



FINANCIAL STABILITY REPORT

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BANCO DE LA REPÚBLICA

CENTRAL BANK OF COLOMBIA

BOGOTÁ. D. C., COLOMBIA

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EXECUTIVE SUMMARY

Favorable conditions for increased activity in financial system continued during the first half of 2007. However, during the second quarter, the combined impact of different macroeconomic elements caused that expansion to ease somewhat. The trends in several variables suggest this slowdown will continue, which could spell less relative exposure for financial institutions and the emergence of certain risks. This underscores the necessity of continuously monitoring the more important trends that materialize in this new scenario.

In June, financial institutions registered considerable real growth in the loan portfolio (22.6%). All types of credit contributed to that increase: retail (36.9%), micro-credit (19.9%), commercial loans (17.3%) and mortgages (12.4%, with securitizations). The latter were especially dynamic during the second quarter. Although these growth rates are lofty, they have been falling since early April, when they were the highest of this decade, with the exception of mortgage loans. The slowdown in loan portfolio growth is due to the monetary policy being implemented since April 2006, which included the increase in Banco de la República's intervention rates, the new ordinary and marginal reserve requirements, and the new provisioning system ruled by the National Office of the Superintendent of Financial Institutions.

Despite a considerable build-up in the risky portfolio, above all with respect to retail loans, loan quality remains good. This reiterates the message conveyed in previous editions of the *Financial Stability Report* concerning the importance of monitoring and assessing Retail Loan disbursements. Financial institutions have made an effort to increase provisioning to cover the riskiest portion of their loan portfolios.

The momentum in the loan portfolio during the semester was backed by two complementary trends. First, there was a real increase in deposits with financial institutions (15.1%), which dipped slightly in June. Secondly, financial institutions continued to sell off part of their investment portfolios, as they had been doing since mid-2006. In real terms, investments were down by 19.6% at the end of the first half of the year. Thanks to this tendency, market risk exposure is low compared to past years. This reduction in exposure has been accompanied by new regulations on market risk intended to ensure it is measured properly and adequately covered with capital.

The size of the portfolio held by non-bank financial institutions (NBFI) has grown slowly, and several severance-pay funds have had problems meeting the requirements on minimum profitability. This

underscores the importance of moving forward with the discussion on general rules and regulations for pension fund managers (PFM).

As to the remainder of the year, the economic situation suggests there will be less momentum in financial intermediation activities. The delayed impact of monetary policy on credit activity should continue to materialize in the coming months. Also, from the standpoint of credit demand, agent expectations concerning the state of the economy are more moderate. All of this has occurred in a context marked by interest rate hikes and the rising cost of financial activity, reinforced by the recent tendency among institutions to finance themselves through sources that are more costly but more stable. Certificates of deposit are an example.

A careful analysis of the risks to the banking system is particularly relevant in this situation. As to credit risk, less momentum clearly leads to less relative exposure. Nonetheless, although the risky loan portfolio remains at manageable levels and current loan ratings are not likely to deteriorate, the exercises presented in this report emphasize how vital it is to continue to implement measures that guarantee adequate coverage throughout the economic cycle. The credit risk management system (SARC) ordered by the National Office of the Superintendent of Financial Institutions is a crucial step in that direction.

Several exercises suggest that less liquidity in the local public debt market, due to uncertainty on international capital markets, could affect the liquidity of financial intermediaries. However, the liquidity indicators continue to be favorable. The regulatory steps taken recently by the National Office of the Superintendent of Financial Institutions to improve measurement, monitoring and regulation of this risk are vital.

Finally, the results of the exercises all show how important macroeconomic stability is to minimizing vulnerability in the financial sector to negative changes in conditions on international financial markets.

Board of Directors
Banco de la República

FINANCIAL STABILITY REPORT

According to its constitutional mandate and Law 31/1992, one of Banco de la República's duties is to ensure price stability. This depends largely on maintaining financial stability and is achieved when the financial system is able to broker financial flows efficiently. Banco de la República also helps to improve resource allocation, which is important to preserving macroeconomic stability. For that reason, financial instability has a direct impact on macroeconomic stability and on Banco de la República's capacity to honor its constitutional mandate. In short, monitoring and maintaining financial stability are crucial to that activity.

Banco de la República provides for financial stability in a variety of ways. First, it ensures the payment system of the Colombian economy operates properly. Secondly, it extends liquidity to the financial system through its monetary

transactions and by exercising its constitutional faculty as the lender of last resort. Thirdly, being the credit authority, it also designs financial regulatory mechanisms to reduce episodes of instability. It does so in conjunction with the Office of the National Superintendent of Financial Institutions. Finally, Banco de la República carefully monitors economic trends that could threaten the country's financial stability.

The *Financial Stability Report* is part of this last task and accomplishes two objectives. First, it describes how the financial system has performed of late and its principal debtors. This is done so future trends in that performance can be visualized. Secondly, it identifies the major risks to credit institutions. The reason behind both these objectives is to inform the public of the trends and risks that affect the financial system as a whole.

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I. THE MACROECONOMIC ENVIRONMENT

Macroeconomic conditions were favorable for financial intermediation activities. However, loan portfolio growth slowed for a variety of reasons.

Financial intermediation activities continued to increase at a healthy pace during the first half of 2007, favored by macroeconomic conditions. Towards the end of that period, a variety of elements, including the delayed impact of monetary policy, caused a bit of a slowdown in this tendency. In terms of investment trading, the rise in volatility on international markets (which has heightened uncertainty and the perception of risk on local and foreign markets) triggered a sharp change in the composition of investment portfolios.

The loan portfolio continues to register high rates of real growth (22.72% in June), thanks to good economic performance in the first quarter of 2007, when gross domestic product (GDP) was up by 7.97% and local demand, by 10.75%. The behavior of demand was explained primarily by the increase in consumption (7.28%)¹ and in gross private capital formation (31.78%)² (Graph 1). The good results on the supply side are explained by the momentum in construction (43.34%), industrial manufacturing (19.18%) and commerce (17.59%) (Graph 2). On the whole, substantial confidence among agents and good income growth contributed to the increase in the loan portfolio.

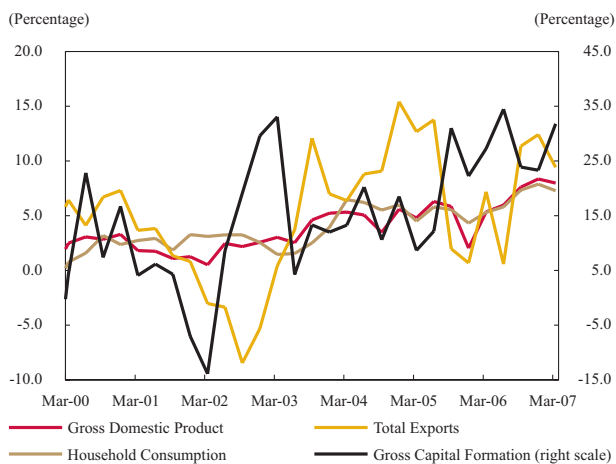
Investment trading was affected by the increase in volatility and uncertainty on international markets.

¹ Particularly semi-durable goods (15.98%) and durables (17.58%).

² Mainly industrial manufacturing (3.7%) and construction (16.32%).

GRAPH 1

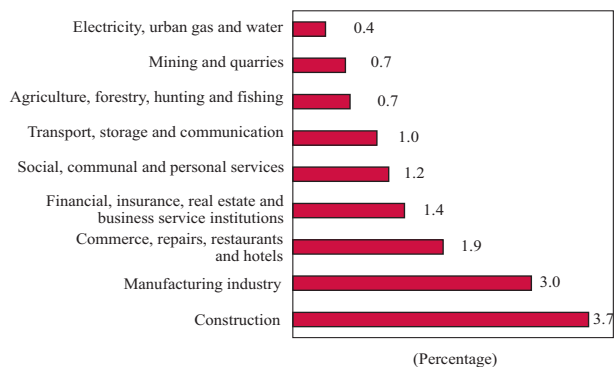
GROWTH IN GDP AND ITS COMPONENTS



Source: DANE.

GRAPH 2

SECTOR GROWTH, WEIGHTED BY GDP SHARE



Source: DANE, Banco de la República's calculations.

The increase in volatility and uncertainty make a sell off of local securities more likely.

Despite the considerable rise in credit demand, several supply-side elements, including the measures adopted by Banco de la República since April 2006,³ cause a slowdown in this growth at the end of the first half of 2007.

The 2005-2006 period was generally favorable for investment trading, thanks to a favorable economic situation in Colombia and worldwide. The macroeconomic indicators were positive, as were those for capital flows, promising good profits in an environment marked by with little uncertainty. However, 2007 has seen a change in the risk situation because the international markets are more volatile. These events can cause imbalances worldwide, prompting a possible reverse in the flow of capital that has fed the emerging economies of late.

The sub-prime mortgage market in the United States⁴ bears most of the responsibility for the increase in volatility. Instability in that market originated with US\$1.2 trillion in (t) in defaults on sub-prime mortgages, mainly because of the interest rate hike and the decline in housing prices. When the value of sub-prime securities dropped, finance companies exposed to that market suffered major losses. The hedge funds lost money when they could not cover the obligations demanded by these securities. Banks also incurred sizeable losses as a result of sub-prime mortgage default. Those losses eventually added to the

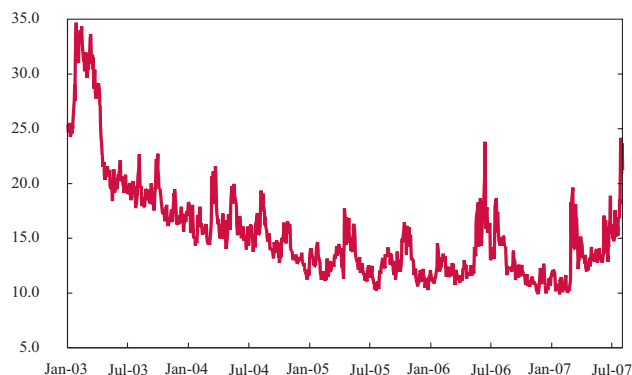
decline in income from securitized loans and the new structured products. In response to the liquidity squeeze in short-term borrowing caused by these events, the US Federal Reserve Bank (the Fed) has promised to supply the system with extra liquidity.

³ Those policies involve: i) an increase in the intervention rate; ii) the marginal reserve on liabilities subject to reserve requirements and unification of the ordinary reserve ratio; iii) the external debt deposit; iv) a quantitative limit on the gross leverage position; and v) the portfolio investment deposit (See Box 1).

⁴ Sub-prime mortgages are high risk loans. Approximately six million people who were not creditworthy had access to loans of this type for 100% home financing. These mortgages were securitized and placed on the market. Despite the high risk inherent in this portfolio, the securities were classified as low risk.

Regardless of the Fed's decisions, uncertainty continued to escalate the world over, as reflected in the market volatility index (VIX)⁵ (Graph 3). It shows the risk aversion level is twice what it was in February 2007. The European Central Bank is holding back on hikes in its intervention rate, and has supplied the market with extra liquidity, following the course adopted by the Fed.⁶ This has translated into increased asset price volatility in the emerging economies, coupled with a decline in the fundamentals related to the economic, policy and the financial risks these countries face (Graph 4).

MARKET VOLATILITY INDEX (VIX)



Source: Bloomberg.

As in many Latin American countries, risk perception in Colombia has increased. Although the country's financial agents are not directly exposed to the US sub-prime market, the risk continues, as securities on the local market could be liquidated in response to the uncertainty on foreign markets. This would jeopardize the value of those securities and exert pressure on the exchange rate. The Colombian stock market index (IGBC in Spanish) was stable between January and August, with few variations (Graph 5). Revaluation of the exchange with respect to the dollar came to Col\$280 between January and July. In the case of the public debt at June, TES prices were lower at the end of August than at the start of the year, as reflected by respective increases of 192, 193 and 171 basis points (bp) in the short, medium and long portions of the zero-coupon curve.

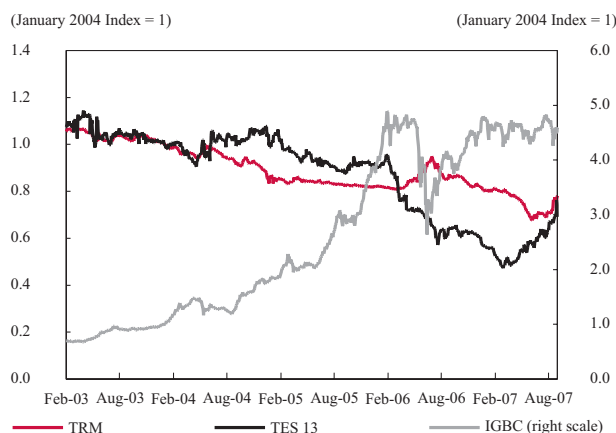
EMBI+ SPREAD FOR SEVERAL LATIN AMERICAN COUNTRIES



Source: Bloomberg.

These tendencies suggest the portfolio will continue to slow during the second half of the year and uncertainty on financial markets worldwide will continue to build.

DEVELOPMENTS IN IGBC, TRM AND TES YIELD (PESOS)



Source: Bloomberg. Banco de la República's calculations.

⁵ The VIX reflects the volatility implicit in options on the S&P 500, which is the volatility anticipated during the next 30 days.

⁶ The European Central Bank has injected more than US\$131,000 million (m).

A continued slowdown in portfolio growth is expected during the remainder of 2007.

Regardless of the outcome for inflation,⁷ it is important to remember that monetary policy does not have an immediate impact on the economy. Therefore, from the standpoint of credit supply, the slowdown in financial trading is expected to continue during the months ahead. This would be extremely important, since the cost of financing goes up when reserve requirements increase.

Both the growth projections and the expectation surveys (summarized in the section on financial system debtors) point to less economic growth. From the standpoint of demand, this indicates that conditions will allow for sharp but increasingly less growth in the loan portfolio.

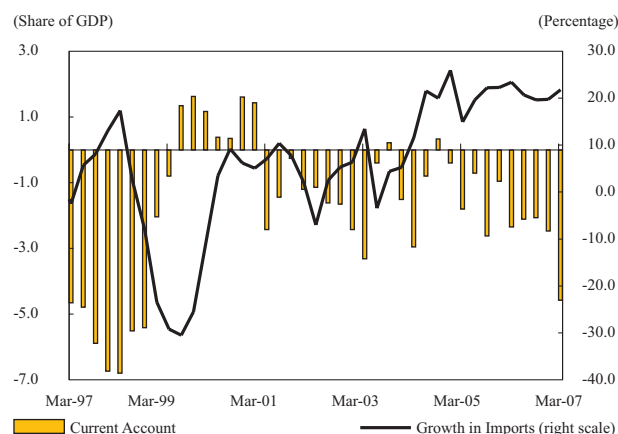
Due to the recent volatility on financial markets, the year to date also is expected to see growing uncertainty. The Fed's message is clear. It is committed to providing the market with added liquidity, but will not attempt to rescue the financial institutions that are in trouble. Insofar as the risk posed by sub-prime loans is dispersed among a large number of investors, messages of that sort could add to uncertainty

on the markets. Moreover, the increase in risk premiums eventually could prompt a sell-off of securities on local financial markets. This scenario suggests the liquidity squeeze in the international economy could tighten even more, which is why it is important to keep an eye on the variables that could have more of an impact on local liquidity.

The foregoing is particularly important when considering the recent increase in the current account deficit (Graph 6), which went from 2.5% of GDP to 4.6% between December 2006 and March 2007. This makes the Colombian economy more vulnerable to a change in liquidity conditions on international financial markets.

GRAPH 6

CURRENT ACCOUNT AS A SHARE OF GDP AND GROWTH IN IMPORTS



Source: DANE, Banco de la República's calculations.

⁷ The positive inflation figures are due mainly to the reduction in food prices after El Niño. The figure for August corroborates those results (-0.13%) and allows Banco de la República to reaffirm its commitment to the inflation target.

AN INSTRUMENT TO ASSESS THE IMPACT OF MONETARY
POLICY ON FINANCIAL VARIABLES

The Monti-Klein model¹ outlined in this section is a banking-theory tool that can be used to assess the impact recent monetary policy measures might have on the financial system. In its simplest version, the model assumes there is just one bank in the economy, which acts as an intermediary between savers and investors. If the banking system is regarded as a whole, this is a convenient assumption as long as the bank is virtually the only agent acting as a finance institution, particularly in the Colombian case.

In the context of the model, the bank's problem is to maximize its benefits (Π). It does so by choosing a level for the loan portfolio, L ; deposits, D ; and indebtedness to the central bank, OMA :

$$\underset{L,D,M}{Max} \Pi(L,D,M) = r_l(L) \times L + r_{oma} \times OMA - r_d(D) \times D - C(D,L,OMA)$$

Where r_l is the lending rate, r_d is the deposit rate, and r_{oma} is the interest rate charged by the central bank. As illustrated, the interest rates depend on the loan portfolio and deposits levels, provided there is a credit demand with a negative slope, and a deposit supply with a positive slope.

The bank is subject to the following restrictions, which basically indicate balance sheet items, where α is the ordinary reserve ratio, α_m is the marginal reserve ratio, R is the bank's reserve (established only to meet the reserve requirements) and T is the line of credit with the central bank:

$$D = R + L + OMA$$

$$D = \bar{D} + \Delta D$$

$$R = \alpha \bar{D} + (\alpha + \alpha_m) \Delta D$$

$$OMA = T$$

The marginal reserve requirement applies only to deposit flow ΔD above predetermined level \bar{D} . Combining the restrictions, the lagrangian of the problem is obtained by:

$$\begin{aligned} \ell = & r_l(L) \times L + r_{oma} \times OMA - r_d(D) \times D - C(D,L,OMA) \\ & + \lambda \left[(D - \bar{D})(1 - \alpha - \alpha_m) + \bar{D}(1 - \alpha) - L - OMA \right] + \mu [OMA - T] \end{aligned}$$

Therefore, the solution is characterized by the following equations:

$$\frac{\partial \ell}{\partial L} = r_l(L) + r_l'(L) \times L - r_{oma} - C_L(L,D,OMA) - \lambda = 0$$

$$\frac{\partial \ell}{\partial D} = -r_d(D) - r_d'(D) \times D + r_{oma}(1 - \alpha - \alpha_m) - C_D(L,D,OMA) + \lambda(1 - \alpha - \alpha_m) = 0$$

¹ See Freixas and Rochet (1997). However, they do not take the marginal reserve ratio into account.

$$\frac{\partial \ell}{\partial OMA} = r_{oma} - C_{oma} \cdot (L, D, OMA) - \lambda + \mu = 0$$

$$\frac{\partial \ell}{\partial \lambda} = (D - \bar{D})(1 - \alpha - \alpha_m) + \bar{D}(1 - \alpha) - L - OMA = 0$$

$$\frac{\partial \ell}{\partial \mu} = OMA - T = 0$$

$$L(r) = aY + br_l \quad a > 0, \quad b < 0$$

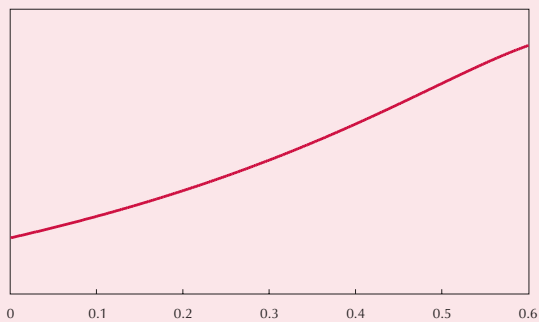
$$D(r) = cr_d + dr_{oma} \quad c > 0, \quad d < 0$$

Where the last two equations represent credit demand and deposit supply.

The impact of introducing (or raising) a marginal reserve requirement on the lending and deposit rates presented in Graphs B1.1 and B1.2 can be analyzed qualitatively by resolving this system of equations (using calibrated values for some of the parameters).²

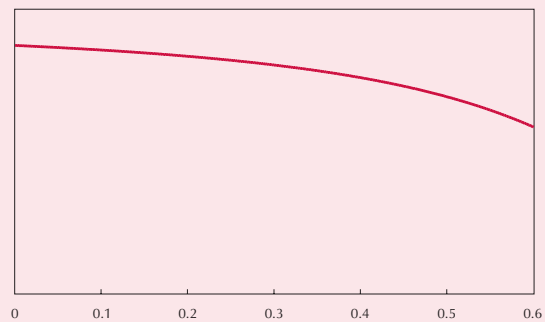
According to the graphs, the marginal reserve ratio has a positive impact on the lending rate and a negative impact on the deposit rate. Therefore, it tends to increase the mark up for credit institutions due to the monopolistic nature of the financial system. When the marginal reserve requirement makes sources of financing more expensive, the system raises the cost of loans and lower its funding costs as best possible. This is done by increasing its mark up. Given the functional forms of credit demand and deposit supply, the higher lending and lower deposit rates that would ensue with the introduction of a marginal reserve requirement are consistent with fewer loans and fewer deposits. The foregoing illustrates the capacity of the marginal reserve requirement to influence financial variables such as credit.

GRAPH B1.1
IMPACT OF THE MARGINAL RESERVE
REQUIREMENT ON THE LENDING RATE



Source: National Office of the Superintendent of Financial Institutions and DANE. Banco de la República's calculations

GRAPH B1.2
IMPACT OF THE MARGINAL RESERVE
REQUIREMENT ON THE DEPOSIT RATE



Source: National Office of the Superintendent of Financial Institutions and DANE. Banco de la República's calculations.

² To obtain the relevant parameters, this system is resolved by using the values registered at a particular point in time for the endogenous variables (L , D and OMA volume, as well as interest rates). This makes it possible to recover the values of the parameters that are consistent with equilibrium of the financial system on a particular date.

II. THE FINANCIAL SYSTEM

Growth in intermediation activities remained high, bolstered by a major increase in deposits and investment sell-offs. However, the pace of that growth has slowed.

A. CREDIT INSTITUTIONS

Financial intermediation activities continued to increase, fueled by strong demand and broad liquidity. The situation with respect to the investment portfolio was less favorable and prompted credit institutions to liquidate their position in local government bonds. Bolstered by a major increase in deposits, they have used this mechanism to finance the growth in credit.

Although growth rates have remained high, every segment of the loan portfolio experienced a slowdown during the first half of the year. A tighter monetary policy, reflected in intervention interest rate hikes and higher reserve requirements, has helped to curb the upward trend in the loan portfolio, which also is backed by requirements for further provisioning. Macroeconomic and financial conditions suggest the coming months will see the slowdown continue.

The main indicators show the banking system is stable.

The main indicators show the banking system is financially stable. This fact is mirrored by historically high profitability, low credit risk and high coverage. Yet, continuous monitoring is necessary, as some trends have changed in recent months.

GRAPH 7

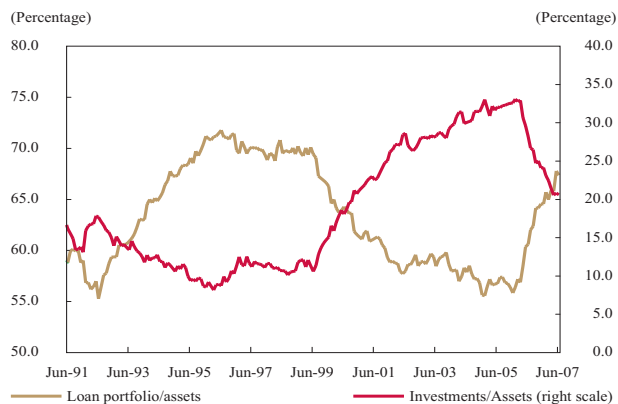
CREDIT INSTITUTION ASSETS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 8

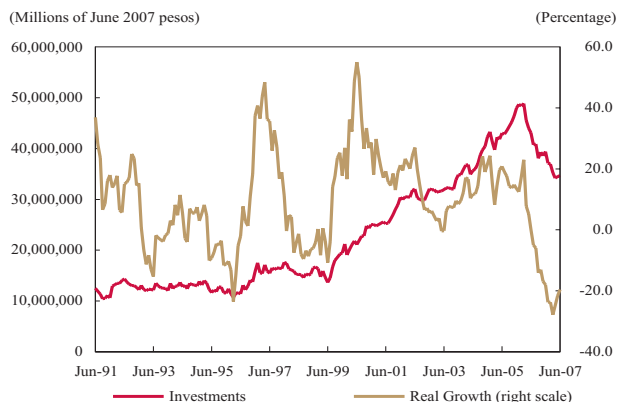
INVESTMENTS AND GROSS LOAN PORTFOLIO AS A PERCENTAGE OF TOTAL CREDIT INSTITUTION ASSETS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 9

CREDIT INSTITUTION INVESTMENTS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

1. General Balance Sheet Positions

a. Asset Accounts

Credit institutions reported Col\$168.5 t in assets at June 2007. Compared to the same month in 2006, this represents a real annual increase of 10.3% (Graph 7). Although assets are at all-time high levels, growth has slowed. The average annual increase in assets during the first half of 2007 was 10.8%, as opposed to 13.6% during the same period in 2006. The slowdown is related primarily to the liquidation of local government bonds.

The increase in assets is explained primarily by loan portfolio growth, which saw a real annual variation of 22.6% and accounted for 67.4% of total assets (Graph 8). The substitution of loans for investments witnessed since the start of 2006 continued up to the first quarter of 2007, thanks to the productive sector's demand for asset financing and a less favorable situation on government bond markets, which prompted credit institutions to liquidate positions in these securities. However, this trend came to a halt during the second quarter of 2007 and, since March, investments as a share of total assets have remained virtually unchanged at levels close to 20.6%.

The shift from investments to loans, ongoing since the second quarter of 2006, is evident in the real value of this item and its growth rate (Graph 9). At June 2007, investments were valued at Col\$34.7 t, which is 19.6% less, in real annual terms. Investment growth so far this year is -23.6%, a figure that reflects the intensity of sell offs throughout 2007.

As mentioned earlier, the increase in assets is due largely to the momentum in the loan portfolio, which registered 22.6% real annual growth at June 2007. Retail loans are still the most dynamic segment of the gross loan portfolio, having risen at a real annual rate of 36.9% (Graph 10). They accounted for 27.7% of total credit,

as opposed to 21.3% at June 2005. Because most of these loans have no collateral, good follow-up on this portfolio is essential; accelerated growth can suggest more exposure to risky customers.

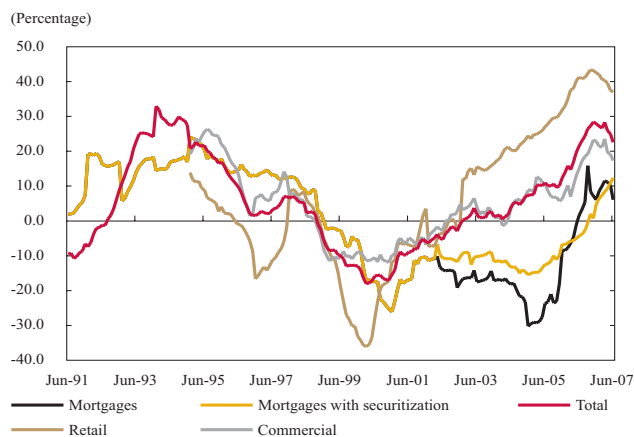
Although growth has been good, it slowed during the first half of the year in virtually every segment of the loan portfolio (Graph 10). The real increase in commercial loans (53.1% of the total loan portfolio) was 17.3% at June. This is 6.2 percentage points (pp) less than the figure at March 2007. Retail loans showed 3.5 pp less growth compared to the same reference period. The mortgage loan portfolio with securitization was the only exception; it was up by a real annual rate of 12.4%, which is 4.0 pp above the increase registered at the end of the first quarter of 2007.

The slowdown in most loan portfolios is due, among other factors, to the impact of a tighter monetary policy, as reflected by the sustained 325 bp increase in intervention interest rates since April 2006 and the application of a marginal reserve requirement in May. The slowdown in credit growth is expected to continue because of the impact of these measures, as well as more demand for provisioning and the economic situation in general.

The momentum in new loans explains the build-up in the mortgage portfolio with securitization (Graph 11). Average monthly disbursements rose to \$273 billion (b) in 2007, which is 33% more than the average in 2006.

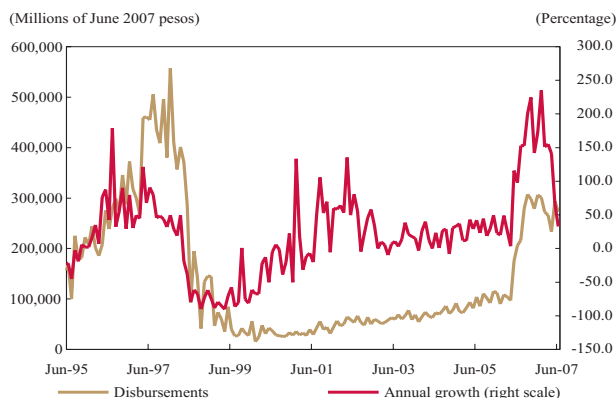
Financial depth (measured as the loan portfolio/GDP ratio) has expanded (Graph 12) due to the shift in assets towards loans, fueled by continued strong demand for credit. The projection for this indicator at June was 33.5%, which implies 8 pp more financial depth compared to June 2006. However, in spite of this increase, the levels are still a long ways from those observed in the years leading up

REAL ANNUAL GROSS PORTFOLIO GROWTH: CREDIT INSTITUTIONS



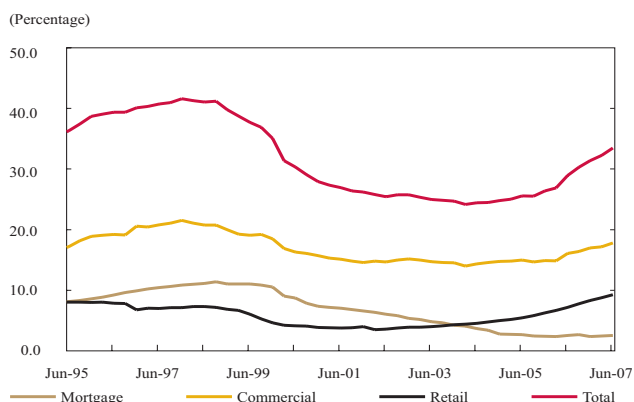
Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

MORTGAGE LOAN DISBURSEMENTS



Source: ICAV, Banco de la República's calculations.

