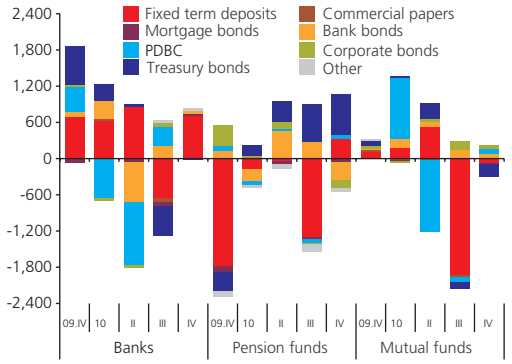
Over the course of this year, the pension funds have increased their position in foreign fixed-income mutual funds in US$7.0 billion, in response to higher yields relative to comparable domestic alternatives as well as legal restrictions on variable-income investments[1]/. These investments are concentrated in high-yield bonds and local-currency and dollar-denominated bonds issued by

[1]/ On 4 November 2010, the Central Bank increased the investment abroad limit for the pension funds according to the maximum levels established in Decree Law 3,500 (chapter VI). At the time of modification, however, the pension funds had room to increase their investments overseas under the old limits.

Figure III.3

Financial intermediation and fixed-income portfolio management (*)

(change in stock, Ch$ billion)



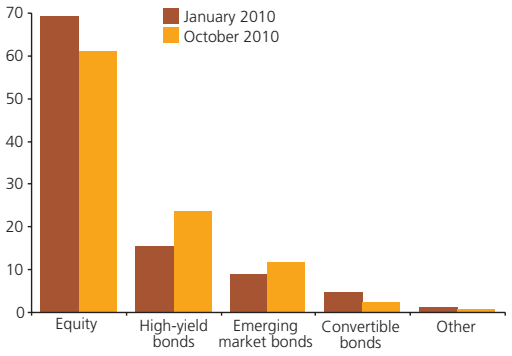
(*) Data through 19 November 2010.

Source: Central Bank of Chile, based on data from the Central Securities Depository.

Figure III.4

Pension fund investments in foreign mutual funds

(percent of investment in foreign mutual funds)

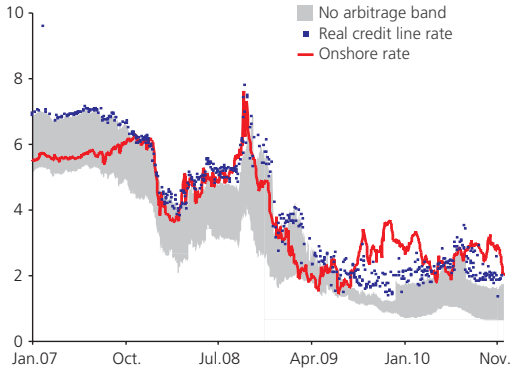


Source: Superintendence of Pensions.

Figure III.5

Liquidity pressure in the dollar money market (*)

(percent)



(*) One-year maturity. The dots represent the maximum rates recorded in the financing of local banks that use external credit lines. For further details, see Opazo and Ulloa (2008).

Sources: Central Bank of Chile and Bloomberg.

emerging economies, at the expense of a reduction in domestic time deposits (figures III.3 and III.4). The pension funds also took long forward positions in foreign currencies, especially between the dollar and the Brazilian real, for a monthly average of US$1.0 billion in 2010; this is explained by the interest rate differential between Chile and Brazil.

The MF-1 revaluation process—which coincided with a contraction in managed funds—was related to both the increase in the expected path of the monetary policy rate and the increase in prime rates seen during the pension funds' portfolio rebalancing process, as mentioned above. The implications in the money market of the pension funds' search for yield were thus amplified by the possible effects on the short-term mutual fund portfolios.

…and the evolution of the institutional investors' time deposit holdings will need to be monitored

The role of the institutional investors in the demand for time deposits presents some challenges for the issuers of these instruments. First, the holding of these instruments will depend on the evolution of the differential between the returns on time deposits and on assets with a higher expected yield, a variable which is not easy to predict, as it depends on the monetary policy normalization rate at the international level and, certainly, on the evolution of financial tensions in international markets, among other factors (chapter I). Second, new regulations on the valuation of the MF-1 funds will come into effect in March 2011, which could shorten the average maturity and/or trigger a contraction in the volume of the time deposits in the MF-1 portfolio. However, the evidence on similar regulatory changes in countries like Brazil, Spain, and France suggests that the contraction in money market mutual fund activity should not be significant (box III.2).

The dollar money market showed signs of increased tension since the last Report, which coincided with the sharp reversal of nonresidents' currency forward positions

Throughout much of the second half, the onshore spread—an indicator for estimating the pressure in the short-term dollar money market—has been highly volatile, with values exceeding the level that would indicate an absence of theoretical arbitrage conditions. Recently, however, there has been a fast convergence to the theoretical arbitrage level (figure III.5).

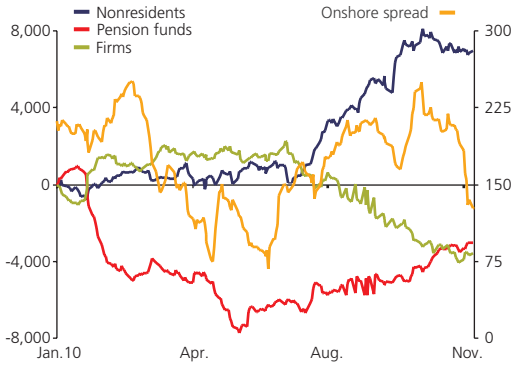
The increases recorded since late July coincide with a strong increase in net dollar forward sales by nonresidents, which exceeded US$7.0 billion in the year, thus reversing their traditional long position in this market. The pressure associated with these changes was partly offset by the reduction in the short position of the pension funds and an increase in the long position of firms, for US$3.3 billion and US$3.1 billion, respectively (figure III.6).

The evolution of the onshore spread has been accompanied by a greater dispersion in the banks' actual funding costs (shown by the blue dots in figure III.5). The spread is at levels near the highest interbank financing costs. This situation does not necessarily indicate that there are frictions impeding the arbitrage of the yield differential between local and external markets, but rather that the marginal cost of financing could be determined by the banks that are financed at a higher rate. This situation could thus generate opportunities for arbitrage between institutions with different external funding costs in dollars.

Figure III.6

Accumulated dollar forward flows and the onshore spread (*)

(US$ million, basis points)



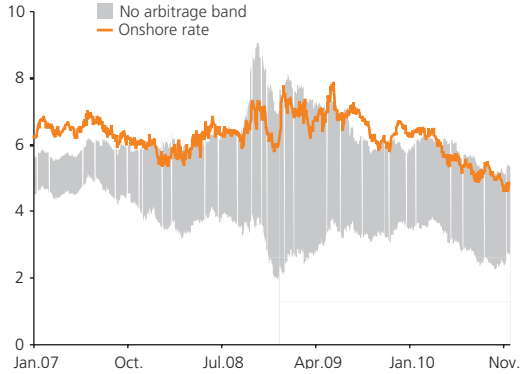
(*) Positive flows indicate net sales; negative flows, net purchases. Onshore spread at one year.

Source: Central Bank of Chile.

Figure III.7

Long-term dollar financing rates (*)

(percent)



(*) Ten-year corporate bonds. For further details, see Álvarez and Opazo (2009).

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

In terms of asset prices, the rates on fixed-income instruments remain in line with international rates

The evolution of the long-term synthetic rate in dollars has, on average, followed its international benchmark throughout 2010 (figure III.7)[2]/. Thus, while external interest rates have fallen somewhat more than domestic long-term rates, changes in foreign currency hedging costs and spreads have offset the differential. Because this analysis is based on AA rated corporate bonds for the average of the economy, the relative financing conditions of individual firms could vary, and some firms may find it more attractive to issue debt overseas (chapter IV).

The evolution of the exchange rate has also been determined primarily by external factors

The nominal exchange rate fell 12%, or 66 pesos to the U.S. dollar, between June 2010 and the close of this *Report*. Internal estimates, using a fundamental-based model, suggest that the evolution of the exchange rate is mainly associated with external factors, including Chile's sovereign spread, the terms of trade, and the international parity of the U.S. dollar. The dollar's international trend alone can explain a large share of the domestic exchange rate appreciation in this period. Finally, exchange rate volatility averaged 7.7% during the year, which is slightly higher than the average for 2005–07 (6.5%), but significantly lower than in 2008–09[3]/.

The domestic stock market index recorded high yields compared to the regional and world markets

The Chilean stock exchange followed an upward trend in 2010, with a yield of 38% measured in pesos at the close of this *Report*. This points to a more dynamic performance relative to other emerging economies and the world as a whole. The domestic stock market trend was led by the manufacturing, retail, and commodity sectors. An analysis of the evolution of the stock price index in Chile reveals that it currently exceeds estimates based on different valuation models (box III.3). Consequently, both residents and nonresidents need to carefully analyze their stock market investment decisions and, especially, their investment financing.

[2]/ The synthetic rate is an equivalent rate in dollars, which is obtained by adjusting a domestic interest rate to include hedging costs (for example, through a cross-currency swap) (Álvarez and Opazo, 2009).

[3]/ Volatility calculated using the methodology in Alfaro and Silva (2008).

Box III.1: **Determinants of the prime-swap spread**

In recent years, the prime-interbank swap spread and its equivalents in other markets (like the Libor-OIS spread) have become a benchmark for the analysis of funding liquidity conditions in the banking system[4]/. In the case of Chile, as mentioned in chapter III, this spread increased significantly and was also highly volatile in 2010. For example, the average 90-day spread increased approximately 40 basis points between July and October relative to its average value in the first half.

This box assesses the determinants of the prime-swap spread in the last few years, using a methodological approach similar to Michaud and Upper (2008) and Taylor and Williams (2008). The estimation assumes that the evolution of the spread is associated with the following variables:

$$s = f(rc, rf, pm), \qquad (1)$$

where *rc* is the credit risk premium, *rf* is the funding liquidity risk premium, and *pm* is the market liquidity risk premium.

Credit risk is measured through the differential between the internal rate of return (IRR) of the LVA index for the banking sector and the IRR of sovereign bonds with similar characteristics[5]/. Part of the funding liquidity risk premium is approximated with the Libor-OIS spread, which is linked to uncertainty in external bank funding sources, mainly during the subprime crisis. The market liquidity premium is approximated through the turnover of time deposits in the secondary market. The model also considers supply and demand factors associated with pension funds and mutual funds portfolio management. In particular, given the importance of these institutional investors in the fixed-income market, their deposit holdings are linked to a demand variable for these instruments, and the PDBC stock is included as a possible substitute for time deposits. The model also considers dummy variables for the period in which the term liquidity facility (*Facilidad de Liquidez a Plazo*, or *Flap*) was open[6]/.

Equation (1) is estimated using weekly data for the period from January 2007 to September 2010. The results indicate that at least three variables are statistically significant: (i) the credit risk premium, (ii) external funding liquidity, approximated by the Libor-OIS spread, and (iii) variables related to the relative demand for time deposits[7]/.

To evaluate the economic relevance of these variables, their contribution to the evolution of the 90-day prime-swap spread was simulated from 2007 to the present (figure III.8). When the tension from the subprime crisis was highest, both the credit risk premium and access to external liquidity were important for explaining the spread's evolution. The incorporation of the *Flap* significantly reduced the spread while it was operating[8]/. Finally, the contribution of the institutional investors has recently been stronger, explaining the majority of the increase in the spread in the third quarter of 2010. This is consistent with the sharp reduction in time deposit holdings by these agents in the third quarter—approximately Ch$3.2 trillion (figure III.3). Thus, the spread should converge to lower levels as the pension funds and mutual funds stabilize their time deposits, which is in line with recent trends.

Finally, the above results hold for the prime-swap spread at longer maturities of six and twelve months (figure III.9). In particular, the institutional investors have an impact on the spread at all maturities, explaining approximately 45 basis points of the change in the 90-day spread in the third quarter of 2010, 50 basis points in the 180-day spread, and 65 basis points in the 360-day spread.

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[4]/ This spread is the difference between the interest rate on deposits that domestic banks offer to their prime clients (institutional investors and large firms) and the average interbank swap rate (called the swap *promedio cámara*, or SPC, in Chile). For a more detailed discussion of this type of spread, see box I.2, *Financial Stability Report*, Second Half 2008.

[5]/ The LVA index for the banking sector groups all bonds issued by domestic banking entities; its IRR is the weighted average of the bonds included in the index.

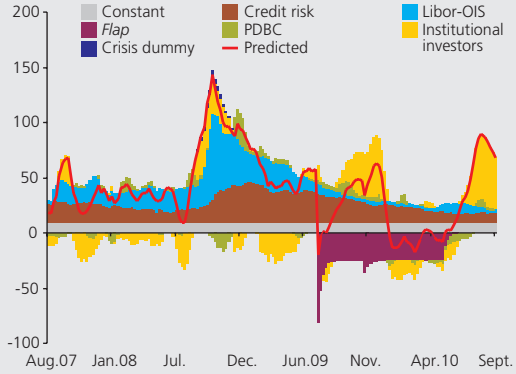
[6]/ The model also controls for the spread's increase in the fourth quarter of 2008, due to the pressure from the subprime crisis.

[7]/ In several model specifications, the market liquidity spread variable is not statistically significant.

[8]/ These results are consistent with the estimates reported in the *Financial Stability Report*, First Half 2009 (box III.1).

Figure III.8

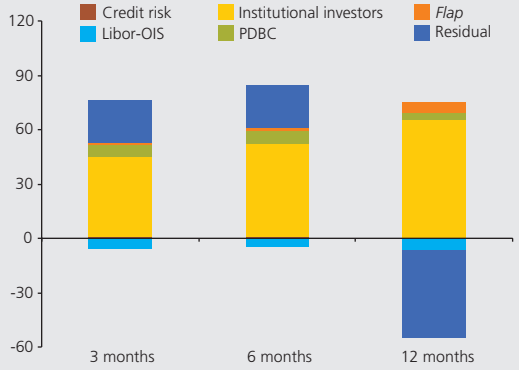
Components of the 90-day prime-swap spread
(basis points)



Source: Central Bank of Chile.

Figure III.9

Components of the prime-swap spread by maturity (*)
(basis points)



(*) Third quarter of 2010.

Source: Central Bank of Chile.

Box III.2: New regulatory guidelines on the valuation of type 1 mutual funds

In October 2010, the SVS published the Administrative Directive 1990, which modified the valuation model for type 1 mutual funds (MF-1) effective 1 March 2011[9]/. The new directive allows funds to continue valuing the portfolio at the interest rate prevalent at the beginning of the investment, as long as the difference from market value is not significant. In this regard, the regulatory guidelines established the following criteria:

1. Difference in portfolio value. If the amortized value (AV) of the total portfolio deviates from the market value (MV) by more than 0.1%, then one or more of the instruments must be adjusted so as to reduce the deviation to a maximum of 0.1%.

2. Difference at the instrument level. The above adjustment requirement also applies to individual instruments, but the limits are based on the type of asset: 0.6% for nominal instruments and 0.8% for instruments denominated in currencies other than the peso or in indexed units of account.

This valuation model contrasts with the current regulation. Under the current guidelines, the portfolio revaluation decision is left to the discretion of the chief executive of the fund, with no specification of the criterion for determining whether the AV-MV differential is significant[10]/. The new guidelines thus reduce the discretionary component of the decision to revalue the managed portfolios.

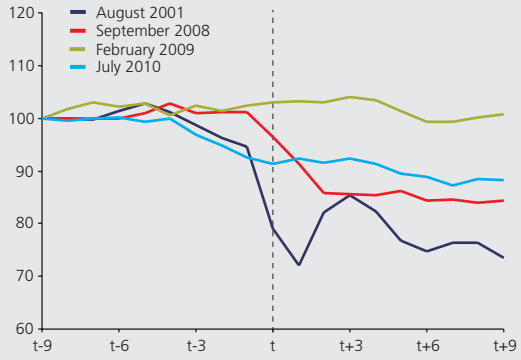
The change in the regulatory guidelines on MF-1 valuation provides benefits in the following areas:

1. Probability of sharp portfolio swings. The assets managed by the MF-1 funds can fluctuate strongly, especially during revaluation episodes (figure III.10). The regulatory change should reduce the probability of investor runs as described by Diamond and Dybvig (1983): since the regulations reduce the potential difference between a fund's market value and its amortized value, it thereby also limits the advantage gained by the first investor to withdraw funds. Similarly, because the amount of the revaluation is not predetermined, the probability of generalized withdrawals should also be reduced, because, again, the advantage to the first investor is limited[11]/.

