



# **INFLATION REPORT**

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*September 2008*

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**Recent trends and  
macroeconomic forecasts**

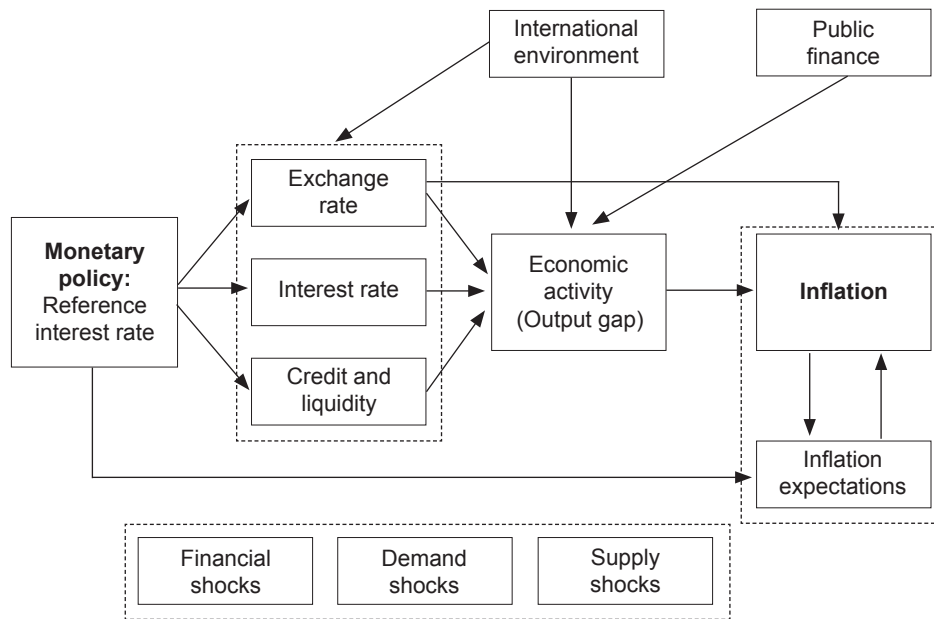


CENTRAL RESERVE BANK OF PERU

# INFLATION REPORT:

## Recent trends and macroeconomic forecasts

*September 2008*



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INFLATION REPORT

Recent trends and macroeconomic forecasts

Edition and Press Area

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CENTRAL RESERVE BANK OF PERU

## CONTENTS

Foreword .....	5
Summary .....	7
I. International environment .....	11
II. Economic activity .....	22
III. Balance of payments .....	33
IV. Public finances .....	41
V. Monetary policy .....	47
VI. Inflation.....	65
VII. Balance of risks .....	75

### BOXES

1. Developments of the international financial crisis .....	19
2. Electricity supply problems: 2008 -2018 .....	29
3. Methods of estimating the growth of potential output .....	31
4. Preventive accumulation of international reserves .....	59
5. Correlation between money growth and inflation .....	60
6. Exchange rate-to prices pass-through .....	63

This ***Inflation Report*** was drawn up using preliminary data on gross domestic product, balance of payments, operations of the non-financial public sector and monetary accounts as of August 2008, and data on inflation, exchange, and financial markets as of September 2008.



## Foreword

- According to the Peruvian Constitution, the Central Reserve Bank of Peru (BCRP) is a public autonomous entity whose role is to preserve monetary stability.
- Monetary stability is one of the basic conditions required to achieve high and sustained economic growth as it favors the appropriate environment for saving, for investment, and for every economic decision in general.
- In order to consolidate this goal, since 2002 the Bank's monetary policy has been based on an inflation targeting scheme, with an inflation target of 2.0 percent, plus or minus one percentage point (between 1.0 percent and 3.0 percent). The Central Bank's target is aimed at anchoring inflation expectations at the level of inflation in developed countries and reflects the BCRP's permanent commitment with monetary stability, independently of temporary shifts caused by factors beyond the control of monetary policy.
- Compliance with the inflation target is permanently evaluated; that is, the Central Bank considers the accumulated rate of inflation in each month and not only at year's end. In the event of any deviation of inflation from the target, the Central Bank implements the necessary measures to return inflation to the target considering monetary policy lags.
- At the beginning of each month, and according to a previously announced schedule, the Board of the BCRP approves a reference rate for the interbank lending market. This interest rate affects the entire array of domestic economic variables and inflation through several channels in different timeframes and, therefore, this rate has to be determined on the basis of macroeconomic forecasts and simulations.