FINANCIAL DEPTH (LOAN PORTFOLIO/GDP)



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

Financial depth has grown as a result of the shift in assets towards loans.

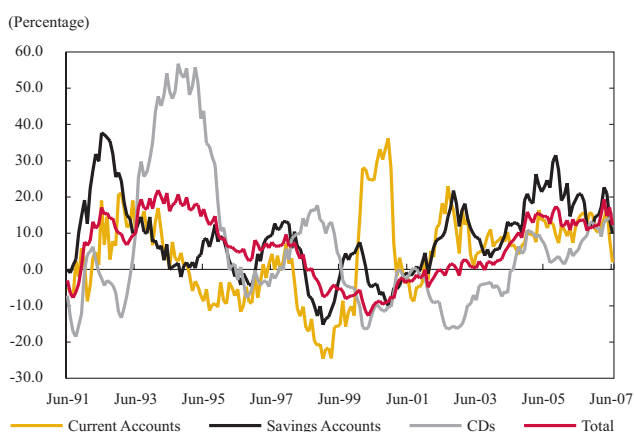
to the crisis at the end of the nineties, when financial depth was over 40%. This is explained by the downward trend in mortgage loan indicator, since retail loans were at a historic high and the commercial loan portfolio already shows a depth similar to what it was before the financial crisis.

b. Liability Accounts

The current growth in the loan portfolio is financed not only by the investment sell-off, but also by a major increase in deposits from the public. During 2007, deposits of that type rose at a real annual rate of 15.1%, on average, to a total of Col\$118.9 t.

GRAPH 13

REAL ANNUAL GROWTH IN DEPOSITS WITH CREDIT INSTITUTIONS, BY TYPE OF DEPOSIT



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

The shift towards certificates of deposit became more pronounced after the marginal reserve requirement was introduced.

As to the main deposit components, credit institutions show less preference for sight deposits, which have not increased as much (Graph 13). Deposits in savings and checking accounts exhibited real annual increases of 9.9% and 2% at June, while term deposits (CDs) were up by 15.9%. This shift towards deposits in the form of CDs has been going on since the second half of 2006, but became more pronounced after introduction of the marginal reserve requirement in May.⁸ In just two months, certificates of deposits increased by 1.4 pp as a share of total deposits, and accounted for 30.1% at June. Expectations of higher interest rates, coupled with the less favorable situation on financial markets, have again made this an important funding option, even

though it generates higher financial costs. These higher costs are expected to be transferred to loans, thus contributing to the slowdown in the portfolio. More funding through CDs has benefits in terms of liquidity, as these deposits are less volatile than savings and current accounts

⁸ This is because the marginal reserve requirement for certificates of deposit is less than for other deposits. The shift occurred even though the structure for marginal reserve requirements and ordinary reserve requirements is the same (the reserve ratio on current accounts is 4.15 times that of CDs).

2. Exposure of Credit Institutions to Major Borrowers

The exposure of credit institutions to borrowers was Col\$126.8 t at June 2007, which includes a real increase of 9.1%. The exposed amount, as a percentage of the assets of credit institution, is similar to the levels reported as of mid-2003 and was 75.3% in June 2007 (Table 1).

Although the past year has seen no major variation in the amount of exposure to the different borrowers, their make-up has changed substantially. Exposure to the public sector dropped sharply to 20.7% in June, having been 28.9% a year earlier. This is a direct result of the sell-off of investments.

In contrast, households have gained ground as a counterpart of the financial system and surpassed the public sector in 2007. By June, exposure to borrowers of this type accounted for 33.7%, which is 4.9 pp more than the year before. The increase is explained by retail loans to households, which were up sharply (36.9%). At the time, exposure to households through retail loans alone was more than aggregate exposure to the public sector.

Credit institutions are less exposed to the public sector due to the sell-off of investments.

TABLE 1

CREDIT INSTITUTIONS' EXPOSURE TO MAJOR BORROWERS

Type	Jun-06		Jun-07		Real Annual Growth (%)
	Trillions of June 2007 Pesos	Share (%)	Trillions of June 2007 Pesos	Share (%)	
Public Sector					
Loans	4.54	3.9	4.74	3.7	4.5
Securities	29.07	25.0	21.54	17.0	(25.9)
Total	33.61	28.9	26.28	20.7	(21.8)
Private Corporate Sector					
Loans	48.35	41.6	57.35	45.2	18.6
Securities	0.76	0.7	0.38	0.3	(50.3)
Total	49.11	42.3	57.73	45.5	17.5
Household Sector					
Loans	31.02	26.7	39.99	31.5	28.9
Retail	22.95	19.8	31.43	24.8	36.9
Mortgage	8.07	6.9	8.56	6.8	6.1
Securitization	2.41	2.1	2.77	2.2	15.1
Total	33.43	28.8	42.76	33.7	27.9
Total Amount Exposed	116.15	100.0	126.77	100.0	9.1
Exposed Amount over Assets (%)	76.0		75.3		

Source: National Office of the Superintendent of Financial Institutions and Banco de la República.

There is more exposure to households because of the trend in the retail loan portfolio.

Exposure to the private corporate sector reached 45.5%, with 17.5% real annual growth. This momentum is due primarily to the favorable trend in the loan portfolio in that sector.

3. Loan Portfolio Quality and Loan-loss Provisioning

The quality of the loan portfolio in the financial system, which is measured as the ratio of risky loans⁹ to the total gross loan portfolio, has improved substantially in recent years and is now at historically low levels. However, there are signs of a relapse, especially in the categories where there has been considerable growth. The loan portfolio quality indicator (QI) for all types of loans deteriorated slightly during the second quarter of 2007, due to less growth in the total loan portfolio and an increase in the risky portfolio.

The mortgage portfolio QI improved from 9.6% to 8.7% between December 2006 and June 2007 (Graph 14), while the quality of the commercial loan portfolio deteriorated slightly from 6.0% to 6.2%. The sharpest decline was in the retail segment of the portfolio: the risky portfolio as a share of the total went from 6.7% to 8%. Because of the deterioration, especially in the retail segment, it is important to emphasize the need to constantly assess and monitor the risk implied by the rapid expansion in retail loans.

The arrears indicator (AI), measured as the ratio of non-performing¹⁰ to total loans, also showed some impairment in recent months for every type of loan except mortgages. During the period from December 2006 to June 2007, the AI went from 1.4 to 1.6% for the commercial loan portfolio, from 4.5 to 5.3% for the retail loan portfolio, and from 2.6 to 3.0% for the total loan portfolio. Yet, despite this relapse, it is still at

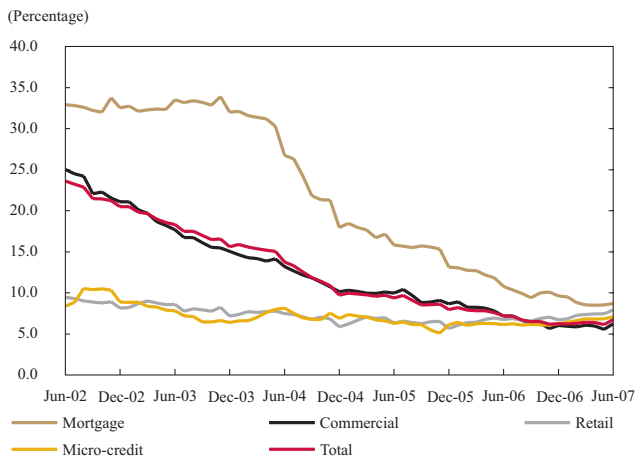
historically low levels (Graph 15).

The deterioration in portfolio quality is obvious, considering how the risky portfolio has grown. In the case of retail loans, the real annual variation is

Loan portfolio quality deteriorated slightly during the second quarter of the year.

GRAPH 14

**LOAN PORTFOLIO QUALITY:
(RISKY PORTFOLIO /GROSS PORTFOLIO)**

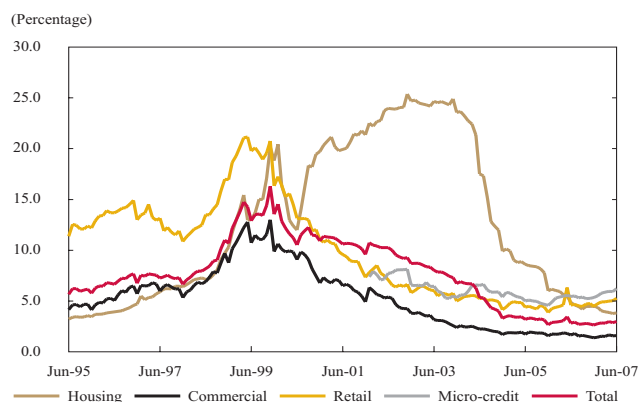


Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

⁹ The risky loan portfolio includes all non-A rated loans.

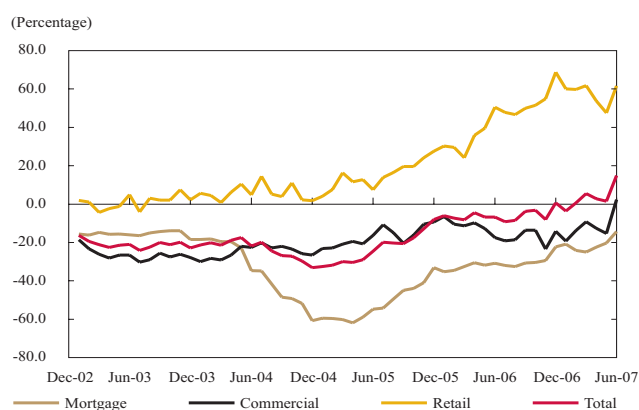
¹⁰ The non-performing portfolio is comprised of loans that are overdue by 30 days or more.

**ARREARS INDICATOR:
NON-PERFORMING /GROSS PORTFOLIO**



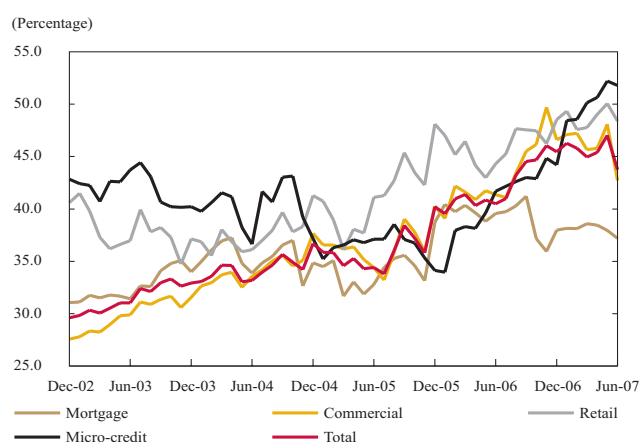
Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

REAL ANNUAL RISKY LOAN PORTFOLIO GROWTH



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculation.s

**COVERAGE:
LOAN-LOSS PROVISIONING/RISKY PORTFOLIO**



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

61.6% (Graph 16), which is well above the average variation in 2006, (44.1%). The recent large increase in the risky portion of the retail portfolio was offset in part by a drop in the risky segment of the portfolio for other types of loans. However, that tendency is changing and, in the case of commercial loans, it resulted in positive growth (at a real annual rate of 2.3%). The risky portion of the total loan portfolio has exhibited signs of positive growth since the first half of the year and reached 14.9% in June, which is a clear indication of further deterioration in loan quality.

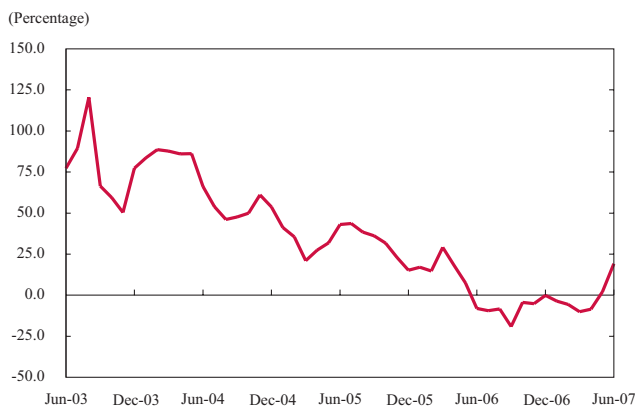
In addition, portfolio coverage (measured as the ratio of loan-loss provisioning to the risky portfolio) declined during the second quarter of the year, particularly as of May (Graph 17). Commercial loan portfolio coverage went from 48.1% in May to 42.8% in June. This deterioration is associated with the risky portfolio in Category B. It has increased (23% in June alone), but does not demand a strong reaction in terms of loan-loss provisioning.¹¹ However, as it spills over into other categories, institutions will have to do more in that respect.

Despite the changing trend in coverage, the levels are still high. Because of the commercial loan portfolio reference model (SARC in Spanish), which took effect in July, institutions adjusted their provisions gradually to avoid an additional expense of considerable proportions at that time. They should be encouraged to develop their own models so as to have a better estimate of anticipated losses. This, in turn, would make it easier to adequately estimate the amount of provisioning needed to cover those losses. In the future, provisioning is expected to reflect not only loan quality, but the point in the cycle.

¹¹ Only 3.2% on the unsecured portion.

GRAPH 18

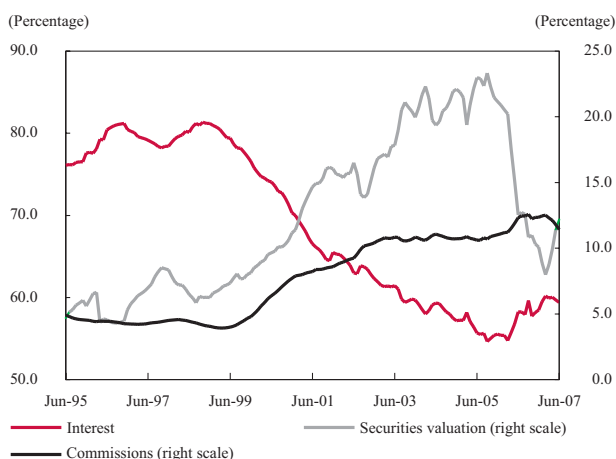
REAL ANNUAL PROFIT GROWTH



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 19

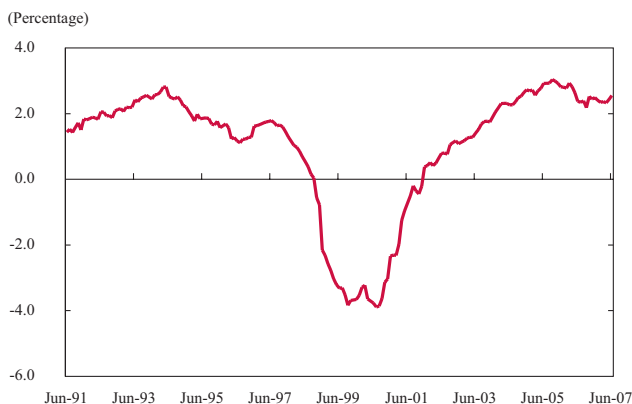
INCOME COMPONENTS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 20

RETURN ON ASSETS (ROA)



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

4. Earnings, Profitability and Capital Soundness

During 2007, credit institutions have seen their profits recover from the drop in 2006. They were Col\$3.9 t at June, which represents 19.2% real annual growth (Graph 18).¹² As to sources of financial income, when credit institutions moved from investments to loans they increased their earnings in the form of interest and commissions, which come from intermediation activity per se. However, as mentioned, that shift was less evident in the second quarter of 2007. This, in turn, led to a gain in the share of income from securities valuation, which rose from 8.74% in March to 12.2% in June (Graph 19).

The momentum in earnings from the loan portfolio and commissions was good, with respective annual increases of 17.9% and 6.1%. These sources, as a share of financial earnings, have remained relatively stable throughout the year.

Credit institutions continue to report good earnings: the return on assets (ROA) is historically high, although slightly less than what it was two years ago (Graph 20). ROA was 2.6% at June, which matches the average for 2006 when profitability dropped because of a poor return on investments. These institutions also are in a good situation with respect to capital soundness. Banking activity still is supported by far more capital than the required minimum (9%) (Graph 21). At June, the capital adequacy ratio for the system as a whole was 13.7%, which is 96 bp more than the year before. This increase in capital soundness was spurred by the decline in investments and the ensuing reduction in market risk.

¹² See Box 2 for an analysis of indicators of this type in Latin America.

Besides reducing their investments, credit institutions also have changed the composition of those investments. This had a favorable impact on the capital adequacy ratio. The sell off of investments in tradable securities as of 2006 lowered their share, as a percentage of total investments, from 44.2% in January 2006 to 25.1% in June 2007. However, the share of securities held to maturity went from 16.9% to 25.8% during the same period. The financial system also has seen its capital soundness bolstered by the fact that investments held to maturity are regarded as a trading book position. Consequently, they are excluded from the market- risk calculation.

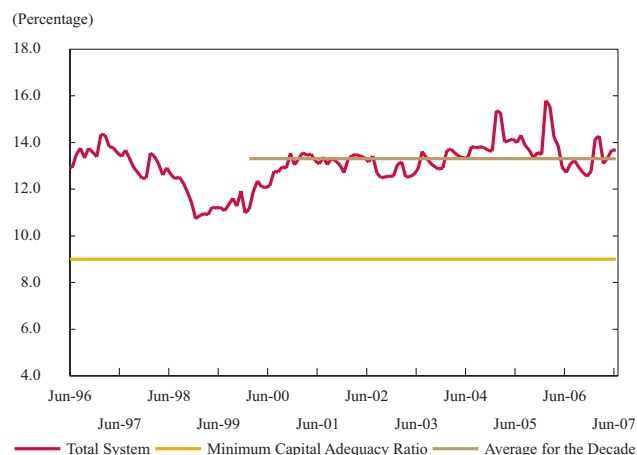
5. Interest Spreads

Previous editions of this report emphasized the loan cycle increase accompanied by low interest rates and narrower spreads. Now, that tendency has slowed and interest spreads are growing, even though they still are at historically low levels (Graph 22). The *ex ante* interest spread has increased for different types of credit and for the system as a whole.¹³ It went from 5.8% at December 2006 to 6.7% at June 2007.

The increase in lending rates, in response to Banco de la República's intervention interest rate hikes and to variations in the usury rate, explains most of the rise. In real terms, the interest rate on commercial loans has increased by 1.3 pp since May 2006; the rates on retail loans were slower to react (as of February 2007), possibly pressured by a rise in the limits on the usury rate.

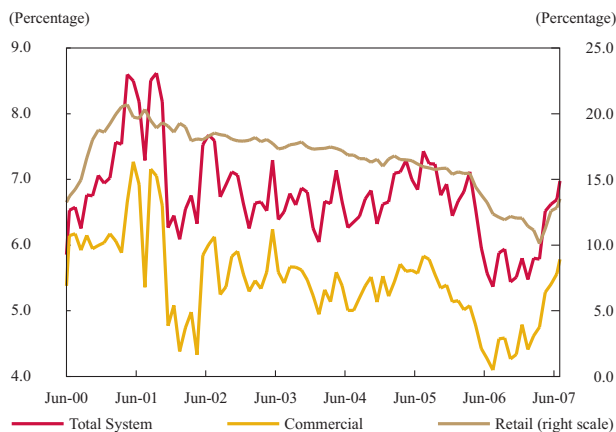
The growth in spreads was linked to a delayed and less accelerated reaction by the deposit rate, which began to increase in the second quarter of 2007. Because the

CAPITAL ADEQUACY RATIO OF CREDIT INSTITUTIONS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

EX ANTE SPREAD USING THE CD RATE



Source: Superintendencia Financiera de Colombia. cálculos del Banco de la República.

¹³ The *ex ante* spread is the difference between the rates intermediaries charge for different types of loans and the rate on certificates of deposit (CD).

GRAPH 23

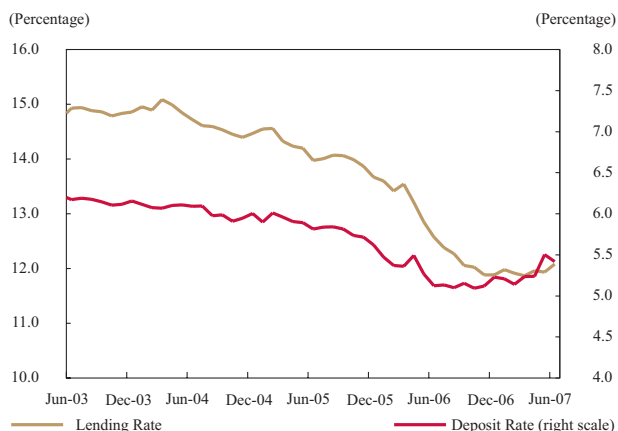
EX POST SPREAD



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 24

CREDIT INSTITUTIONS' IMPLICIT INTEREST RATES



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

marginal reserve requirement ordered by Banco de la República raised the cost of funding for intermediaries, credit institutions decided not to increase their deposit rate.

Although the spread remained historically low, the downturn in the *ex post* margin¹⁴ reported in earlier editions of the *Financial Stability Report* came to a standstill during the first half of the year (Graph 21). The combined effect of more earnings from interest and less growth in the loan portfolio halted the downward spiral in the implicit lending rate, which had gone on for several months, and kept it relatively stable during the first half of the year, with a slight increase as of March (Graph 23). The same occurred with the real implicit deposit rate, which rose by 20 bp between March and June (Graph 24).

Larger increases in the deposit rate are expected in the future, as certificates of deposit (CDT) represent a bigger share of funding for credit institutions. Eventually, a higher deposit rate could lead to a higher lending rate. For the most part, what we are seeing is a generalized increase in the cost of financial intermediation activities. One reason, among others, is the monetary policy adopted by the Board of Directors of Banco de la República (JDBR).

6. Conclusion

The first half of 2007 was a good time for credit institutions in terms of traditional loan activity. The spreading credit cycle has energized a process of financial depth that is close to the levels reached prior to the crisis at the end

¹⁴ The *ex post* spread is calculated as the difference between implicit lending and implicit deposit rates. The first is income from interest, plus indexation as a percentage of the performing portfolio. The latter includes outlays for interest, plus indexation as a percentage of liabilities with cost.

of the nineties. This cycle has been funded by the healthy momentum in deposits (especially CDs) and by the sell-off of tradable investments, accompanied by historically low portfolio-quality levels and a good degree of coverage.

Nevertheless, loan portfolio growth has slowed since the second quarter of 2007 because of a tighter monetary policy, coupled with a slight dip in quality for the various portfolio types. This underscores the importance of designing and constantly improving provisions for assessing the risk in credit institution activities. The outlook for the economy and the financial markets suggests the credit cycle will continue to expand, but less so than in past years.

The outlook for the economy and the financial markets suggests the credit cycle will continue to expand, but less so than in past years.

B. NON-BANK FINANCIAL INSTITUTIONS

This section takes a look at the major non-bank financial institutions (NBFI) in Colombia. They include pension fund and severance-pay managers (PFM), insurance companies, trust funds and brokerage firms (BF).¹⁵ Obviously, all of them are important to financial stability, as they are among the primary savings (investment) vehicles used by agents in the economy and are linked to the other financial institutions, either as counterparts in capital markets or because of their association with a particular financial group. This underscores the importance of continuing to closely monitor NBFI investment portfolios and profitability levels, particularly considering their high concentration in local securities, both fixed- and variable income (TES and stocks). Up to now, this has had a negative impact on their profits.

The value of the NBFI investment portfolio is shown in Table 2, together with its relative size. The total value increased during the course of the year from Col\$212 t at December 2006 to Col \$223 t b at June 2007, although the slowdown since last year is more pronounced because of what has happened to prices for stocks and TES, which account for a sizeable portion of the portfolio held by NBFI investors. Stock prices have recovered gradually, after plummeting in mid-2006, and are converging slowly towards the values registered at the start of last year. However, due to higher inflation expectations and subsequent interest rate hikes, there has been no favorable recovery in TES prices.

The extraordinary growth experienced by non-bank financial institutions was halted by a less favorable situation on the financial markets.

¹⁵ This edition of the *Financial Stability Report* does not include an analysis of mutual investment funds (MIF), as the only available figures are annual and there is no new information beyond what was presented in the last report.

TABLE 2

INVESTMENT PORTFOLIO OF FINANCIAL INSTITUTIONS

	2004		2005		2006		2007 ^{a/}	
	Trillions of pesos	Percentage of GDP	Trillions of pesos	Percentage del GDP	Trillions of pesos	Percentage del GDP	Trillions of pesos	Percentage del GDP (proj)
Credit Institutions								
Investments	36.93	14.33	43.93	15.40	37.65	11.75	34.68	10.23
Loan portfolio	66.06	25.63	77.09	27.02	101.91	31.79	113.49	33.49
Total: credit institutions	102.99	39.96	121.02	42.42	139.56	43.54	148.16	43.72
Non-bank Financial Institutions								
Mandatory pension funds	26.45	10.26	36.58	12.82	43.17	13.47	45.60	13.46
Voluntary pension funds	4.49	1.74	7.33	2.57	7.15	2.23	6.73	1.99
Severance-pay funds	3.13	1.21	3.71	1.30	3.77	1.17	4.40	1.30
General insurance	2.84	1.10	3.62	1.27	3.35	1.04	3.26	0.96
Life insurance	4.38	1.70	5.82	2.04	6.19	1.93	6.37	1.88
OMF	4.52	1.75	5.33	1.87	3.79	1.18	3.67	1.08
SMF	1.93	0.75	3.12	1.09	1.54	0.48	1.61	0.48
Brokerage firms ^{b/}	2.78	1.08	4.18	1.47	2.94	0.92	2.90	0.86
Mutual investment funds	0.40	0.16	0.57	0.20	0.56	0.17	n.a.	n.a.
Total: non-bank financial institutions	50.92	19.76	70.27	24.63	72.54	22.63	74.54	21.99
Total	153.91	59.71	191.29	67.04	212.10	66.17	222.70	65.72

n.a. Not available.

a/ Data at June.

b/ Own position.

(Proj) Projected.

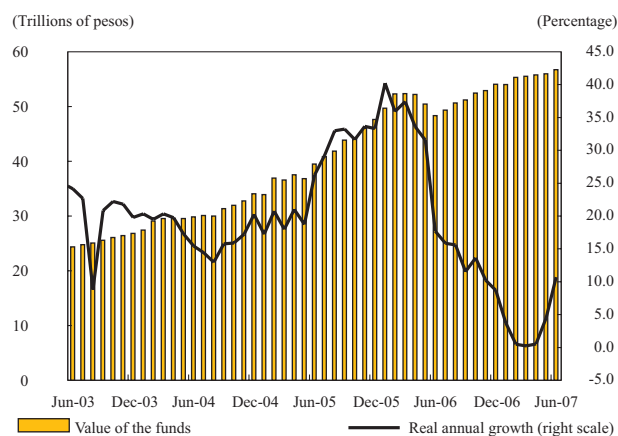
Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

1. Pension and Severance-pay Fund Managers (PFM)

a. Portfolio Value and Profitability

GRAPH 25

REAL PENSION FUND VALUE AND GROWTH



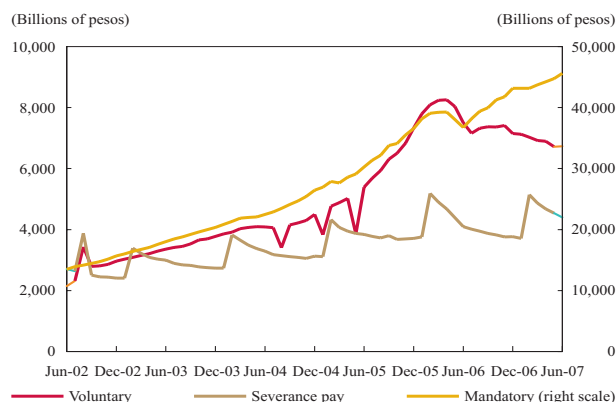
Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

Growth in PFM-managed portfolios suffered a major slowdown in 2006, which continued during the first quarter of this year before reversing slightly between March and June. At June 2007, the value of the portfolio was Col\$56.7 t. This implies a real annual increase of 10%, but is low compared to the levels reached in 2005 and the first half of 2006, which were above 30% (Graph 25).

Separating the pension fund managers (PFM) into groups; namely, mandatory (MPF), voluntary (VPF) and severance-pay funds, shows an interesting fact. Out of the three groups, only the MPF have recovered to a large extent, following the period of uncertainty on the markets in mid-2006 (Graph 26).

The MPF, the VPF and the severance-pay funds rose respectively by 24.2%, -10.3% and 7.4% between June 2006 and June 2007. The relative stability of severance-pay funds and the decline in VPF value appear to be associated with two factors. The stability in the severance-pay funds was related to more demand for these resources from households looking for a source of home financing. The VPF were affected by the drop in profitability associated with greater concentration in local assets,¹⁶ which seems to have prompted some depositors to withdraw their savings. In fact, the number of VPF affiliates declined by almost 4,000 between January and June of this year, from 489,900 affiliates to 485,896.