   From the perspective of financial stability, the main advantage of the new regulations is that they reduce the probability of sharp portfolio swings. The IMF (2010) has proposed moving toward market price valuation models in order to reduce the probability of such events. The new regulatory guidelines being implemented by the SVS are a step closer to that recommendation, but they should continue advancing toward a market pricing valuation approach.

Figure III.10

Net worth impact of MF-1 revaluation (*)
(baseline index t–9 before revaluation=100)



(*) Dashed line represents the day the revaluations were announced.

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

[9]/ The MF-1 are funds that invest in short-term debt instruments and whose average maturity cannot exceed 90 days.

[10]/ SVS Administrative Directive 1579 of 17 January 2002.

[11]/ If the MF-1 are valued at market price, the probability of investor runs is equal to zero.

2. Reduction of information asymmetries. Establishing a valuation metric mitigates the potential advantages that informed agents might have over uninformed agents[12]/. For example, under the old guidelines, differences in AV and MV valuation could be such that the revaluation process generated average yields of up to 0.5%, which could potentially be arbitraged by informed clients to the detriment of investors with a more passive profile (uniformed clients) (table III.1).

Table III.1

MF-1 revaluation events

	Implicit rate differential (1)	Fund managers that revalued (2)	Average return (3)
	(basis points)	(percent)	(percent)
Sept.08	-195	100	-0.50
Feb.09	220	84	0.56
Jul.10	-80	68	-0.20

(1) Estimated difference between the average purchase rate and the average market rate of the instruments in the portfolio, before the revaluation event. Assumed maturity of around 90 days.
(2) Number of fund managers that revalued over the total number of fund managers.
(3) Weighted average yields of MF-1 shares on the day of the revaluation.

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

3. Internalization of risk. The new regulations are aimed at having agents internalize the risk implicit in the assets that make up the MF-1 portfolio. Under the old guidelines, the return volatility of the MF-1 funds was artificially low in normal times.

One possible effect of the regulatory transition in Chile is that the MF-1 funds could see an increase in return volatility, which would reduce their attractiveness for clients looking to earn yields on temporary excess liquidity. Under this scenario, the net worth managed by this industry could contract. However, the international evidence on the implementation of market price valuation models—which could imply even more volatility than the proposed regulation—suggests that the impact on the managed funds should be low[13]/. At the same time, the fund managers could also shorten the average maturity of their portfolio, thereby reducing their sensitivity to changes in market conditions.

[12]/ The literature in this area provides evidence for the United States on transfers from uninformed to informed agents (Lyon, 1984).

[13]/ This was the case in Brazil (2002), Spain (2008), and France (2008).

Box III.3: Determinants of the domestic stock market evolution

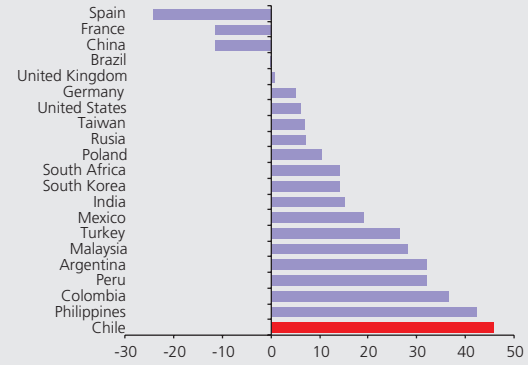
The stock market recorded a significant increase in prices in the current year. The *Ipsa* grew 38% when measured in pesos and 46% in dollars, as of the statistical closing date of this *Report*. In terms of valuation, the price-earnings (P/E) ratio was 21.3 times in November 2010, which is above the average for the 2005–07 period (19 times). Other emerging market stock exchanges have also risen strongly (figure III.11).

This box explores the determinants of the stock market dynamics in Chile. Given the lack of consensus on the correct model, the exercise considers four different valuation models.

Figure III.11

Stock market returns in 2010

(dollar index, percent)



Source: Bloomberg.

Models

The first model estimates the determinants of the *Ipsa* based on economic fundamentals. The model relates the level of the stock market index to the evolution of output (measured through the *Imacec*) and the terms of trade (measured through the copper and oil price). The model also controls for the long-term interest rate and the price level. The results of this estimation show a positive difference between the observed and estimated *Ipsa* in November, which is statistically different from zero at the 1% confidence level (figure III.12).

Figure III.12

Evolution of the *Ipsa* according to an economic fundamentals model

(daily values, index)

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

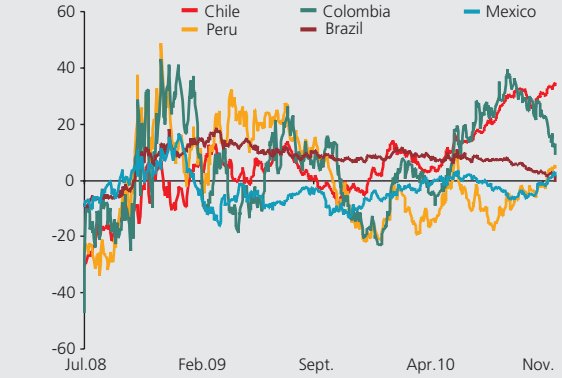
The second model estimates the *Ipsa* index against the evolution of a regional stock price index measured in dollars (CAPM model), an approach used in other emerging economies[14]/. The regression residuals are associated with the unexplained component of the domestic stock index, such that a positive (negative) value indicates overvaluation (undervaluation) (figure III.13). The results confirm that the increase in the stock market index in 2010 is, in part, specific to Chile, with an unexplained variation greater than zero in November 2010 (at the 1% confidence level). Moreover, at the closing date of this *Report*, Chile had the highest unexplained variation in a sample of ten emerging economies.

[14]/ The sample includes the economies with the greatest stock market growth in 2010, as well as some systemically important economies: Brazil, Chile, China, Colombia, South Korea, Mexico, Peru, The Philippines, Thailand, and Turkey.

Figure III.13

Unexplained component of the *Ipsa* according to the CAPM model (*)

(percent)



(*) The difference between the value estimated by the CAPM model and the real value of the *Ipsa*.

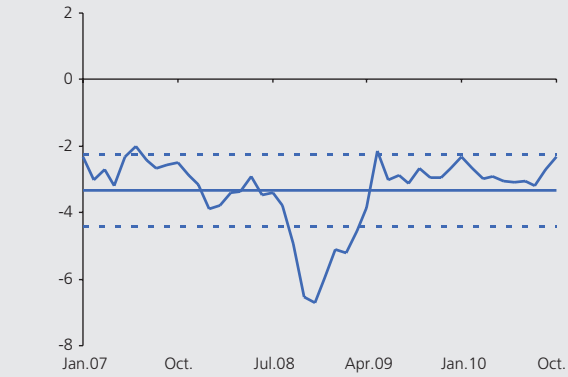
Source: Central Bank of Chile, based on data from Bloomberg.

The third model complements the previous econometric estimates. Known as the Fed model, it assumes that there is a stable relationship between a long-term government bond and the price-earnings ratio of firms[15]/. When the difference between these variables is greater than the average, stock prices are considered to be above their long-term values. This is precisely the case in Chile starting in January 2010, although the discrepancy is less than one standard deviation (figure III.14).

Figure III.14

Excess returns according to the Fed model (*)

(percent)



(*) BCU10 minus the ratio of expected earnings to the *Ipsa* price. The dashed lines represent +/– one standard deviation from the average.

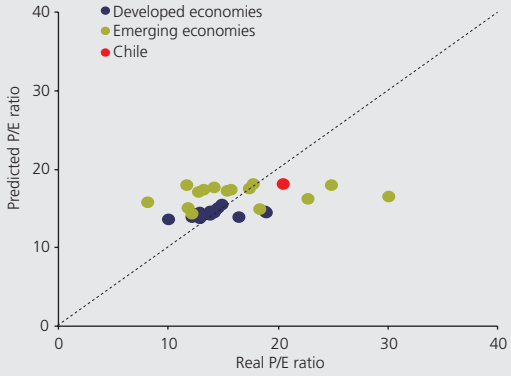
Source: Central Bank of Chile, based on data from Bloomberg.

Finally, the fourth approach estimates the P/E ratio as a function of inflation and output growth for a cross-section of countries[16]/. Based on this model, the current P/E ratio for Chile is above its estimated long-term level as of September 2010, at the 1% level of statistical significance (figure III.15).

Figure III.15

Actual and estimated price-earnings ratio according to a cross-section analysis of countries (*)

(times)



(*) Data through September 2010.

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

In sum, three of the models, to varying degrees, indicate that the *Ipsa* is above the level suggested by the different approaches. Nevertheless, the magnitude of the deviations, combined with indicators of leveraged exposures in stocks of households and firms, suggests that the possibility of a price correction in this asset poses limited risks to financial stability.

[15]/ Federal Reserve Board (1997).

[16]/ Silva (2007), based on a standard growth model, estimates a statistically significant positive relationship for GDP growth and a negative relationship for inflation, with the latter variable interpreted as a proxy for the discount rate.

IV. Credit users

Corporate debt has continued to increase. Although the growth was led by an expansion of external debt, it has not generated a significant increase in currency mismatches or a deterioration of the firms' financial position. For households, credit risk has not increased substantially despite the strong recovery of consumption.

Firms

Corporate debt has grown, driven mainly by the increase in external financing

The total debt of nonfinancial firms grew 8.3% in real annual terms in the third quarter of 2010. External debt was the main source of this growth. In particular, external loans and bonds, which accounted for 27.3% of total debt in September 2010, posted annualized increases of 9.7 and 17.6%, respectively, in the same period (table IV.1). Loans tied to foreign direct investment (FDI) grew at rates around 80% in the second and third quarter of the year, accounting for about two percentage points of total debt expansion.

Table IV.1

Sources of financing

(real annual change, percent)

	2007	2008	2009	2010			Contribution to growth (1))	
Indicator	IV	IV	IV	I	II	III	10.II	10.III
Bank loans	11.8	11.5	-2.3	1.2	5.1	5.2	2.7	2.7
Commercial loans	12.2	8.5	7.7	6.7	6.5	4.8	2.6	2.0
Foreign trade loans	4.3	35.3	-40.1	-23.8	7.1	0.9	0.4	0.1
Factoring and leasing	18.5	4.2	-11.1	-3.0	-6.1	12.8	-0.4	0.7
Locally listed instruments (2)	6.1	14.7	18.3	9.2	5.2	2.1	0.9	0.3
External debt (3)	9.0	9.5	15.0	12.7	19.0	16.6	5.8	5.2
Commercial credits and loans	9.4	8.1	12.7	8.9	10.8	9.7	2.6	2.4
Bonds	-3.0	20.0	21.2	15.9	31.1	17.6	1.1	0.7
FDI loans	24.2	9.6	28.8	47.4	80.1	82.0	2.0	2.1
Total	**10.1**	**11.3**	**5.8**	**6.0**	**9.3**	**8.3**	**9.3**	**8.3**

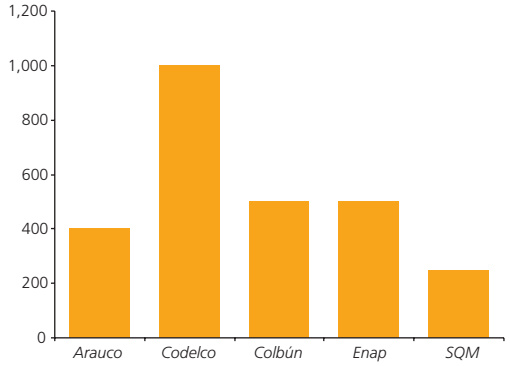
(1) Percentage points.
(2) Corporate bonds (except *Codelco*), securitized with commercial papers and nonbank assets.
(3) Includes loans associated with FDI. Converted to pesos using the average exchange rate in the period from March 2002 to September 2010.

Source: Central Bank of Chile, based on data from *Achef*, SBIF, and SVS.

Figure IV.1

Corporate bonds issued overseas (*)

(US$ million)



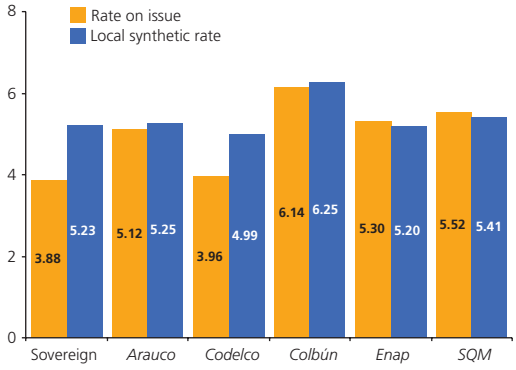
(*) Issued in 2010.

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

Figure IV.2

Interest rates on corporate bonds issued overseas (*)

(percent)



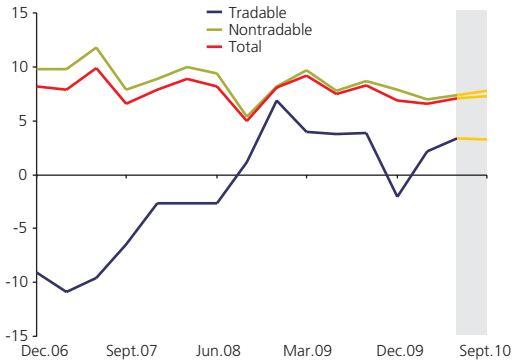
(*) Issued in 2010.

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

Figure IV.3

Currency mismatches (1) (2) (3)

(percent of total assets)



(1) Dollar liabilities less dollar assets, less net derivatives positions.
(2) Asset-weighted average of a constant sample of 113 firms.
(3) The gray area shows forecasts.

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

Several factors could explain why firms have turned to external financing. Companies that export a significant share of their production are generally more inclined to issue debt in foreign currency, since their debt service is then naturally tied to the currency of their income. This decision also reflects the relative costs of external and local financing[1]/.

This latter factor was assessed based on a sample of firms that issued bonds overseas in 2010, comparing the issue rate in dollars for these instruments with the equivalent rate in dollars in the domestic market (the synthetic dollar rate). The results indicate that the issue rate in dollars for these firms is, on average, 21 basis points lower than the synthetic rate in the domestic market (figures IV.1 and IV.2). The magnitude of these differences is not large, which suggests that there could be other reasons behind the trend, such as a diversification of funding sources.

In contrast, the growth rate of local debt in 2010 was lower than before the subprime crisis. However, the most recent data show that bank lending is picking up again, although growth rates are still below historical levels and slightly lower than projections based on output growth. Data on bank lending by firm size does not reveal important differences in access to credit. This is confirmed by the Survey on General Conditions and Standards in the Bank Credit Market for the third quarter of 2010, which suggests a loosening in commercial lending to both large firms and SMEs.

The expansion of external debt has not produced significant changes in the corporate sector's currency mismatch

A concern that arises with the growth of foreign-currency-denominated debt is the possibility that firms will increase their currency mismatches, which would make them more vulnerable to exchange rate fluctuations. The evidence, however, indicates that this exposure remains within historical ranges (figure IV.3). Specifically, for a sample of 113 firms, the currency mismatch represented 7.0% of total assets in June 2010, versus an average of 7.7% from year-end 2006[2]/.

More recently, forecasts based on actual data on net derivatives positions, with extrapolations from firms' asset and liability data, indicate an aggregate mismatch level of 7.3% in September 2010[3]/. While this figure is slightly higher than in the second quarter, it is still below its historical average. Firm-level estimates show that a small number of firms have recorded an increase in

1/ Keloharju and Niskanen (2001) show that external debt increases when the external funding cost is comparatively lower than what firms can obtain in the domestic market.