- The economic studies based on which monetary policy decisions are made are disseminated to generate the public's understanding of the consistency of the decisions adopted and to ensure that economic agents' expectations take these forecasts and simulations into account. With this aim, the Central Bank publishes its Inflation Report every four months.
- This Inflation Report analyzes the evolution of the main economic developments observed in the first months of 2008. The forecast scenario included herein is consistent with monetary lags during the 2008-2010 macroeconomic horizon.

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## Summary

- i. The international scenario continues to be marked by a severe crisis which has generated turbulences of such magnitude that the stability of the main financial markets in the world has been affected. This context implies greater uncertainty regarding the evolution of global economy in variables such as economic activity, commodity prices, international interest rates, and the quotations of the main currencies.
- ii. Because the financial crisis, which started in August 2007, has deepened over the last two months, prospects of global growth for 2009 and 2010 have been revised downwards. Global growth has already been affected by the unfavorable evolution of employment in the United States, the correction of the real estate market in several developed economies, and the tightening of financial conditions in the economies affected by the subprime crisis.
- iii. Despite the deterioration of the international scenario as a result of the crisis of financial markets, the Peruvian economy continues to show high rates of growth. Boosted by the evolution of private consumption and by public and private investment, economic activity in Peru would have grown 9.9 percent between January and September. Since this pace of growth is higher than the one forecast in our Inflation Report of May (8.4 percent), the forecast on GDP growth for this year has been raised from 8.0 to 9.3 percent.
- iv. Inflation has also been higher than expected in our previous Inflation Report, showing an annual rate of 6.2 percent as of September. This evolution would be mainly reflecting that the foreseen risks of higher prices of food and fuels have materialized.



Inflation continued to show an upward trend due to rises in the prices of fuels (as a result of range adjustments implying lower compensations from the Fuel Stabilization Fund), as well as due to transport rates and supply factors that affected the prices of some domestic products (mainly potato).

However, a reduction in the prices of the main food inputs –the main initial determinants of higher inflation since mid-2007– has been observed in international markets since July, deepening since September with the aggravation of the international financial crisis. Considering this information, the annual inflation rate as of December 2008 is expected to be around 6 percent.

- v. The baseline inflation forecast scenario considers a gradual return of inflation to the target range by end 2009 and to the target level by 2010. This gradual convergence of inflation towards the target considers a partial reversal of the rises seen in the international prices of food and fuels, a slowing in the growth of domestic demand, and inflation expectations declining to the level of the target as inflation resumes a clearly downward trend.
- vi. The Central Bank has continued adjusting its monetary policy stance with the aim of steering inflation to gradually return to the target range and to prevent that the higher prices of food and fuel may translate into inflation expectations in a context of high growth of domestic demand. Thus, the Central Bank has increased its reference interest rate on four successive occasions –25 basis points each–, thus raising this rate from 5.50 percent to 6.50 percent between May and September 2008.
- vii. In the last two months, the Central Bank's actions have been oriented to ensuring liquidity in the financial system and to reducing the volatility of exchange in order to offset the impacts of the deepening of the international economic crisis on our economy.
- viii. Interventions in the exchange market have continued to be based on the criterion of reducing volatility in the exchange market. The Central Bank's preventive accumulation of international reserves in the last years –when the prices of minerals rose in an exceptional manner– provides the BCRP with a high capacity of response to face situations of international turbulence as the one observed today.

Between June and September, upward pressures have predominated in terms of exchange in a context of lower terms of trade and increased risk aversion of external capitals vis-à-vis emerging countries' debt and currencies. In this context, a reversal of foreign investors' positions

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in soles has been observed, both in the market of dollar forwards and in holdings of Public Treasury bonds or CDBCRP. In this scenario of high volatility, the Central Bank intervened in the exchange market selling dollars.

- ix. Additionally, the Central Bank has expanded the range of monetary operations it can carry out in order to improve the regulation of liquidity in the financial system.