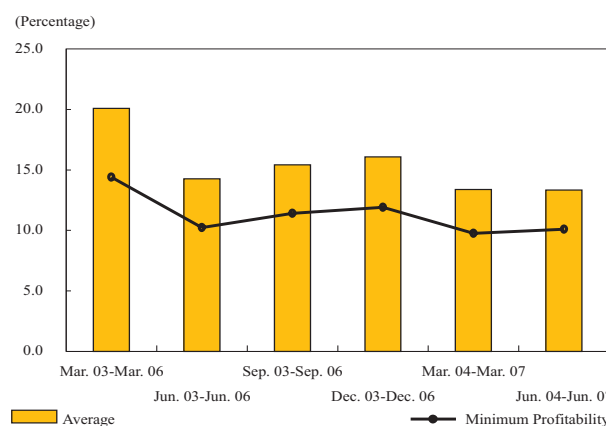
PENSION FUND PORTFOLIO VALUE



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

The breakdown also is interesting from the standpoint of profitability. The MPF saw a 2.7 pp decline in profitability from 16.1% at December 2006 to 9.0% at June 2007. However, this is still more than 3 pp above the required minimum for the period (Graph 27). The average profitability of severance-pay funds was down by 3.3 pp during the same period (5.4% at June 2007). This is slightly more than 1.5 pp above the required minimum. Nevertheless, at the disaggregate level, two funds failed to meet their required minimum profitability at June (4.23%), and one also failed in March 2007. They were charged regulatory penalties by the Superintendent of Financial Institutions as a result (Graph 28).

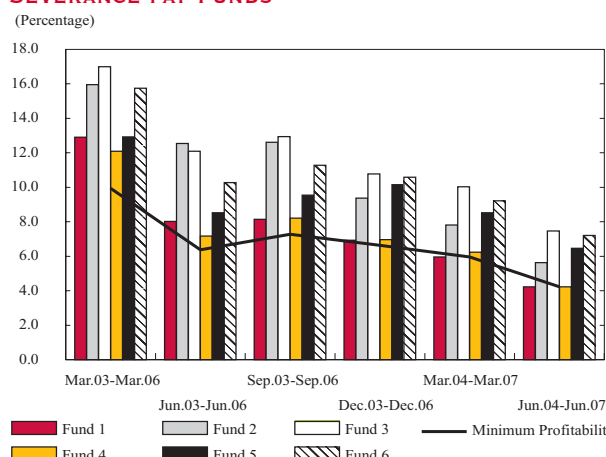
AVERAGE TRI-ANNUAL AND MINIMUM PROFITABILITY: PFM (MANDATORY)



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

The inferior performance of these funds seems to be the outcome of a larger concentration in local securities and, in the case of one fund, a concentration in assets with low return. The composition of both funds and the average of the others are shown in Graph 29. As illustrated, Fund 1 is quite concentrated in productive sector assets, which account for 19.4% of its portfolio, or 4 pp more than the average for the others. Fund 2 has a

TRI-ANNUAL AND MINIMUM PROFITABILITY: SEVERANCE-PAY FUNDS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

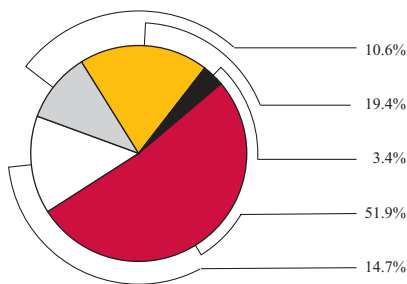
¹⁶ Voluntary pension funds are not subject to the limits imposed on mandatory pension funds with respect to portfolio composition.

high concentration of assets in the public sector (55.3%), as well as other assets¹⁷ (11.7%). These percentages are 3.2 pp and 87 pp above the averages. Moreover, the share of financial sector assets in both funds is low; some 3.5 pp and 7.5 pp less than the others. Unlike TES and stocks, financial sector assets were quite profitable during that period, thanks to the way CDs performed.

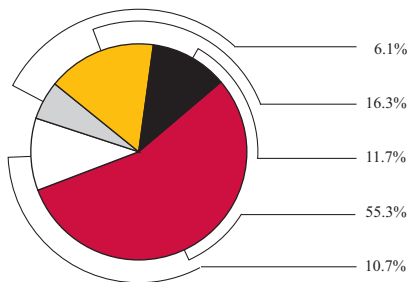
GRAPH 29

SEVERANCE-PAY FUND PORTFOLIO COMPONENTS, BY ISSUER

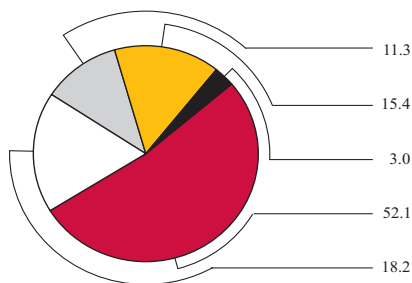
(A) FUND 1



(B) FUND 2



(C) OTHER FUNDS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

Funds 1 and 2 failed to meet their minimum profitability requirement, even though it was made less restrictive. However, that requirement is expected to become more prohibitive, since the tri-annual period used as the basis for calculating the rate of minimum profitability includes years that were exceptionally rewarding for these funds (2005 and the first half of 2006).

b. Portfolio Composition, by Issuer and Maturity

The PFM are distinguished for their concentration in highly correlated local assets. This has made their portfolios more sensitive to changes in interest rates that cause adverse variations in the prices of those assets. That concentration is evident when considering PFM exposure by type of issuer (Graph 30). The public debt is near the maximum limit (50%), accounting for almost 44% of the portfolio; the productive sector accounted for approximately 18% at June 2007.

Although the exposure of these funds to external assets increased from 121% at December 2005 to 15.6% at December 2006, it has declined steadily since the start of the year and was 12.9% at June. This seems to suggest the change in composition was temporary and a consequence of the turbulence on financial markets in mid-2006.

Furthermore, many PFM investments are concentrated in short-term instruments, even though this is contrary to the anticipated flow of pension obligations. Although long-term holdings (more than 10 years) were up from

¹⁷ By definition, these are low-return assets, since they include local and foreign sight deposits and the net position in derivatives.

8.2% at December 2006 to 11.1% at June 2007, the increase was accompanied by a rise in short-term holdings (under one year) from 36.4% to 39.5% during that period (Graph 31). As a result, comparative holdings of longer term assets are still low.

Therefore, as emphasized in the last edition of this report, it is important to construct portfolios that do not have as much exposure to local asset price changes and better reflect the saver's investment horizon.

c. Portfolio Composition, by Currency

The PFM portfolio denominated in pesos continued to grow during the first six months of the year, having accounted for nearly 71.9% of the total at December 2006 and 74.4% at June 2007 (Graph 32). Apart from exposure in pesos, investments denominated in real value units (RVU) were the only ones that increased during the period (from 11.8% to 13.1%).

Moreover, the early part of the year witnessed a decline in the proportion of the portfolio denominated in foreign currency without coverage (Graph 33). In the case of MPF, exposure went from 7.6% at December 2006 to 5.5% at June 2007, which is the least amount of uncovered exposure in the past year.

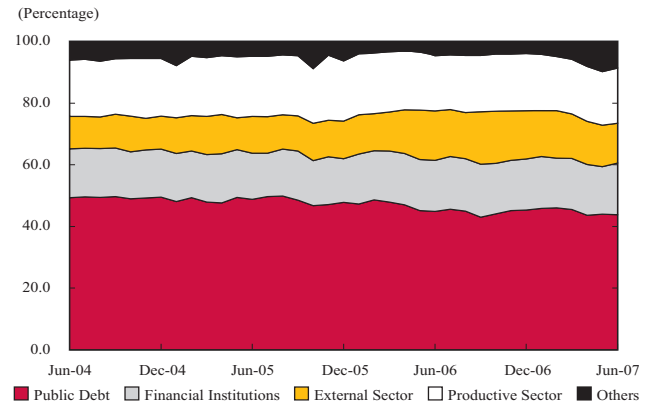
2. Life and General Insurance

Life insurance companies (LIC) reported Col\$6.3 t in investments at June 2007, which represents a real annual increase of 4.2%. This is a sharp contrast to the portfolio of general insurance companies (GIC), which registered a real decline of 13.1% during the same period. Although the insurance business has improved of late, as evidenced by a technical margin near zero,¹⁸

¹⁸ The technical margin is the ratio of business earnings to the number of issued premiums. It reflects the performance of the

GRAPH 30

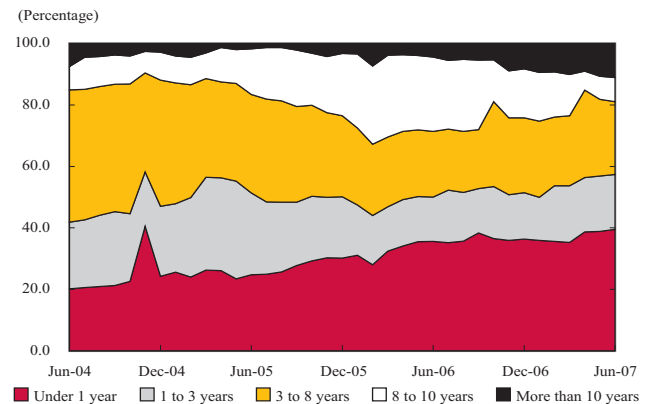
PENSION FUND PORTFOLIO COMPOSITION, BY ISSUER



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 31

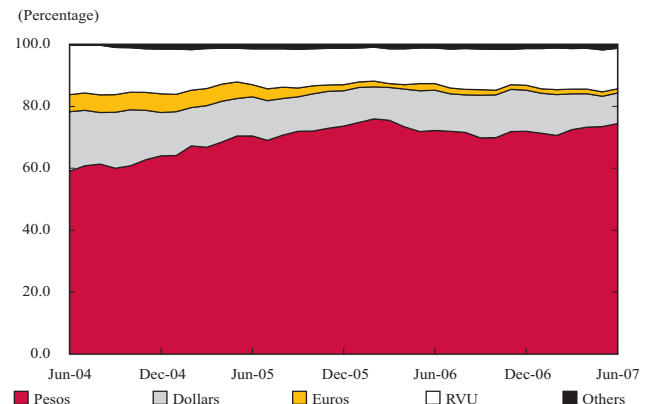
PENSION FUND PORTFOLIO COMPOSITION, BY MATURITY



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 32

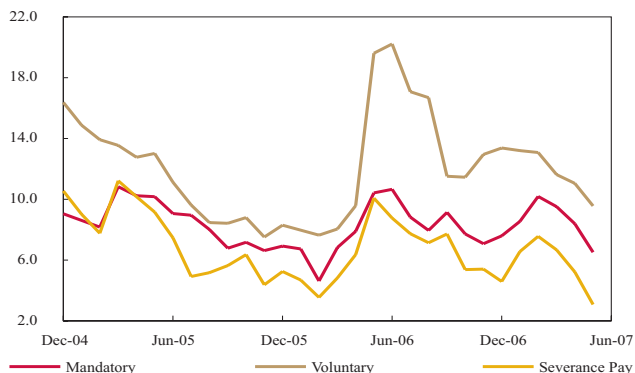
PENSION FUND PORTFOLIO COMPOSITION, BY CURRENCY



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 33

PERCENTAGE OF PORTFOLIO VALUE DENOMINATED IN FOREIGN CURRENCY, WITHOUT COVERAGE



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

its earnings depend heavily on the return on its investments (Graph 34, (Boxes A and B)).

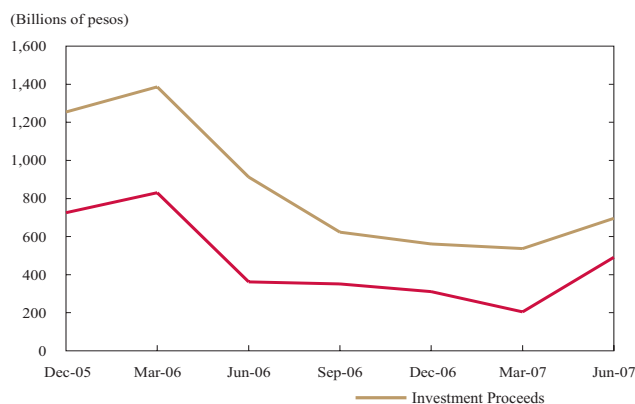
In this respect, the largest concentration in the LIC portfolio, compared to the GIC portfolio, makes its profitability cycles more pronounced. As shown in Graph 35, the GLI portfolio is highly concentrated in government assets (nearly 50%) and those of the

insurance business per se. A margin near zero implies that insurance companies are correctly calculating claims and, therefore, premiums.

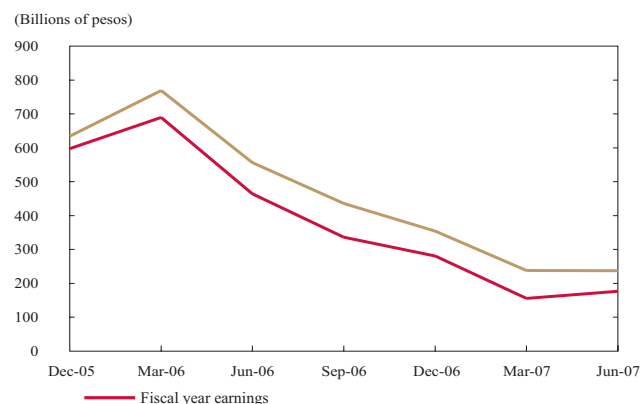
GRAPH 34

FISCAL YEAR EARNINGS AND RETURN ON INVESTMENTS

(A) LIFE INSURANCE COMPANIES



(B) GENERAL INSURANCE COMPANIES

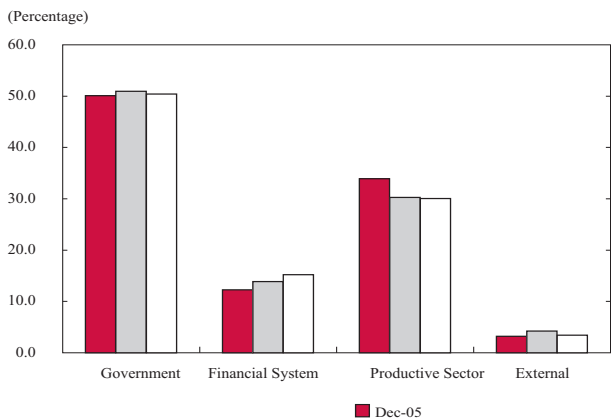


Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

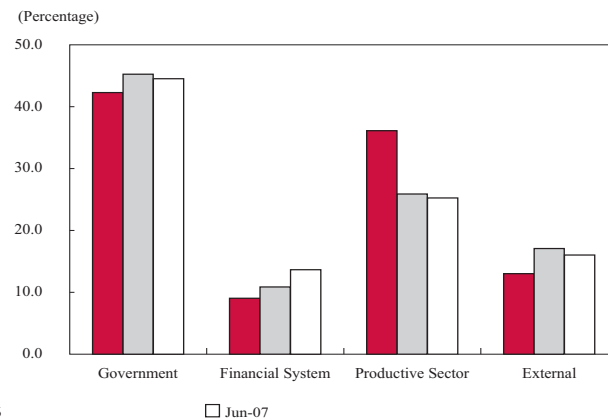
GRAPH 35

INVESTMENT PORTFOLIO, BY ISSUER

(A) LIFE INSURANCE COMPANIES



(B) GENERAL INSURANCE COMPANIES

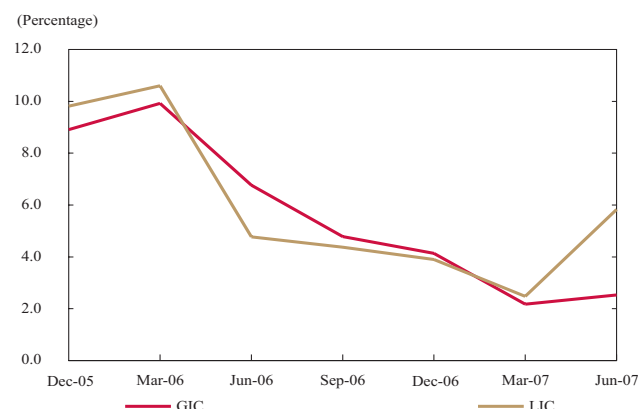


Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

productive sector (approximately 30%). These proportions experienced practically no change in the last few years. The GIC have kept a large percentage of their portfolio in government assets (about 45%), but reduced their exposure to the productive sector from 36.1% at December 2005 to 25.2% at June 2007. That change was offset by more exposure to the financial system (13.7%) and the external sector (16%).

As mentioned, more LIC exposure to the productive sector, compared to the GIC portfolio, together with less exposure to the external sector, has given those companies a portfolio that is highly sensitive to local asset cycles. That fact has had a direct impact on their profitability (Graph 36). When the local markets were extremely volatile, LIC saw their profitability plunge; however, the subsequent recovery in stock prices has given them better profitability than GIC, which also suffered losses from increased exposure to foreign currency during the early months of the year.

ROA FOR LIFE AND GENERAL INSURANCE COMPANIES



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

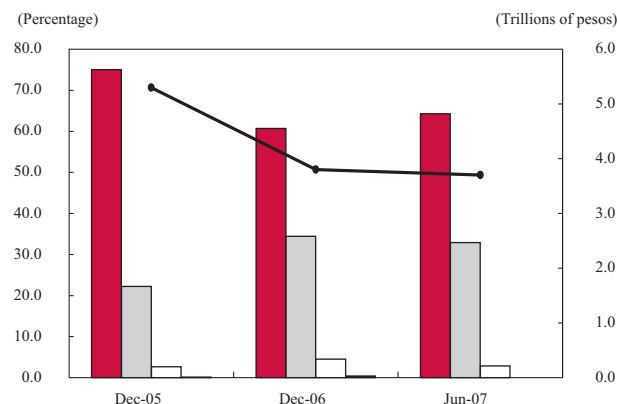
PORTFOLIO VALUE AND COMPOSITION, BY ISSUER

3. Ordinary Mutual Funds (OMF) and Special Mutual Funds (SMF)

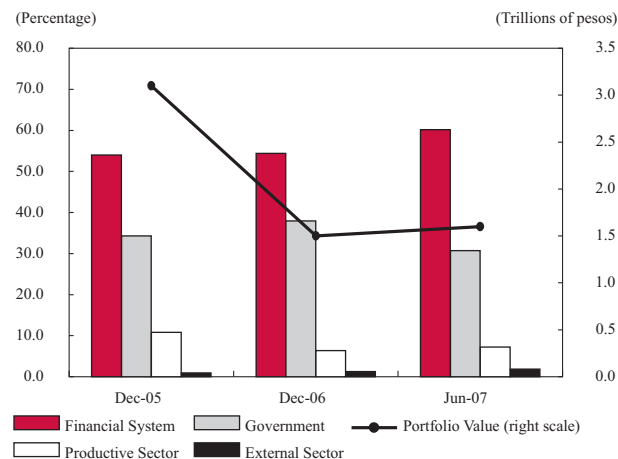
At June 2007, ordinary and special mutual funds managed by trust companies were valued respectively at Col\$3.7 t and Col\$1.6 t. This represents a real decline of 7.3% in the case of OMF and a marginal increase of 0.4% for SMF since December 2006.

OMF and SMF portfolio value has yet to recover from significantly after the volatility on financial markets during the first half of 2006 (Graph 37).¹⁹ Depositors withdrew large amounts from these funds when local asset prices plunged.

(A) ORDINARY MUTUAL FUNDS



(B) SPECIAL MUTUAL FUNDS

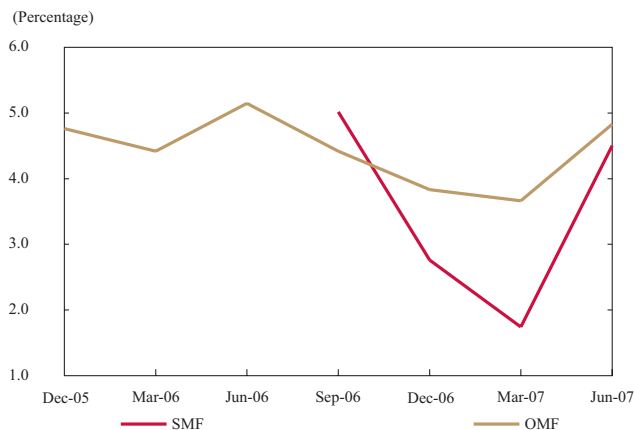


Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

¹⁹ Certificates of deposit accounted for 59% of the OMF portfolio and 48.7% of the SMF portfolio.

GRAPH 38

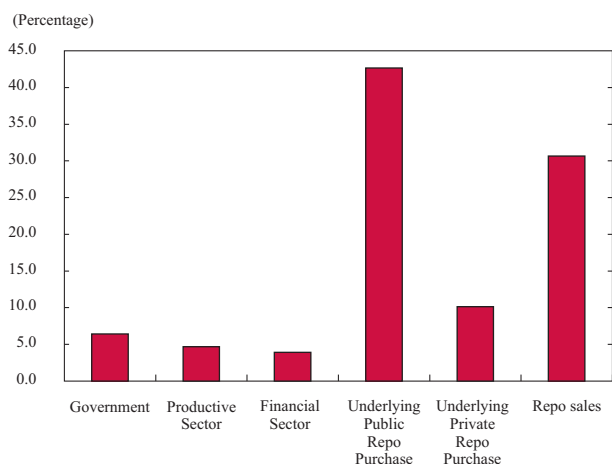
ROA FOR OMF AND SMF



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 39

BROKERAGE FIRM PORTFOLIO COMPOSITION, BY ISSUER



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

Nonetheless, during the second quarter of 2007, both funds recovered quite well in terms of profit and profitability levels. The real increase in annualized gains for OMF was 19.7% (from Col\$314 b at December 2006 to Col\$393 b at June); the expansion in SMF was 60% for this same item (from Col\$75 b to Col\$125 b).

Higher profit levels were accompanied by increased profitability. For OMF, the profit/asset ratio went from 3.8% to 4.8% between December 2006 and June 2007; for SMF, it increased from 2.8% to 4.5% (Graph 38). Ordinary mutual funds were more profitable. This is due to their concentration in financial system assets, particularly certificates of deposit, which have garnered a better return because of a higher fixed-term deposit rate (DTF in Spanish) (Graph 39). However, the increase in SMF profitability is important to bear in mind. It was up by 2.8 pp during the second quarter compared to March, because of the gradual recovery in stock prices and less relative exposure to the public sector.

4. Brokerage Firms

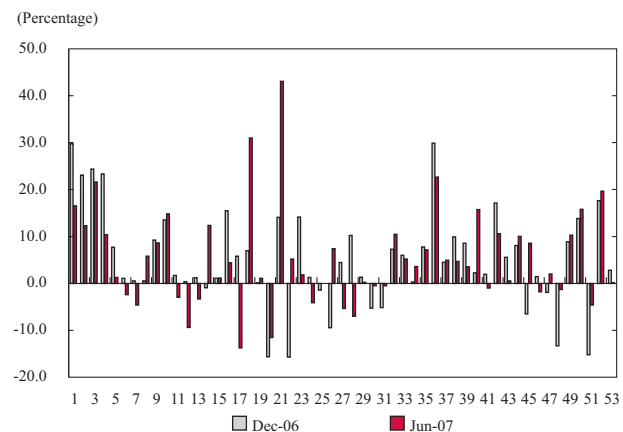
Financial market volatility during the first half of 2006 left its biggest mark on brokerage firms (BF). They suffered sharp losses from major sell-offs in the midst of unfavorable circumstances. The value of their investment portfolio dropped from Col\$4.18

t at December 2005 to Col\$3.76 t at December 2006 and to only Col\$2.9 t at June 2007. This represents a real decline of 26.2% during the period from December 2006 to June 2007. The plunge in investments also was evident in the equity of brokerage firms. During the period in question, their investment/equity ratio went from 6.1 to 5.1, and finally to 3.0.

Liquidation of an important percentage of BF portfolios, coupled with a large share of debt securities in those portfolios (Graph 39), had a negative impact on BF earnings. As a result, brokerage firms registered one of the worst levels of profitability in recent years. Their profitability, on the whole, fell from

4.5% at December 2005 to 1.74% one year later, hitting its lowest point in June 2007 (-0.26%). Individually speaking, 16 brokerage firms showed negative profitability, almost twice as many as in 2006 (Graph 40). Their obligations to the financial system came to slightly more than Col\$1.2 t.

ROA FOR BROKERAGE FIRMS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

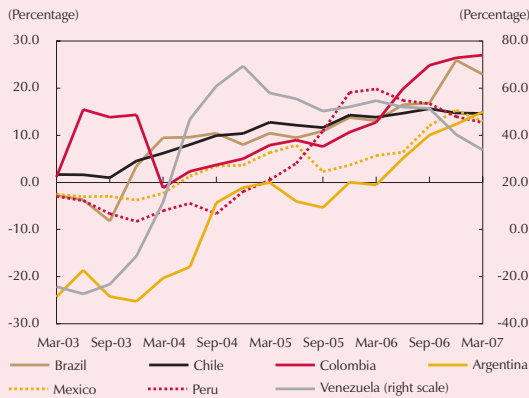
INTERNATIONAL INDICATORS

Several important indicators for the banking system in Colombia and in other Latin American countries¹ are examined in this section. The objective is to draw a comparison between international standards and the efficiency, profitability and loan-portfolio quality indicators for Colombia's financial system.

There was not much difference in the way Latin American banking systems performed compared to last year. However, some of the changes are important to bear in mind. The loan portfolio growth witnessed since late 2003 turned around as of December 2006 in countries such as Brazil, Chile, Mexico, Peru and Venezuela (Graph B2.1). The sharpest drop was in Venezuela: approximately 17 pp between September 2006 and March 2007. However, it is still the country with the highest real growth rate (33.79%). The slump in Brazil, Chile, Mexico and Peru was less: between 1 and 3 pp with respect to December 2006. Argentina, Chile, Mexico and Peru, on the other hand, have converged towards rates near 14% since the end of 2006.

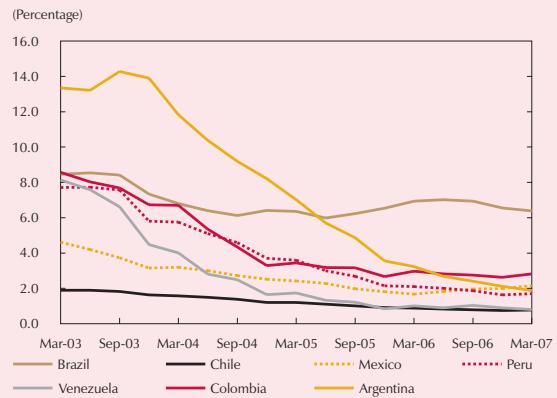
As to loan portfolio quality, the indicators have been low and relatively stable in recent years (Graph R2.2). Chile had the best indicator (0.78%), closely followed by Venezuela (0.81%). Argentina is the country with the most

**GRAPH B2.1
REAL ANNUAL GROSS LOAN
PORTFOLIO GROWTH**



Source: The banking authorities in each country, the Central Bank of Brazil and the Central Bank of the Republic of Argentina. Banco de la República's calculations.

**GRAPH B2.2
LOAN PORTFOLIO QUALITY:
NON-PERFORMING/GROSS LOAN PORTFOLIO**



Source: The banking authorities in each country, the Central Bank of Brazil and the Central Bank of the Republic of Argentina. Banco de la República's calculations.

¹ Argentina, Brazil, Chile, Mexico, Peru and Venezuela.

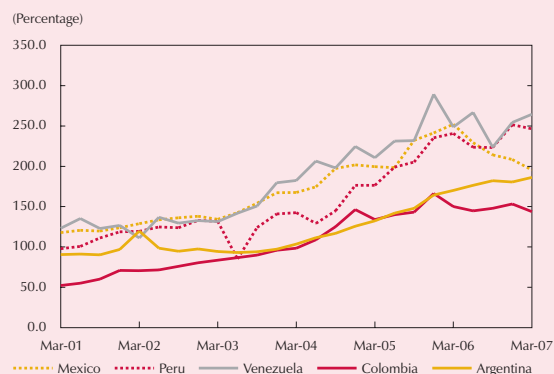
improvement in loan portfolio quality since December 2005; its indicator continues to decline and is now below 2%, thanks to considerable portfolio growth and a smaller non-performing portfolio. Although Colombia has a stable indicator, it is the second highest of the countries in the sample, surpassed only by Brazil.

The levels and changes in coverage differ from one country to another (Graph B2.3). Coverage in Colombia and Peru declined during the first quarter of 2007. In Mexico, it has been falling since March 2006. Colombia still is the country with the lowest coverage indicator in the sample: 143:78% at March 2007. Peru and Venezuela are above 200%. Argentina, in turn, has an indicator near 190%, having registered levels close to those of the Colombian banking system in December 2005.

The efficiency indicator last quarter was more or less stable. Only Peru registered a slight improvement: from 4.21% at December 2006 to 3.74% during the first quarter of 2007 (Graph B2.4). Venezuela, on the other hand, was the only country to see its efficiency decline, due to more administrative and labor expenses coupled with fewer assets. Chile continues to have the best indicator (2.10%, on average, for the past year).

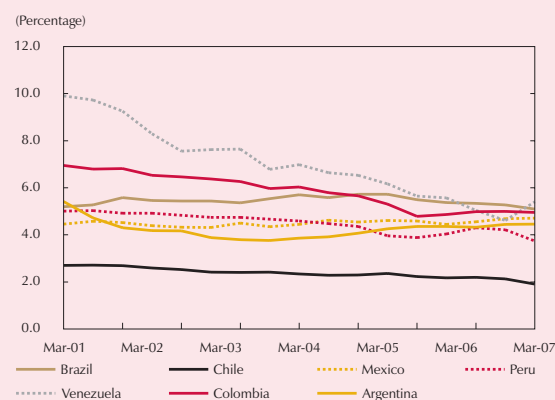
The interest spread² is stable in all the countries in the sample (Graph B2.5). The indicator in Venezuela is up 1 pp with respect to December 2006. Once again, after two and a half years, Venezuela is the country with the largest spread. Colombia registered stable performance, with a slight increase. Its interest spread is the lowest among the countries in the sample.

GRAPH B2.3
**COVERAGE: LOAN-LOSS PROVISIONING/
NON-PERFORMING PORTFOLIO**



Source: The banking authorities in each country, the Central Bank of Brazil and the Central Bank of the Republic of Argentina. Banco de la República's calculations.