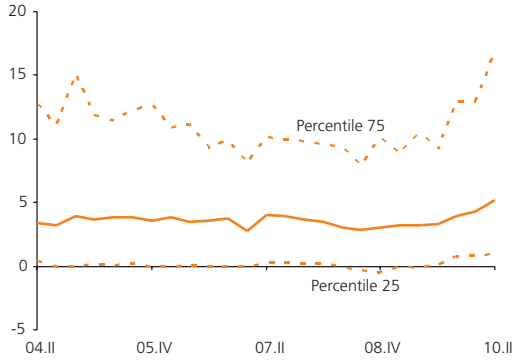
2/ Starting in March 2010, when Law 20,382 entered into effect, a substantial number of firms ceased to report information necessary for calculating the currency mismatch. Consequently, the comparisons with previous periods were made using a sample of 113 firms with data for all periods from December 2006 on.

3/ The dollar liability extrapolations were estimated using the aggregate growth of external debt, while dollar assets and total assets were held constant.

Figure IV.4

Payment capacity of firms (1) (2)

(times)



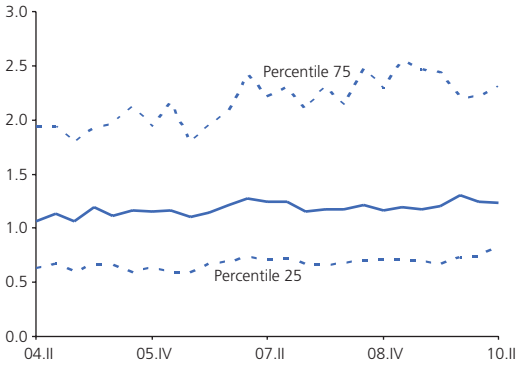
(1) Interest coverage ratio, moving year.
(2) Consolidated financial statements of firms registered with the SVS, excluding mining.

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

Figure IV.5

Liquidity ratio (1) (2)

(times)



(1) Current assets less inventories, divided by current liabilities.
(2) Consolidated financial statements of firms registered with the SVS, excluding mining.

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

their currency mismatch. Due to the size of these firms, their increases largely explain the increase in the aggregate mismatch, although in most cases the mismatch represents less than 4% of the individual firm's assets.

For the tradable and nontradable sectors, the projections do not point to any important changes in the currency mismatches of either group of firms. For nontradable firms, the estimates show a slight increase in the mismatch in the third quarter, from 7.4 to 7.7% of assets, which is still lower than the historical average for this sample (8.6%). The tradable sector, in turn, has recorded a small reduction (figure IV.3). Given that nontradable firms receive most of their income in domestic currency and have a liability position in dollars, they should be more sensitive to a depreciation of the peso.

The above analysis only considers large and medium-sized firms, so the results are not necessarily applicable to small businesses. Estimates for a larger sample of firms (2,500) between May and September 2010, indicate that the increase in external debt is concentrated in the tradable sector (approximately 65%) and it has not, on average, been accompanied by changes of a similar magnitude in the foreign currency hedging position of the analyzed firms. This is true for SMEs as well as for large companies. Consequently, the possibility remains that specific firms present a larger mismatch. This could be a particular concern if it involves smaller firms, given the differences in solvency and access to financial markets.

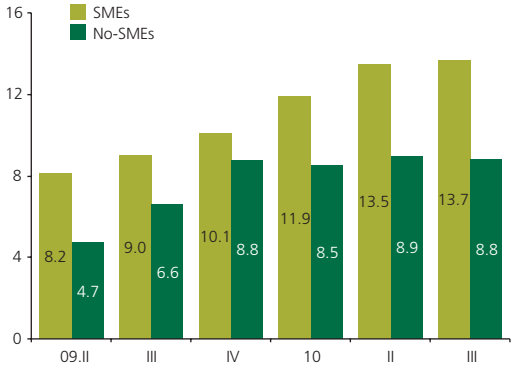
The financial indicators of the corporate sector remain stable around their historical levels

Companies' return on assets—measured as the median—fell from 4.9 to 4.2% between year-end 2009 and June 2010. Interest coverage ratio rose from 3.9 to 5.2 times in the same period, with a significant improvement among the firms in the upper part of the distribution (75th percentile) (figure IV.4). There were differences by firm size, however. The large firms in the corporate sector increased their coverage from 4.2 to 5.5 times, whereas medium-sized firms recorded a drop from 2.7 to 2.0 times.

In the same period, firms' liquidity—measured through the acid test—decreased from 1.31 to 1.24 times (figure IV.5). In terms of the distribution of this indicator, the percentage of financial debt in firms with an acid test ratio of less than one was 40.7%, up from 34.3% in December 2009 but still lower than

Figure IV.6

Impaired commercial loan portfolio, by firm size (1) (2) (3)
(percent of the commercial portfolio of each segment)

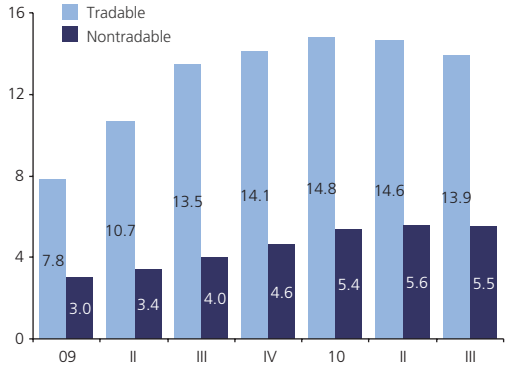


(1) Loans to debtors about whom there is evidence that they will not be able to meet their contracted liabilities, regardless of the possibility of recovery.
(2) Sample of approximately 190,000 firms.
(3) SMEs: Firms with annual sales of up to UF100,000. All others are non-SMEs.

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

Figure IV.7

Impaired commercial loan portfolio, by sector (1) (2)
(percent of the commercial portfolio of each segment)



(1) Loans to debtors about whom there is evidence that they will not be able to meet their contractual obligations, regardless of the possibility of recovery.
(2) Sample of approximately 190,000 firms.

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

the 43.6% recorded in December 2008. Thus, the liquidity and profitability indicators have not deviated much from their historical performance[4]/. Given the level of economic growth in the last few months, these indicators are expected to evolve favorably in the short term.

The increase in credit risk in smaller firms in the first quarter of this year appears to be stabilized

Based on a sample of approximately 190,000 firms, the commercial nonperforming loan ratio had stabilized by September 2010 (figure IV.6). Most notably, this ratio increased for SMEs through June 2010 and then began to level off. A similar trend is found for larger firms, except that the stabilization began in late 2009. An analysis of tradable and nontradable sectors reveals that while there are differences in the level of the nonperforming loan ratio, both sectors show a pattern of stabilization (figure IV.7).

In sum, the credit risk indicators have stabilized, and the increase in external debt appears to have had only a limited effect on the aggregate currency mismatch to date. This could change, however, if external debt continues to grow, making firms more vulnerable to exchange rate fluctuations, especially smaller and nontradable firms.

Households

The growth of household debt continues to recover

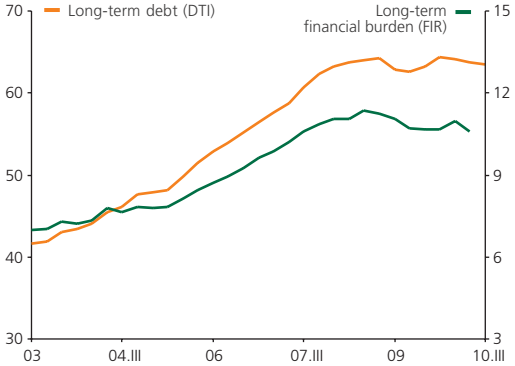
The growth rate of household debt has been increasing since late 2009, although it is still less dynamic than in the years before the subprime crisis, when growth rates stretched into the double digits. In September, household debt grew 7.5% in annual terms, with sharp differences in the main components. Bank mortgage debt maintained a relatively high growth rate of 10.4%, while bank and nonbank consumer debt grew 7.5 and 3.8%, respectively (table IV.2).

[4]/ The decline in liquidity indicators could reflect a reversal toward more normal values, once the uncertainty caused by the financial crisis receded.

Figure IV.8

Long-term debt and financial burden

(percent of available income)

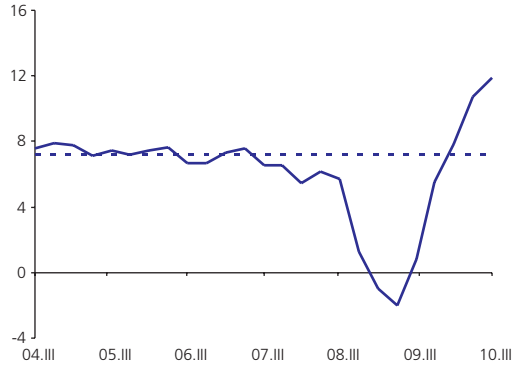


Source: Central Bank de Chile, based on data from SBIF, SuSeSo, and SVS.

Figure IV.9

Private consumption

(real annual change, percent)

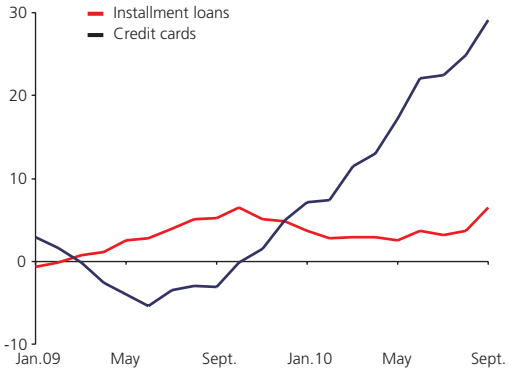


Source: Central Bank of Chile.

Figure IV.10

Bank consumer debt

(real annual change, percent)



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

Table IV.2

Household debt

(real annual change, percent)

	2007 IV	2008 IV	2009 IV	2010 I	2010 II	2010 III	Contribution to growth (1)
Mortgage	16.1	12.9	7.3	7.7	8.6	8.8	4.9
Bank	15.3	13.1	8.6	9.2	10.0	10.4	5.0
Nonbank (2)	20.7	11.7	-0.5	-1.6	-1.0	-1.5	-0.1
Consumer	10.7	3.9	1.8	2.3	4.7	5.8	2.6
Bank	7.0	-0.3	2.2	2.7	5.1	7.5	1.8
Nonbank	15.8	9.1	1.4	1.9	4.3	3.8	0.8
Retailers	17.9	9.3	-7.9	-6.4	-1.2	3.6	0.3
FCF (3)	12.5	9.6	8.3	7.5	6.9	1.3	0.1
Cooperatives	20.0	11.6	5.6	3.3	9.5	5.2	0.1
Other (4)	13.8	7.6	6.7	7.6	6.8	5.1	0.3
Total	**13.5**	**8.7**	**4.8**	**5.3**	**6.8**	**7.5**	**7.5**

(1) Percentage points.
(2) Includes securitized mortgage debt.
(3) FCF: Family compensation funds.
(4) Includes car financing, university loans, and insurance company loans.

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

Household debt levels and financial burden have been stable

In the past year, household debt and the financial burden have flattened out at the previous levels of the financial crisis (figure IV.8). In September 2010, the debt-to-income ratio (DIR) was close to its 2007 level at 63.4%, while the financial burden-to-income ratio (FIR) was 10.6% in June 2010, the latest available data. This leveling off has occurred despite the rapid recovery of private consumption, which has been growing above its historical average in the past few quarters (figure IV.9). While this dynamic performance is consistent with the process of recovering to pre-crisis levels, it could have serious repercussions on the financial vulnerability indicators if it remains high.

Credit card debt has been one of the most dynamic components of bank consumer debt

The growth of bank debt is still slower than forecasts based on output growth, with an uneven performance among its components. In the third quarter of 2010, consumer installment loans grew at a rate of 6.4%, while credit card debt expanded at rates exceeding 20% for several consecutive months (figure IV.10). Given the nature of these contracts, credit card debt involves a variable rate that is higher than other sources of financing. This could have a negative impact on the household financial burden and credit risk in an environment of rising rates[5]/.

[5]/ The (floating) interest rate is applied to unpaid balances each month. In the case of loans with interest-free installments, the interest is applied to any unpaid installments. Credit card debt represented 17% of total bank consumer debt in October 2010.

Table IV.3

Distribution of credit card debt (1)

(percent)

Income quintile	Indebted households	Debt	DIR (2)
1	4.1	4.1	80.0
2	9.4	6.0	35.8
3	13.1	15.0	36.0
4	18.3	21.6	28.6
5	30.6	53.3	27.3
Total	**15.1**	**100.0**	**33.4**

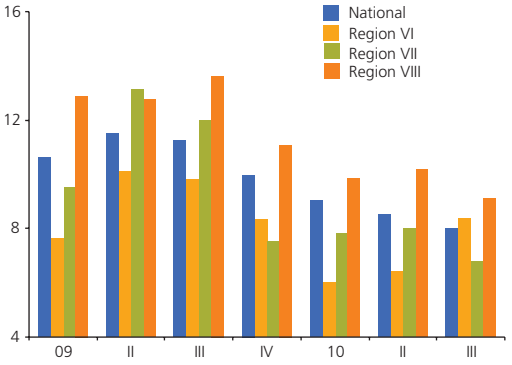
(1) The subset of households with bank credit card debt.
(2) Median.

Source: Central Bank of Chile, based on data from the 2007 HFS.

Figure IV.11

Unemployment rates

(percent)

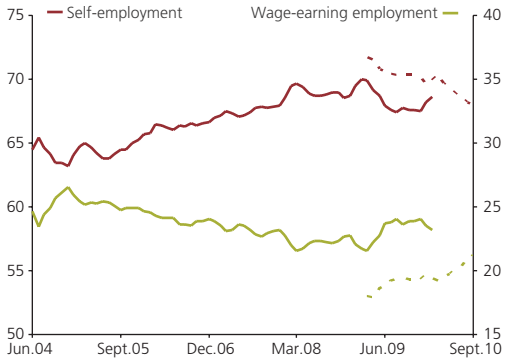


Source: Central Bank of Chile, based on data from INE.

Figure IV.12

Employment by category (*)

(percent of total jobs)



(*) The dotted lines represent the New National Employment Survey series.

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

The evidence indicates that bank credit card debt is concentrated in households in the highest income segments. According to the 2007 Household Financial Survey (HFS), 30.6% of households in the highest income quintile have bank credit card debt, versus 10% of households in the poorer quintiles. In terms of the implications for credit risk, the concentration of this type of debt in the higher income quintiles should reduce aggregate vulnerability, since these households tend to have a lower DIR and FIR (table IV.3). The quantitative evaluation of the implications of the risk scenarios is presented later in the *Report*.

Consistent with the growth of the economy, unemployment has declined at both the national levels and the most of regions

One source of concern for household credit risk, as analyzed in the last *Report*, was the possible rise in unemployment, especially in the areas that were most affected by the earthquake last February. Data for the third quarter are generally positive. The unemployment rate has fallen in regions VII and VIII, though not in region VI (figure IV.11). Despite the favorable performance in these regions, however, unemployment remains high in the major cities. This variable needs to be closely monitored.

The analysis of the more qualitative aspects of employment has mixed results in terms of household payment capacity. On one hand, the share of wage jobs in total employment has dropped, reversing the slight increase highlighted in the last *Report* (figure IV.12). On the other, the percentage of households with no unemployed members has grown, reaching 88% in the last quarter of 2010. This figure is higher than in the last quarter of 2009 (85%) and also higher than the average since 2006 (85.9%). Moreover, the share of households with no employed members fell to 2.6%, which is below the average since 2006 (2.9%) and lower than in the same quarter of 2009 (3.2%) (figure IV.13).

Household credit risk could deteriorate in an adverse scenario characterized by an interest rate hike and lower growth than forecast

In an unfavorable scenario characterized by increases in interest rate and an economic contraction, households could become financially more vulnerable in the face of higher financing costs and a reduction in disposable income. This could be significant given the recovery of households debt, especially for credit card debt.