GRAPH B2.4
GAL/ASSETS

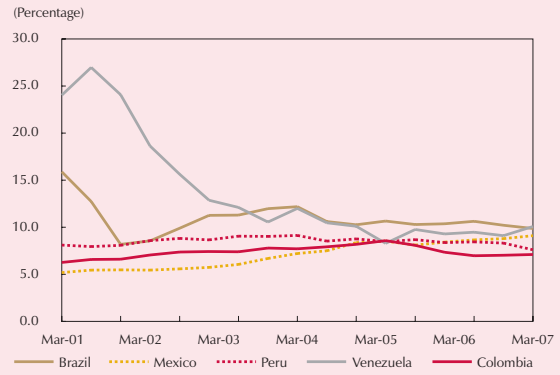


Source: The banking authorities in each country, the Central Bank of Brazil and the Central Bank of the Republic of Argentina. Banco de la República's calculations.

² The interest spread is calculated as the difference between the ex post lending and deposit rates in the banking system. The lending rate is the ratio of interest income to the portfolio; the deposit rate is the ratio of expenses to deposits.

In short, the outlook for the banking systems in Latin America remained relatively stable throughout the first quarter of 2007. The countries, in general, have seen a reversal of the trend in real loan portfolio growth, accompanied by stable quality indicators.

GRAPH B2.5
INTEREST SPREAD WITH EX POST RATES



Source: The banking authorities in each country, the Central Bank of Brazil and the Central Bank of the Republic of Argentina. Banco de la República's calculations.

PROPOSED CHANGES IN THE MANDATORY PENSION SYSTEM

The government is working on a legislative bill to reorganize and modernize the financial system. The main issues being considered are: i) the structure of the financial system; ii) the interest rate system; iii) mandatory pension fund (MPF) resources and management; iv) support for access to financial services; and v) cross-border financial service delivery. The proposals in the bill, with respect to MPF, are outlined in this section.

The current pension system in Colombia is 13 years old and, by June 2007, the funds had accumulated Col\$45.6 t, which is equivalent to 13.5% of GDP. Since most of those who contribute are young people, the funds are at a point where they are accumulating resources. The importance of future pensions and the fact that the MPF are young underscore the need to introduce whatever changes might be required, and to do so as quickly as possible for the sake of financial management that benefits both the funds and their affiliates. At present, each pension fund manager (PFM) groups its affiliates into a one investment portfolio. However, because affiliates are varied in terms of their risk profiles, a single fund does not allow for the best possible financial management.

The government's proposal calls for a multi-fund system that groups the contributions from similar affiliates into funds that more adequately reflect their risk profiles. For example, an affiliate who is new to the system will want a fund structured for more long-term profitability, while an affiliate who is near retirement will want to reduce the chance of volatility at the moment of retirement and to maximize profitability within shorter periods. The ideal investment for the risk profile of a new affiliate may be in variable income or long-term assets; for affiliates near retirement, it is better to increase their position in inflation-linked short-term assets that would not lose their buying power at the time of retirement.

The bill proposes continued government regulation of the pension system. The government also would be called upon to design an investment regime for the funds. Currently, this is the job of the National Office of the Superintendent of Financial Institutions. The assortment of funds proposed for the new system means the government must have more flexibility to determine the minimum profitability requirement for each one.

It also is suggested that the current PFM commission system be changed "to generate more competition and to encourage a distinction in the make-up of the different MPF portfolios".¹ Under the current system, the commission is calculated as a percentage of the contribution. This is an incentive to more contributions, but offers no direct encouragement to making the funds more profitable for affiliates.² The bill proposes a commission that would be the sum of two components: one that depends on contributions (as is now the case), and another based on the fund's profitability. The first component would encourage PFM to collect contributions, which is consistent with the objective of building or at least maintaining the amount of active and new affiliates. The second is a vital incentive to making the funds more profitable for their affiliates, which eventually will be reflected in the size of their pensions. Because more than three fourths of an accumulated pension comes not from contributions, but from earnings attributed to MPF profitability (capitalization), the change goes beyond encouraging competition among the funds by attempting to create wealth for future pensioners.

¹ Finance Reform Bill, Ministry of Finance and Public Credit (2007) p 17.

² Martínez y Murcia (2007), "Desempeño financiero del los fondos de pensiones obligatorias en Colombia," *Reporte de Estabilidad Financiera*, March.

III. CURRENT SITUATION AND OUTLOOK FOR BORROWERS FROM THE FINANCIAL SYSTEM

The outlook for households is less favorable than in 2006. Although unemployment is down, expectations are less optimistic and households have begun to see their financial burden increase. This could affect their creditworthiness.

A. HOUSEHOLDS

The recent trends in household consumption are described in this section. Household creditworthiness is analyzed according to how the labor market performed with respect to unemployment and wages. The household financial burden also is taken into account. The home and durable goods buying expectation and perception indexes shed light on the prospects for this sector in terms of financial stability.

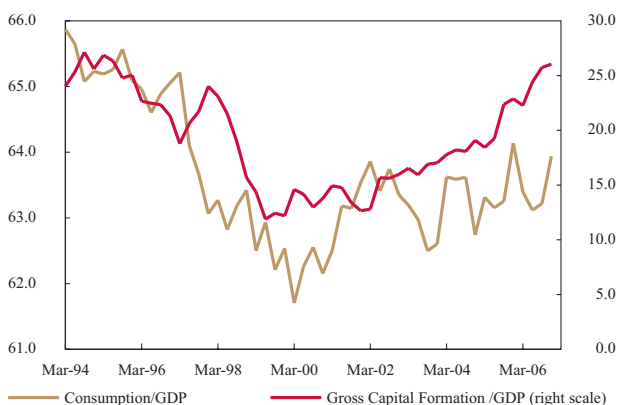
1. Household Finances

Consumption, as a share of GDP, declined slightly in the first quarter of 2006, having gone from 63.4% to 63.1%. Part of this slim reduction is largely due to the added weight of gross fixed capital formation (GFCF), which was up 5 pp during that period (Graph 41).

As a determinant of demand for retail loans, this indicator remained positive, registering 7.2% real annual growth by the first quarter of 2007 (Graph 42). Basically, the current trend in household spending is due to real annual growth in durables (17.6%) and semi-durables (16%) and, to a lesser degree, the consumption of non-durable goods (6.4%) and services (4.2%).

GRAPH 41

HOUSEHOLD CONSUMPTION AND INVESTMENT AS A SHARE OF GDP



Source: DANE, Banco de la República's calculations.

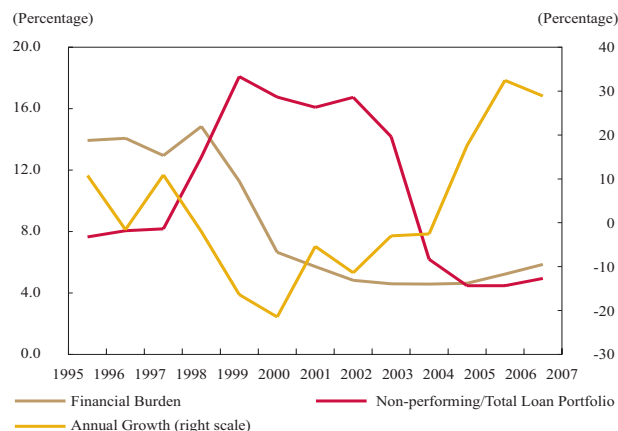
The financial burden indicator, calculated as the ratio of interest payments²⁰ to total household income, is shown in Graph 43. It is substantially lower than during the 1999 crisis. However, indications of a change in that trend have been growing since 2006.²¹ Although the household financial burden is low compared to what it was before the financial crisis, it is expected to keep increasing. The interest rate hikes also could bring pressure to bear on household creditworthiness.

Household income is not growing as quickly as in earlier periods, which implies more of a financial burden. Real wages are virtually unchanged, with 1.0% growth in the case of retail trade and -1.55% in the manufacturing sector at June 2007 (Graph 44).

Unemployment in Colombia's 13 major cities declined from 12.4% to 11.7% with respect to June 2006 (Graph 45).

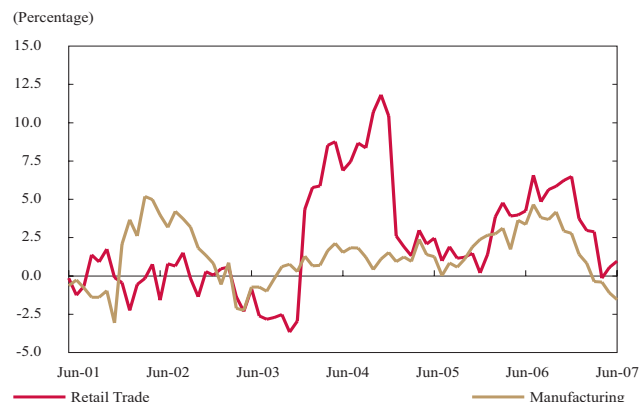
²⁰ This includes interest payments on retail loans, credit cards, mortgages and monetary correction.
²¹ The denominator of the financial burden index for 2006 and 2007 was calculated with a forecast for household income growth, assuming the rate of growth in income for wage earners was the same as for industrial manufacturing employees.

FINANCIAL BURDEN, QUALITY AND GROWTH OF THE HOUSEHOLD LOAN PORTFOLIO



Source: DANE and the National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

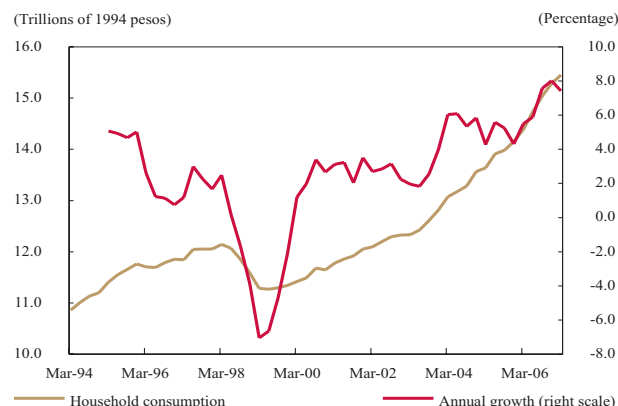
ANNUAL REAL WAGE INDEX GROWTH, BY SECTORS



Source: DANE, Banco de la República's calculations.

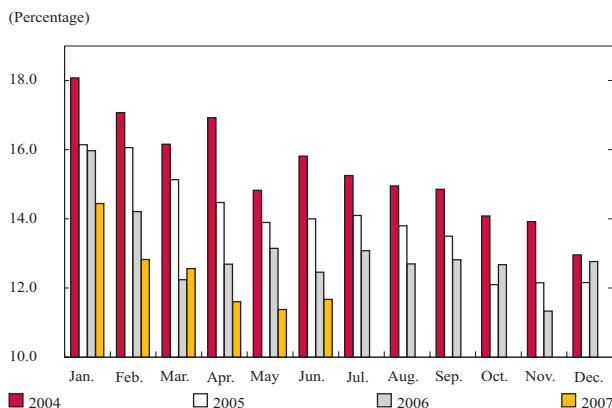
GRAPH 42

HOUSEHOLD CONSUMPTION (SEASONALLY-ADJUSTED SERIES)



Source: DANE, Banco de la República's calculations.

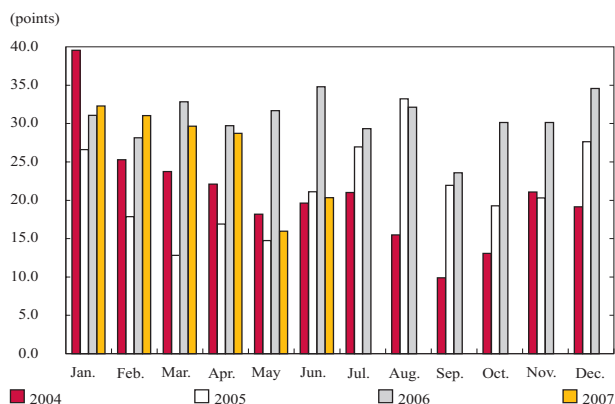
UNEMPLOYMENT RATE



Source: DANE, Banco de la República's calculations.

GRAPH 46

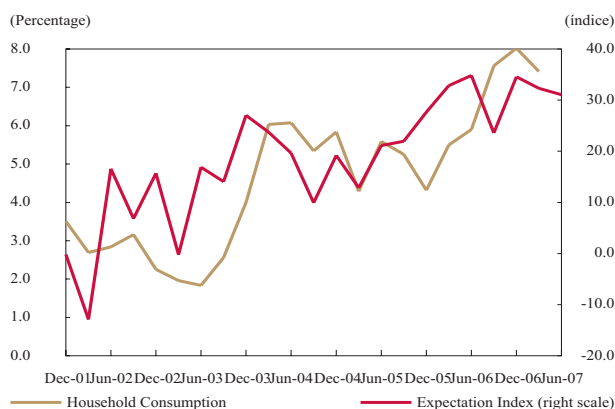
CONSUMER EXPECTATION INDEX



Source: Fedesarrollo, Banco de la República's calculations.

GRAPH 47

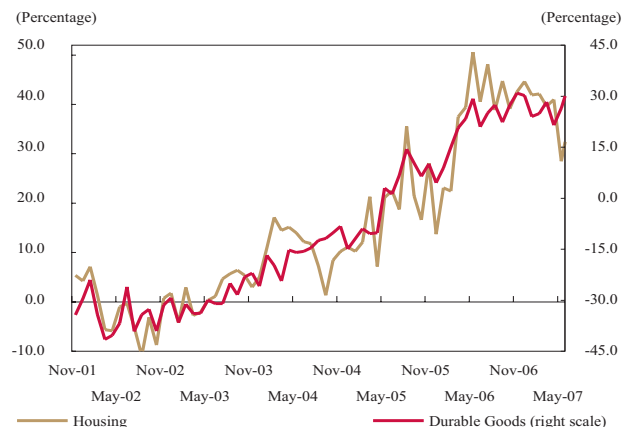
GROWTH IN HOUSEHOLD CONSUMPTION AND THE CONSUMER EXPECTATION INDEX



Source: DANE and Fedesarrollo, Banco de la República's calculations.

GRAPH 48

HOME AND DURABLE GOODS BUYING PERCEPTION INDEX ^{a/} (BALANCE)



^{a/} Percentage of households that believe it is a good time to buy, minus the percentage that believe it is not.
Source: Fedesarrollo, Banco de la República's calculations

This situation is attributed to 0.8% average growth in the economically active population and a reduction of 6.16% in unemployment. Less unemployment spells better economic conditions for households, facilitating, in turn, their access to the financial system. Even so, less growth in real wages can eventually reduce their creditworthiness, on the whole, and increase credit risk exposure for the financial system. The situation in the labor market, coupled with the recent deterioration in retail loan-portfolio quality and increased household borrowing, suggests the need for a more rigorous selection of borrowers and further diligence in following up on loan payments according to borrowers and the variables that can affect their ability to pay.

2. Prospects

Household expectations for the Colombian economy do not paint an overly optimistic picture.

Fedesarrollo's consumer expectation index (IEC in Spanish) (Graph 46) was 32.7 at January 2007. Later, it declined to 20.3, demonstrating more pessimism than in recent years. It is important to analyze the relationship between the trend in household consumption and the trend in the consumer expectation index. Graph 47 shows a positive correlation of 0.73 between the IEC (two quarter lag) and the growth in consumption, suggesting the momentum in this indicator will be less vigorous during the second half of 2007.

The opposite is true of the durable goods buying perception index, which continued to climb and reached a historic high of 33.3 in June 2007 (Graph 48). The behavior of the durable goods buying

intention index is reflected in more of a real annual increase in vehicle sales (40% for the first quarter of 2007 as opposed to 20% for the first quarter of 2006), an increase in home sales (1.5%) during the same quarter, and 37% real annual growth in sales of furniture and electrical appliances by June 2007.

Although the home buying perception index slowed from 50.6 in May 2006 to 36 in June 2007 (Graph 48), its levels and the extent of home loan disbursements remain high. The average annual increase in area licensed for construction continued to grow as well. It was 23.82% at June 2007 as opposed to 9.1% at June 2006. The upward trend in housing prices also continued, implying better collateral for loans (Graph 49). All these factors suggest the upswing in mortgage loans will continue in the months ahead.

However, interest rates on new mortgages and retail loans have increased in recent months, suggesting the growth in loans means higher costs for households (Graph 50). Despite the continued upswing in credit, this reinforces expectations of a short-term slowdown.

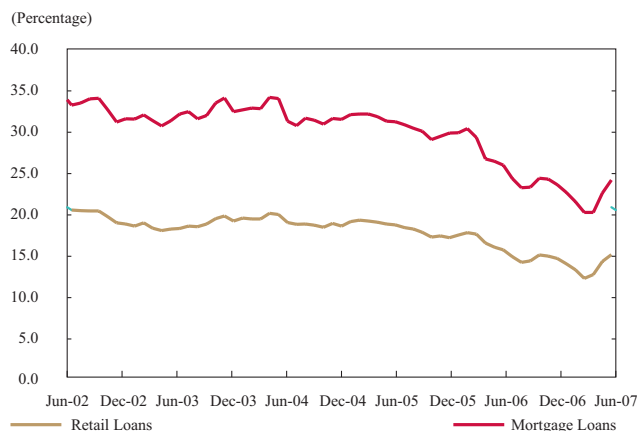
In conclusion, prospects for the momentum in household debt are positive, although less so than in 2006. There are favorable conditions that could enhance loan portfolio growth, such as less unemployment and the low financial burden. However, this last indicator is expected to increase during 2007, because of higher interest rates. The positive trend in consumer expectations also seems to have reversed. Therefore, more consumption, if not based on sound household finances, eventually could undermine the ability to pay the retail and mortgage loan portfolios, hurting financial system stability. As emphasized throughout this report, it is important that the momentum in retail loans result in additional follow-up to measure credit risk efficiently and to ensure a better selection of borrowers.

REAL NHPI



Source: DNP, Banco de la República's calculations.

LENDING RATES, BY TYPE OF LOAN



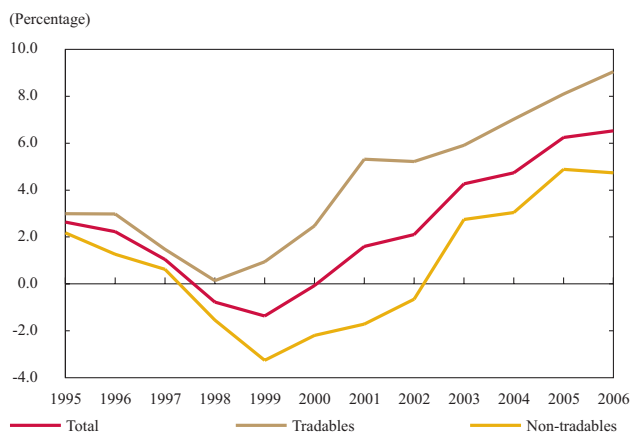
Source: Superintendent of Financial Institutions and Superintendent of Companies, Banco de la República's calculations.

B. THE PRIVATE CORPORATE SECTOR

A sample of companies that reported balance sheet data to the country's financial and corporate authorities was used for this section.²² The financial indicators were analyzed for companies across the board and for producers of tradable and non-tradable goods and services.²³ The indicators examined are identical to those in previous editions of the *Financial Stability Report*, and are identified as determinants of the frailty of Colombian companies.²⁴

GRAPH 51

RETURN ON ASSETS (PROFITS BEFORE TAXES/ TOTAL ASSETS)



Source: Superintendent of Financial Institutions and Superintendent of Companies, Banco de la República's calculations.

1. Profitability

The return on assets (ROA), defined as profits before taxes divided by total assets, continue to expand, following a major increase as of 2005. These returns were up by 6.5% during 2006 (Graph 51). Sales rose sharply during the past year (13% in real terms), but the increase in administrative expenses was less (9% in real terms). Although expenses other than business spending rose as well,²⁵ the private corporate sector enjoyed a major increase in profits. These came to Col \$24 t at the end of 2006 (Table 3).

As noted in the September 2006 edition of the *Financial Stability Report*, non-tradable producers performed out of character in 2005, with respect to profitability and compared to tradable producers. ROA was up by almost 2 pp for the former, as opposed to only 1 pp for the latter. Tradable producers again performed exceptionally well in 2006, better than non-tradable producers, and registered nearly twice the profitability of the latter by the end of 2006. Profits for tradable producers were up by 15% in 2006 compared to 4% for non-tradable producers. The results in terms of respective profitability were 9% and 4.7%.

Good sales growth gave companies a high return on assets (6.5%) in December 2006.

²² Two separate samples were used. The first includes all companies that reported data during the period from 1995 to 2006. The second is a homogeneous sample constructed with the companies that concomitantly possess information for 2004, 2005 and 2006.

²³ The companies producing tradable goods are those involved in agriculture, cattle-raising, hunting, fishing, mining/quarrying and industrial manufacturing. Companies in the other sectors are producers of non-tradables.

²⁴ Óscar Martínez (2003), "Determinantes de fragilidad de las empresas colombianas, in *Borradores de Economía*, No. 259, Banco de la República.

²⁵ These are non-operational expenses, particularly financial ones. Among others, they include banking expenses, commissions, interest and expenses generated by the exchange difference.

PRIVATE CORPORATE SECTOR INCOME STATEMENT

	Billions of December 2006 pesos			Growth Rate (%)	
	2004	2005	2006	2005	2006
Total					
Sales	229.0	240.5	272.6	5.0	13.3
Costs	163.0	170.6	194.6	4.7	14.1
Gross profits	66.0	69.9	77.9	5.9	11.6
Administrative costs	23.0	22.4	23.6	(2.6)	5.3
Sales costs	23.9	25.1	28.3	5.0	12.8
Operational profits	19.1	22.4	26.1	17.1	16.4
Non-operational income	30.1	14.5	19.2	(51.9)	32.5
Non-operational costs	32.4	15.0	21.2	(53.6)	40.7
Profits before taxes	16.8	21.8	24.1	30.1	10.4
Inflation adjustments	1.7	1.4	1.1	(19.2)	(17.7)
Taxes	6.5	7.1	8.1	9.4	14.9
End profits	12.0	16.1	17.1	34.2	6.0
Tradables					
Sales	111.8	112.1	125.7	0.3	12.1
Costs	78.5	79.3	88.0	1.0	11.1
Gross profits	33.3	32.9	37.6	(1.4)	14.5
Administrative costs	8.9	8.1	8.6	(9.2)	6.4
Sales costs	11.5	11.7	13.1	2.4	11.7
Operational profits	13.0	13.0	15.9	0.6	22.0
Non-operational income	20.3	7.1	10.3	(65.2)	45.6
Non-operational costs	22.9	7.6	11.9	(66.5)	55.1
Profits before taxes	10.5	12.5	14.4	19.4	15.0
Inflation adjustments	0.8	0.6	0.5	(23.4)	(19.3)
Taxes	4.3	4.6	5.3	6.6	16.4
End profits	6.9	8.5	9.5	22.5	11.9
Non-tradables					
Sales	117.1	128.3	146.9	9.6	14.5
Costs	84.5	91.4	106.6	8.1	16.7
Gross profits	32.6	37.0	40.3	13.3	9.0
Administrative costs	14.1	14.3	15.0	1.6	4.7
Sales costs	12.4	13.3	15.2	7.3	13.8
Operational profits	6.1	9.3	10.1	52.0	8.7
Non-operational income	9.7	7.4	8.8	(24.3)	20.0
Non-operational costs	9.6	7.4	9.3	(22.8)	25.8
Profits before taxes	6.3	9.3	9.7	47.9	4.1
Inflation adjustments	0.9	0.8	0.7	(15.8)	(16.5)
Taxes	2.2	2.5	2.8	14.9	12.1
End profits	5.1	7.6	7.5	50.2	(0.7)

Source: Superintendent of Financial Institutions and Superintendent of Companies, Banco de la República's calculations.

2. Liquidity

The liquidity indicator, measured as the ratio of current assets to current liabilities, has declined slightly during the last two years, but remains high. In 2006, current assets were 1.35 times current liabilities. This means that companies in the private corporate sector are able to cover short-term liabilities with their more liquid assets. According to the general balance sheet (Table 4), the decline in liquidity as of 2004 is due to more of an increase in several current liabilities with respect to current

TABLE 4

PRIVATE CORPORATE SECTOR GENERAL BALANCE

	Billions of December 2006 Pesos			Growth Rate (%)		Share (%)	
	2004	2005	2006	2005	2006	2005	2006
Assets							
Cash	7.7	8.7	9.1	13.3	4.8	2.5	2.6
Investments	13.7	13.3	13.0	(3.2)	(2.0)	4.5	4.0
Borrowers	51.2	53.9	60.7	5.1	12.7	16.6	16.2
Inventory	32.6	32.0	36.9	(1.9)	15.4	10.6	9.6
Deferred	1.8	1.7	1.8	(5.5)	1.6	0.6	0.5
Current assets	107.1	109.6	121.6	2.3	10.9	34.8	33.0
Investments	54.0	69.2	77.3	28.2	11.6	17.5	20.8
Borrowers	6.1	5.9	5.8	(2.9)	(1.9)	2.0	1.8
Property, plant and equipment	51.1	53.9	58.1	5.5	7.7	16.6	16.2
Intangibles	14.1	12.1	11.9	(14.4)	(1.6)	4.6	3.6
Deferred	8.6	8.6	8.8	(0.8)	3.0	2.8	2.6
Other assets	0.9	0.8	0.8	(4.0)	(9.8)	0.3	0.3
Valuation	65.8	72.1	77.0	9.5	6.8	21.4	21.7
Non-current Assets	200.7	222.7	239.7	11.0	7.6	65.2	67.0
Total Assets	307.8	332.3	361.2	8.0	8.7	100.0	100.0
Liabilities							
Financial obligations	22.1	21.3	24.0	(3.8)	12.9	19.6	18.7
Suppliers	21.5	22.8	25.9	5.9	13.7	19.0	20.0
Accounts payable	15.2	15.6	18.5	3.0	18.2	13.4	13.7
Taxes	5.4	5.9	6.6	9.1	12.4	4.7	5.1
Labor obligations	1.9	1.9	2.1	1.9	11.6	1.7	1.7
Estimated liabilities and provisions	3.6	4.2	4.6	15.8	9.5	3.2	3.7
Deferred	0.8	0.9	1.1	4.9	26.9	0.7	0.8
Other liabilities	4.2	5.1	5.8	20.4	14.6	3.7	4.5
Bonds and commercial paper	0.9	0.9	0.9	1.5	4.0	0.8	0.8
Current Liabilities	75.6	78.5	89.5	3.8	14.1	66.9	68.9
Financial obligations	16.2	13.7	16.1	(15.5)	17.4	14.4	12.1
Accounts payable	6.3	5.8	6.2	(8.3)	7.2	5.6	5.1
Labor obligations	0.2	0.1	0.1	(11.4)	2.9	0.1	0.1
Estimated liabilities and provisions	3.5	3.5	3.4	1.4	(3.4)	3.1	3.1
Deferred	2.9	3.1	3.3	6.7	6.1	2.6	2.7
Other liabilities	2.1	1.9	2.2	(9.9)	17.5	1.8	1.6
Bonds and commercial paper	6.3	7.2	5.6	14.8	(22.4)	5.5	6.3
Non-current Liabilities	37.4	35.3	36.9	(5.6)	4.5	33.1	31.1
Total Liabilities	113.0	113.8	126.4	0.7	11.1	100.0	100.0
Total Equity							
Capital stock	9.6	8.6	7.2	(10.5)	(16.8)	5.0	4.0
Capital surplus	38.0	46.6	46.8	22.7	0.4	19.5	21.3
Reserves	18.2	20.6	25.4	13.3	23.3	9.3	9.4
Equity revaluation	56.2	56.8	59.8	1.0	5.2	28.9	26.0
Dividends	0.0	0.0	0.0	(8.7)	4.2	0.0	0.0
Fiscal year profits	11.8	15.9	16.8	34.5	5.7	6.1	7.3
Profits from previous years	(4.9)	(2.2)	1.5	(56.3)	(171.8)	(2.5)	(1.0)
Valuation surplus	65.9	72.1	77.3	9.5	7.2	33.8	33.0
Total Equity	194.8	218.5	234.8	12.2	7.5	100.0	100.0

Source: National Office of the Superintendent of Financial Institutions and the National Office of the Superintendent of Companies, Banco de la República's calculations.

assets, and particularly to the sizeable increase in financial debt as of 2005 (Graph 52).

The short and long-term items on the balance sheet behaved quite differently. The situation, in the case of non-current assets and liabilities, was entirely the opposite (Table 4). The former grew more than the latter, particularly because of the increase in investments and fixed assets on the asset side, and the reduction in bonds on the liability side.

3. Financial Indebtedness

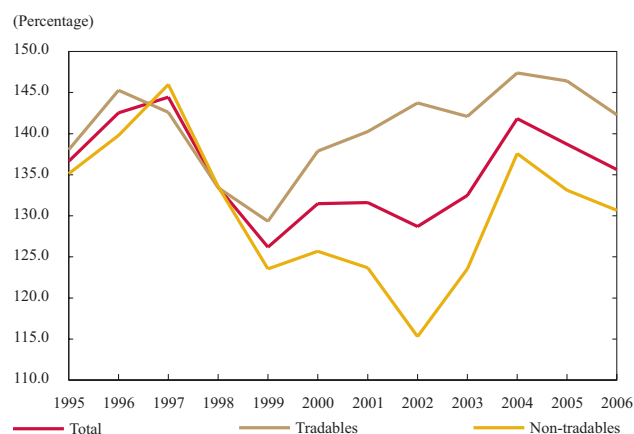
The financial indebtedness indicator (financial obligations divided by assets) shows that companies have again included a significant amount of financial debt in their capital structure (Graph 53). Although the indicator does not reflect exceptional growth, because assets rose as well, short and long-term financial obligations were up considerably in 2006. Short-term financial obligations increased 13%; the long-term ones, 17% (Table 4).

The growth in short-term financial obligations during 2006 was due entirely to obligations contracted with local banks, which were up by 27% (Table 5). Obligations with foreign banks and commercial finance companies showed a great deal of variation, but did not account for a major portion of the debt at less than one year.

In the case of the long-term debt, although obligations with local banks were less important in terms of the amount than the short-term obligations, they increased by 32% in 2006. Long-term obligations contracted with foreign banks rose by 28%.

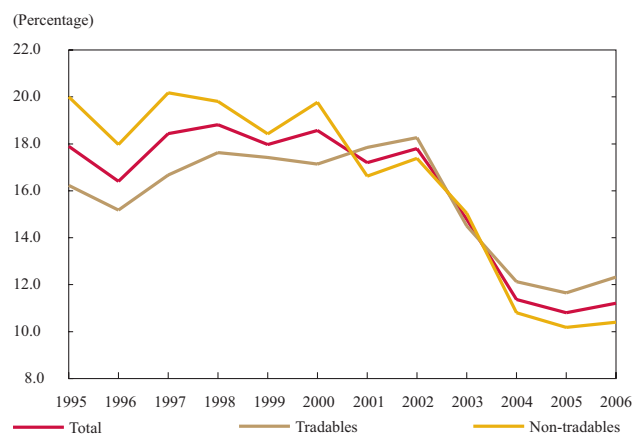
As to composition by maturity and currency, nearly 60% of the financial obligations were contracted at less than one year. This percentage has been more or less stable during the past two years. Financial obligations in foreign currency lost 3 pp due to the reduction in short-term liabilities. Those

**CURRENT LIQUIDITY
(CURRENT ASSETS/CURRENT LIABILITIES)**



Source: National Office of the Superintendent of Financial Institutions and National Office of the Superintendent of Companies, Banco de la República's calculations.

**FINANCIAL INDEBTEDNESS
(FINANCIAL OBLIGATIONS /TOTAL ASSETS)**



Source: National Office of the Superintendent of Financial Institutions and National Office of the Superintendent of Companies, Banco de la República's calculations.

TABLE 5

PRIVATE CORPORATE SECTOR FINANCIAL INDEBTEDNESS

	Billions of December 2006 Pesos			Growth Rate (%)		Share (%)	
	2004	2005	2006	2005	2006	2005	2006
Short-term Financial Obligations							
Domestic banks	14.6	14.1	17.9	(3.6)	26.9	66.1	66.3
Foreign banks	2.7	3.4	2.6	24.6	(22.3)	12.3	15.9
Finance corporations	1.2	0.9	0.4	(21.8)	(56.8)	5.3	4.3
Commercial finance companies	0.7	0.7	0.8	(6.0)	18.0	3.1	3.1
Mortgage banks	0.2	0.2	0.2	22.6	(12.1)	0.8	1.0
Foreign entities	0.7	0.6	0.3	(21.3)	(47.8)	3.3	2.7
Investment buy-back agreements	0.7	0.2	0.1	(69.2)	(31.1)	3.2	1.0
Loan portfolio buy-back agreements	0.0	0.0	0.0	10.0	(1.1)	0.1	0.1
Governmental obligations	0.0	0.0	0.0	(0.2)	(36.5)	0.2	0.2
Other obligations	1.2	1.1	1.6	(7.2)	45.5	5.5	5.3
Total short-term financial obligations	22.1	21.3	24.0	(3.8)	12.9	100.0	100.0
Long-term Financial Obligations							
Local banks	6.4	6.1	8.0	(4.3)	31.6	39.3	44.5
Foreign banks	3.3	3.2	4.0	(5.5)	28.0	20.6	23.0
Finance corporations	1.4	0.9	0.4	(37.7)	(49.2)	8.5	6.3
Commercial finance companies	0.9	0.7	0.8	(22.8)	12.7	5.4	4.9
Mortgage banks	0.1	0.1	0.1	(19.1)	15.7	0.8	0.8
Foreign entities	1.2	0.3	0.3	(78.2)	30.6	7.2	1.9
Investment buy-back agreements	0.0	0.1	0.0	82.7	(52.1)	0.2	0.5
Loan portfolio buy-back agreements	0.0	0.0	0.0	14.8	(1.8)	0.1	0.1
Governmental obligations	0.7	0.3	0.1	(60.2)	(60.5)	4.1	1.9
Other obligations	2.2	2.2	2.2	(1.2)	0.5	13.7	16.0
Total short-term financial obligations	16.2	13.7	16.1	(15.5)	17.4	100.0	100.0

Source: National Office of the Superintendent of Financial Institutions and National Office of the Superintendent of Companies, Banco de la República's calculation.

percentage points were gained by the local debt, which saw more momentum because of less external borrowing.

In short, the private corporate sector continues to experience major growth in sales, which has raised profitability to important heights. Although liquidity is more than enough to cover the sector's short-term obligations, it has declined during the past two years (2005 and 2006) because of more growth in current liabilities with respect to current assets. As part of short-term liabilities, the increase in financial obligations was particularly important. It is an indication that companies in the productive sector are turning, once again, to the financial system for funding, thanks to good conditions in the economy.

The growth in the commercial loan portfolio suggests that companies again are including debt as part of their financial structure.

4. Business Expectations

According to the expectation survey conducted by Banco de la República in July 2007, businessmen are far more optimistic about economic growth,

probably because the economy performed well during first quarter of 2007. In earlier surveys, particularly the ones conducted in January and April 2007, those interviewed anticipated 5.4% and 5.8% economic growth, respectively, while the average rate anticipated in the July survey was 6.5% (Graph 54).

Businessmen also are confident about next year. As was the case for 2007, they raised their expectations throughout the year. In the January and April 2007 surveys, their forecasts for 2008 were 5.3% and 5.6%; in the July survey, the forecast was 6%.

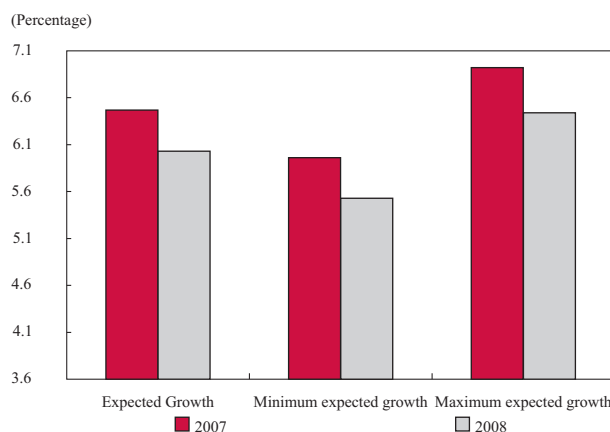
The combined industrial opinion survey conducted in March 2007 by the National Association of Industrialists (ANDI) confirmed the time is right for continued growth. Sales and production were up by more than 8%, inventory was at normal levels, and it was considered a good time to invest. All manufacturing activities reported growth. Nearly 70% of those surveyed believe the situation is good and 45% believe it will improve in the short term.

As to the expectation survey conducted by Banco de la República, although the representative market rate declined prior to June 2007, those questioned said they believe the exchange rate will increase to Col\$1,998 in September and to Col\$2.037 in December 2007. They also expect it to rise during the first half of 2008. This coincides with developments in August, when the exchange rate was Col\$2.173 by the end of the month (Graph 55).

As to the fixed-term deposit rate (DTF), businessmen indicated in earlier surveys (January and April 2007) that they expected the interest rate to remain more or less stable throughout the quarter. However, in the July 2007 survey, they said the interest rate would be 19 bp higher by September and 35 bp higher by December 2007. During the last week in August, the DTF was 8.43% (Graph 56).

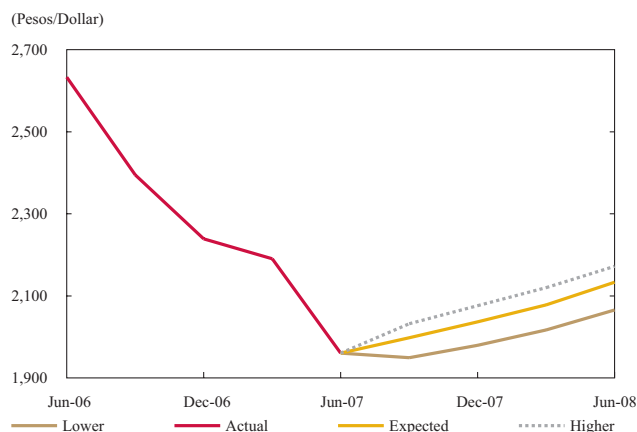
In their response to the question about the state and development of liquidity and the availability of credit during the next six months, those interviewed

EXPECTED GDP GROWTH IN 2007 AND 2008



Source: Banco de la República Expectation Survey.

REPRESENTATIVE MARKET RATE: EXPECTED AND ACTUAL



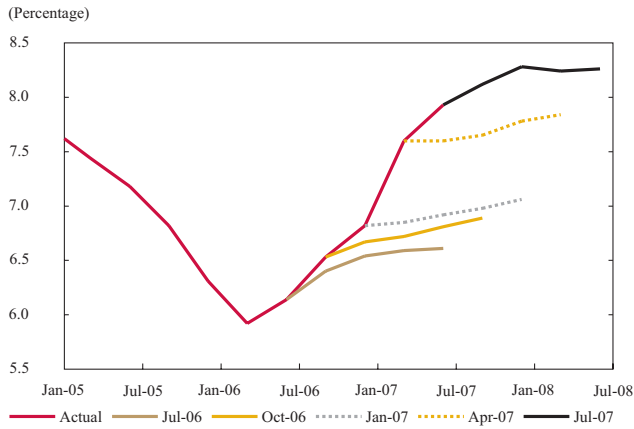
Source: Banco de la República Expectation Survey.

were very pessimistic compared to previous surveys (Graph 57). As to actual liquidity, 76.5% believe it is high, as opposed to 85.2% and 84% who were of the same opinion two and six months earlier. In the July 2007 survey, when asked about the availability of credit, 79% rated it as high, compared to 92.6% who were of that opinion in January and April 2007. In the case of credit, the percentage of businessmen who believe credit availability is low increased sharply from 4.9% and 2.5% in January and April 2007 to 9.9% in July 2007.

At present, expectations for the next six months point to less liquidity and less available credit. The percentage of those interviewed who believe liquidity will increase declined from 14.8% in the January survey to 9.9% in the July survey. In the case of credit, the

GRAPH 56

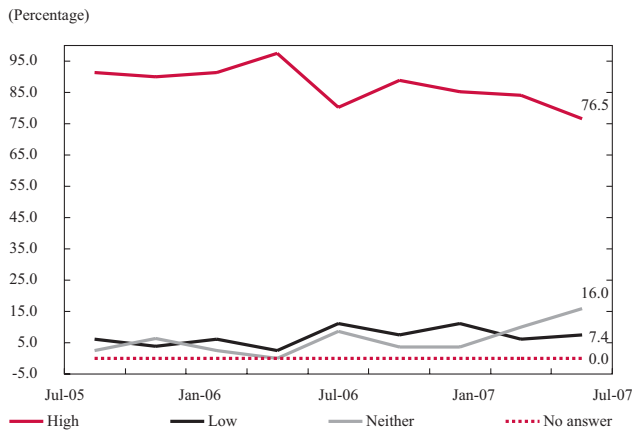
DTF: EXPECTED AND ACTUAL



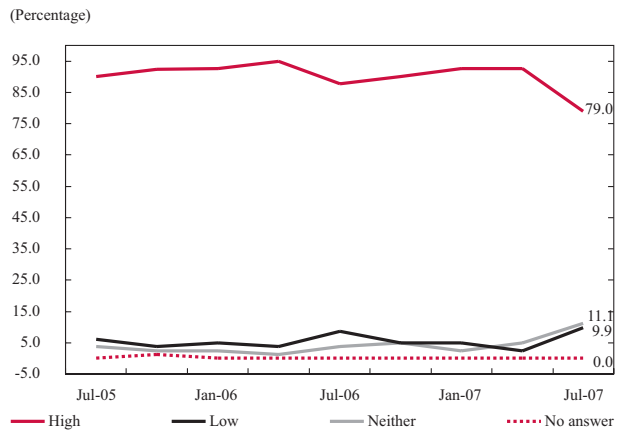
Source: Banco de la República Expectation Survey.

GRAPH 57

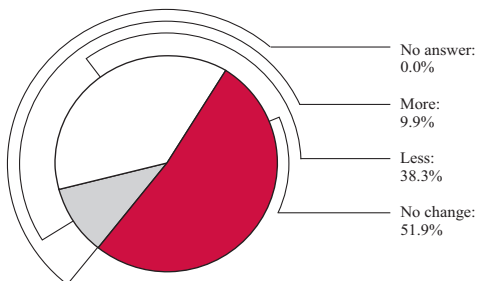
(A) CURRENT PERCEPTION OF LIQUIDITY IN THE ECONOMY



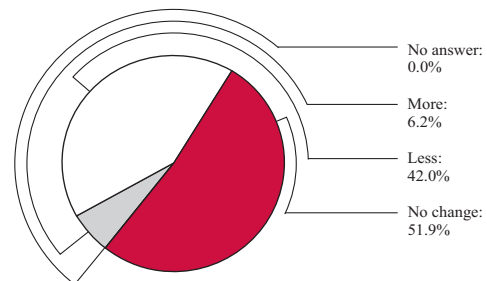
(C) CURRENT PERCEPTION OF CREDIT AVAILABILITY



(B) CHANGE IN LIQUIDITY IN THE NEXT SIX MONTHS



(D) CHANGE IN CREDIT AVAILABILITY DURING THE NEXT SIX MONTHS



Source: Banco de la República Expectation Survey.

percentage dropped by half from 13.6% in January to 6.2% in July. There was a dramatic increase in the percentage of those interviewed who believe both these variables will decline. As to liquidity, the proportion of those who expect to see a reduction went from 16% in the January survey to 38.3% in July. In the case of credit, these percentages increased from 9.9% in the January survey to 42% in July.

NFPS indebtedness has decline since 2003 and was 49% of GDP in June 2007.

C. NON-FINANCIAL PUBLIC SECTOR (NFPS)

1. NFPS Aggregate Debt

NFPS indebtedness, as a percentage of GDP, has decline by about 13 pp since 2003 (Table 6). As of December 2006 and up until June 2007, the reduction was 3.1 pp, thanks to the combination of better fiscal performance, peso appreciation and better economic performance. The gross NFPS debt was Col\$165 t at June, which is 49% of GDP. Net indebtedness was Col\$131 t; that is, 41% of GDP.²⁶

Less growth in the debt was due to less need for financing on the part of the central government (CG), which continues to account for almost 90% of NFPS indebtedness. The increase in CG tax revenue during 2006 and expectations for 2007 are fueled by more economic activity (in the case of income tax and VAT),

²⁶ The difference between the gross and net debt has been growing since 2005. It pertains to CG bonds in pesos listed on the balance sheets of NFPS institutions.

TABLE 6

NFPS GROSS DEBT

	(Billions of pesos)			(Percentage of GDP) ^{b/}			(Share)		(Nominal Annual Growth)		
	Domestic ^{a/}	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Domestic	Foreign	Total
Dec-95	9,929	12,018	21,946	11.8	14.2	26.0	45.2	54.8			
Dec-97	18,774	17,609	36,383	15.4	14.5	29.9	51.6	48.4	48.1	36.2	42.1
Dec-99	32,928	32,879	65,808	21.7	21.7	43.4	50.0	50.0	37.5	34.5	36.0
Dec-01	54,905	50,796	105,701	29.1	26.9	56.1	51.9	48.1	17.7	21.0	19.3
Dec-03	75,078	65,883	140,961	33.0	28.9	61.9	53.3	46.7	10.7	6.3	8.6
Dec-04	84,322	59,779	144,101	32.8	23.7	56.6	58.5	41.5	12.3	(9.3)	2.2
Dec-05	102,408	53,343	155,751	36.4	18.7	55.0	65.8	34.2	21.4	(10.8)	8.1
Dec-06	106,911	57,961	164,872	33.6	18.2	51.8	64.8	35.2	4.4	8.7	5.9
Mar-07	109,333	58,959	168,292	32.9	17.8	50.7	65.0	35.0	4.4	14.4	7.7
Jun-07	111,551	53,697	165,248	32.9	15.8	48.7	67.5	32.5	6.0	(7.4)	1.2

^{a/} The central government debt includes capitalization bonds issued by state-owned banks.

^{b/} GDP in the last twelve months.

Source: Banco de la República, Ministry of Finance and Public Credit.

The central government's creditworthiness has improved considerably in recent years, thanks to good revenue and less borrowing.

the considerable momentum in imports as a result of peso appreciation (in the case of customs duties and external VAT), and better management by DIAN. The tax on net worth will begin to be collected in 2007, and income from privatizations the year before (Granbanco, Ecogas and several electrical power companies) will be perceived.

As a result of more revenue, there were two changes in CG funding sources. i) The amount of TES the government had intended to auction during 2006 and the first half of 2007 was reduced. A look at the revised financial plan for February and June 2007 shows the Finance Ministry lowered the auction target from Col\$9 t to Col\$6.5 t. The estimated debt sustainability indicator, defined as the ratio of loans to debt service, shows a sizeable reduction for 2006 and 2007 to 95% and 69%, respectively.²⁷ ii) Disbursements on loans from multilateral lenders declined by slightly more than US\$1 billion, restricting the amount of dollars the CG will bring into the country during 2007. Therefore, the increase in revenue has reduced CG financing needs, resulting in fewer disbursements from multilateral lenders and fewer TES auctioned during 2006 and 2007.

NFPS debt exposure to foreign exchange (debt in pesos divided by debt in foreign currency) has diminished during 2007, consolidating the trend observed at the start of this decade towards replacing debt denominated in other currencies with debt in pesos. By June 2007, 29% of the gross debt was denominated in currencies other than the peso. Prior to 2003, the proportion was around 50%. Less foreign-exchange exposure between June 2005 and March 2006 was due to price and quantity (peso appreciation and less debt in dollars). However between September 2006 and June 2007, the decline in foreign-exchange exposure is solely due to price, because of sharp peso appreciation.²⁸ Likewise, the substitution of local borrowing (primarily TES B) with global TES as of 2006 reduces pressure on the local market, by diversify the holders of securities (local and foreign), and lessens exchange exposure.²⁹

An issue of Col\$23 t in TES, which is nearly Col \$5 t more than in 2007, will be the primary source of financing during 2008.

²⁷ The updated financial plan for 2007 (February and June 2007) published by the Finance Ministry. Sustainability indicators below 100% show debt service in excess of the amount of bonds sold. In 2003, 2004 and 2005, the indicator was 113%, 107% and 167%, respectively.

²⁸ The foreign-currency denominated debt has seen positive growth since the third quarter of 2006.

²⁹ A global TES is structured the same as a TES B, which means its flows are denominated in pesos. However, they are paid in dollars at the representative market rate of exchange (TRM). If the pesos devaluates, amortization of these securities represents fewer dollars for the central government. This offsets higher amortization from Yankees (bonds denominated in dollars) when the pesos loses value against the dollar (more exchange coverage).

2. Creditworthiness

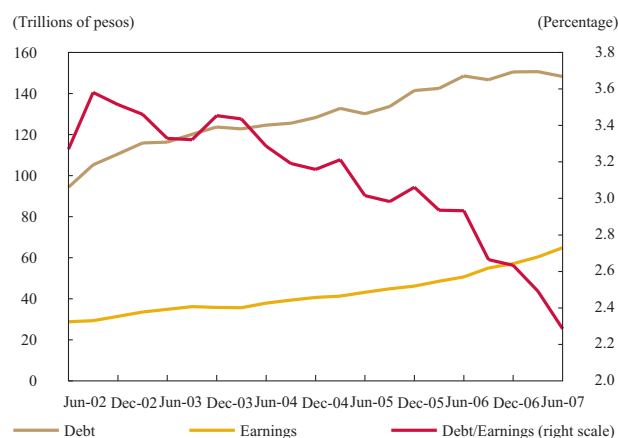
The central government's creditworthiness has improved considerably in recent years, thanks to good revenue and the slowdown in borrowing. Although the central government's revenue rose by 28% between June 2006 and June 2007, its level of indebtedness remained stable. The debt/revenue ratio declined from 2.93% to 2.29% during that period, which is the most pronounced drop in the indicator since 2002 (Graph 58).

3. Outlook

The central government had planned to sell Col\$18.4 t in long-term TES during 2007, or Col\$5 t less than in 2006, to finance a projected deficit of Col \$13.6 t.³⁰ In addition, disbursements from multilateral lenders will be down by almost US\$1 b, reducing the pressure for peso appreciation that has been evident throughout 2007. Less need for CG financing is due to collections from the new tax on net worth, most of which will be used during 2008. Proceeds from privatizations in 2006, the pre-financing arranged last year for 2007, and the increase in tax revenue (income, customs duties and VAT, among others) (Table 7) also are contributing factors.

The deficit anticipated for 2008 is similar to the one in 2007. However, unlike this year, 2008 will see no proceeds from privatization or a pre-financed amount similar to the one this year. Col\$23 t in long-term TES will be issued as the main source of funding, including Col\$10 t to be auctioned off. The increase of nearly Col\$5 t in local government bond sales with respect to 2007 contrasts with the drop in foreign-currency disbursements planned for 2008. Despite the growth in TES sales, the central government expects the local debt sustainability indicator to be 85% during 2008 (sales /debt service), which is more than in 2007 but less than 100%.³¹

CG CREDITWORTHINESS



Source: Ministry of Finance and Public Credit and Banco de la República.

TABLE 7

CG FINANCING SOURCES (BILLIONS OF PESOS)

	2007	2008 (proj)
Amount financed	40,646	36,961
External loans	4,173	2,268
Local loans	17,253	21,622
TES via auction	6,506	10,000
Initial availability	6,966	3,711
Privatizations	6,226	4,500
Banco de la República profits	1,310	1,178
Others ^{a/}	4,718	3,682

(proj) projected.
a/ Includes accrual adjustments, short-term TES and treasury operations.
Source: Ministry of Finance and Public Credit.

³⁰ "Revised Financial Plan for 2007 "(June 2007), Finance Ministry.

³¹ 2008 Financial Plan (June 2007), Finance Ministry.

IV. POTENTIAL RISKS

Credit and liquidity risks could turn into major weaknesses in the event of an adverse macroeconomic situation. In contrast, market risk exposure has declined.

The analysis presented in the first three sections of this report suggests the slowdown in the economy, coupled with the uncertainty on international financial markets has raised the risks to the financial system. This process is becoming evident in some of the balance sheet positions of credit institutions, and the macroeconomic trends suggest it will continue in the near future.

It is, therefore, extremely important to determine just how sound the financial system is with respect to its ability to deal with a shock that would cause any of those risks to materialize. Therefore, the major weaknesses in the system are associated with the risks it obviously is less able to resist. The analysis and exercises presented in this section show market risk has declined in recent months. However, credit and liquidity risk – although yet to materialize - could become significant weaknesses in the event of an adverse macroeconomic situation.

A. MARKET RISK

1. Financial System Exposure to the TES B Market

The method used to appraise securities is the same one used for past editions of this report. It consists of appraising each security at the average price at which the issue traded on the market.³²

Exposure to market risk has declined for credit institutions, but has increased for pension fund managers.

³² See the December 2005 edition of the Financial Stability Report for more details on the method used.

All outstanding TES B at market prices are shown in Table 8.³³ Credit institutions held Col\$21.02 t in these bonds at August 31, 2007 (Table 9), which is 7.8% less than the amount registered on February 16, 2007. Those held by commercial banks continue to account for the bulk of outstanding TES B, with a 90.8% share in August (1.6 pp less than the percentage in February 2007).

³³ The valuation exercise includes all TES B held by agents (tradable, available for sale and at maturity).

TABLE 8

**OUTSTANDING TES B VALUED AT MARKET PRICES: CREDIT INSTITUTIONS
(MILLIONS OF PESOS)**

	In Pesos	At Variable Rate	In RVU	Total
Outstanding at February 16, 2007				
Commercial banks	17,456,464	688,580	2,940,052	21,085,096
Commercial finance companies	169,022	3,640	22,157	194,820
Upper-grade financial cooperatives	24,377	0	0	24,377
Finance corporations	1,309,555	12,228	179,956	1,501,738
Total: Credit Institutions	18,959,418	704,449	3,142,165	22,806,032
Outstanding at August 31, 2007				
Commercial banks	16,398,984	606,352	2,087,932	19,093,267
Commercial financial companies	92,104	2,219	4,571	98,894
Upper-grade financial cooperatives	1,851	0	0	1,851
Finance corporations	1,594,316	1,112	232,112	1,827,540
Total: Credit Institutions	18,087,254	609,683	2,324,615	21,021,552

Source: Banco de la República.

TABLE 9

**OUTSTANDING TES B VALUED AT MARKET PRICES: NON-BANK FINANCIAL SYSTEM
(MILLIONS OF PESOS)**

	In Pesos	At Variable Rate	In RVU	Total
Outstanding at February 16, 2007				
Brokerage firms	437,218	3,854	62,642	503,715
Insurance and investment companies	2,158,812	188,332	1,403,493	3,750,638
Pension Fund Managers (PFM)	21,717,099	947,677	6,108,733	28,773,509
Trust companies	5,675,462	152,953	518,981	6,347,396
Total: Non-bank Financial Sector	29,988,591	1,292,815	8,093,850	39,375,257
Outstanding at August 31, 2007				
Brokerage firms	247,721	1,244	60,933	309,898
Insurance and investment companies	1,853,188	184,661	1,509,132	3,546,981
Pension Fund Managers (PFM)	22,651,709	706,376	6,414,926	29,773,011
Trust companies	5,505,374	142,837	1,050,692	6,698,903
Total: Non-bank Financial Sector	30,257,992	1,035,119	9,035,682	40,328,793

Source: Banco de la República.

Although the commercial banks sold off a large quantity of TES B, the FC and PFM have increased their holdings of these securities.

The TES B portfolio in the non-bank financial sector³⁴ came to Col\$40.3 t, which is slightly higher than at February 16, 2007. Pension fund managers (PFM), as part of the NBFS, hold the most TES B and account for 73.8% of the total. There was virtually no change in that proportion between the two dates used for comparison.

The reduction in TES B holdings of credit institutions (7.8%) is due to a parallel decline in the three types of paper presented: RVU denominated, variable rate and peso denominated. However, the TES-RVU holdings saw the biggest drop in terms of percentage: 26% between February and August 2007. In the case of the NBFS, one sees a shift in resources from variable-rate TES to TES-RVU, as the former mature and are removed from circulation.

A breakdown of the variations in the quantity and price of TES B holdings is shown in Table 10. The price variation is due to a shift towards securities with prices that rose or fell during the period in question and is calculated as the residue between the total variation and the variation in quantity.

Although the commercial banks sold off a large quantity of securities between

³⁴ In the non-bank financial sector considered in this section the trust companies included the mutual funds.

TABLE 10

VARIATIONS IN TES B HOLDINGS ^{a/}
(MILLIONS OF PESOS)

	Variation in Quantity	Variation in Price	Total Variation
Total: Credit Institutions	(155,158)	(1,629,322)	(1,784,480)
Commercial banks	(459,892)	(1,531,938)	(1,991,830)
Commercial financial companies	(70,561)	(25,365)	(95,926)
Upper-grade financial cooperatives	(14,170)	(8,357)	(22,527)
Finance corporations	389,465	(63,663)	325,802
Total: Non-bank Financial Sector	2,709,488	(1,755,952)	953,536
Brokerage firms	(87,314)	(106,502)	(193,816)
Insurance and investment companies	114,182	(317,839)	(203,657)
Pension Fund Managers (PFM)	2,130,229	(1,130,727)	999,502
Trust companies	552,391	(200,884)	351,507

a/ Variations between February 16 and August 31, 2007.
Source: Banco de la República.

February and August 2007 (nearly half a trillion pesos), the quantity impact on credit institutions as a whole was small due to the performance of finance corporations that purchased securities during the period.

The valuation loss on these securities, which was unleashed during that period due to continuous interest rate hikes, eventually had a major impact on the total variation in outstanding TES B holdings. The drop in market prices was responsible for 91.3% of that outcome. Accordingly, in net terms, credit institutions as a whole (except FC), and particularly commercial banks, have less market-risk exposure.

TES B holdings in the NBFS increased and the drop in prices raised the net effect of exposure by August 31 compared to February 16, 2007. The PFM were the institutions that increased their share of TES the most.

2. Sensitivity to TES B Rate Increases

The valuation losses that would occur with a 200 bp change for all maturities on the zero-coupon yield curve for fixed-rate TES³⁵ and RVU-denominated TES³⁶ was calculated to measure how portfolio value responds to interest rate changes. As with exercises done in the past, this one included only the trading book positions of these securities.^{37 38}

Valuation losses were estimated according to the portfolio at August 31, 2007 and are presented in Table 11. The losses incurred by credit institutions, with a hypothetical increase in the interest rate, came to Col \$642 b. This is equivalent to 17.14% of annualized profits at June 2007. In the case of commercial banks, the amount was Col\$602 b and represented 20% of the profits during the same period.

Graph 59 allows us to compare this outcome to previous periods.³⁹ The valuation losses that would be incurred by credit institutions as a whole and by all commercial

The valuation loss on securities had a serious impact on the total variation in TES B holdings.

³⁵ For countries other than the G-10, this is the shock suggested by the Basel Committee on Banking Supervision.

³⁶ It is assumed there is an increase in the real spread on the RVU reference rate for TES-RVU. Higher inflation expectations would result in losses only on fixed-rate TES, as there would be no change in the real return on TES-RVU.

³⁷ The trading book is the portfolio of financial instruments each bank holds for the benefits to be derived from their short-term purchase and sale. In the Colombian case, it includes the positions in tradable securities up for sale.

³⁸ The Risk Metrics method was used to calculate the change in portfolio value. See the December 2005 edition of the *Financial Stability Report* for a more detailed explanation.