The 2007 HFS was used to simulate the effect of higher interest rates, greater unemployment, and slower growth of available income. The results indicate that these shocks do not appear to be significant from a systemic perspective. When the impact of the earthquake is included and the income and interest rate trends are projected over 2007 conditions, the share of debt-at-risk in the baseline scenario would rise to 9.3% in June 2010. Under the adverse scenario, featuring a 5 percentage point unemployment shock, a 250 basis point interest rate hike, and lower income growth, debt-at-risk would increase by just 3.6 percentage points (table IV.4)[6,7]/.

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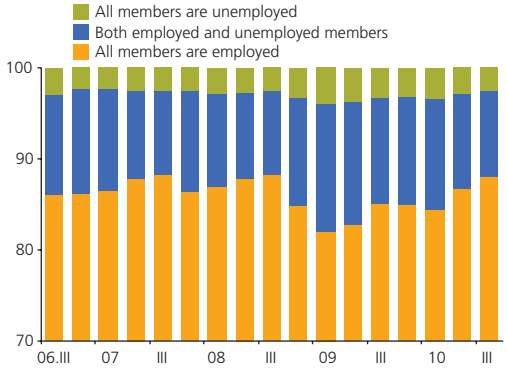
[6]/ The evolution of the interest rate corresponds to the baseline scenario in the September 2010 *Monetary Policy Report*.

7/ These results are consistent with previous simulations, which show that the unemployment shocks like those considered in this exercise do not have systemically important effects on debt-at-risk (Fuenzalida and Ruiz Tagle, 2009).

Figure IV.13

Household unemployment situation

(percent of total households)



Source: Employment and unemployment survey of Greater Santiago, University of Chile.

Table IV.4

Household debt-at-risk (1)

(percent of total debt)

	2007	2010
Baseline scenario	10.6	9.3
Adverse scenario (2)	11.5	12.9

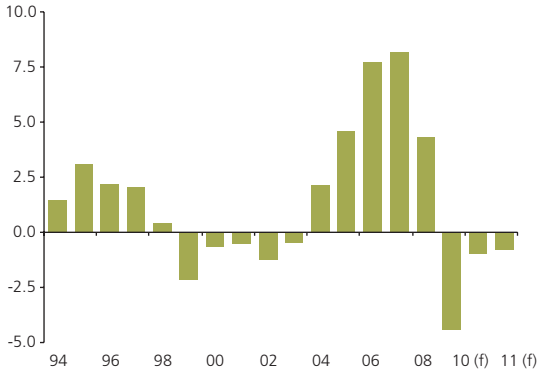
(1) Debt-at-risk is defined as the debt position of households that have a FIR of over 75% and a negative financial margin exceeding 20% of income. (2) Features a 5% increase in unemployment, a 250 basis point interest rate hike, and lower income growth.

Source: Central Bank of Chile, based on data from the 2007 HFS.

Figure IV.14

Accrued balance of the central government

(percent of GDP)



(f) Forecast.

Source: Ministry of Finance.

These results overestimate the potential impact of an interest rate hike, because the 2007 HFS does not support a disaggregation of non-credit-card debt into fixed versus variable interest rates. Therefore, the exercise used a conservative assumption that all debt was contracted at a variable rate, when in fact floating-rate bank loans have represented around 60% of the total from 2007 to the present.

Consolidated government[8]/

Since the last Report, the accrued deficit of the total central government for 2010 has been reduced

According to the revenue authorities, the most recent estimate of the central government's accrued deficit for this year declined to 1% of GDP, which is less than the estimated deficit in June (1.7% of GDP). This reduction is associated with both a revision of the macroeconomic scenario and lower growth of public spending than forecast (from 9.0 to 7.8% real annual) (figure IV.14). The structural deficit changed from 1.6 to 2.3% in the same period. For 2011, the target structural deficit is 1.8% of GDP, which is consistent with an accrued deficit of 0.8% of GDP[9]/.

The changes in the estimated structural deficit not only incorporate adjustments to the macroeconomic scenario, but also reflect methodological changes. These changes are derived from the report by the advisory committee on the design of a structural balance policy, which was released in August. Specifically, the changes are as follows: (i) reestimation of the elasticity of health care contributions; (ii) reestimation of the output gap and trend GDP; (iii) elimination of adjustments for transitory tax measures with a legal expiration date; (iv) elimination of cyclical adjustments to the item "other income;" and (v) elimination of cyclical adjustments to interest income from the financial assets of the Public Treasury[10]/. In general terms, the proposals incorporated in the 2011 Budget Law imply minor changes in the estimated structural balance for the period 2001–10, with the exception of 2009 (figure IV.15).

8/ The consolidated government comprises the total central government and the Central Bank of Chile.

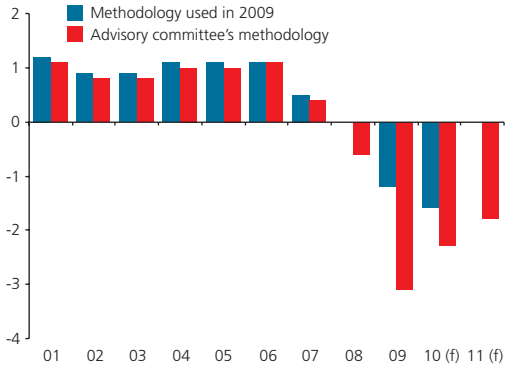
9/ The budget was calculated assuming trend GDP growth of 4.8% and a long-term copper price of US$2.95 per pound.

10/ The other proposals contained in the report, which could be incorporated into the 2012 Budget Law, are as follows: (i) estimation of the long-term copper price; (ii) estimation of the long-term molybdenum price; (iii) accounting principals; and (iv) transparency.

Figure IV.15

Structural balance of the central government

(percent of GDP)



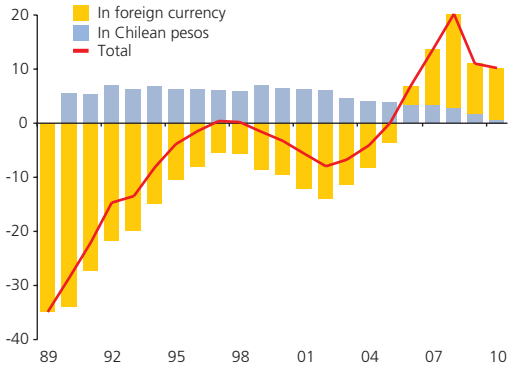
(f) Forecast.

Source: Ministry of Finance.

Figure IV.16

Net positions of the central government (1) (2)

(percent of GDP)



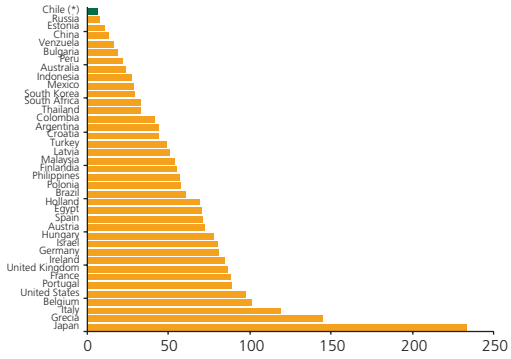
(1) A positive (negative) number implies a net asset (liability) position.
(2) Data through June 2010.

Source: Central Bank of Chile, based on data from the Ministry of Finance.

Figure IV.17

Public sector debt forecast for 2011

(percent of GDP)



(*) Central government.

Source: Moody's (2010).

The balance is expected to follow a path that reaches a structural deficit of 1% of GDP around 2014

In addition to the 2011 Budget Law, the revenue authorities submitted the financial assessment of the central government for the period 2012–14. The report outlined the objective of reaching a structural deficit of 1.0% of GDP in 2014, which would be achieved through a lineal reduction of the deficit in the 2012–14 period. That is, the balance would fall to –1.8% of GDP in 2011, –1.5% in 2012, –1.3% in 2013, and –1.0% in 2014. According to these estimates, this would imply real balances of –0.8%, –0.9%, –0.8%, and –0.7% of GDP, respectively.

Based on the expected trend for the total central government balance, gross debt should remain low as a share of GDP through 2014

The 2010 deficit, estimated at approximately US$2.0 billion, will be financed through the use of own resources and the issue of debt[11]/.Gross debt will increase by around US$7.4 billion relative to year-end 2009, thus reaching US$18.5 billion in December of this year, or 9.2% of GDP (figure IV.16). For December 2010, the central government will maintain a net credit position, and for 2011 Chile will continue to hold a very good position at the international level in terms of public debt (figure IV.17).

Finally, financing needs for the two-year period 2010–11 do not consider additional resources in the estimated deficit, since there are not amortizations of internal or external debt in the period. The first expiration is scheduled for 2012.

Finally, the size of the Central Bank balance has returned to pre-crisis levels

Since the last *Report*, the evolution of the balance sheet has been marked by a reduction of assets, liabilities, and equity. In 2010 the balance of repos and the *Flap* was zeroed out, which produced a decline in assets of around four percentage points of GDP. On the liability side, debt also fell, though by less. Central Bank equity, in turn, went from –$1.96 trillion on 31 December 2009 to –$2.92 trillion on 15 November 2010, based on the usual accounting practices. This drop was mainly caused by the appreciation of the peso against the dollar and, to a lesser extent, the higher cost of indexed debt and the differential between the monetary policy rate and the Libor.

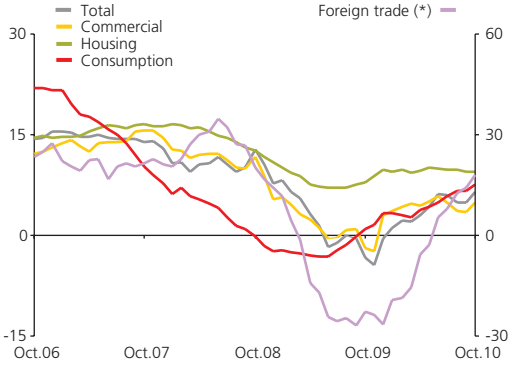
[11]/ Two debt bonds were issued in August 2010 for a total of US$1.52 billion, of which US$1.0 billion was denominated in U.S. dollars and US$520 million in chilean pesos.

V. Banking system

Figure V.1

Loan growth

(real annual change, percent)



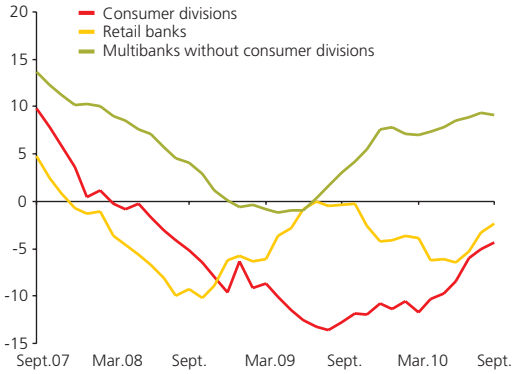
(*) Loans measured in dollars.

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

Figure V.2

Consumer loan growth

(real annual change, percent)



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

Bank lending continues to recover, in a context of favorable solvency and liquidity indicators.

Lending activity continues to recover, albeit at a lower rate than projected based on output

Bank lending has been more dynamic since the last *Report* (figure V.1). Total loans in the banking system grew over 5% in real annual terms between July and October 2010, thus exceeding the average of the first half of the year (almost 3% in real annual terms). This growth is consistent with the improved payment capacity of households and the corporate sector, but it is still lower than suggested by output growth (chapter IV). However, the financial institutions themselves expect bank lending to continue accelerating in the coming months.

The growth of lending has been driven by private banks. It has been generalized across the different segments, with somewhat more intense activity in foreign trade financing operations, especially imports[1]/. Commercial loans grew around 4% in real annual terms in the last three months, while consumer loans grew around 7% in real annual terms. The increase in the latter segment, however, has been concentrated in relatively larger entities. Meanwhile, retail banking and consumer divisions—oriented to lower income segments—have seen a contraction in their market share over much of 2010. This largely reflects the fact that a large share of new loans has gone to higher income households with lower relative credit risk (figure V.2)[2]/.

Credit risk indicators have stabilized for both business and personal loans

The nonperforming loan ratio for the system as a whole grew steadily from November 2008 to early 2010, when it stabilized at around 1.3% through mid-year and then declined to 1.2% in October (figure V.3). By type of loan, nonperforming consumer loans have been falling since mid-2009 and they

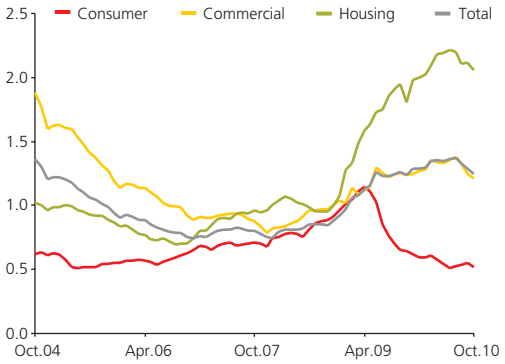
[1]/ These represent 36% of total effective trade loans, and they recorded a real annual growth rate of over 40% in the third quarter of 2010. This in line with the more dynamic sector: imports grew 39% between January and October relative to the same period of 2009.

[2]/ This is also consistent with the growth of credit card financing (chapter IV).

Figure V.3

Nonperforming loans

(percent of loans in each segment)

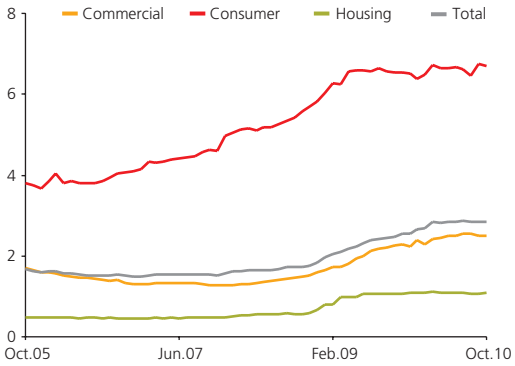


Source: Central Bank of Chile, based on data from SBIF.

Figure V.4

Provisions ratio

(percent of loans)

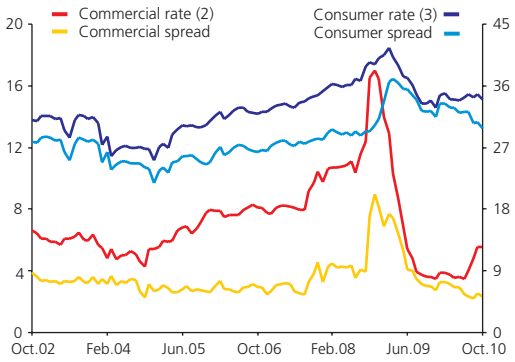


Source: Central Bank of Chile, based on data from SBIF.

Figure V.5

Interest rates and spreads on bank loans (1)

(annual percent)



(1) Representative maturities and currencies in each loan segment. See Matus et al. (2009).
(2) Pesos, 30 to 89 days.
(3) Pesos, six months to one year.

Source: Central Bank of Chile.

have now stabilized around the level seen before the international financial crisis. In July, nonperforming mortgage loans reversed the continuous rise recorded since late 2008, almost exclusively as a result of the quality of the mortgage loan portfolio of *BancoEstado*. Finally, nonperforming commercial loans have been stable at around 1.3% of loans[3]/.

The banking system's provisions ratio has been stable since mid-2009. The only exception is the commercial loan portfolio, which increased nearly 30 basis points between December 2009 and October 2010 (figure V.4). Although there are specific situations in some firms, the increase largely reflects the constitution of provisions for contingent operations beginning in January 2010 and the entry into effect in July of a provisions requirement of a minimum of 0.5% of commercial loans individually assessed which are classified in "normal performance"[4]/.

The higher output conditions and lower risk are consistent with a loosening of lending standards and, in particular, a reduction in spreads

The results of the last bank lending survey, carried out in the third quarter of this year, show that the majority of banks have loosened lending conditions, which has translated into a reduction in spreads. The interest rates on consumer loans have been stable over the course of the year. At the same time, nominal deposit rates up to one year increased almost three percentage points between December 2009 and October 2010, thereby contracting spreads in this loan segment. However, these spreads are still above the average for the period from January 2002 to September 2008 (figure V.5). Interest rates on commercial loans in pesos have increased in the last three months, but not as much as deposit rates, which rose more than two percentage points in the 30- to 89-day segment. Commercial loan spreads have thus been reduced to the lowest levels of the last nine years[5]/.