³⁹ The exercises were done for the portfolio on the last working day of June and December of each year during the 2003-2006 period. The last two figures are for February 16 and August 31, 2007.

The hypothetical valuation losses are the lowest since 2003 for both credit institutions and PFM. MANAGERS (PFM),

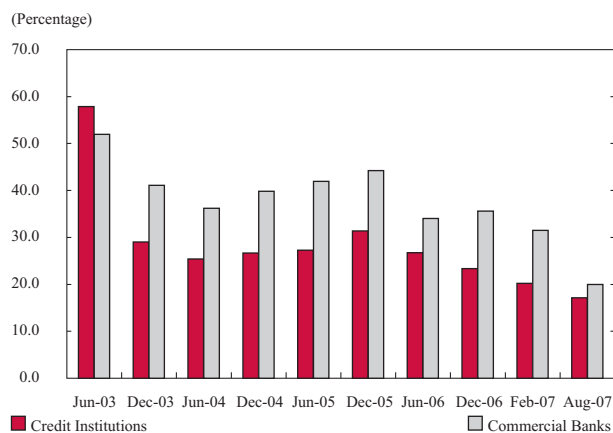
TABLE 11

**VALUATION LOSSES WITH A 200 BP SHOCK
(MILLIONS OF PESOS)**

	In Pesos	In RVU	Total	Annualized Loss/Profits (Jun.) (%)
Total: Credit Institutions	(488)	(154)	(642)	(17.14)
Commercial banks	(463)	(139)	(602)	(20.00)
Commercial finance companies	(1)	(0)	(1)	(3.13)
Finance corporations	(24)	(15)	(39)	(5.62)
Pension Fund Managers (PFM)	(1,062)	(462)	(1,524)	2.69^{a/}

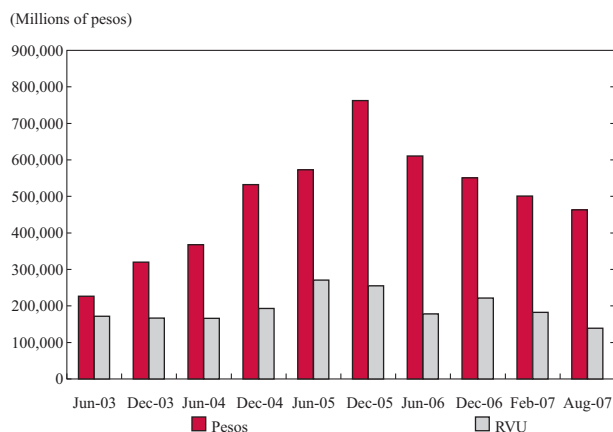
a/ Loss as a percentage of total portfolio value at June 2007
Source: Banco de la República.

GRAPH 59

**VALUATION LOSSES AS A PERCENTAGE
OF ANNUALIZED PROFITS,
WITH A 200 BP SHOCK**


Source: Banco de la República.

GRAPH 60

**VALUATION LOSSES
FOR COMMERCIAL BANKS**


Source: Banco de la República.

banks with the February portfolio are the lowest of the entire period in question, mainly because these institutions are less exposed to market risk, as noted earlier.

To isolate the effect profit performance has on the outcome for commercial banks, the valuation losses incurred by these institutions are shown in Graph 60 (in millions of pesos). As illustrated, valuation losses on securities denominated in pesos have declined steadily since December 2005 and, in the case of TES-RVU, since December 2006.

Given the same hypothetical case, with an interest rate hike, PFM valuation losses came to Col\$1.5 t and represent 2.7% of the portfolio value at June 2007 (Table 11). Estimated PFM losses have increased significantly since June 2003, with a brief interruption in June 2006 (Graph 61). However, these losses declined slightly between February and August 2007, going from 2.8% to 2.7% of portfolio value.⁴⁰ This reduction is due to more growth in PFM portfolio value,

⁴⁰ The reference portfolios for the exercise are those at December 2006 and June 2007.

compared to the millions in projected losses (Graph 61).

The PFM valuation losses shown in Graph 62 (in millions of pesos) provide additional data. Although the hypothetical losses for the period have declined as a percentage of the total loan portfolio, the same cannot be said of the losses evaluated in millions of pesos for fixed-rate TES. They remain on the upward course observed since June, having increased by 1.8% between February and August 2007. The losses on TES-RVU were down slightly during the same period.

B. CREDIT RISK

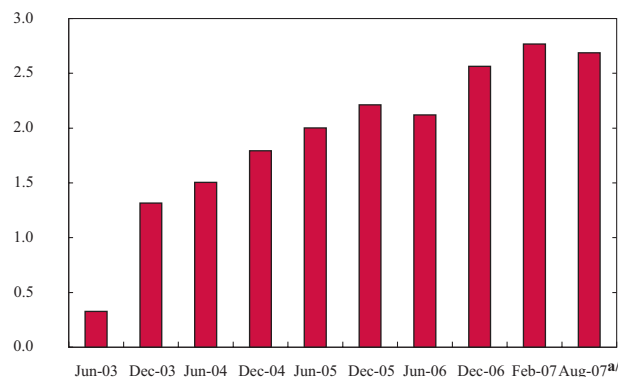
1. Credit Institutions

As summarized in the section on credit institutions, the gross loan portfolio has shown signs of a slowdown since the end of last year. Portfolio quality remains extremely low, even though the risky portion of the portfolio continues to grow, mainly due to the increase in retail loans. The coverage indicator is at good levels, despite a slight reduction during the second quarter of 2007.

At present, credit risk does not appear to pose a latent threat to the stability of the financial system despite these variations in the main indicators. However, to analyze how financial institutions would react to extreme, but highly unlikely macroeconomic situations, an exercise was done to examine how the capital adequacy ratio of 17 credit institutions would respond to an abrupt variation in interest rates, housing prices and economic activity.

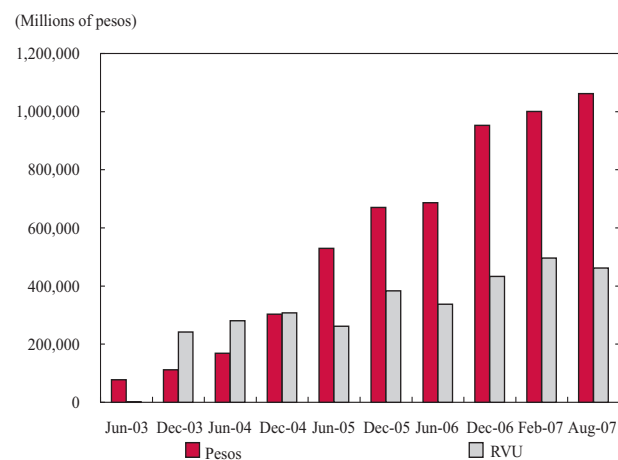
The exercise is based on a model for each type of loan portfolio; namely, the VEC models for the retail and mortgage loan portfolios, which include the non-performing portfolio and GDP, in addition to the interest rate in the case of the former and the housing price index for the latter. The model for the commercial loan portfolio is developed with a panel in which the dependent variable is the non-performing loan portfolio and the explicative variable is the return on assets.

PFM VALUATION LOSSES AS A PERCENTAGE OF PORTFOLIO VALUE, WITH A 200 BP SHOCK



a/ Percentage of the June portfolio
Source: Banco de la República.

PFM VALUATION LOSSES



Source: Banco de la República.

A shock to the macroeconomic variables would reduce the capital adequacy ratio of 12 banks.

Shocks to the macroeconomic variables affect the non-performing portion of every loan portfolio.⁴¹ The non-performing portfolio increases in the wake of those shocks, affecting bank balance sheets in a way that can be seen through two channels. First, a larger non-performing portfolio creates more spending on loan-loss provisioning, which is evident in fewer profits on the income statement. Secondly, the non-performing or overdue portfolio generates no income from interest, which also means less profit. Fewer profits affect technical equity and, therefore, the capital adequacy ratio.⁴²

The results of the exercise are shown in Table 12. In this adverse scenario, credit institutions would face serious problems with respect to their capital adequacy ratio, which is a measure of their capacity to absorb unexpected losses. If we assume those changes occur simultaneously in all the macroeconomic variables under consideration (Shock 3), the capital adequacy ratio would go from 12.94% to 8.57%, and would fall below the required minimum (9%) in the case of 12 credit institutions.

The stressed capital adequacy ratio for each of the 17 credit institutions is presented in Graph 63, which shows the capital adequacy ratio for the 12 institutions that would see their ratios go below the required minimum. Moreover, this indicator would dip below 8% for nine banks.

⁴¹ The retail and mortgage loan exercises assume a 6.8% decline in economic activity, as occurred in the second quarter of 1999. They also assume a 450 bp rise in the interest rate (as was the case between May and June 1998), and an 8% drop in housing prices, which is equivalent to the average decline during 1996-2000. In the case of commercial loans, the exercise is based on a 9% sales reduction, as registered during 1999, and the same change for the interest rate on the other two loan portfolios.

⁴² For a detailed explanation of these exercises, see "Financial Stability Matters" in the December 2005 edition of the *Financial Stability Report*.

TABLE 12

NUMBER OF BANKS WHERE THE CAPITAL ADEQUACY RATIO WOULD FALL BELOW THE MINIMUM (12 MONTHS)

	Shock 1 ^{a/}	Shock 2 ^{b/}	Shock 3 ^{c/}
Commercial	0	4	4
Retail	1	3	5
Mortgage	0	0	0
Total	2	9	12
Current Capital Adequacy Ratio (%)	12.94	12.94	12.94
Stressed Capital Adequacy Ratio (%)	11.59	9.48	8.57

^{a/} Interest rates (on consumer and commercial loans) or housing prices (mortgages).

^{b/} GDP (consumer and mortgage) or sales (commercial).

^{c/} Combination.

Source: Banco de la República.

How do these results compare to the ones obtained with previous credit risk exercises? The change over time in the number of banks that would see their capital adequacy ratio fall below the required minimum is presented in Graph 65, along with the stressed capital adequacy ratio. The number of banks is still 12, except in March 2006, when the number was 10. The stressed capital adequacy ratio, which had dropped to 8% in March 2007, is now 8.6%, which is similar to the percentage a year earlier (September 2006).

In short, although there are no extremely pronounced changes in the capital adequacy ratio with respect to the previous exercises, it is important to point out that credit risk, although slight, has increased.

2. Concentration and Credit Risk Analysis of the Commercial and Retail Loan Portfolios

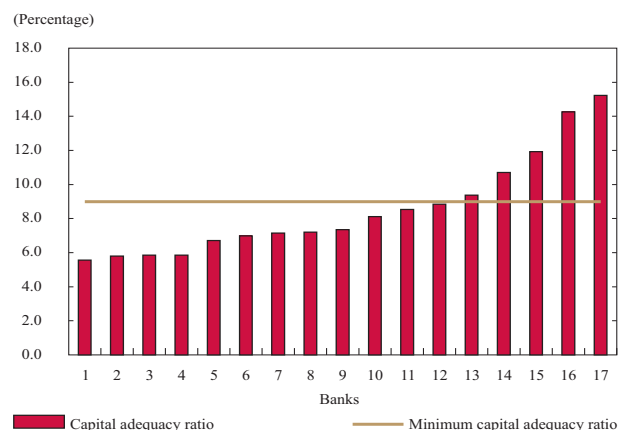
A description of the data is presented in this section and the change in the amount and number of commercial and retail loan operations is discussed. Developments in the concentration of credit by institution and borrower are presented, along with the results of a simple exercise with transition matrices that summarize recent changes in loan portfolio quality.

The information for this section comes from credit and leasing reports submitted regularly to the National Office of the Superintendent of Financial Institutions (SFC) (Form 341). The database is quarterly: from December 1998 to December 2006 for the commercial loan portfolio and from December 2002 to December 2006 for the commercial loan portfolio.

a. Commercial Loan Portfolio

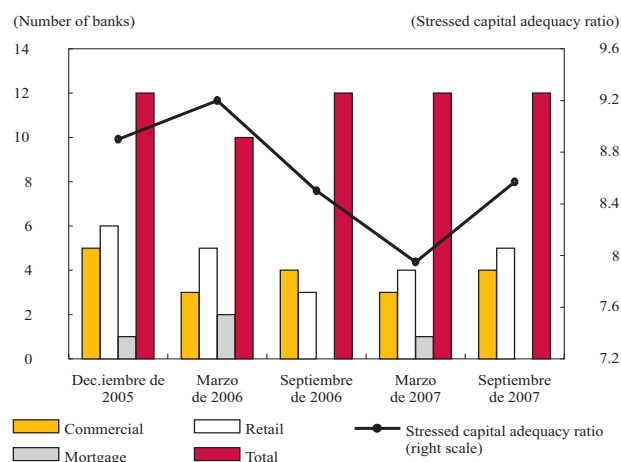
The commercial loan portfolio accounts for 53% of the total loan portfolio of financial institutions. Given this important percentage, monitoring how credit risk develops for the commercial loan portfolio is crucial to detecting early warning

STRESSED CAPITAL ADEQUACY RATIO, MARCH 2007 (SHOCK 3)



Source: Banco de la República.

DEVELOPMENTS IN CREDIT RISK



Source: Banco de la República.

signs of possible threats to the stability of the financial system. For this reason, due to the mixed quality of the loan portfolio held by financial institutions, the mixed quality of their customers and the terms of their loan agreements, the data should be broken down and examined by segments.

i) Description of the Data

The coverage of the information has improved over time. In December 1998, the total commercial loan portfolio contained in the aforementioned database accounted for 46% of the total commercial loan portfolio taken from the balance sheets of financial institutions. By December 2006, it covered the entire portfolio. This, however, does not pose a barrier to analyzing loan concentration and quality, as the data are broken down. In other words, each loan can be monitored individually throughout the eight years in question, allowing for a careful analysis of the concentration and quality of the commercial loan portfolio.

ii) Amount and Number of Loans per Issuer

The fundamental statistics that summarize the database used in this section are shown in Table 13. Only figures on capital in local currency are presented. The number of operations has increased gradually over time: 77,416 operations in local currency were reported in December 1998, as opposed to 785,124 in December 2006. This amounts to an average annual increase of 29.4%. As mentioned, the coverage of the reports submitted by credit institutions on their loan operations has

TABLE 13

**CAPITAL IN LOCAL CURRENCY
(FIGURES IN MILLIONS OF PESOS FOR DECEMBER EACH YEAR)**

Quarter	Outstanding Loan Portfolio in Local Currency	Number of Legal Transactions	5 Percentile	Lower Quartile	Median	Upper Quartile	95 Percentile
1998	13,081,464	77,416	3.6296	16.2898	39.2091	108.4373	985.0903
1999	18,956,191	113,597	2.6007	14.9206	30.5175	92.7217	954.1303
2000	23,933,512	310,504	0.9650	1.9481	3.6349	8.4645	125.9284
2001	25,633,517	230,053	1.0000	2.3354	5.5694	20.0000	266.9444
2002	29,493,862	346,559	0.6230	1.9315	6.9428	20.8333	197.0000
2003	35,787,016	407,483	0.7917	2.9469	9.0000	25.6000	222.9754
2004	43,001,795	546,644	1.0097	4.0000	10.0000	28.1956	220.3333
2005	45,878,809	655,651	1.0131	4.1281	10.3632	28.9311	200.0000
2006	59,694,099	785,124	1.0175	4.4565	12.0000	32.3838	204.9669

Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

increased, which is why this growth rate does not completely reflect the performance of the loan market.

By the same token, the total amount of the commercial loan portfolio of institutions reported in the database jumped from Col\$13.1 t in December 1998 to Col\$59.7 t in December 2006. This amounts to 11.7% average real annual growth. Once again, part of this increase reflects the increased coverage of the database.

The average amount of credit declined, in real terms, from Col\$284 m in December 1998 to Col\$76 m in December 2006. This seems to be the result of a combination of two factors. On the one hand, it is reasonable to assume that most of the unreported credit in the initial quarters pertains to small loans (biasing the database in favor of large loans). On the other hand, the change in regulations in December 2001 affected the way the commercial loan portfolio is understood. Rather than being defined by the amount on loan, it is now defined by the way loans are used. Loans considered commercial under the new regulations were previously regarded as retail loans because of their small amount. Given these two factors, it seems reasonable to assume that the average commercial loan is now smaller, in real terms, than it was eight years ago.

The increase in the number of borrowers is consistent with the increase in the number of operations on record. In December 1998, 37,962 borrowers were on record. In December 2006, this figure was 8.7 times higher, showing a total of 330,803 borrowers.

Graph 65 illustrates the information presented in Table 13; namely, the real progression, in time, of the median, lower and upper quintiles, and the 5 and 95 percentiles of the amount of commercial loans.

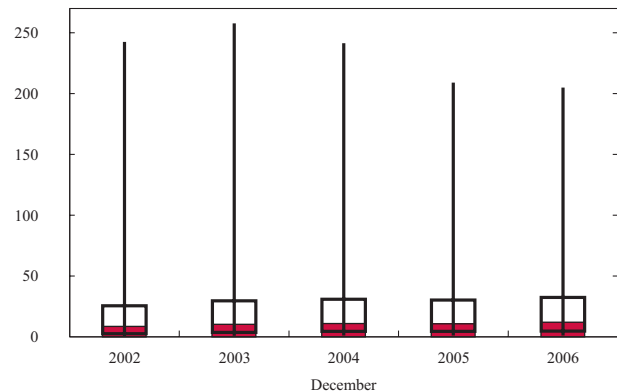
As to the makeup of the loan portfolio by type of institution, the commercial banks accounted for the largest share of the commercial loan portfolio during the period in question. Their proportion declined from 71.4% to 64.7% between December 1998 and December 2001, but increased during the years thereafter, accounting for as much as 80.4% of the commercial loan portfolio by December 2006. Special official institutions (IOES in Spanish) maintained a share between 15% and 20% during the period in question, while finance corporations (FC) slowly reduced their share. After accounting for 13% of the total commercial

Although the total amount of the commercial loan portfolio has increased, the average loan is smaller.

GRAPH 65

LOAN PORTFOLIO IN LOCAL CURRENCY (ACTUAL)^{a/}

(Millions of pesos)

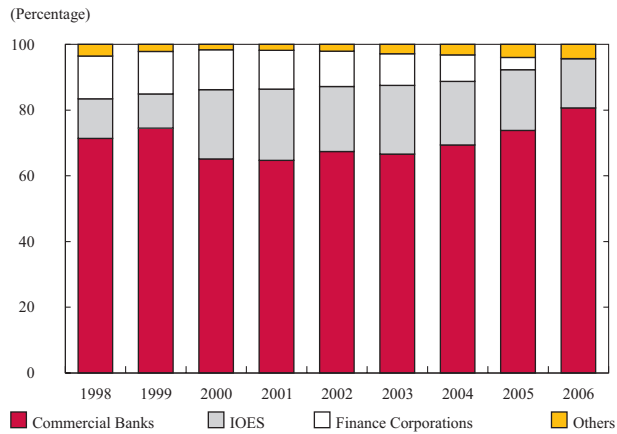


a/ A candlestick chart, in real terms. Each candlestick has a rectangle with a black border. The upper and lower sides of the rectangle represent the upper and lower quintiles of legal capital. From the lower part of the candle, a straight line is drawn from percentile 5 to percentile 95. The red band represents the value of the median each December. Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

loan portfolio in December 1998, they represented less than 1% in December 2006.⁴³ Commercial finance companies accounted for 3.5%, on average, during the period in question (Graph 66).

GRAPH 66

CONCENTRATION OF THE COMMERCIAL LOAN PORTFOLIO IN COMMERCIAL BANKS (DECEMBER)



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

Not surprisingly, the borrowers identified with a tax number (NIT) account for the bulk of the commercial loan portfolio. Their share increased from 81.6% in December 1998 to 85.1% in December 2001. It declined after that, accounting for 76.8% of the total amount in December 2006. The share lost by borrowers identified with a tax number (NIT) was gained by borrowers identified with a Colombian I.D. card number (Graph 67).

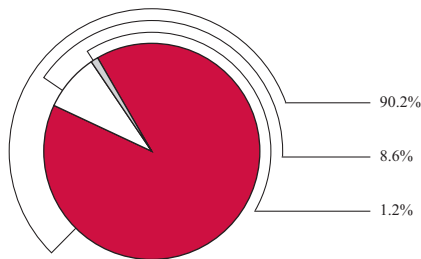
iii) Commercial Loan Portfolio Concentration, by Institutions

As indicated earlier, most of the commercial loan portfolio is held by the commercial banks. For a simple estimate of the systemic risk in the commercial loan portfolio, it is important to look at how the share of the total portfolio has evolved for the major creditors in the system. Graph 4 reflects the changes in the percentage of the commercial loan portfolio that is concentrated in the five and the ten financial institutions with more commercial loans. The classification is arbitrary, but does provide interesting information on the concentration of credit by issuer.

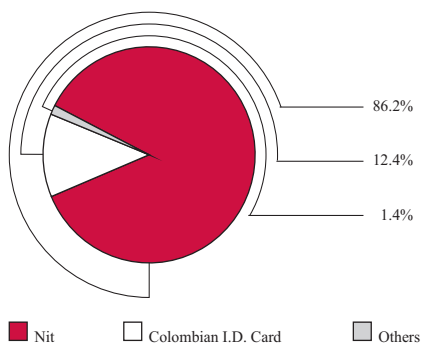
GRAPH 67

COMMERCIAL LOAN PORTFOLIO CONCENTRATION

(A) AT DECEMBER 1998



(B) AT DECEMBER 2006

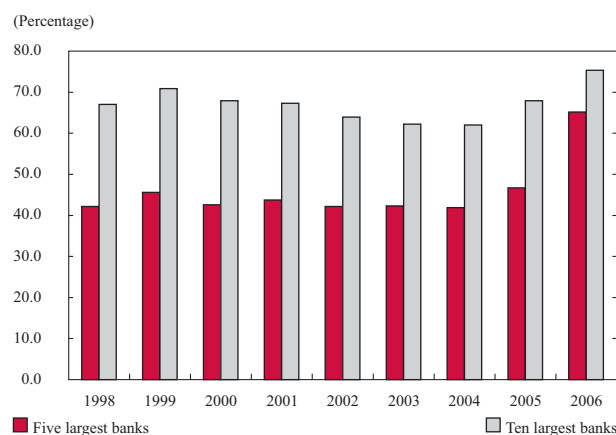


Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

As illustrated in Graph 68, there has been a sharp increase in concentration during the last two years. The leading five issuers held approximately 42% of the commercial loan portfolio during the first years shown in the graph. By December 2005, their proportion was 46.7%. One year later, it was 65.1%. The same is true of the 10 major issuers. In December 2006, they held 76.4% of the total commercial loan portfolio in the financial system.

⁴³ The reduction in the share pertaining to finance corporations is due to their mergers and bankruptcies during the period in question.

COMMERCIAL LOAN PORTFOLIO CONCENTRATION IN THE LARGEST FINANCIAL INSTITUTIONS (EACH DECEMBER)



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

After examining the concentration of commercial loans by creditor, it is important to round out the picture by looking at the other side; that is, loan concentration by borrower. Graph 69 shows the changes in the percentage of credit concentrated with the 50 and 100 major borrowers. As illustrated, there is no clear upward trend in the percentage of commercial loans in the hands of the major borrowers. Although the 50 major borrowers accounted for a larger share of the commercial loan portfolio at December 2006 (32.1%) compared to December 1998 (29.2%), it is less than the percentage registered during the first five years of this century. The 100 leading borrowers exhibited a similar trend.

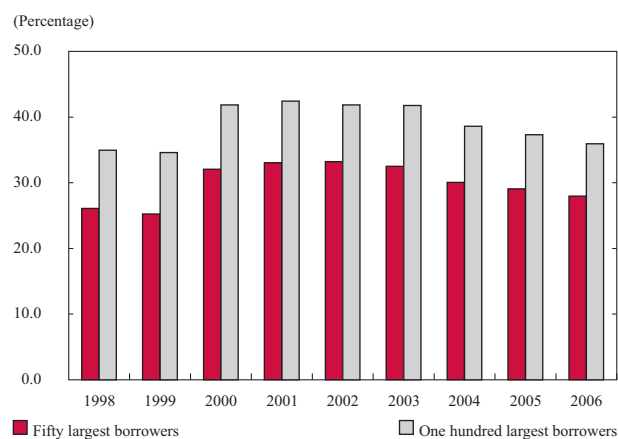
iv) Analysis of Developments in Commercial Loan Portfolio Quality

Estimating transition matrices is an important part of credit risk analysis. Transition matrices represent the conditional probability that the state of a loan will change. In this sense, it is fundamental to clearly identify the individuals that could migrate from one state to another and to define those states. The results of the transition matrices estimated for commercial loans are presented in this section, based on quarterly data from December 1998 to December 2006.⁴⁴

A series of relevant points must be clarified before presenting the results of the estimates. First of all, the information from the database was filtered for this section, eliminating loans granted by CFC that specialize in leasing, the smallest 5% of the loans, and entries for a single borrower who has more than one loan with the same bank at the same point in time.⁴⁵ The other two filters were used to reduce bias and identification problems.

The states pertaining to the loan portfolio classification at each point in time (A, B, C, D and E) were used for this analysis. There is no absorbent state. This is

COMMERCIAL LOAN PORTFOLIO CONCENTRATION IN THE LARGEST BORROWERS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

⁴⁴ The estimated probabilities of migration from one state to another are presented, but not the losses from default.

⁴⁵ Loans extended by CFC that specialize in leasing were eliminated from this analysis, as they are very different from loan operations.

Credit concentration per bank has increased slightly during the last two years.

convenient because it eliminates the necessity of clarifying that the Markovian assumption in this type of analysis is valid only for the short term.⁴⁶

The individuals are the loans and the estimates are done in discreet time, using the cohort method. In this way, the probability of migrating from one state to another, which happens from one quarter to another, is estimated with a simple counting method. Although it has problems that have been identified in literature (see, for example, Gómez González and Kiefer [2007]⁴⁷), this method is a good starting point for analyzing the credit risk in the commercial loan portfolio, given the wealth of the database used. A research article attached to this report (Gómez González, Morales, Pineda and Zamudio [2007]⁴⁸) offers a more thorough analysis of credit risk in the commercial loan portfolio, estimating transition matrices in continuous time and with a duration model.

The average quarterly transition matrix, estimated in discreet time for the entire period under consideration, is presented in Table 14. The bulk is concentrated in the diagonal elements of the matrix, particularly for categories A and E. In other words, migration is greater for the best and the worst loans, which sounds reasonable: loans with an extremely high rating rarely migrate towards poor ratings, and those with a very poor rating are not likely to improve over time. The other categories also show that most loans are concentrated in the diagonal elements, but less so than in the case of categories A and E.

Highly rated loans are less likely to migrate towards a poor rating.

⁴⁶ In a Markovian system with an absorbent state, all individuals eventually migrate towards that state. There is no such state in the transition matrices presented in this section. Therefore, the probability of migration from one particular state to another is strictly positive.

⁴⁷ Gómez González, J. E., and Nicholas M. Kiefer (2007), "Evidence of Non-Markovian Behavior in the Process of Bank Rating Migrations," Borradores de Economía, no. 448, Banco de la República.

⁴⁸ Gómez González, J. E.; A. P. Morales; F. Pineda and N. Zamudio (2007), "Estimation of Credit Quality Transition Matrices in Discreet and Continuous Time for the Commercial Loan Portfolio of Financial Institutions in Colombia," Financial Stability Report, Banco de la República, September 2007.

TABLE 14

AVERAGE TRANSITION MATRIX (PERCENTAGE)

	A	B	C	D	E
A	93.76	4.70	1.05	0.29	0.19
B	28.64	50.78	17.48	2.47	0.64
C	12.17	7.91	36.04	41.44	2.44
D	6.11	2.24	2.23	61.06	28.36
E	2.73	0.55	0.41	1.15	95.15

Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

Furthermore, migrations towards a particular state are concentrated in the adjacent categories. This also is reasonable, since migrations are expected to be relatively slow. The risk profile of a particular loan is not expected to change quickly. Inasmuch as a credit risk analysis should allow for predictions on the future performance of credit quality, it is interesting to compare the matrix in Table 14 (average migration for the entire period in question) with the transition matrix in Table 15 (quarterly average for the last year with available figures). At first glance, both matrices appear to be quite similar. However, the one in Table 15 shows more likelihood of category A loans staying in that category. Likewise, the probability of migration from A to a lower category is less. For the rest, the effect is the opposite: the matrix in Table 15 shows a greater likelihood of migration to lower categories. Accordingly, if the better quality loans appear more likely to preserve a good rating in recent times, those with a lower rating are now more likely to migrate to categories with a worse rating.

The retail loan portfolio includes different types of credit with characteristics that are far from uniform.

b. Retail Loan Portfolio

Unlike the commercial, housing or micro-credit loan portfolios, there are three types of retail loans: automobile, credit card and others.⁴⁹ Each has different characteristics (collateral, amount, number of operations, etc.). The purpose of this section is to describe those characteristics and to assess their credit risk, using a complete database that contains each retail loan operation reported quarterly by financial institutions to the SFC. In all, approximately 85 million operations were registered during the period from March 2002 to December 2006. The analysis will make it possible to develop better tools for understanding the recent

⁴⁹ The "others" include free investment, revolving credit, overdrafts, loan portfolio purchase and education loans.