The reduction in the share of liquid assets and the shortening of deposit maturities produced a tightening of bank liquidity that was reversed in October

In periods of credit recovery, it is normal for the relative share of more liquid bank assets to fall, given the preference for higher-yield investments. Thus, between January and July 2010, the system's liquid assets reduced their share on the balance sheet, falling slightly below the historical average of the last three years (figure V.6)[6]/.

[3]/ The evolution of nonperforming loans by type also reflects regulatory differences, in particular, the maximum period for write-offs. Consumer loans must be written off within a maximum period of six months from the time an installment becomes overdue, whereas the maximum period for commercial and housing loans is 36 and 48 months, respectively. This could be part of the reason for the lower nonperforming loan ratio in consumer loans.

[4]/ See chapter VI on the regulatory guidelines. In June 2010, the ratio was below the required minimum in twelve banks.

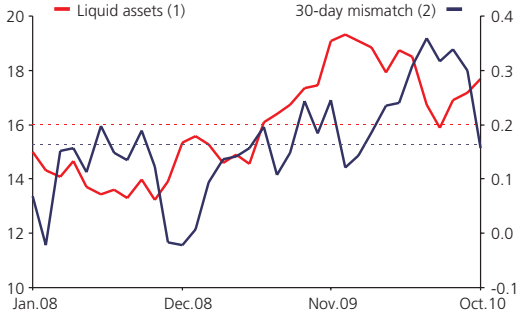
[5]/ This has occurred despite the strong growth of lending in the small business segment (chapter IV).

[6]/ This drop is mainly explained by financial instruments issued by the Central Bank of Chile.

Figure V.6

Liquid assets and 30-day mismatch in the banking system

(percent of total assets, times Tier 1 capital)



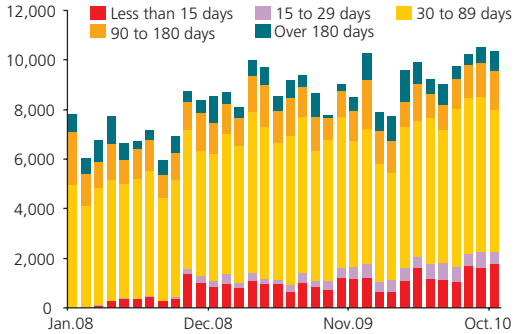
(1) Cash plus trading and available-for-sale instruments as a percent of assets. The dotted line shows the average liquid assets of the system, between January 2008 and October 2010.
(2) Liabilities minus assets, times Tier 1 capital, adjusted basis. The dotted line shows the average mismatch of the system, between January 2008 and October 2010.

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

Figure V.7

Time deposit flows by segment

(Ch$ million)

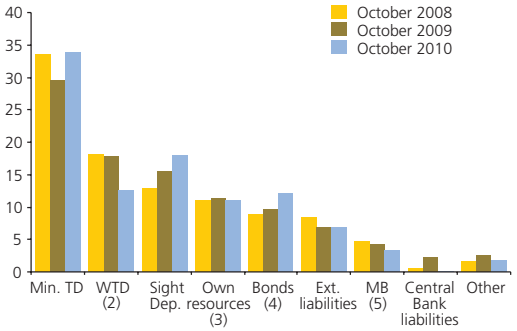


Source: Central Bank of Chile.

Figure V.8

Sources of bank financing

(percent of total liabilities) (1)



(1) Total liabilities net of contingent liabilities and fair value of derivative instruments.
(2) Wholesale time deposits (TD). It includes mutual funds and pension funds.
(3) Includes Tier 1 capital, provisions, net fair value of derivative instruments, and earnings.
(4) Includes senior and subordinate bonds.
(5) Mortgage bonds.

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

At the same time, the banking system significantly increased financing through short-term deposits in the last year. Despite a recent slowdown, demand deposits grew more than 20% in real annual terms, and the share of time deposits with maturities shorter than 30 days increased significantly (figure V.7). This shortening of deposit maturities, combined with the lower relative share of liquid assets, produced a tightening of liquidity around mid-year (figure V.6). However, the recovery of liquid assets in the past few months has brought the short-term liquidity mismatches back to its average level, while all banks are far from the maximum allowed by regulation (once the Tier 1 capital).

The rate normalization process should favor the use of time deposits by retail sources, whose increase has offset the lower share of the institutional sector

Time deposits continue to be the main source of financing for the banking system, accounting for over 45% in October 2010 (figure V.8). However, wholesale sources reduced their share in the last year, as the pension funds went overseas in search of higher returns and the type 1 mutual funds saw a slowdown in activity (chapter III). This trend was offset by retail sources, which increased in around 4% of total bank financing their time deposits over the course of 2010, consistent with the monetary policy normalization process.

Despite this lower participation, some relatively smaller banks, including institutions whose business is concentrated in the consumer and treasury segments, continue to be highly exposed to mutual fund time deposits (figure V.9). As a group, the banks whose exposure to this source of financing exceeds 20% of their liabilities represent close to 10% of total system assets. Given the recent regulatory change in the valuation of type 1 mutual funds, the industry's transition to the new regulatory approach could imply a shortening of time deposit maturities and/or a contraction in the funds managed by these institutions. This could put pressure on the banks' liquidity mismatches, although this financing source should become more stable once the measure is in regime (box III.2).

The banking system's net interest margin has increased, favored by the higher inflation levels…

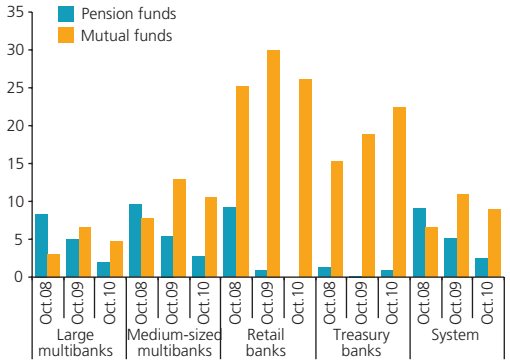
Because the banking system holds a net asset position in local inflation-indexed units of account (UF), the evolution of inflation in 2010 has favored the industry's earnings, through a higher indexation margin. This trend largely explains the 0.3 percentage point increase in the banking system's net interest margin between December 2009 and October 2010 (figure V.10)[7/].

[7/] Although the net indexation margin represented less than 10% of the total net interest margin, on average, the two indicators have been highly correlated in the last six years.

Figure V.9

Time deposits from institutional investors

(percent of total liabilities)

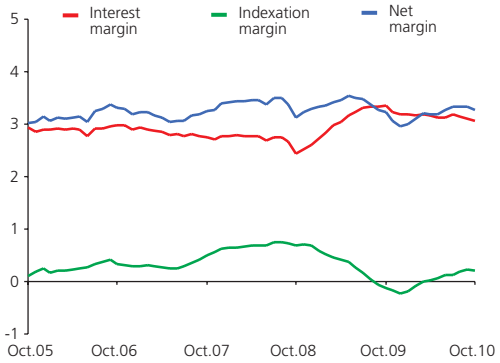


Source: Central Bank of Chile, based on data from SBIF, SP, and SVS

Figure V.10

Disaggregation of the net interest margin (*)

(percent of total assets)



(*) Moving year.

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

…which, together with the lower loan loss provisions related to credit risk, has contributed to keeping profitability indicators above their historical averages

The evolution of the net interest margin and the lower loan loss provisions made by the banking industry this year have contributed to bringing the annualized returns of the banking sector to over 19% of equity and 1.5% of assets in October 2010 (table V.1). Loan loss provisions made by the banking industry between January and October of this year were 14% lower than in the same period of 2009. Loan loss provisions related to loans have decreased in all loan categories over the course of this year, with consumer loans recording the biggest drop (from 9.1% in October 2009 to 6.4% in October 2010).

Table V.1

Composition of the banking system's return on assets (ROA)

(percent of total assets)

	1995 - 2005	2008	2009	2010 (3)
Interest and indexation margin	3,8	3,3	2,9	3,2
Interest and indexation earned	9,2	8,5	4,4	5,1
Interest and indexation paid	-5,4	-5,2	-1,4	-1,9
Net commision	0,8	0,6	0,7	0,7
Net trading	0,4	0,2	0,6	0,5
Provisions	-1,0	-1,1	-1,4	-1,2
Support costs	-2,9	-2,0	-2,0	-2,0
Other	-0,1	-0,1	0,2	0,2
ROA	1,1	0,9	1,2	1,5
Leverage (1)	13,20	13,73	12,9	12,7
ROE (2)	14,46	12,45	15,1	19,2

(1) Assets-to-equity ratio (times).
(2) Return on equity (percent).
(3) Annualized data as of October.

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

This earnings generation has supported the recovery of lending activity, while solvency levels remain stable

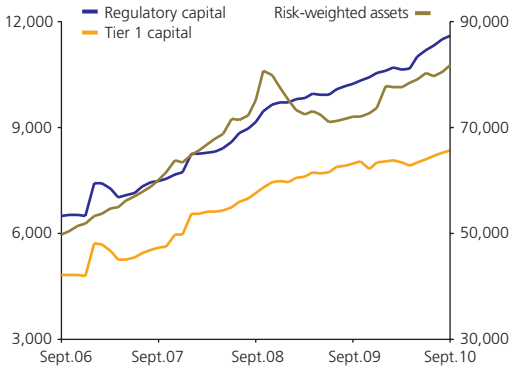
The recovery of bank lending has implied that the banking system's risk-weighted assets grew nearly 5% between January and September 2010. Nevertheless, the system's capital adequacy ratio (CAR) has remained around 14% in the last five months (figure V.11). The banking system's equity base was strengthened over the course of the year due to the issue of subordinate bonds equivalent to US$1.5 billion and the generation of higher earnings. As a result, all banks in the system had a CAR of over 10.5% in September 2010[8]/.

[8]/ At that date, nine banks, which account for more than 75% of the system's risk-weighted assets, had a CAR between 12 and 15%.

Figure V.11

Composition of the capital adequacy ratio

(Ch$ billion)

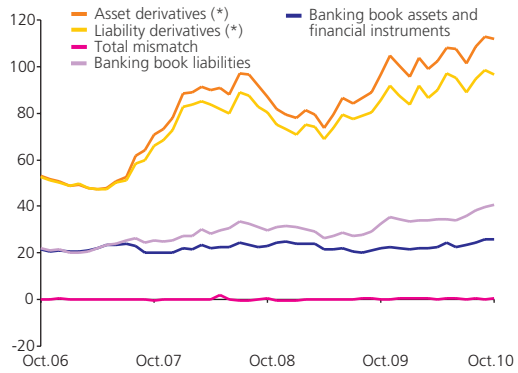


Source: Central Bank of Chile, based on data from SBIF.

Figure V.12

Banking system's foreign currency balance

(US$ billion)



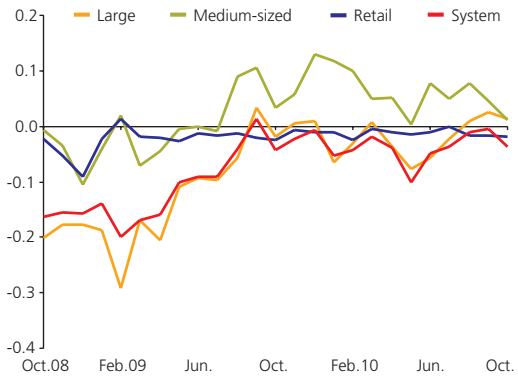
(*) Includes the notional value of foreign currency swaps and forwards.

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

Figure V.13

Banking system's foreign currency mismatch at 1 to 7 days (*)

(liabilities minus assets, times capital)



(*) Adjusted basis for authorized banks.

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

Some banking entities have undertaken substantial issues of long-term debt in domestic and international markets, to help financing their increased activity…

Between November 2009 and September 2010, the banks issued senior and subordinate bonds for the equivalent of US$6.2 billion, of which 65% were placed in international financial markets[9]/. In the past year, a large share of external bank financing flows has derived from the issue of senior bonds, which has increased the share of the banking system's external debt to almost 9% of total bank liabilities and around 22% of the total external debt of the Chilean economy. This greater external debt, which mainly involves the large multibanks, should allow the banking system to improve its liquidity position, in virtue of the longer maturity of these liabilities. It should also favor the net interest rate margin (table V.2)[10]/.

Table V.2

Amount and maturity of external bank debt in September 2010, by cluster (*)

(US$ million, months)

	Amount		Maturity		
	Loans	Bonds	Loans	Bonds	Total debt
Large multibanks	10,996	3,232	9.3	61.7	21.2
Medium-sized multibanks	3,791	-	6.8	-	6.8
Treasury and Foreign trade	49	-	12.0	-	12.0
System	**14,836**	**3,232**	**8.5**	**61.7**	**18.0**

(*) Average weighted maturity of the debt obtained in one year. Preliminary data.

Source: Central Bank of Chile.

…which, combined with a net asset position in derivative instruments, has allowed the banking system to keep a low exposure to foreign currency risk

The growth of external debt strongly increased exposure to currency risk in nonderivative instruments in the last three months, to a net liability position of over US$15.0 billion in October (figure V.12). However, the banking system has also increased its net asset position in foreign currency derivatives, mainly through a change in derivative positions in the external market (NDFs and cross-currency swaps) (chapter III).

As a result, the foreign currency mismatch remains low and stable, at around 2% of the system's effective equity. In the specific case of dollar assets and liabilities, the industry maintains minimal mismatches in the short term, which helps limit foreign currency liquidity risk in case of sudden and significant changes in these positions (figure V.13).

[9]/ Senior or current bonds are given priority in case of insolvency, that is, they are paid before all other subordinate debt.

[10]/ Some of these loans had favorable spreads, even relative to lines with shorter maturities.

Several market indicators confirm the positive assessment of the solvency of the Chilean banking system

The positive assessment of the national banking system on the part of holders of debt instruments is reflected in both the level of the discount rates on long-term loans in the domestic market and the favorable conditions in the international credit markets[11]/. Not only has the demand for international bond issues been generally favorable, but some banks have also been able to obtain syndicate loans, with a longer duration relative to conventional credit lines. Such developments have allowed them to diversify their creditor matrix. These trends, combined with the national banking system's solid earnings position and solvency level, are in line with the increase in the stock market indices for these institutions, as well as the improvement in the risk ratings on their debt securities over the course of the year.

However, this assessment is sensitive to the materialization of the risk scenario described in chapter I

The risk of a new world economic downturn could translate into a slowdown in local lending and a higher default probability for firms.

In addition, the greater external debt of the banking system is associated with foreign currency financing risk. While debt in the form of external loans and bonds represents less than 9% of the banking system's total financing, there is still a strong dependence on European banks, so the worsening of fiscal problems in these economies could threaten the industry's access to foreign currency financing[12]/. In the last international crisis, however, Chilean banks were able to diversify their external creditor matrix, thereby maintaining access to this source of financing.

The growing exchange rate pressures might not have a direct impact on the banking system's mismatch, but they will affect external hedging costs and the mismatch of banks' clients. With regard to the latter point, since 2000, Chilean regulations require that banks take into account the currency risk exposure of debtors when carrying out their credit risk assessment, which should help mitigate some of the impact of this possible risk scenario.

Finally, given the current international environment and the presence in Chile of affiliate banks with a foreign parent or head office, there is a risk of parent-affiliate contagion through higher financing costs or other mechanisms. In the case of domestic banks, however, there are objective conditions that could mitigate these sources of contagion. These include a generally low dependence on the parent bank for funding; the fact that Chilean banking legislation requires the affiliate to maintain all of its equity in the country in order to operate as a financial entity in the domestic market; and corporate governance requirements.

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[11]/ The annual discount rates on banks' subordinate bonds was stable at around 4%, on average, in 2010.

[12]/ As of September 2010, European banks accounted for nearly 40% of external bank loans.

Table V.3

Impact of stress tests on profitability

(percent del Tier 1 capital)

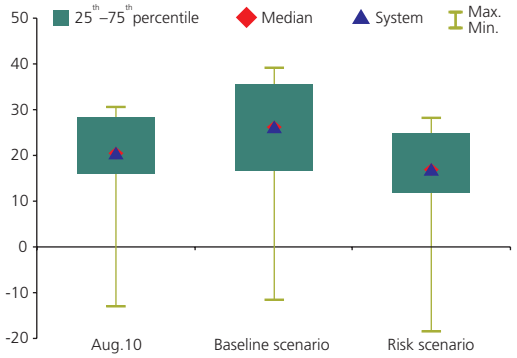
	Risk scenario
Initial ROE	20.6
Market risk	-1.1
Valuation	-0.1
Repricing	-1.3
Currency	0.3
Credit risk	-7.2
Consumer	-2.7
Commercial	-4.6
Housing	0.2
Margin	4.7
Final ROE	17.0

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

Figure V.14

Impact of different scenarios on return on equity (*)

(percent)



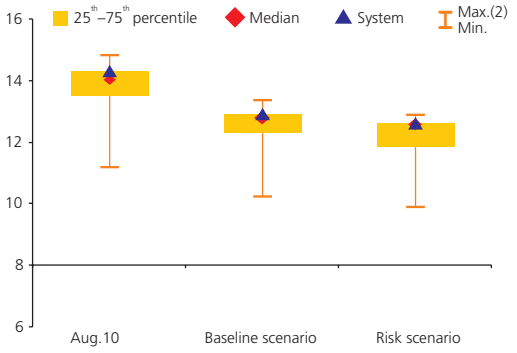
(*) Weighted by the Tier 1 capital of each institution.

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

Figure V.15

Impact of different scenarios on the capital adequacy ratio (1)

(percent)



(1) Weighted by the Tier 1 capital of each institution.
(2) Maximums correspond to the 90th percentile.

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

The next section reports the results of a quantitative evaluation of the impact on the national banking system's profitability and solvency of the materialization of the risk scenario described in chapter I.

Stress tests

Stress tests are an analytical tool that contribute to identifying weaknesses and sizing up financial strengths in a given moment of time. Given their partial nature, they do not necessarily uncover all the effects of specific risk scenarios. Consequently, they should not be interpreted as projection exercises[13]*/.*

The tests carried out based on August 2010 data reveal that the banking system is in a healthy financial position for operating normally, and it has the capacity to absorb the materialization of a severe risk scenario

The baseline scenario assumes a level of output and interest rates consistent with the forecasts in the September 2010 *Monetary Policy Report*. In particular, economic growth for 2010 and 2011 will reach 5.4 and 6.1%, respectively. In contrast, the risk scenario assumes a significant downturn in 2011, with economic growth estimated at 3% for that year. The risk scenario further assumes a 20% exchange rate depreciation in a period of 15 days and a 250 basis point increase in interest rates in the short term[14]/.

The exercises show that the losses for the system under the risk scenario are equivalent to a reduction in return on equity (ROE) of 3.6 percentage points of Tier 1 capital. The actual level in August 2010 was 20.6%, so under the risk scenario, the system's profitability would be 17% (table V.3). The main factor explaining the deterioration in the profitability ratio is the higher credit risk and the associated increase in loan loss provisions, in the face of the deterioration of economic activity in the risk scenario.

At the level of the institution, banks in the 25th percentile continue to post an ROE of over 10%, while a fairly small share of institutions post losses. This is also seen under the baseline scenario (figure V.14). Finally, the system's capital adequacy ratio remains around 13%, on average, under both scenarios (figure V.15).

[13]/ This analysis is based on the methodology described in Jara, Luna, and Oda (2007) and Alfaro, Calvo, and Oda (2009). Both the analysis and the results are regularly reported to the SBIF.

[14]/ This scenario is consistent with the main threats to the financial stability of the Chilean economy, as outlined in chapter I.

Box V.1: Review of international bank capital and liquidity standards and their application to Chile

Since the financial crisis of 2008–09, the BIS has been analyzing mechanisms for strengthening the capital and liquidity requirements applied to the banking industry[15]/. The objective for the former is to expand the Basel II capital framework and for the latter to introduce new standards.

Capital standards

At the September 2010 meeting, the BIS set new capital requirements and established a calendar for their gradual implementation, to be completed by early 2019. The main objectives of these requirements are to raise the quality, consistency, and transparency of the capital base, strengthen risk coverage, restrict leverage levels, and promote a countercyclical capital framework. Specifically, the recommendations establish the following requirements:

1. A minimum common equity requirement of 4.5% of risk-weighted assets (RWA) and an increase in the minimum Tier 1 capital level from 4 to 6% of RWA[16]/.
2. An increase in total regulatory capital requirements from 8.0 to 10.5% of RWA, through the addition of a capital conservation buffer of 2.5% of RWA, which banks can draw down to meet minimum capital requirements in periods of financial stress[17]/.
3. The addition of a countercyclical buffer of up to 2.5% of RWA, to be used in episodes of excess bank credit growth[18]/.
4. A minimum capital requirement of 3% of total assets, to come into effect in 2018. The numerator is Tier 1 capital, although the Committee will also evaluate total regulatory capital and common equity as alternatives. The denominator includes off-balance items and securitization instruments, with the option of applying netting in the calculation of loan equivalents of derivatives and repos.

Liquidity standards

The BIS has proposed two new liquidity standards: a short-term liquidity coverage ratio (LCR) and a long-term net stable funding ratio (NSFR).

1. The LCR measures the sufficiency of high-quality liquid assets to meet severe liquidity stress scenarios in 30 calendar days. High-quality liquid assets (the numerator) are characterized by low market and credit risk, ease and certainty of valuation, low correlation with risky assets, listing on spot and repo markets at all times, low market concentration of buyers and sellers, preference during flights to quality, and absence of explicit or implicit commitments as collateral or credit enhancers[19]/. The denominator is total expected payables outflows, less total expected receivables inflows, arising in the stress scenario over a period of 30 days. It is calculated according to a table of conversion factors for contractual flows.

2. The NSFR measures the share of long-term assets financed by stable resources. Stable funding (the numerator) corresponds to capital, preferred assets and liabilities with a maturity of one year or more, and the share of time deposits maturing in less than one year that the institution expects to hold in the face of idiosyncratic stress events. Long-term assets (the denominator) are measured according to the supervisor's assumptions on the liquidity risk profile of the institution's assets, including off-balance exposures.

For both indicators, the BIS proposes a minimum of 100%. This regulatory framework would enter into effect in 2015 in the case of the LCR and 2018 in the case of the NSFR.

[15]/ See BIS (2009 and 2010b).

[16]/ In Chile, common equity is equivalent to share capital, and Tier 1 is share capital plus reserves, mainly from earnings.

[17]/ Banks would be subject to restrictions on the distribution of dividends until these reserves were fully constituted.

[18]/ The definition of this countercyclical component is still under discussion, and its effective level will be left to the discretion of each jurisdiction.

[19]/ The BIS makes an exception for high-quality assets used as collateral in Central Bank repo operations, which could be included in the numerator.

Additionally, the BIS has suggested monitoring a set of variables to support the assessment of the banking system's liquidity. These include the following: contractual maturity mismatches, concentration of funding, available unencumbered assets that can be used as collateral in secondary markets and/or are eligible at the Central Bank, and market indicators such as stock prices, stock market or fixed-income indices, and CDS spreads.

Estimation of the Basel III indicators for the case of Chile

One of the characteristics of the domestic banking sector's capital base, as in other emerging economies, is that it is made up mainly of share capital (65% of Tier 1 capital) and, to a lesser extent, retained earnings. Thus, the majority of total regulatory capital is of high quality. This means that the new capital standards would not be overly restrictive for Chilean banks, since both core capital (equivalent to Tier 1) and total capital indicators are above the minimum levels outlined by the BIS for 2019 (table V.4)[20]/. Similarly, the leverage ratio proposed by the BIS would not be restrictive for the domestic banking sector, since the General Banking Law already specifies this limit[21]/. In fact, in the last ten years, the average system indicator has always exceeded 6%.

In the case of the liquidity standards, Chilean regulations establish 30- and 90-day mismatch limits in both domestic and foreign currency[22]/. Nevertheless, the short-term coverage ratio calculations proposed by the BIS are difficult to apply to the available data, basically because they are subject to a large degree of discretion on the part of the regulator. One way to approximate the LCR is to consider the stock of high-quality liquid assets (the numerator) as the sum of available funds and trading and available-for-sale financial instruments (both recorded on the balance sheet at market value) less securities pledged as collateral in repo operations[23]/.The denominator includes the net payables outflow over 30 days, discounting asset flows in the same period considered in the numerator and without applying stress factors.

Although there is some variation by type of bank, the system is above the minimum requirement most of the time (figure V.16). In the case of the NSFR, the estimation generally followed the parameters suggested by the BIS[24]/. The estimated ratio for the domestic banking system shows a growing trend in the last two years, exceeding the proposed Basel III minimum most of the time.

Table V.4

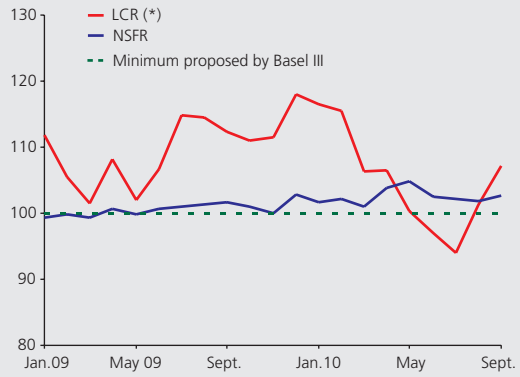
National banking system's capital standards according to Basel III
(percent of risk-weighted assets)

		Chile (June 2010)	
Minimum value	BIS 2019 (Basel III)	Just credit risk (Basel I)	Credit, market, and operational risks (Basel II)
Tier 1	6.0	10.1	8.9
Conservation buffer (CB)	2.5	-	-
Total capital	8.0	13.9	12.4
Total capital + (CB)	10.5	-	-
Countercyclical buffer	0 to 2.5	-	-

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

Figure V.16

Basel III liquidity indicators for the Chilean banking system
(percent)



(*) Estimated as (Liquid assets on the balance sheet – non-Central Bank repos)/(30-day liabilities – 30-day assets + available funds + 30-day financial investments).

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

[20]/ This is based on capital charges for market and operational risks estimated under the assumption that the increase in "Basel III" standards will be applied to capital indicators estimated according to Basel II. In Chile, banks are still operating under Basel I standards.

[21]/ Introduced in 1997, in conjunction with Basel 1 capital regulations (Article 66 of the General Banking Law).

[22]/ The Chilean regulatory guidelines are formulated for normal situations, whereas the Basel ratios aim to evaluate stress situations.

[23]/ Assuming that these operations are 100% collateralized. Central Bank operations are excluded, as recommended by the BIS. See note 19.

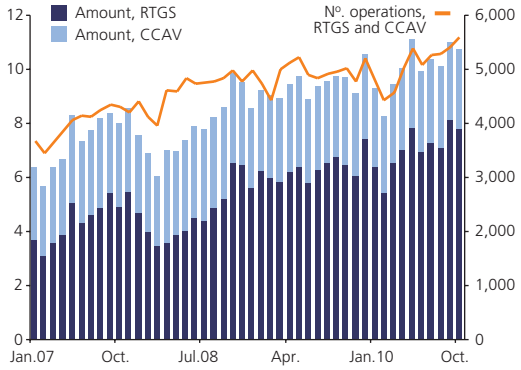
[24]/ The numerator includes 100% of regulatory capital; long-term debt instruments and deposits with a maturity of one year or more (adjusted basis); 70% of noninstitutional deposits with a maturity of less than one year; and 50% of institutional time deposits. The denominator includes 5% of held-to-maturity Central Bank and Treasury financial instruments, 50% of commercial and foreign trade loans at less than one year, 85% of consumer loans at less than one year, and 100% of other assets. The calculation of the denominator excludes corporate bond holdings, which represent a very small fraction of Chilean bank assets.

VI. Financial regulations and infrastructure

Figure VI.1

Payments settled in the LVPS (*)

(Ch$ trillion, thousands of operations)



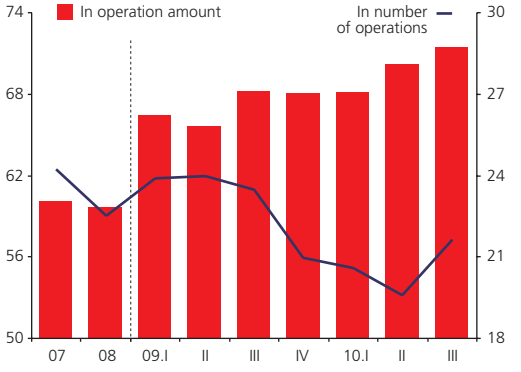
(*) Daily averages,

Sources: Central Bank of Chile and *Combanc*.

Figure VI.2

Share of the RTGS system in the LVPS

(percent)



Sources: Central Bank of Chile and *Combanc*.

This chapter reviews recent initiatives in the area of the financial regulatory framework, both in Chile and abroad, as well as factors affecting the functioning and development of the payment systems and the infrastructure that supports the operation of the financial markets.

Payment systems and financial infrastructure

The payment systems have a fundamental role in the performance of the economy, the effectiveness of monetary policy, and financial stability. The Central Bank of Chile has the responsibility of regulating and supervising the safe and efficient functioning of these systems.

Large-value payment systems

The large-value payment systems (LVPS) are the real-time gross settlements (RTGS) system and the large-value payment clearing house (Cámera de Compensación de Pagos de Alto Valor, or CCAV). Both systems process interbank, client account, and delivery versus payment (DVP) transactions. The RTGS system settles gross transactions immediately in the accounts of each bank, through electronic transfers effected as they enter the system, whereas the CCAC nets the transactions for each bank at the end of the day and then clears them through the RTGS system.

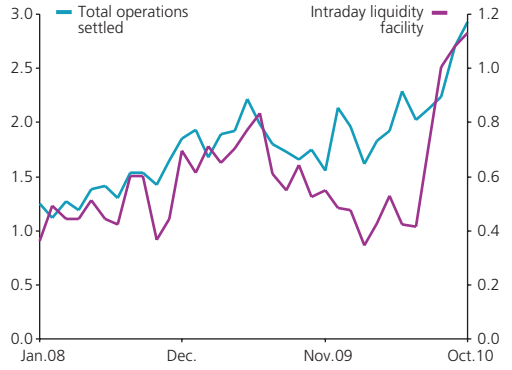
In the third quarter of 2010, the average daily amount settled in the LVPS was Ch$10,5 trillion, with more than 5,300 operations a day, on average. These figures represent increases of 10 and 8%, respectively, relative to the same period last year (figure VI,1). This reflects the fact that the Chilean economy has been more dynamic since second quarter of this year.

The RTGS continues to increase its share of the total amount settled in the LVPS, exceeding 70% in the third quarter 2010 (figure VI,2). In much of the past year, this growth trend was essentially associated with a precautionary strategy in the face of external uncertainty (as discussed in past *Reports*). In the last few months, however, it has been related to a more intensive use of the intraday liquidity facility.

Figure VI.3

Liquidity in the RTGS system (*)

(Ch$ trillion)



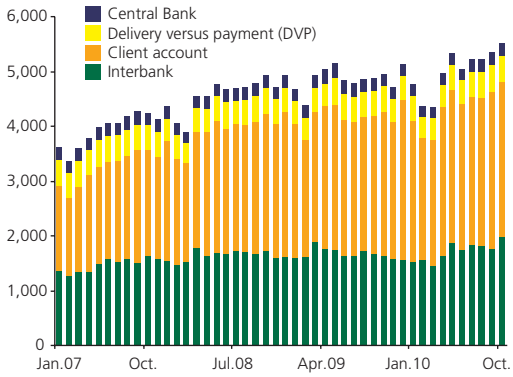
(*) Daily averages.

Source: Central Bank of Chile.

Figure VI.4

Types of payments settled in the LVPS (*)

(thousands of operations)



(*) Daily averages.