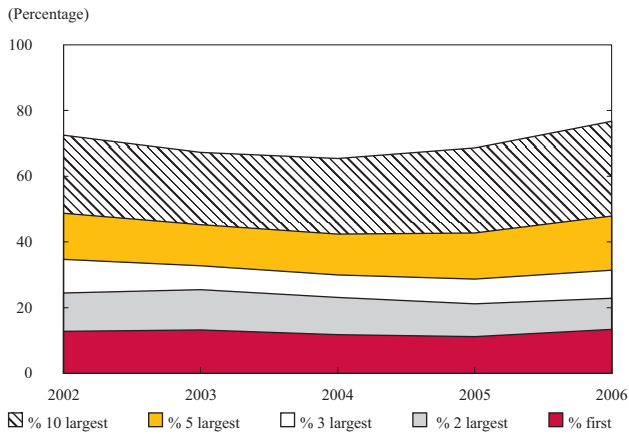
TABLE 15

AVERAGE TRANSITION MATRIX 2006 (PERCENTAGE)

	A	B	C	D	E
A	96.01	3.34	0.51	0.12	0.03
B	35.66	40.84	21.54	1.18	0.77
C	10.27	6.79	27.83	51.73	3.37
D	3.60	1.26	1.39	64.60	29.15
E	2.30	0.44	0.35	0.99	95.91

Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

ISSUE CONCENTRATION BY AMOUNT



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

and accelerated momentum in this portfolio and its components and the trend in credit risk.

i) Description of the Data

As with the commercial loan portfolio, the available figures are from SFC Form 341. A number of institutions did not report data for 2002 and 2003. This created a discrepancy between the total retail loan portfolio and our database. During those years, the sum of individual loans in our database was 10% less than the actual amount. This inconsistency was less during 2004 (6% on average) and non-existent as of 2005. While the actual increase in amounts was 24% 32%, 39% and 49% during the years from 2003 to

2006, our database shows more growth. Both cases reflect considerable momentum in credit during the last three years.

ii) Amount and Number of Loans by Issuer and Type

Commercial banks are the primary retail loan creditors, accounting for nearly 90% of the amount loaned, followed by commercial finance companies (CFC) with 8%. Since 2004, the ten institutions with the largest volume of credit have increased their concentration (exposure) from 65% to 77% in December 2006 (Graph 70). Half the retail loan portfolio at December 2006 was concentrated in five of the 46 retail lenders. Therefore, the increase in the retail loan portfolio during recent years was fueled by institutions with a larger share and not by new institutions entering the retail loan market.

An analysis of the number of loans and their amounts shows the disparities among the different portfolio types. Approximately two thirds of all retail loans are classified as "others", 20% are credit card operations and 12% are automobile loans. A breakdown of the Col\$27.6 t reported in December 2006 shows Col\$18.8 t in "other" loans, Col\$5.6 t in credit card loans and Col\$3.2 t in automobile loans. There was no significant change in this makeup during the three preceding years, given the considerable growth in the three types of retail loans (Graph 71, Panel A).

The average amount of credit reflects the differences among the various types of retail loans. The number of credit card or "other" operations is much higher than the number of automobile loans. Only 3% of the almost 10 million operations registered

The vigorous growth in the retail loan portfolio applied to the three types of credit (automobiles, credit card and "others").

in December 2006 pertained to automobile loans; 49% were “others” and 48% were credit card operations (Graph 71, Panel B). While the average automobile loan at December 2006 was for Col\$12.2 m, the average was Col\$3.7 m for “other” loans and Col\$1.1 m for credit card operations (Table 16). The size of the average automobile loan has declined in the last three years, contrary to the average size of “other” and credit card loans. Although the average for the total retail loan portfolio was Col\$2.7 m per operation in 2006, there are major differences among the various types of retail loans.

Commercial banks granted 98% of the credit card loans in the retail portfolio. However, during 2006, the CFCs gained a 1.3% share of that market. Banks also account for 90% of “other” retail loans. Automobile loans are where the CFCs have an important share of the market (nearly 40%), but it accounts for less than 10% of the total retail loan portfolio

iii) Concentration and Amount by Borrower and Type

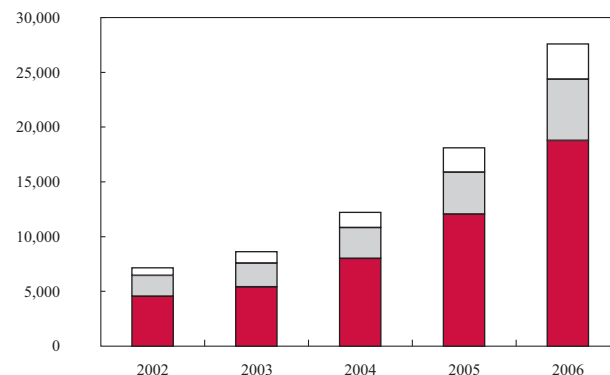
The vigorous growth in the retail loan portfolio also has made it possible to expand the number of users in the system. For example, there were 4.1 million retail loan borrowers in December 2006, which is 50% more than in December 2002⁵⁰ and 1.5 times the number in

⁵⁰ As mentioned, 10% of the portfolio was not reported in 2002 and 2003.

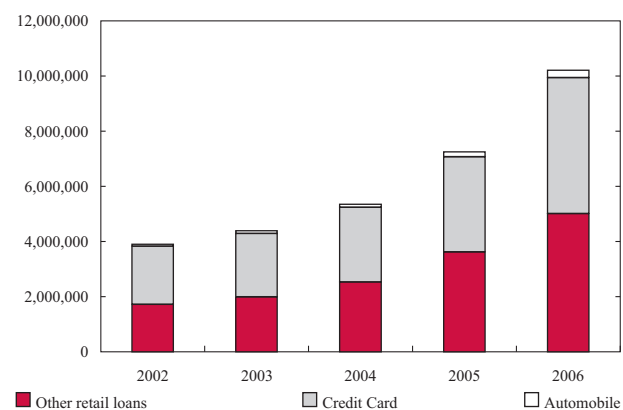
GRAPH 71

SIZE AND NUMBER OF RETAIL LOAN PORTFOLIO OPERATIONS, BY TYPE

(A) BILLIONS OF PESOS



(B) NUMBER OF OPERATIONS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

TABLE 16

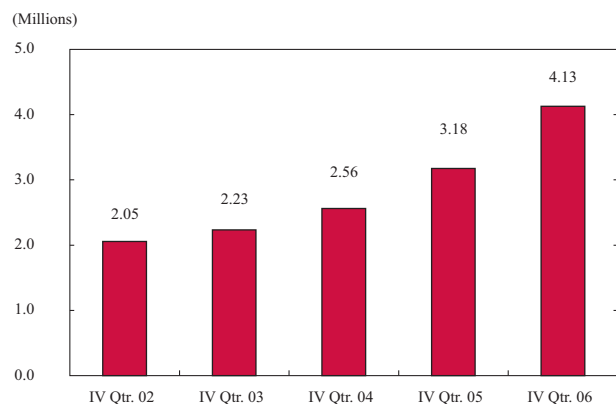
AVERAGE AMOUNT LOANED PER OPERATION

	Automobile Retail Loans	Other Retail Loans	Credit Card Loans	Total Retail Loans
2002	9,636,100	2,640,820	902,696	1,835,349
2003	11,032,177	2,713,751	950,032	1,963,991
2004	13,112,096	3,161,605	1,038,020	2,282,135
2005	12,834,254	3,334,833	1,104,904	2,499,062
2006	12,168,310	3,747,607	1,132,069	2,702,369

Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

GRAPH 72

NUMBER OF BORROWERS IN THE RETAIL LOAN PORTFOLIO



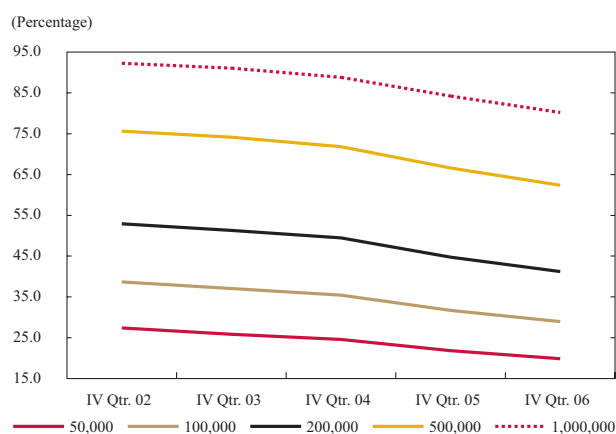
Source: Banco de la República.

2004 (Graph 72). The increase in coverage does not necessarily mean less concentration of credit, which is why we calculated the share of the total retail loan portfolio pertaining to the major borrowers. In terms of the first 50,000, 100,000, 200,000, 500,000 and 1,000,000 largest borrowers, their share of the amount of credit extended has declined since 2002 (Graph 4, Panel A). For example, the one million largest borrowers accounted for 92% of the loan portfolio in 2002; by 2006, they accounted for 80%. The 50,000 largest borrowers accounted for 27% of the retail loan portfolio in 2002 and only 20% in 2006. Consequently, there is more coverage in this type of portfolio, as the number of users has increased rapidly and a given number of large debtors account for less of a share of the entire retail loan portfolio.

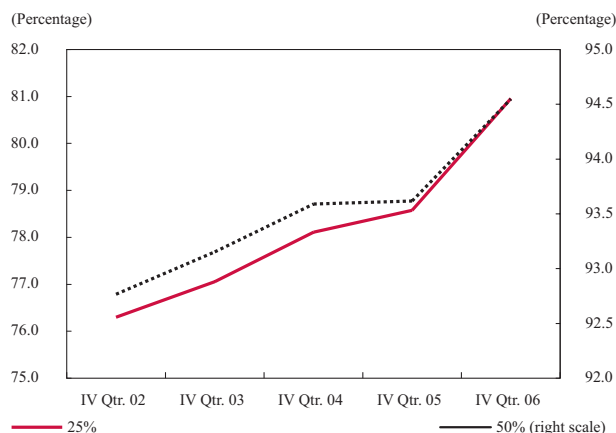
GRAPH 73

SHARE OF DEBT

(A) FOR THE NUMBER OF BIG BORROWERS



(B) FOR BIGGEST 25% AND 50% OF BORROWERS



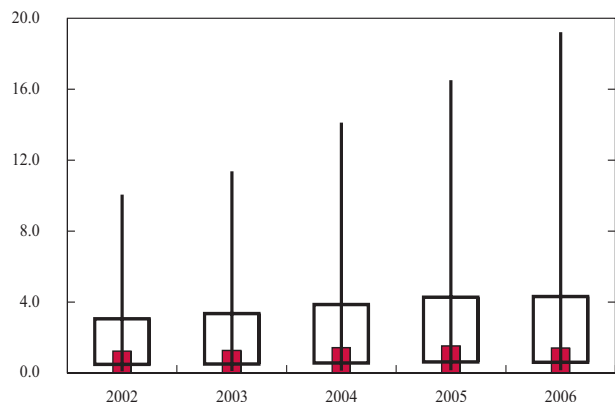
Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

However, the concentration between 2002 and 2006 is slightly higher for the largest 25% and 50% of borrowers (Graph 73, panel B). The debt acquired by the largest 50% of borrowers in 2006 (approximately two million borrowers) represented 95% of the retail loan portfolio, which is more than in 2002 (93%, slightly more than one million borrowers). Similarly, the largest 25% of debtors in 2006 (a little more than one million borrowers) accounted for 81% of the retail loan portfolio, which is more than in 2002 (76%, accounting for somewhat more than 500,000 borrowers). In other words, despite a considerable increase in coverage, concentration of the retail loan portfolio in the largest 25% and 50% of borrowers rose slightly between 2002 and 2006.

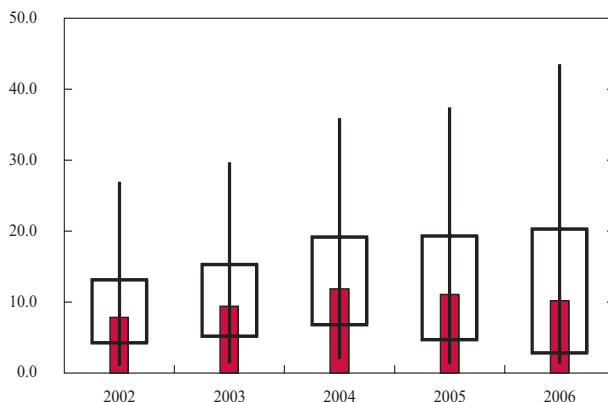
Graph 74 shows loan distribution, by borrower, over a period of time. For example, the median for retail loan portfolio borrowers during 2006 was an amount close to Col\$1,4 m (red bar, Panel A in Graph 74); half the credit granted was between Col\$0.6 m and Col\$4.3 m for a single borrower (box above the bar). Isolating the largest and smallest 5% of loans, the range was Col\$0.2 m to Col\$19.2 m (vertical line crossing the box and the bar). However, a look at the way each of the three types of credit is distributed, by borrower, shows how varied the retail loan portfolio is.

CONSUMER LOAN DISTRIBUTION BY BORROWER AND TYPE

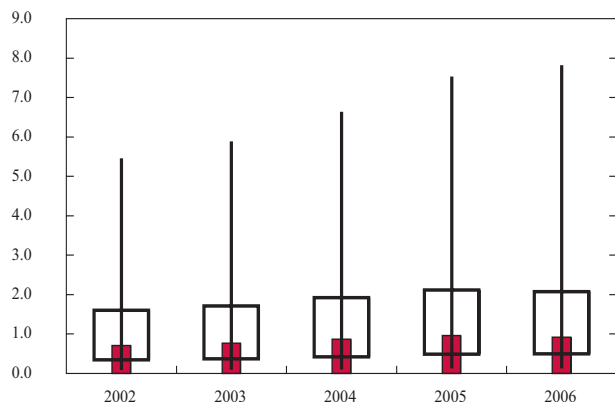
(A) TOTAL: CONSUMER LOANS



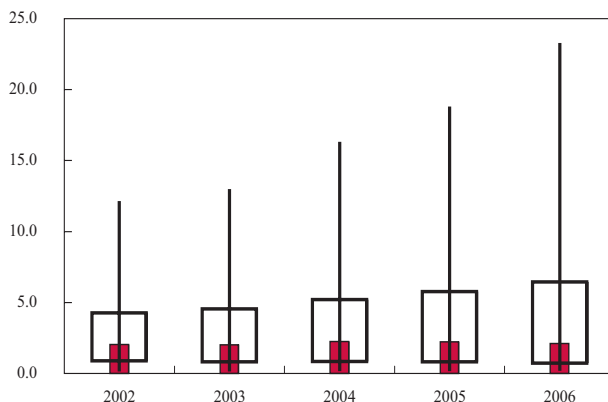
(B) AUTOMOBILE



(C) CREDIT CARD



(D) OTHERS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

In the case of automobile loans, the amounts by type of borrower, and the dispersion are greater (in 2006, 90% of the amount loaned was between Col\$1.3 m and Col\$43.5 m). Although the average borrower reduced the outstanding balance on his/her loan in the two preceding years (from Col\$11.9 m to Col\$10.2 m between 2004 and 2006), the range between quartiles and between quantiles 5 and 95 has increased, denoting a larger dispersion in the amount loaned, by borrower. This added dispersion also was evident in “other” loans, but was not as clear in the case of credit card loans. For credit of this type, where amounts per borrower are lower (Col\$0.9 m for the average borrower in 2006), the distribution has remained constant (half the loans were in the Col\$0.5 m to Col\$2.1 m range between 2005 and 2006).

In short, the retail loan portfolio includes three types of loans with very different features. The automobile loan portfolio is characterized by larger average amounts

and larger individual borrowers than other types of retail loans and by fewer operations. Credit card loans, in contrast, are characterized by a larger number of small-sized operations. Although dispersion with respect to the size of loans has increased for the former, dispersion of the latter in terms of amount per borrower has not changed much. The residue of these two types of credit is found in “other” retail loans, which account for around two-thirds of the total. The vigorous growth in the retail loan portfolio applied to all three types and was fueled by the leading retail loan institutions. This, in turn, allowed for a substantial rise in the number of users. Up until 2006, this increase in coverage was not reflected in less portfolio concentration, measured as the largest 25% and 50% of borrowers.

iv) Credit Risk

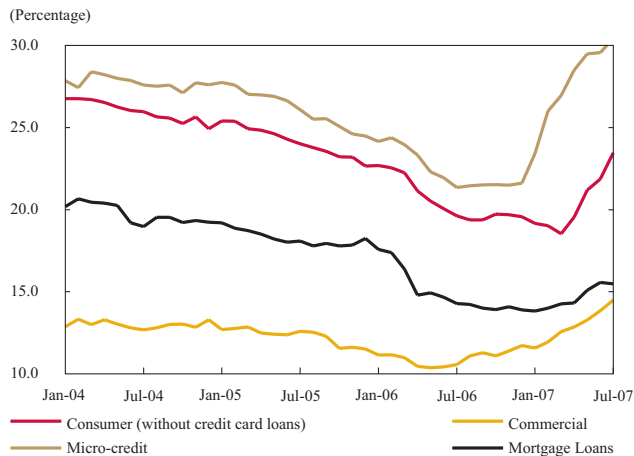
Usually, the retail loan portfolio is regarded as the one with more credit risk (aside from micro-credit). This is reflected in higher lending rates compared to those for commercial and mortgage loans (Graph 75, Panel A).⁵¹ Because these are short-term loans, the SFC believes that sufficient default time to lower a retail loan rating is less than for other types of credit (i.e., commercial or housing). For example, a retail loan that is six month overdue is classified as uncollectible (category E), while a commercial loan or a mortgage with the same default time would be classified as a loan at significant or appreciable risk (categories D and C, respectively). The fact that retail loans have little collateral is one of the features of retail loans that most supports this argument. Only 17% of the retail loan portfolio in 2006 was backed by suitable collateral. This is less than the proportion registered in 2004 (21%) and in 2002 (24%). Almost all loans with suitable collateral are automobile loans, since 99% of the credit card portfolio and 90% of “other” loans have no collateral.

There was an improvement in the quality of the retail loan portfolio between 2002 and 2004. However, in 2006, the risky portfolio (loans rated other than A)

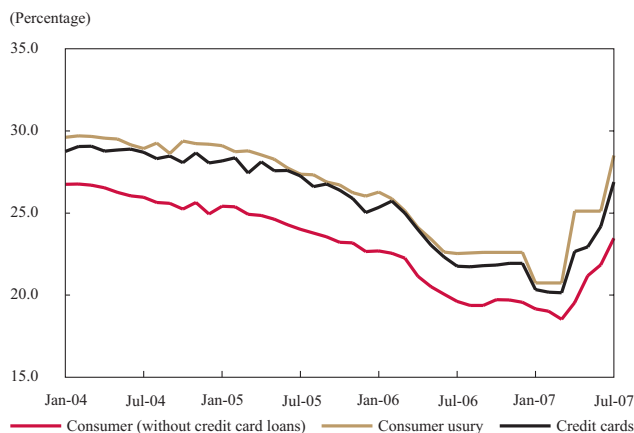
GRAPH 75

LENDING RATES

(A) BY TYPE



(B) CONSUMER LOANS



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

⁵¹ In the case of credit cards, the rate can be limited by the usury rate (Graph 6, Panel B).

increased at a faster rate than the total portfolio. The three types of loans declined in quality during 2006, especially credit card loans, which went from a quality indicator of 5.9% in 2005 to 7.4% in 2006 (Graph 76). In the case of automobile loans, the deterioration was not as significant. This has helped to maintain quality levels compared to the rest of the retail loan portfolio. Despite the deterioration during 2006, the quality indicator is still below what it was in 2002 or 2003.

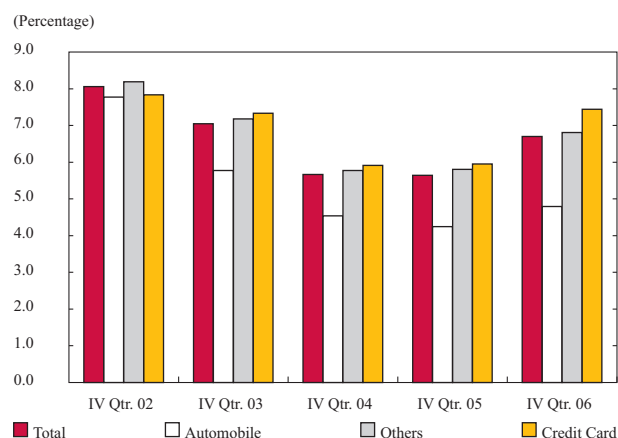
For a better idea of how credit risk has evolved with respect to these types of loans, discreet quarterly transition matrices were calculated for the entire portfolio and for each of the three types of retail loans.⁵² The individuals described by the matrices are loans and the states are the five ratings. The columns in the matrix show the state of the final rating for a loan, while the rows show the state of the initial rating. The amount reported in the i, j position of the matrix tells us what proportion of initially i-rated loans migrated to a j rating during a given quarter. In the case of the total retail loan portfolio, the matrix for the average during 2002-2006 and the average matrix for 2006 are shown in Table 17. For example, position 4.2 indicates that, between 2002 and 2006, 30% of the D-rated loans, on average, migrated to a B rating one quarter thereafter.

A look at the 2002-2006 transmission matrix shows high persistence for an A-rated loan (98%), or migration from B or C towards an A rating (72% and 66%). The high probabilities observed in the lower part of the dia-

⁵² The method described in the section on the commercial loan portfolio was used to construct these matrices. For the retail loan portfolio, all entries in amounts below one thousand pesos were eliminated and approximately 85 million quarterly entries between 2002 and 2006 were used.

GRAPH 76

LOAN PORTFOLIO QUALITY, BY TYPE:
RISKY PORTFOLIO /TOTAL PORTFOLIO



Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

TABLE 17

TOTAL RETAIL LOAN PORTFOLIO TRANSITION MATRICES
(PERCENTAGE)

	a. 2002-2006 Average					b. 2006 Average					
	A	B	C	D	E	A	B	C	D	E	
A	97.5	1.9	0.4	0.2	0.1	A	97.6	1.8	0.4	0.2	0.1
B	72.3	21.6	3.8	1.9	0.3	B	76.3	18.1	3.5	1.8	0.4
C	66.1	18.2	11.3	3.7	0.6	C	70.1	16.9	9.2	3.4	0.4
D	25.4	29.7	28.1	15.5	1.3	D	25.7	30.0	28.6	15.0	0.8
E	0.9	0.4	0.9	34.7	63.1	E	0.8	0.4	0.9	41.2	56.7

Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

The retail loan portfolio is characterized by very little collateral and high lending rates.

gonal are indicative of a period in which the portfolio migrates towards better categories (upward cycle in quality). However, the estimates also show that, despite the limited probability of a loan migrating to category E, if it does, it likely will stay there (63%). A comparison between this matrix and the average for 2006 (Table 17 panel B) shows very similar probabilities, which also are higher in the lower part of the matrix (numbers in blue), denoting even more likelihood of migration to better ratings than the average matrix for 2002-2006.

The differences between the quarterly transition matrices with respect to type apparently are not wide. The average 2002-2006 matrix for credit cards (Table 18, panel A) shows better recovery towards higher ratings than for the other two types of retail loans (the numbers in red, which are higher than those in Table 17, Panel A for these positions). The red numbers above the diagonal in the matrix for automobiles and “others” indicate more likelihood of deterioration compared to the average. The matrices for the 2006 average are consistent with the changes in

TABLE 18

RETAIL LOAN PORTFOLIO TRANSITION MATRICES, BY TYPE (PERCENTAGE)

1. Credit Card											
a. 2002-2006 Average						b. 2006 Average					
	A	B	C	D	E	A	B	C	D	E	
A	97.5	1.9	0.4	0.2	0.0	A	97.6	1.9	0.4	0.2	0.0
B	73.8	20.8	3.3	1.7	0.3	B	78.8	16.3	3.1	1.4	0.4
C	72.3	15.9	8.6	2.8	0.4	C	75.5	14.5	6.6	3.1	0.2
D	26.8	31.8	29.2	11.5	0.8	D	28.4	31.8	29.4	9.9	0.5
E	0.7	0.4	0.8	39.2	58.9	E	0.7	0.4	0.7	44.9	53.3

2. Automobile											
	A	B	C	D	E	A	B	C	D	E	
A	97.5	1.9	0.3	0.2	0.1	A	98.3	1.3	0.2	0.1	0.0
B	66.5	25.6	5.3	2.1	0.5	B	72.4	21.9	3.8	1.7	0.2
C	45.8	28.7	19.0	5.6	0.9	C	52.3	27.7	15.3	4.2	0.5
D	17.0	23.9	26.6	30.1	2.4	D	20.4	26.8	27.0	24.4	1.4
E	0.8	0.3	0.4	23.7	74.7	E	1.0	0.5	0.4	29.8	68.3

3. Others											
	A	B	C	D	E	A	B	C	D	E	
A	97.5	1.8	0.4	0.2	0.1	A	97.6	1.7	0.4	0.2	0.1
B	71.2	22.0	4.3	2.1	0.4	B	74.5	19.3	3.8	2.1	0.3
C	61.2	20.0	13.4	4.5	0.9	C	66.3	18.5	11.0	3.7	0.6
D	24.7	28.0	27.1	18.5	1.8	D	24.0	28.7	27.9	18.4	1.0
E	1.0	0.4	1.0	32.7	65.0	E	0.9	0.4	1.0	39.4	58.2

Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

loan portfolio quality described in Graph 76. Automobile loans are more likely to retain their A rating than the other types (98.3% as opposed to 97.6%). Although small, this difference explains the lesser percentage of “other” and credit card loans in category A, where more than 90% of the portfolio is situated.

In short, the retail loan portfolio for automobile purchase has less credit risk than other types of retail loans, not only because it is backed by suitable collateral but also because, in the past, its portfolio quality indicators have been the lowest. The other types of retail loans are far more risky, since credit card and “other” loans have little collateral. In the case of credit card loans, this explains the high interest rates in the market. The matrices for 2002-2006 are characterized by a high probability of migration to better ratings. However, quality deteriorated in 2006, mainly for credit card and “other” loans, after registering historically low levels in 2005.

C. LIQUIDITY RISK

Traditionally, academic literature offers two definitions of liquidity risk that point to different (but complementary) sources of the risk financial institutions face due to the nature of their intermediation.

To begin with, literature on the subject recognizes that, as a direct consequence of efforts to transform liquid liabilities (such as deposits) into non-liquid assets (such as the loan portfolio), a bank eventually might face a situation where its liquid resources are insufficient to cover its short-term obligations. Therefore, liquidity risk is understood as the possibility this shortfall will occur, which even can lead the institution into bankruptcy, with all the costs that entails.⁵³

On the other hand, some authors say there is another side to liquidity risk, given the current complexity of financial activities. Many institutions now manage their liquid resources in the form of investments in various assets that are traded on financial markets (debt securities, derivative securities, etc.). When a bank is required meet an obligation, it might be forced to liquidate some of those investments (by converting them into cash). If market liquidity is scarce, the bank might not receive an “adequate” price for its investments and, as a result, might not be able

The transition matrices estimated for the retail loan portfolio are characteristic of a period of recovery in portfolio quality.

The first dimension of liquidity risk is the possibility that a bank might not have enough liquid resources to meet its short-term obligations.

⁵³ This type of liquidity risk has been defined in literature as a “funding risk”, since it represents the possibility of a bank eventually not having enough funds to meet its obligations. See Brunnermeier and Pedersen (2007), “Market Liquidity and Funding Liquidity,” NBER, Working Document No. 12939.

... Secondly, institutions might not receive an "adequate" price for their investments.

to meet its obligation. In this case, the liquidity risk is understood as the bank's inability to liquidate its investments at an "adequate" price due to elements beyond its control (such as the liquidity existing in the market on the day of the transaction).⁵⁴

The two views are complementary. In the event of a shortfall, the bank would turn to the market for liquidity, which is restricted by market liquidity. Consequently, any precise measurement of liquidity implies taking both perspectives into account. Two measurements that attempt to come close to both these definitions are presented in this section: the uncovered liabilities ratio (ULR) and liquidity-adjusted value at risk (VaR-L).

According to our calculations, liquidity risk remains low, but has increased recently. Even more important is the fact that changes in liquidity risk must be monitored, since the system is not as resistant to a liquidity shock as it was several months ago.

1. Uncovered Liabilities Ratio (ULR)

The ULR is designed to measure, as precisely as possible, the potential shortfall in liquid resources financial institutions might face due to their maturity-transformation activity. The following ratio is constructed for that purpose:

$$RPNC = \frac{(PTr + PL) - [lINV + (AL - INV)]}{AT - AL}$$

where PL are the liquid liabilities, PTr is the temporary component of all other liabilities, INV are the tradable investments and those available for sale, AL are the liquid assets, and AT are the total assets.⁵⁵ In this equation, the sum of PL and PTr constitutes the liabilities subject to redemption. The backing institutions have (in square brackets) is the sum of liquid assets other than investments that are tradable and available for sale ($AL - INV$); the latter are multiplied by a discount (l). This discount means that the value of INV —in terms of liquidity risk—is slightly

The system is not as resistant to a liquidity shock as it was several months ago.

⁵⁴ See Brunnermeier and Pedersen Op. Cit., and J. Muranaga and M. Ohsawa (1997), "Measurement of Liquidity Risk in the Context of Market Risk Calculation," Bank of Japan, Institute for Monetary and Economic Studies.

⁵⁵ In this edition of the Financial Stability Report investments at maturity are not included as part of liquid assets. The assumption is that all liquid assets can be redeemed at any time. The temporary component of all other obligations is determined by applying the Hodrick- Prescott filter to the series of liabilities other than liquid liabilities. See Robert Hodrick and Edward Prescott. "Postwar U. S. Business Cycles: An Empirical Investigation," Journal of Money, Credit and Banking, Vol. 29 No. 1, Ohio State University Press, 1997, pp. 1-16.

below their market value ($l < 1$), due to the market liquidity effect on this value in the event of a liquidity crisis.^{56 57}

The ULR is interpreted in accordance with Table 19.