Sources: Central Bank of Chile and *Combanc*.

Table VI.1

Main means of retail payment

	2009	2010 (*)
	(Ch$ billion)	
Checks	336,650	326,985
Automatic teller machines (ATM)	13,729	16,478
Nonbank credit cards	4,636	4,864
Bank credit cards	3,713	4,504
Debit cards	2,580	3,313
Internet transfers	n.a	n.a
	(thousands of operations)	
Checks	223,418	207,238
Automatic teller machines (ATM)	333,311	379,140
Nonbank credit cards	205,540	190,394
Bank credit cards	82,056	85,337
Debit card	142,218	175,229
Internet transfers	220,106	223,000

n.a.: Not available.
(*) Latest available data, annualized.

Source: SBIF.

The use of the intraday liquidity facility has expanded not only because of the actual increase of activity in the banking industry and the total number of payments, but also as a result of the definitive closure of the term liquidity facility (*Flap*) (figure VI,3)[1]/. Banks may have been using a share of the *Flap* to finance intraday liquidity needs generated by their RTGS operations.

With regard to the number of transactions settled directly in the RTGS system, the downward trend in the RTGS share of the total number of transactions processed through the LVPS was reversed in the third quarter of 2010, with an increase of approximately 2%. This increase was associated with the growth of interbank client account transactions (figure VI,2).

Finally, the composition of the operations settled in the LVPS has been stable over time. The majority is interbank operations, with 54% client account operations and 34% own account transactions. DVP operations (securities market operations) represent 9%, while Central Bank operations account for 3% (figure VI,4).

Retail payment systems

The retail payment systems are used to make payments and transfer funds between individuals and/or firms. They process a large number of low-value transactions, normally tied to the sale and purchase of goods and services.

The main retail means of payment had a strong increase in transactions by individuals and businesses in the third quarter of 2010. Bank credit and debit cards were especially dynamic, as were automatic teller machine (ATM) withdrawals. All of these means of payment grew at annual rates of over 20% in terms of amount (table VI,1).

The transaction amount of bank credit cards grew strongly, which could be related to the adoption of business strategies in the banking industry and the increase in the supply of relatively large interest-free consumer loans, particularly for higher-income clients.

The recovery of nonbank credit cards has been slower, and it is based on higher value transactions. Although the transaction amount of these cards grew at a rate of nearly 5%, the number of transactions continues to follow a downward trend (figure VI,5).

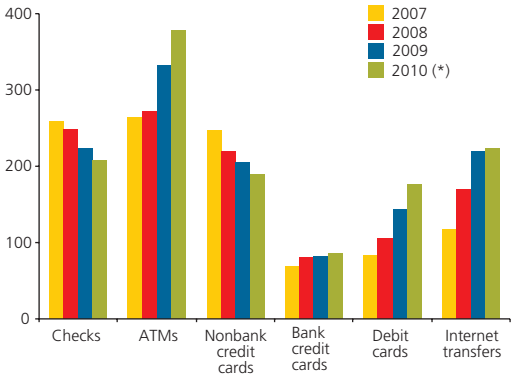
Finally, the use of checks continued to fall in terms of both number of transactions and amount (7 and 3%, respectively). However, checks are still the most important means of payment in terms of transactions amount.

[1]/ The decoupling of the intraday liquidity facility and total transactions began with the introduction of the *Flap* in July 2009. The first auction was held on 20 July 2009, with terms of 91 days, and the last on 17 May 2010, with terms of 28 days.

Figure VI.5

Means of retail payment

(millions of transactions)



(*) Latest available data, annualized.

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

Financial regulation

Regulatory framework issued by the Central Bank of Chile

Adaptation of the regulatory framework of the real time gross settlements (RTGS) system to incorporate the participation of Management Corporations in securities clearing and settlement systems (August 2010, www.bcentral.cl)

The Central Bank Board modified the regulations governing the RTGS system to incorporate the participation of Management Corporations incorporated as central counterparty entities or financial clearing houses, in accordance with current legislation (Law 20,345). The Board further modified the general conditions on bank accounts opened in the RTGS system, to cover transactions by the aforementioned corporations.

The objective of modifying the regulatory framework to allow these corporations to participate in the RTGS system and to open accounts is compliance with current legislation, It does not, under any circumstance, compromise the provision of financing or refinancing facilities or the Central Bank of Chile's guarantee with regard to settlement operations.

Increase in maximum investment abroad limits for pension funds (November 2010, www.bcentral.cl)

The Central Bank Board raised the overall maximum limit on overseas investment by the pension funds from 60 to 80%, in accordance with the faculties granted in Law 20,255, published in the *Official Gazette* on 17 March 2008, which modified D.L. 3500 of 1980. At the same time, the Board also raised the maximum investment limit by fund, to 100% for type A funds, 90% for type B funds, 75% for type C funds, 45% for type D funds, and 35% for type E funds. As with prior decisions made in this area, the new higher limits will be phased in gradually.

This modification was made within the framework of coordination between the Ministry of Finance and the Central Bank, and it is consistent with the general economic policy orientation of the government. The resolution adopted by the Board, in accordance with its legal faculties, to expand the diversification options available to the pension funds, aims to contribute to achieving adequate yields and security for pension savings.

In making decisions on these matters, and in fulfillment of its legal mandate, the Central Bank of Chile takes into account the behavior of the financial markets, ensuring that potential adjustments to the pension fund investment portfolios can be made without affecting the normal operation of the internal and external payments system or the effective implementation of monetary policy. The new regulatory guidelines came into effect on 1 December 2010.

Legislative and regulatory developments of other national agencies

Implementation of the new legal framework for financial clearing and settlement (Law 20,345)

Securities clearing systems are a fundamental component of the financial market infrastructure, given the potential for a build-up of liquidity pressures and significant credit losses for market participants or systemic risks for the payments systems used in securities clearing, Given these potential effects, the BIS has established a list of recommendations for these systems[2]/. In Chile, some of these principles, such as delivery versus payment, the immobilization of securities, and book entry transfers in the securities depository, are already being applied, but some challenges still remained. Therefore, the Ministry of Finance presented Law 20,345, which establishes 6 September as the date of compliance for entities involved in financial clearing and settlement. The SVS then issued General Regulations 256 to 259 and 293 to implement the law.

The new legal framework safeguards the finality of transfer orders accepted by the system, promoting investor confidence and reinforcing the authority of the central counterparty, which becomes the sole counterparty for the investor. This, in turn, facilitates the administration of market risk. The framework further strengthens the securities clearing and settlement process by providing several levels of liquidity, solvency, and operational protections for both the management corporations of these systems and the settlement agents, Finally, cash settlement is conducted via the RTGS system, eliminating the so-called "settlement bank risk." Other aspects include the transparency and mandatory nature of the procedures and the availability of resources to be used in case of a cash or securities shortage in the settlement process.

In this context, "*CCLV Contraparte Central S.A.*" opened for operations on 30 August. This central counterpart clearing house is an affiliate of the Santiago Stock Exchange; it acts as a clearing house for brokers and the fixed-income market and as the central counterparty for the variable-income market. It is supervised by the SVS, which, as set out in the aforementioned law, had to first review and approve its operating rules, with prior approval from the Central Bank of Chile in areas of its competence.

Reforms on liquidity, financial innovation, and capital market integration (August 2010, www.bcn.cl)

Law 20,448, known domesticly as MKIII, was published on 13 August to increase the liquidity and depth of the capital market, broaden the financial market, introduce elements of competition to the credit market, and facilitate the financial integration of the capital market, The law introduces changes to the legal frameworks that regulate the following: mutual funds, securities market, pension funds, foreign risk capital investment funds, income tax, and banks.

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[2]/ BIS (2001).

In particular, banks have been given the power to issue mortgage bonds, The resources obtained from these bonds must be earmarked for mortgage loans, and, should the issuer become insolvent, the bonds are subject to the same regulations governing mortgage-backed securities (letras hipotecarias), This makes them similar to covered bonds, which are widely used in Europe.

Other changes introduced with MKIII are the incorporation of new modalities in terms of the currencies in which foreign securities and security certificates of deposit can be expressed and traded; the establishment of basic and standardized (universal) credit products; and the protection of the debtor's right to freely contract loan insurance.

Draft changes to Law 19,496 on consumer rights protection, to grant the National Consumer Service authority in the financial area, among others (August 2010, www.camara.cl)

In the framework of the bicentennial capital market reform program, Congress is discussing a bill to strengthen consumer protection in financial services. The objective is to strengthen the current National Consumer Service by expanding its authority and competence to improve the level of transparency of the financial markets, for example, by carrying out studies and issuing publications that reduce information asymmetries. Box VI.1 discusses aspects of consumer financial protection at the international level.

Valuation of mutual funds that invest in short-term debt instruments (October 2010, www.svs.cl)

The SVS issued new instructions on the valuation of short-term mutual fund portfolio instruments. As of 1 March 2011, the companies that manage this type of mutual fund and that value the fund's investment instruments at the internal rate of return implicit in their purchase price, must move toward market price valuation. The regulations further require that the companies develop and establish clear and precise liquidity policies on the valuation of the instruments in the investment portfolios of this type of fund and that they consider implementing stress tests (box III.2).

Changes to the guidelines on credit risk provisions (June and August 2010, www.sbif.cl)

In June 2010, the SBIF established a minimum provisions requirement of 0.5% of the portfolio for commercial loans that have been individually assessed as "normal performance" loans. In August, the agency issued new regulatory guidelines on credit risk provisions, effective January 2011. These new regulations, which apply to individually assessed commercial loans, identify a larger number of categories, which are grouped into three types of portfolio (normal, substandard, and default), and specify the days of delinquency for each debtor classification. They also stipulate the recognition of recovery flows other than guarantees for the calculation of provisions, such as collateral endorsements. This new regulatory framework will also allow banks to constitute additional countercyclical provisions.

Clarity and transparency in standardized bank contracts (September and November 2010, www.sbif.cl)

The SBIF introduced several changes to its regulatory framework on good practices for contracting financial products, with the aim of promoting greater transparency and precision in the terminology, conditions, and modalities of banking services. These changes limit unilateral changes in the conditions contracted for financial products, such as interest rates, commissions, the definition of general mortgage guarantees, and amounts of overdrafts and loans. They also regulate the possibility of conditioning mortgage interest rates to the holding of other bank products. The new guidelines were issued in September, and some clarifications on their scope were issued in November.

Financial regulation initiatives and documents of interest published by national and international organizations

"Dodd-Frank Wall Street Reform and Consumer Protection Act" (111th Congress of the United States of America, July 2010, thomas.loc.gov)

This is the first significant financial reform implemented in the United States since the crisis. Its objective is to strengthen the stability and transparency of the financial system, reduce the risk associated with systemically important institutions (too big to fail), lessen the costs to taxpayers of rescuing financial institutions, and improve consumer protection.

This law creates new regulatory/supervisory agencies while merging, reforming, or removing others, with the goal of making the regulatory process more flexible. New agencies include the Financial Stability Oversight Council (FSOC), which will identify and respond to systemic risks, and the Orderly Liquidation Authority (OLA), which is in charge of applying preventive liquidation procedures to insolvent systemically important institutions. The Bureau of Consumer Financial Protection (BCFP) was created to safeguard consumer protection in the area of financial services.

From the perspective of financial stability, the creation of the FSOC is important because it will identify threats to the financial system, promote market discipline, and respond to emerging risks that threaten the stability of the financial system. The FSOC has the authority to increase capital, liquidity, and leverage requirements as firms grow in size and complexity, and it should identify systemically important institutions and require them to periodically report their orderly liquidation plans in case of insolvency. It can also extend Fed regulations to nonbank entities that represent a risk to financial stability, and it can even require companies that are a serious threat to dissolve their affiliates.

"The Basel Committee's Response to the Financial Crisis: Report to the G20" (BIS/ BCBS, October 2010, www.bis.org)

This document summarizes the Committee's regulatory initiatives in response to the crisis and proposes long-term objectives, such as reducing dependence on risk ratings and developing a methodology or evaluating the systemic importance of individual institutions (box V.1).

"An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements" (BIS/BCBS, August 2010, www.bis.org)

This study assesses the long-term macroeconomic costs and benefits of stronger bank capital and liquidity requirements, It concludes that there is a wide margin for adjusting capital requirements, with positive net benefits in terms of output (GDP). The benefits are realized through a lower probability of a banking crisis and the reduction of output volatility during normal times, while the costs stem from a reduction in consumption and investment due to higher lending costs.

"Systemic Risk and Systemically Important Firms: An Integrated Approach" (Institute for International Finance, May 2010).

This document addresses financial stability issues from the perspective of the financial industry. It focuses on understanding the concept of systemic risk, with the goal of generating proposals on how to address the too big to fail dilemma.

The report recognizes the multidimensional, unpredictable, global, and dynamic nature of systemic risk and emphasizes that market conditions determine whether or not a particular event has systemic consequences. It therefore advocates integrated, flexible solutions that involve the joint and coordinated participation of regulators, supervisors, and the industry.

The report stresses that in addition to providing benefits of scale, well-managed large financial entities can constitute a source of stability in periods of financial stress, for example, by absorbing firms on the verge of insolvency. It further argues that any solution to the moral hazard associated with rescues should avoid categorizing firms and must take into account the degree of interconnection and the possibility of substitution, as well as the size of the institutions.

Box VI.1: Institutional framework of consumer financial protection

The growing concern for protecting the rights of financial system clients reflects both the more extensive use of financial services and products (some of which are increasingly sophisticated) and the adverse effects that an inappropriate consumer protection framework can have on financial stability. The latter has become more important in the wake of the financial crisis of 2008–09, which in its origin has some relation with the proliferation of predatory loan practices, asymmetric information, abuses, and fraud (Ashcraft and Schuermann, 2008).

There are two modalities in consumer financial protection, which normally coexist. In the first, a law and/or other regulatory legislation establishes limits on how certain products can be provided. This regulation is supervised by sectoral agencies or by the regular justice system. The mandate of the sectoral agencies is to ensure compliance with the law. The second modality is a law that sets out general consumer rights (such as the availability of reliable information and nondiscrimination in access to goods and services). This law normally contemplates the creation or existence of an agency that proactively pursues consumer financial protection, The functions of these institutions focus on financial education, the definition of standards on the delivery of information, the investigation of possible violations of the law, and the taking of legal action when a product's supply conditions are determined to be unfair or opaque.

The institutional scheme for consumer financial protection is related to the general regulatory and supervisory model in each jurisdiction[3]/. In countries with segmented supervisory models for banks, insurance, and pension funds, such as Spain and Chile, the consumer protection function is included in each of the supervisors, In jurisdictions that have moved toward integrated supervisory schemes, such as the United Kingdom, consumer protection is implemented through the single body or integrated supervisor.

In recent years, there has been a trend toward the adoption of models that separate the functions of prudential regulation—focused on safeguarding the solvency of institutions—from functions linked to the preservation of market conduct, specifically incorporating consumer financial protection, among other functions[4]/. Australia and New Zealand employ the precursors of this scheme, while other jurisdictions, such as Germany and Canada, have partially implemented it.

The advantages of separating these functions include the possibility that supervisors can focus on a single objective—which facilitates compliance—and a greater visibility of financial client protection procedures when there is a single point of access. There are also disadvantages, however, including potential conflicts between regulatory powers used with different objectives (financial stability and financial client protection); loss of information and know-how (economies of scope) stemming from the separation of the consumer protection agent and the regulator; and difficulties associated with the administration of functions that, while they may be related to the needs of consumer protection, in practice are very diverse in nature.

In jurisdictions with a division of the institutional framework, safeguards are in place to bolster the advantages of the system and mitigate the costs. For example, in Australia and Canada, consumer protection agencies are focused on regulatory compliance, with no direct participation in developing the regulations themselves. In the United States, in contrast, the recent financial reform creates a financial client protection institution that has substantial regulatory powers but is subject to the veto of the Financial System Oversight Council, which is made up of the principal regulatory authorities of the country[5]/.

[3]/ G30 (2008).

[4]/ Ocde (2009).