TABLE 19

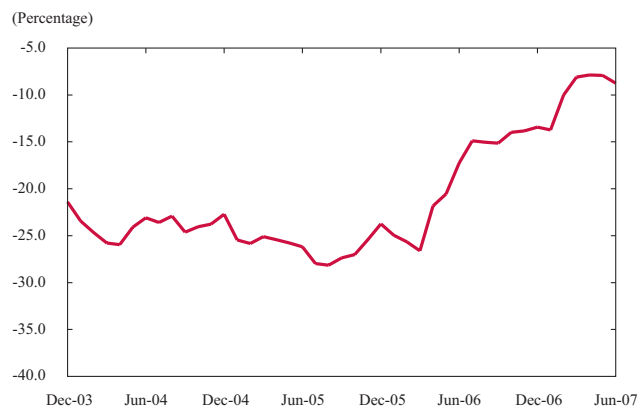
ULR	Motive	Liquidity Risk
Positive	$PTr + PL > \lambda INV + (AL - INV)$ (Faltante)	Alto
Zero	$PTr + PL = \lambda INV + (AL - INV)$	Medio
Negative	$PTr + PL < \lambda INV + (AL - INV)$ (Sobrante)	Bajo

a. *Development and Stress-testing*

Graph 77 shows the recent changes in the ULR for credit institutions as a whole. The indicator was negative at June (-8.7%), meaning those institutions still have surplus liquid resources (liquid assets exceed their liabilities susceptible to redemption). Yet, although the incidence of risk is low, it has increased rapidly since March 2006 due to the marked substitution of investments for loans in the banking system during that period. That trend has slowed a bit during the last three months. This is consistent with the slowdown in loan portfolio growth (one result of the tighter monetary policy adopted by Banco de la República during that period) and the slower pace of tradable investment sales.

GRAPH 77

ULR: CREDIT INSTITUTIONS

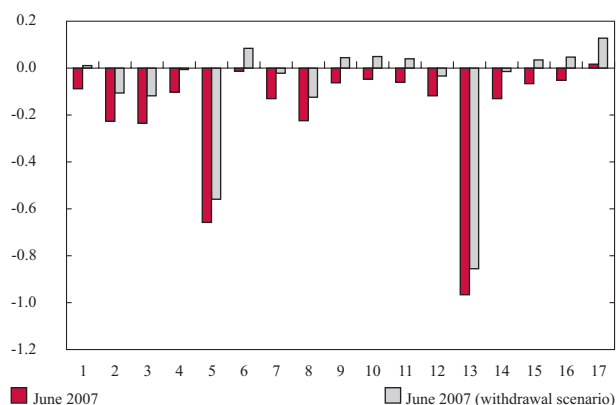


Source: National Office of the Superintendent of Financial Institutions (SFC), Banco de la República's calculations.

⁵⁶ λ is calculated as (1-haircut). The haircut is the discount Banco de la República applies to the value of a credit institution's loan portfolio in its repo transactions. By using the information on haircuts, it is possible to calculate the value of the tradable securities portfolio discounted for these transactions. This element includes several considerations on the market liquidity mentioned earlier, although exogenously (since the haircut is exogenous from the standpoint of the institutions).

⁵⁷ According to Dziobek, Hobbs and Marston, "Toward a Framework for Systemic Liquidity Policy," in IMF Working Document No. 34 (2000), the difference between liabilities susceptible to redemption and liquid assets should be scaled by illiquid assets to prevent the indicators from favoring the largest banks, as the amount of their operations is greater.

**SENSITIVITY ANALYSIS:
ULR OF CREDIT INSTITUTIONS**



Source: National Office of the Superintendent of Financial Institutions (SFC), Banco de la República's calculations.

The ULR makes it possible to gauge how sound the system is in terms of its capacity to deal with an extreme, but probable liquidity situation. The exercise illustrated in Graph 78 simulates the effect that a massive withdrawal equivalent to 12% of all funds on deposit with institutions in the banking system would have on their ULR.⁵⁸

Two observations can be drawn from the graph. First, there was one institution with a positive ULR at June 2007. This suggests its liquidity risk is high. Although the institution's position is not major in terms of the assets in the system, it is important to remember that the liquidity problems of one institution can spill over to banks as a whole (contagion). This can occur through various channels and affect financial stability.

Secondly, a withdrawal scenario like the one suggested in the graph would mean a positive ULR for seven institutions (in addition to the bank already mentioned). In other words, withdrawing 12% of the deposits in the system would generate a shortfall for eight banks; that shortfall would be equivalent, on average, to 5.4% of their non-liquid assets. Because those eight banks account for 53% of all bank assets, it is possible to say that a liquidity shock like the one in question could have a serious impact on the stability of the financial system. For that reason, it is very important to monitor any macroeconomic trends that might affect not only the confidence depositors have in the system, but also the liquidity of public debt markets. This last conclusion is reinforced by the VaR-L calculation.

2. Liquidity-adjusted Value at Risk (VaR-L)

As mentioned earlier, financial institutions manage their liquid assets in the form of portfolio of investments in different instrument, the price of which is keyed to the situation on financial markets. Added to the risk of a loss due to unexpected variations in the market value of those investments (see the section in this report on market risk) is the possibility that - aside from those variations - financial institutions will not be able to sell their investments at market value if there is a liquidity shortage on the financial markets.

Monitoring the macroeconomic trends that might affect depositor confidence and market liquidity is crucial.

⁵⁸ The amount of the simulated withdrawal equals the simple average of the largest monthly decline in deposit volume experienced by financial intermediaries during 1994-2007.

In that case, given this aspect of the risk, it is important to recognize that the portfolio value of institutions, in the event of a liquidity crisis, is somewhat below market value. The VaR-L is an attempt to estimate this contingency value by calculating the percentage the traditional VaR would have to increase to include these considerations on market liquidity.⁵⁹ Clearly, the higher this percentage, the greater the liquidity risk in terms of the impossibility of obtaining the market price on investments.

Table 20 shows the percentage of correction for each institution in the banking system on August 28, 2007. Because of the structure of investments made by banks in Colombia, the exercise is limited only to the local government bond portfolio (TES).

According to Table 20, the liquidity risk implies an 8.8% correction in VaR for the system as a whole, if market liquidity is taken into account. In other words, the considerations with respect to liquidity mean the risk implied for institutions in managing an investment portfolio is 8.8% higher than what the traditional VaR suggests.

This percentage varies widely within the banking system, with a standard deviation of 12.6% and some entries between 4.15% and 42.75%.

To assess how sensitive banks are to the occurrence of this risk in an extreme but probable liquidity situation, the percentage is calculated for a severe case where financial markets behave as they did during the second quarter of 2006, which was one of the most volatile periods in the current decade. Table 21 shows the percentage for the system as a whole would increase to 46.57%, which is almost five times higher than at the end of August. Therefore, in the event financial markets are affected by a turbulent episode like the

⁵⁹ For a more detailed explanation of the method, see Juanita González and Daniel Osorio (2007), "Liquidity Adjusted Value-at-Risk (L-VaR) in Colombia," *Financial Stability Report*, Banco de la República, March 2007.

TABLE 20

**CORRECTION PERCENTAGE
AUGUST 28, 2007**

Institutions	Percentage
1	4.91
2	12.30
3	4.31
4	5.67
5	5.44
6	6.84
7	42.75
8	8.87
9	6.57
10	39.34
11	14.68
12	32.59
13	14.51
14	4.15
15	13.64
16	27.47
Total	8.80

Source: Banco de la República's calculations.

TABLE 21

**CORRECTION PERCENTAGE ^{a/}
AUGUST 28, 2007
(VOLATILITY SCENARIO)**

Institutions	Percentage
1	34.22
2	38.88
3	32.55
4	42.67
5	45.50
6	43.84
7	62.50
8	56.59
9	38.42
10	62.45
11	50.19
12	62.32
13	52.80
14	27.17
15	52.93
16	59.90
Total	46.57

^{a/} Volatility in the second quarter of 2006.
Source: Banco de la República's calculations.

one during the second quarter of 2006, the liquidity risk would be five times greater. This highlights the importance of carefully monitoring the major trends that affect market liquidity, some of which are mentioned in the section of this report that deals with the macroeconomic environment.

In short, although liquidity risk is still manageable, it is important to remember that the system is no longer as resistant to adverse situations (massive withdrawal of deposits or unusually high market volatility) compared to the exercises done in past months. This clearly denotes one of the most important vulnerabilities credit institutions now face, which is less liquidity in the economy. As mentioned in the section on the macroeconomic environment, there are several factors that suggest the coming months will see less liquidity due to a combination of macroeconomic elements. According to the exercises, less liquidity is very likely to affect financial stability. Therefore, credit institutions and the National Office of the Superintendent of Financial Institutions must be conscious of the importance of careful liquidity management within financial institutions, so as to minimize the impact the external situation (and, consequently, financial market liquidity) can have on the stability of the financial system.

Less liquidity is very likely to affect financial stability.

INTEREST RATE RISK IN THE BANKING BOOK

Changes in interest rates have an important impact on credit institutions, which is why it is essential to measure their vulnerability to interest rate hikes. A capital charge for risk occasioned by a change in the market rate was imposed in Colombia. It acknowledges possible losses on an investment portfolio (trading book) due to adverse changes in interest rates. What remains to be examined is how those changes affect the rest of the balance sheet (banking book). From the standpoint of the Basel Committee on Banking Supervision,¹ there are two analyses that can be done in this respect:

- a) A gap analysis shows the increased earnings (outlays) that can appear on the income statement because of an interest rate hike. This is a short-term approach, at one year.
- b) The economic value shows the change in a company's value due to changes in interest rates. This is a long-term approach.

Only the gap analysis will be discussed in this article. Its purpose is to identify institutions that are taking excessive interest-rate risks. An adequate mismatch in interest rates is recognized as a normal event in the banking business, and existing equity requirements can cover that risk. However, the Basel Committee recommends that each institution set its own limits, which should be subject to follow-up. A capital requirement would be set only in extreme cases, based on each supervisor's criteria.

A. The Gap Analysis Method

Not all proceeds and outlays on the income statement react at the same speed to a change in the market interest rate. Fixed rates can be updated only at maturity, while variable rates can be updated constantly. As a result, institutions earn less profit until they manage to raise the rate on their assets. To quantify how this affects an income statement, the year is divided into time bands that show the outstanding balances scheduled to mature during each period. It is assumed that all the instruments negotiated at a variable rate bring their rate up to date during the first time band. This being the case, the total gap is calculated as follows:

$$gap = \left| \sum_{t=1}^5 (At - Pt) \times \mu_t \right|$$

Where At = interest and maturity of banking book assets collected in band t ; Pt = interest and maturity of banking book liabilities paid during band t ; μ_t , the weighing factor of each band; t = the time bands: less than one month, from 1 to 2 months, from 2 to 3 months, from 3 to 6 months and from 6 to 12 months.

¹ The Basel Committee on Banking Supervision (1993), "Measurement of Banks' Exposure to Interest Rate Risk", BIS.

The gap is calculated by currencies, which are added at the end. Because there is not enough data, the calculation is done only for local currency and RVU (foreign currency is not included). The exercise measures the risk to the current stock registered in the banking book, which is why there are no projections. It is assumed that whatever is redeemed is invested according to the new terms.

The calculation for weight factor μ has two components:

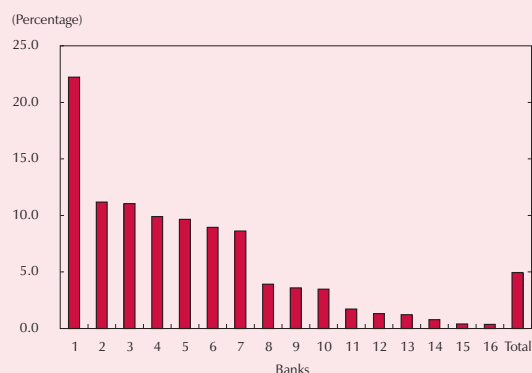
- a) Weight by permanence in each band $(12 - T)/12$, where T is half the band interval. The weight for the 0-to-1 month band is $11.5/12$, which is the fraction of the year during which resources are repriced (deposited) at the new rate.
- b) Weight by interest rate shock = 300 bp for all bands in pesos,² and 200 bp for the RVU. The shock to interest-earning savings and current accounts is assumed to be the same as the shock to certificates of deposit and the portfolio.

Accordingly, weight factor μ for the first band in pesos would be $3\% \times 11.5/12 = 2.87\%$, and so on for the remaining bands.

B. Results

The banking sector gap was calculated at Col\$608 b, based on the foregoing parameters and the data submitted by institutions to the Office of the Superintendent of Financial Institutions at March 2007 (Form 269). This is equivalent to 27% of the sector's profits at March (divided by 12 months), or 5% of its equity. There are institutions within the banking sector that face high risks. For example, one institution has 22% of its equity exposed to interest rate changes. Four institutions have a gap equal to around 10% of their equity. These five institutions include three banks with an important share of their total loan portfolio represented by mortgages.

GRAPH B4.1
INTEREST RATE RISK IN THE BANKING BOOK:
RISK/EQUITY



Source: Banco de la República.

² Banco de la República's intervention interest rate was up by 325 bp between April 2006 and July 2007.

ASSET OVERVALUATION

Volatility in asset and loan price cycles is considered a main source of economic and financial instability if accompanied by a combined imbalance in those variables.¹

The mechanism whereby imbalances in these variables can end up affecting the stability of the financial system is called a financial accelerator. When macroeconomic conditions are favorable, agents are optimistic about their expected income flows. This, in turn, raises the price of assets.² Agents perceive this increase as added wealth, and their consumption (investment) patterns and need for financing are altered as a result. Moreover, the increased value of assets is reflected in better collateral, thereby adding to the credit supply. This raises the amount of resources available in the economy, stimulating demand and generating further asset price increases.

If the initial increase in asset prices is not backed by feasible expectations of future profitability, agents eventually will revise their initial forecasts, adjusting prices downward. At that point, the wealth of households and companies declines, as does their capacity to obtain new loans (and to pay existing ones), adversely affecting household and corporate decisions on spending and financial and macroeconomic stability.

Consequently, the combined performance of these variables must be monitored to check if possible asset-price increases are reflected in more indebtedness (or vice versa), which could jeopardize the creditworthiness of debtors if the current situation were to reverse. The focus of this section is on finding evidence of asset price overvaluation in Colombia's mortgage and securities markets, as well as analyzing the increase in credit using the credit/GDP ratio.³

A. Credit

A Hodrick and Prescott filter was used to examine the current movement in total credit, the consumer and mortgage loan portfolios, and mortgage loan disbursements. It estimates the smoothed long-term trend in these series.⁴ That trend is compared to the actual indicator to calculate the deviation of each series with respect to its long-term trend.

¹ Literature on this topic appears to agree in that an imbalance in one of these variables - understood as sudden increases followed by corrections to original levels - is not enough, by itself, to cause financial instability on the markets. See, among others, Borio and Loewe (2002), "Imbalances or 'Bubbles'? Implications for Monetary and Financial Stability," in W. Hunter, G. Kaufman and M. Pomerleano (eds.), *Asset Price Bubbles: The Implication for Monetary, Regulatory, and International Policies*, Massachusetts, MIT Press, Chapter XVII, pp. 247-270; London, England, and Sopanha (2006), "Capital Flows and Credit Booms in Emerging Market Economics," *Financial Stability Review*, No. 9.

² In this case, prices increase because agents anticipate a certain pattern in their future income. If their expectations materialize, the increase in prices will have responded to a change in the fundamentals that determine it. If not, the increase is a deviation in value determined by the fundamentals, which is commonly known as an asset price bubble.

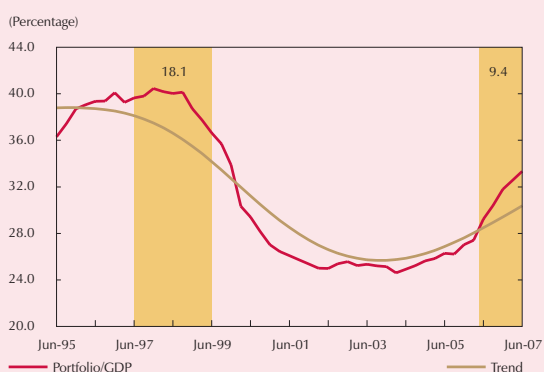
³ The analysis does not include local government bond (TES) prices. Contrary to housing and stocks, TES account for only a small share of total household and corporate wealth.

⁴ The total and retail loan portfolios, as a percentage of GDP from December 1994 to June 2007, are used. The GDP used was projected on the assumption of 12.3% nominal annual growth during the second quarter of the year.

On average, the total and retail loan portfolios as a percentage of GDP were 9.4% and 12.4% above their long-term trend during the first half of 2007 (Graph B5.1 and B5.2). This represents an increase of 18.1% and 5.2% in the indicator for both these portfolios, compared to the average during the period preceding the financial crisis in 1999. However, that gap should begin to close in the coming months to the extent that the slowdown observed in these portfolios since March 2007 gains strength.

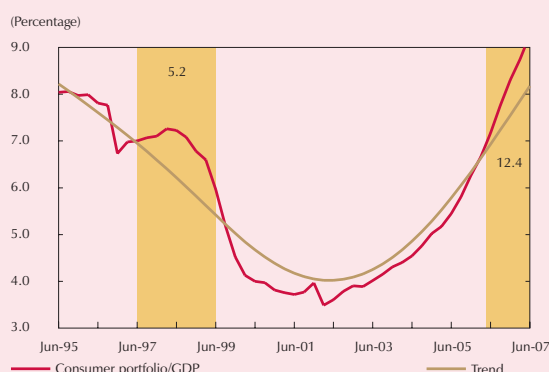
So far this year, the average deviation in the mortgage loan portfolio, compared to its tendency, is 33% (Graph B5.3). This is more than in 1997-1998 (9%). It is explained by the recent recovery in that portfolio (mid -2006), which means the long-term trend calculated here is biased towards a lower level than might be expected in the coming months, when the recovery consolidates. The rapid growth in this indicator also is associated with the vigorous rise in disbursements, which are near 22.3% (for the first half of 2007). This exceeds their long-term trend, but is far from the levels registered before the crisis, which were above 100% in several quarters (Graph B5.4).

**GRAPH B5.1
TOTAL LOAN PORTFOLIO/GDP AND ITS TREND**



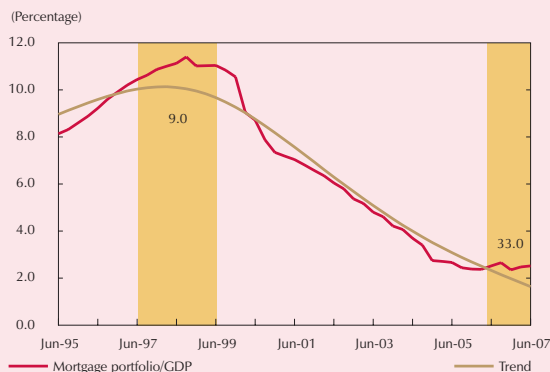
Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

**GRAPH B5.2
RETAIL LOAN PORTFOLIO /GDP
AND ITS TREND**



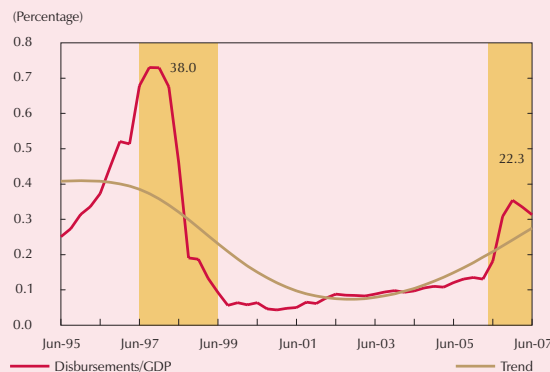
Source: National Office of the Superintendent of Financial Institutions, Banco de la República's calculations.

**GRAPH B5.3
MORTGAGE LOAN PORTFOLIO /GDP
AND ITS TREND**



SSource: National Office of the Superintendent of Financial Institutions (SFC), Banco de la República's calculations.

**GRAPH B5.4
DISBURSEMENTS/GDP AND THEIR TREND**



Source: National Office of the Superintendent of Financial Institutions (SFC), Banco de la República's calculations.

B. Mortgage Market

Two separate indexes were used to verify the existence of possible overvaluation in the mortgage market. Each serves to analyze different markets, as well as their respective advantages and constraints. Specifically, we used: i) the National Department of Planning (DNP) New Home Price Index (NHPI) and ii) Banco de la República's Used Home Price Index (UHPI).⁵ The first includes only new home prices. This creates a bias towards lower levels than what the end consumer actually faces, due to under-registration of the final home price. However, it has the advantage of being a monthly indicator (the UHPI is quarterly) and has less of a lag than the UHPI. Yet, the UHPI goes back further in time (starting in March 1988, while the NHPI did not begin until January 1994). It also has the advantage of being a homogeneous price index, as it measures the same homes, using the repeat sales method.

Two indicators are constructed with these two price indexes: i) the ratio of the NHPI to Banco de la República's rental index,⁶ and ii) the ratio of the UHPI to the RI. The purpose of these indicators is to compare the price of an asset with the price of the essential element that determines that price (rentals in this case). A Hodrick and Prescott filter was applied to both these price series to assess the deviations from their long-term trend.

It is important to note the increase in the first indicator. It went from a point close to its long-term level⁷ in March 2006 to 8% overvaluation in June 2007 (Graph B5.5), reflecting the delayed effect of mortgage loan portfolio growth on the price of housing. However, this is not an alarming level compared to those witnessed between 1994 and 1995 (near 30%). Discretion is essential when analyzing these results, since aggregate figures are used to construct this ratio.

Graph B5.6 offers a comparison between the actual index and the long-term trend. It also shows the NHPI is currently approaching its long-term level (1.2% above). Interestingly, both indicators coincide in terms of high housing prices during 1995-1997 and slight deviations in recent years with respect to the long-term level.

The ratio of used home prices to rentals (Graph B5.7, Panel A) is in a situation similar to that of the first indicator, having gone from 15% undervaluation in 2004 to positive deviations near 3% in December 2006 with respect to the long-term trend.⁸ However, despite positive deviations from its long-term trend, this indicator, which does not have the under-registration problems characteristic of the NHPI and is a uniform price index, is also a long ways from what it was during in the pre-crisis period, when it was above 15%.

The overvaluation levels observed the end of 2006 show it was more pronounced in the new home market than in the market for used homes. This might be explained by the menu costs implicit in the construction business (e.g.

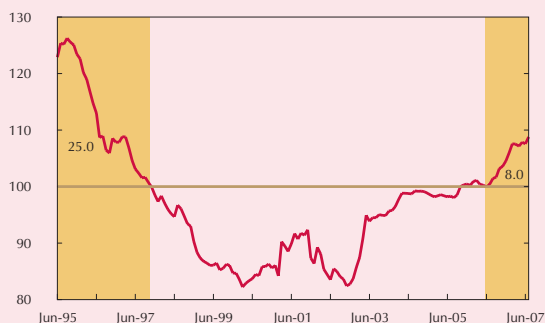
⁵ There is a third indicator: the Real Estate Registration Index (IRI) compiled by Fedelonjas-ICAV. However, the series is normalized to the average for 1998-2007, which does not permit the same analysis done with the other indexes used in this article. See ANIF, "Comentario Económico del Día," August 28, 2007 (www.anif.org) for information on how this indicator has behaved recently.

⁶ The rental index is the housing component of the CPI.

⁷ The long-term value is defined as the average new housing price ratio divided by rentals for the 1994-2007 period.

⁸ As with the extent of overvaluation calculated for the NHPI, it is important to be cautious about these results, since aggregate figures were used to construct this ratio as well.

GRAPH B5.5
RATIO OF NEW HOME PRICES
TO RENTALS (NHPI)
(1994-2007 AVERAGE = 100)



Source: DNP and Banco de la República.

GRAPH B5.6
NHPI AND ITS TREND
(DECEMBER 1999 = 100)



Source: DNP, Banco de la República's calculations.

marketing costs), which prevent an immediate adjustment in prices. Therefore, when suppliers overestimate the price of an asset, the rigidities would mean that overvaluation is more pronounced in that market.

A comparison between the NHPI and its long-term trend confirms the overvaluation observed in the first indicator (Graph B5.8). The actual levels were 6% above the long-term trend. These exercises suggest the increase in home prices during the past few months was not a phenomenon exclusive to the market for new and used homes, but a common trend.

C. The Stock Market

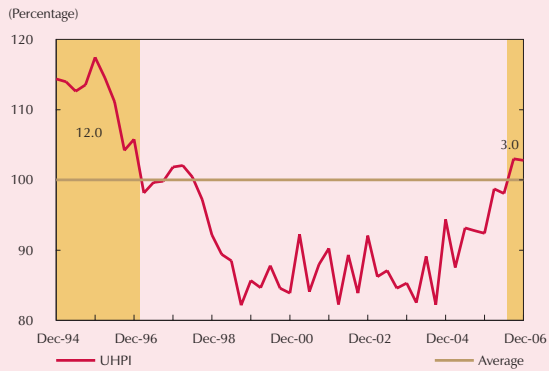
The ratio of the Colombia stock market index (IGBC in Spanish) to a return-on-capital indicator for the companies listed on that market⁹ is used to detect possible overvaluation on the stock market. The period between 2005 and the first quarter of 2007 saw stock prices soar, apart from the drop during the second quarter of 2006 (Graph B5.9). The indicator presented herein shows a great deal of overvaluation in the stock market. However, these levels should be regarded with caution, as there are constraints in the way the indicator is constructed and sharp assumptions in its calculation.¹⁰

The Hodrick and Prescott filter was applied to the IGBC to analyze the deviations from its long-term trend. Contrary to the previous analysis, the results show 5% overvaluation, on average, so far this year (Graph R5.10). Interestingly, both methods indicate a slight degree of undervaluation during 1997-1998, as well as high levels in 2005,

⁹ The September 2006 edition of the *Financial Stability Report* contains a description of the method used to calculate this indicator.

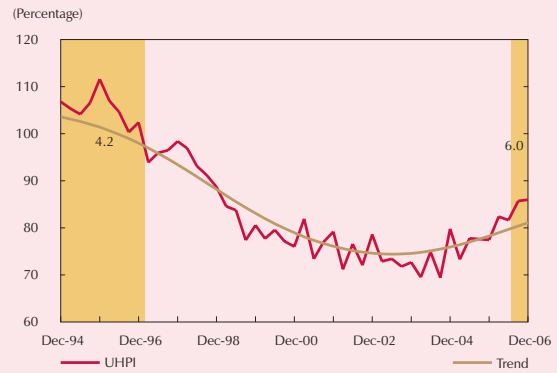
¹⁰ The following are the main constraints. i) The indicator includes the entire crisis period and only part of the upward phase of the cycle. This biases the long-term average towards levels below those that would emerge with a complete economic cycle. ii) The companies used to calculate the indicator changed considerably during the course of the sample by constantly entering and leaving the stock market. For that reason, the comparison between different periods is not altogether precise. iii) The upward trend in the Colombian Stock Market is in response to its added depth in a context marked by high world liquidity.

GRAPH B5.7
RATIO OF USED HOME PRICES TO RENTALS
(1988-2006 AVERAGE = 100)



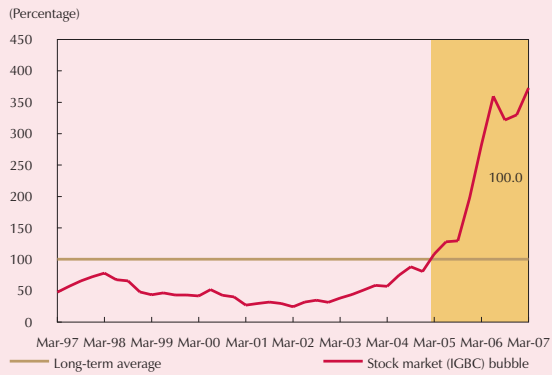
Source: Banco de la República's calculations.

GRAPH B5.8
UHPI
AND ITS TREND



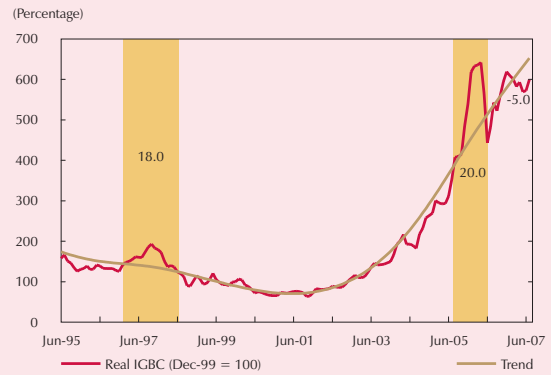
Source: Banco de la República's calculations.

GRAPH B5.9
RATIO OF THE IGBC
TO THE RETURN ON CAPITAL INDEX



Source: Colombian Stock Market, Banco de la República's calculations.

GRAPH B5.10
IGBC AND ITS TREND
(DECEMBER 1999 = 100)



Source: Colombian Stock Market, Banco de la República's calculations.

corroborating the consistency of both exercises in previous periods. The vigorous increase in prices since 2005 is the reason the indicator is so low. This generates a long-term trend with an upward bias (even when controlled by the crisis in the mid- 2006), while prices have increased gradually since the second half of 2006.

D. Conclusions

In short, the results suggest that prices in the mortgage market are beginning to show signs of overvaluation. It remains low but has increased of late. This movement could consolidate if the momentum in the mortgage loan portfolio continues, which is why credit institutions must initiate a detailed analysis of the potential risk in the value of the collateral on those loans.

The stock market indicators reflect different signs. However, it is to be expected that once the price of these assets has recovered, both indicators should be at positive levels in terms of overvaluation. How the market performs in the future will depend on volatility in the international environment, as well as the degree of aversion to risk among investors and the course of local inflation.

During 2006 and 2007, all the loan-portfolio indicators deviated considerably from their long-term level, corroborating what this report says about the vigorous growth in the loan portfolio and the need to monitor that trend closely. Finally, as mentioned at the start of this section, a combined analysis of these indicators is important in terms of possible financial imbalances. In this respect, if the loan portfolio indicators continue to reflect major deviations and asset prices do the same, efforts to monitor these markets will have to be increased to avoid possible attacks on the system's stability.