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Glossary

Acid liquidity: The acid-test ratio, or the ratio between current assets net of inventory and current liabilities.

Additional provisions: Bank provisions in excess of the required level, which are not attributed to any particular loan portfolio.

Available-for-sale instruments: Financial instruments that are not included in either the trading instruments category or the held-to-maturity investment category.

Average interbank interest rate swap (*promedio cámara*): Derivatives contract between two parties, who carry out an exchange of flows at future dates, between a fixed rate established when the contract is written and a variable rate (fixed-for-floating swap). The variable rate corresponds to the average interest rate in the interbank clearing house (*cámara*), which in turn is derived from the average clearing house index.

Basel II: The second accord issued by the Basel Committee on Banking Supervision (BCBS), with the goal of creating an international standard for the banking industry's operation and risk control. Basel II is based on three pillars, which seek to foster greater stability of the financial system: (1) minimum capital requirements aimed at making resource allocation more sensitive to credit and market risks; (2) procedures for improved supervision; and (3) greater market discipline.

Basis point: Unit of measure of the volatility of a bond that is traded in financial markets, equal to one one-hundredth of one percent (0.01%).

CAPM: Capital asset pricing model. Frequently used in finance to determine the theoretically required rate of return of an asset, taking into account sensitivity to nondiversifiable risk (also known as market risk), the return of a representative market portfolio, and the return of a risk-free asset.

CAR: Capital adequacy ratio. A measure of a bank's financial soundness, measured as the ratio of capital to credit-risk-weighted assets.

CCAV: Large-Value Payment Clearing House (*Cámara de Compensación de Pagos de Alto Valor*). Electronic system of interbank payments that operates as a netting engine, with procedures to ensure the final clearing of the net results of each settlement cycle in the RTGS system.

CDS: Credit default swap. A derivative instrument that provides insurance against the credit risk of the issuer of a given underlying sovereign or corporate bond. The institution that grants the CDS commits to covering the loss associated with a previously established credit event occurring before the bond's maturity date.

CEMBI Broad Premium: Measures the differential return on corporate bonds in dollars issued by a set of emerging economies in international markets, relative to U.S. Treasury bonds.

CEMBI Chile Premium: Measures the differential return on corporate bonds in dollars issued by a Chilean firm in international markets, relative to U.S. Treasury bonds.

Central Government: Institutions associated with the three branches of the state (executive, legislative, and judicial), as well as Law 13,196, the interest earned from recognition bonds, and the oil price stabilization fund.

Commercial papers: Documents issued by corporations specially authorized by the Superintendence of Securities and Insurance (SVS), with the goal of attracting funds directly from the public to finance the short-term operations of the issuer (working capital).

Consolidated government: Total central government and the Central Bank of Chile.

Consumer divisions: Bank units oriented to a specific segment or group of the parent bank's clients, generally a lower-income segment. Several of these divisions are heirs to the old finance corporations.

Covered bonds: Bonds backed by a set of assets such as mortgage loans, which remain on the issuer's consolidated balance sheet.

Credit risk: The possibility that a bank debtor or counterparty will fail to meet its contractual obligation, whether in interest or capital.

CSA: Credit Support Annex. An annex to ISDA contracts that provides additional credit protection on over-the-counter derivatives operations. ISDA contracts are standard contracts developed by the International Swaps and Derivatives Association (ISDA).

Currency carry trade: An investment strategy in which an investor contracts debt in one currency at a low interest rate and invests the funds in instruments denominated in a different currency yielding a higher interest rate. When the instrument matures, the investor converts the funds into the original currency to pay off the debt.

Currency mismatch: The difference between foreign currency liabilities and foreign currency assets, less the net position in derivatives (the difference between buy and sell positions in derivatives contracts).

Currency risk: Exposure to losses caused by adverse changes in the value of the foreign currencies in which the instruments, contracts, and other transactions recorded on the balance sheet are denominated.

Currency swap: A contract between two parties establishing a commitment to exchange the specified notional principal and fixed interest in one currency for the specified notional principal and fixed interest in another currency, at a future date and at a pre-established price. In this type of contract, the notional principal must be specified in both currencies.

Default: The nonpayment of the interest or principal on a legally contracted debt.

DIR: Debt-to-income ratio. Measures the debt held by households with different financial and nonfinancial entities as a percentage of their available income.

DVP: Delivery versus payment. A clearing mechanism that links a securities transfer system with a funds transfer system, guaranteeing that the delivery of the securities occurs simultaneously with the payment thereof.

EBITDA: Earnings before interest, taxes, depreciation, and amortization. Used as an approximation of the operating cash flow.

EMBI Global Premium: The most commonly used measure of emerging market risk. The difference between the return on emerging economies' sovereign debt in dollars issued in international markets and U.S. Treasury bonds.

EMBI Premium: The most commonly used measure of an economy's risk. The difference between the return on a country's sovereign debt in dollars issued in international markets and U.S. Treasury bonds.

External debt: Includes bank debt, bonds, and other overseas loans, as well as loans associated with foreign direct investment.

Factoring: A financing option oriented toward small and medium-sized enterprises, which allows such firms to obtain liquidity by selling or assigning their accounts receivable. The receivables are usually made up of invoices, checks, and drafts. The firm receives a cash advance in exchange for transferring the right to collect payment on the accounts to the factor, which could be either a bank or a specialized firm called a factoring company.

Financial debt: Interest-bearing debt, measured as bank debt, plus liabilities with the public (bonds and commercial papers).

Financial indebtedness: Ratio of financial indebtedness, measured as financial debt/(Equity plus minority interest).

FIR: Financial burden-to-income ratio. Measures the payments that households must make to fulfill their consumer and mortgage loan commitments, as a percentage of their available income.

***Flap*:** short-term liquidity facility (*Facilidad de Liquidez a Plazo*). Financing provided by the Central Bank of Chile to banking entities, at maturities of 90 to 180 days and at a fixed rate for the full period of the operation. The guarantees required for these operations are the same as those for overnight loans.

FLI: Intraday liquidity facility (*Facilidad de Liquidez Intradía*). Financing granted by the Central Bank of Chile to banking entities through the RTGS system. This facility operates daily through the purchase of financial instruments with a repurchase agreement. The terms and conditions of these operations are contained in the Central Bank's financial regulations.

Forward: A contract between two parties, establishing a commitment to exchange a certain quantity of an asset on a future date, at a predetermined price.

FPD: Standing deposit facility (*Facilidad Permanente de Depósito o Depósito de Liquidez*). Operations through which the Central Bank contributes to banks' liquidity management by accepting deposits. The deposits collect interest on the agreed maturity date, as established in the Central Bank's financial regulations.

FPL: Standing liquidity facility (*Facilidad Permanente de Liquidez*). Financing instrument loaned by the Central Bank of Chile to banks via the purchase of securities with a repurchase agreement. This window is contracted at an interest rate and maturity established in the Central Bank's financial regulations.

FRP: Pension Reserve Fund (*Fondo de Reserva de Pensiones*). A fund created by the Fiscal Accountability Law, whose objective is to complement the financing of fiscal liabilities deriving from the state minimum pension guarantee on old age, disability, and survivor's pensions and welfare benefits. It is managed by the Central Bank of Chile in its capacity as fiscal agent, under investment guidelines defined by the Finance Ministry's Decree 1382 and complementary instructions.

G20: An international forum for cooperation and consultation among developed countries and emerging economies, on issues related to global economic stability. Members include the seven most industrialized countries in the world, Russia, the European Union, and a group of other economies, including Brazil, India, China, and South Africa, among others.

IFRS: International Financial Reporting Standards. A set of standards issued by the International Accounting Standards Board (IASB), whose goal is the comparable and transparent revelation of financial statement information, for all participants in the world capital markets.

Impaired portfolio: Loans for which there is evidence that the borrowers will not fulfill their obligations under the contracted payment terms, without the possibility of recovering the debt through guarantees, legal actions, or the contracting of different terms. A loan is considered impaired when it is past due by 90 days or more.

Indexation margin: Difference between the indexation adjustments earned and paid by banks, measured relative to total bank assets.

Interest coverage ratio: A measure of payment capacity, defined as the ratio of EBITDA to financial expense.

Interest margin: Difference between the interest earned and paid by banks, measured relative to total bank assets.

Interest rate risk: Exposure to losses caused by adverse changes in interest rates, which affect the value of the instruments, contracts, and other transactions recorded on the balance sheet.

Liquidity risk: The risk that a counterparty (or participant in the payments system) will not be able to meet its obligations when they come due, although it may be able to do so in the future. Liquidity risk does not necessarily imply that the counterparty is insolvent.

Listed instruments: Instruments issued by firms and traded in the capital market.

LTRO: Longer-term refinancing operation. A monthly open market operation carried out by the Eurosystem, usually with a maturity of three months, using variable interest rate auctions for which the volume is announced in advance.

LVPS: Large-value payment systems. It comprises the RTGS and CCAV systems.

Market risk: The potential loss in value of the net positions held by a financial entity, as the result of adverse changes in market prices.

MSCI Index: An index created by Morgan Stanley Capital International to measure the stock market performance of different regions worldwide.

Multibanks, large: Banks with a large market share and a high degree of diversification in their operations (loans and derivative and nonderivative financial instruments).

Multibanks, medium-sized: Banks with a smaller market share than large multibanks, but as much diversification.

Net interest margin: Difference between interests and indexation adjustments earned and paid by banks, measured relative to total bank assets.

NIIP: Net international investment position. The difference between the economy's external assets and liabilities.

Nondeliverable forward (NDF): Over-the-counter (off-exchange) currency futures that are settled (net) outside the domestic market, primarily in New York. Because the forward is nondeliverable, the payment at maturity is based on the differential between the contracted forward price and the spot price.

Nonperforming loans: Bank loans, or a fraction thereof, that are past due by up to 90 days from the maturity date. On loans with fixed monthly payments, only the amount of the past-due payment is considered, although the full amount of the loan could transfer to the nonperforming portfolio if acceleration clauses are enforced.

Onshore dollar rate: Estimate of the external rate relevant to the national foreign exchange market, which is, in general terms, derived from the covered interest rate parity.

Onshore dollar spread: The difference between the onshore rate and the Libor. It is therefore a proxy for the cost of financing in dollars in the national market vis-à-vis the international market.

Overnight indexed swap (OIS): An interest rate swap in which the floating rate is the geometric average of an overnight rate (published daily) up to the day of payment. In the U.S. the calculation is based on the federal funds rate, which is published daily.

Overnight rate: The rate at which the banks grant immediate financing to other banks.

Over-the-counter: A term used to describe the trading of financial instruments directly between two parties, without going through the organized securities exchanges.

Prime deposit rate: Interest rate that financial institutions offer their best clients on short- and medium-term deposits.

Repos: Repurchase (reverse repurchase) agreements. A sale (purchase) collateralized with an agreement or commitment to repurchase (sell back) the security.

Repricing: A component of interest rate risk, corresponding to the exposure to losses caused by rolling over of assets and liabilities with different maturities under different financial conditions.

Residual short-term external debt: External debt coming due within 12 months of a given date (that is, short-term external debt plus the current portion of long-term external debt).

Retail banks: Banks whose main business is consumer lending.

Risk-weighted assets: Bank assets weighted on the basis of five risk categories, set forth in Article 67 of the General Banking Law. The ratio of capital to risk-weighted assets serves as an indicator of capital adequacy (known as the Basel ratio), which is internationally accepted as a measure of bank solvency.

ROA: Return on assets. Measured as the ratio of earnings after taxes, amortizations, and extraordinary items to total assets.

ROE: Return on equity. Measured as the ratio of earnings after taxes, amortizations, and extraordinary items to shareholders' equity plus minority interest. It is the shareholders' return.

RTGS: Real-time gross settlements system. Electronic interbank payment system managed by the Central Bank of Chile, in which the processing and clearing of transactions is carried out continuously, individually, and in real time.

Savings banks: Financial institutions in Spain (known domestically as *Cajas de Ahorro*), which are limited liability companies run as foundations (whereas commercial banks are corporations) and must therefore earmark a share of dividends to social ends or have government representation on the board, although they are private entities.

Secondary market rate on deposits: The interest rate at which bank deposits are traded in the secondary market of the Santiago Stock Exchange.

Senior bonds: Ordinary long-term bonds issued by banks.

Sovereign bonds: Debt instruments issued by the government of a country in domestic or foreign currency. In the case of a foreign-currency-denominated sovereign bond, the selected currency generally corresponds to a more stable economy.

SPV: Special Purpose Vehicle. A subsidiary entity whose operations are limited to the acquisition and financing of specific assets and that has an asset and liability structure and legal status that ensure the fulfillment of obligations even if the parent company goes bankrupt.

Subordinate bonds: Long-term bonds issued by banks, with an average maturity of not less than five years and with no prepayment clauses. Because subordinate bonds are repaid after the claims of other creditors are settled in the case of bank liquidation, a share of these bonds is computed as effective equity.

Subprime: A loan segment of the U.S. financial market. They are loans (usually mortgages) granted to debtors whose characteristics and payment history are below the average standards of the banking industry, such that they present a greater default risk than the average for other loans. The loans granted to debtors that satisfy the average standards of the banking industry are called prime.

Swap: Derivatives contract between two parties, who carry out an exchange of flows at future dates. One of the most common swap contracts is the interest rate swap, in which the parties exchange predetermined flows at a fixed rate, set when the contract is written, for predetermined flows at a variable rate.

Tier 1 capital: Paid-in capital plus bank reserves and period earnings, net of provision for the distribution of dividends.

Tier 2 capital: Bank equity exceeding Tier 1 capital. Includes subordinated bonds, up to 50% of Tier 1 capital, and general provisions up to 1.25% of risk-weighted assets.

Trading instruments: Easily transferable instruments acquired with the objective of reselling them in the short term in order to make gains from arbitrage or fluctuations in the market rate or price.

Trading: Net earnings from financial operations and foreign exchange transactions.

Treasury banks: Banks that are dedicated to investment in derivative and nonderivative financial instruments and that do not have loans.

Type 1 fund: Mutual funds that invest in short-term debt instruments, with duration of 90 days or less.

Type A fund: The highest risk category of the five types of pension funds, invested in fixed- and variable-income instruments. The upper limit on variable-income investments is 80% of the value of the fund; the obligatory lower limit is 40% of the value of the fund.

Type B fund: The second-highest risk category of the five types of pension funds, invested in fixed- and variable-income instruments. The upper limit on variable-income investments is 60% of the value of the fund; the obligatory lower limit is 25% of the value of the fund.

VIX: Stock volatility index calculated by the Chicago Board of Trade, and the most commonly used measure of general volatility in the markets at the international level. It measures the implicit volatility in S&P 500 options contracts.

Abbreviations

Achef: *Asociación Chilena de Empresas de Factoring* (Association of Chilean Factoring Firms).
BIS: Bank for International Settlements.
CEBS: Committee of European Banking Supervisors.
CPI: Consumer price index.
CSD: Central Securities Depository.
ECB: European Central Bank.
EMBI: Emerging Markets Bond Index.
EU: European Union.
Fed: U.S. Federal Reserve.
GDP: Gross domestic product.
IMF: International Monetary Fund.
INE: *Instituto Nacional de Estadísticas* (National Statistics Bureau).
***Ipsa*:** *Índice de Precios Selectivo de Acciones* (Selective Stock Price Index).
Libor: London inter-bank offered rate.
MPR: Monetary policy rate.
MSCI: Morgan Stanley Capital International.
Oecd: Organization for Economic Cooperation and Development.
PDBC: Central Bank discount notes promissory denominated in pesos.
S&P: Standard & Poor's.
SBIF: *Superintendencia de Bancos e Instituciones Financieras* (Superintendence of Banks and Financial Institutions).
SMEs: Small and medium-sized enterprises.
SP: *Superintendencia de Pensiones* (Superintendence of Pensions).
SuSeSo: *Superintendencia de Seguridad Social* (Superintendence of Social Security).
SVS: *Superintendencia de Valores y Seguros* (Superintendence of Securities and Insurance).
U.S.: United States of America.
UF: *Unidad de Fomento* (inflation-indexed unit of account).

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