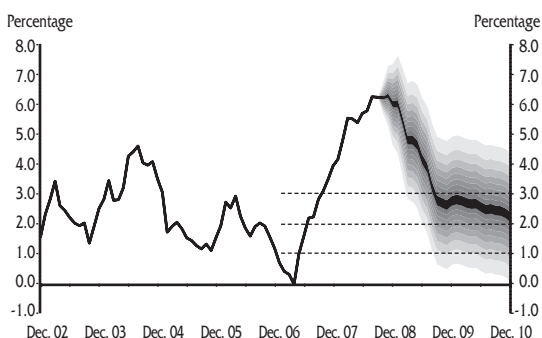
In the case of domestic currency, the collaterals and the habitual terms for operations aimed at injecting liquidity have been expanded. In the case of foreign currency, the option of making repo operations in dollars has been established. The financial system remains exceptionally liquid in terms of dollars, with a liquidity overhang (voluntary reserve requirements) in the order of US\$ 2 billion and holdings of CDBCRP in the order of S/. 14 billion.

- x. With the crisis unfolding and with higher probabilities that the main developed economies will go into a phase of slow growth –with the subsequent impact on global economy–, a faster deceleration is expected in the Peruvian economy, the rate of growth declining from 9.3 percent in 2008 to 6.5 percent in 2009. A slow recovery is expected for 2010, with a forecast growth rate of 7.0 percent.
- xi. In a scenario characterized by uncertainty in international financial markets and by high volatility in the prices of commodities, public finances are expected to maintain a surplus position within the forecast period. The fiscal scenario of this forecast is coherent with a prudential outlook.
- xii. The current account of the balance of payments showed a deficit during the first half of the year (3.8 percent of GDP) due to the continuous dynamism of domestic demand and the reduction observed in terms of trade, as a result of which a deficit of 3.2 percent is foreseen. Particularly, the growth of investment –the main factor boosting domestic demand– has been translating into high rates of growth of imports of capital goods. In 2009 and 2010 the current account is expected to continue showing a deficit (3.0 percent of GDP) considering the effects of the international financial crisis, such as a higher deterioration of terms of trade and a higher slowing of growth in our main trading partners. However, these effects will be offset by a moderation in the expansion of domestic demand and the fiscal surplus.
- xiii. The main risks that could cause inflation to deviate from the forecast central scenario include the following:

- Higher deterioration of the world economy.** The deepening of the financial crisis in the United States is consistent with the expectation of an adverse international environment, particularly with the reduction of terms of trade considered in the baseline scenario. Moreover, a deceleration of global growth affecting especially the United States is assumed. However, the magnitude of the impact of the crisis could be even greater. This risk of higher world recession, lower terms of trade and financial volatility could entail in the short run a rise in the country risk which would pressure the depreciation of the currencies of emerging countries against the dollar. In this scenario, the Central Bank's sound position of international reserves would allow the BCRP to intervene in the exchange market to moderate exchange volatility and provide the financial system with liquidity. Other liquidity injection mechanisms in both currencies are also in place to be used if necessary to maintain the normal functioning of financial markets.

In the medium term, the dynamism of economic activity could decline. In such case, a more flexible monetary policy stance, consistent with anchoring inflation to the target level, would be adopted.

**INFLATION FORECAST DENSITY**  
(Annual percentage change)



Note: The graph shows the inflation prediction bands along the forecast horizon. The darkest band around the central forecast represents a 10 percent probability of occurrence, while all the other bands represent a 90 percent probability of occurrence.

- Constraints in the supply of electricity.** The central scenario considers some increases in electricity rates given that the strong expansion of demand for electricity has been higher than the growth of supply. There is the possibility that the imbalance between the demand and supply of electricity may aggravate and, therefore, the possibility of rationing in the forecast horizon cannot be excluded. In such a context of electricity constraints, the increase of electricity rates would be higher and the increase of marginal production costs would imply a reduction of the economy's potential growth.

This factor would not alter monetary policy as long as the inflationary impact does not affect inflation expectations nor generate a second-round effect.

In a context of high uncertainty about the evolution of the global economy, weighing the above mentioned risks against the baseline scenario shows a neutral balance for the inflation forecast.

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## I. International environment

*The financial crisis that started in August 2007 has deepened in the last months, adding greater uncertainty to the economic outlook on global growth. Global economic growth has already been affected by the unfavorable evolution of employment in the United States, the correction of the real estate market in several developed economies, and the tightening of financial conditions in economies affected by the subprime crisis. In this context, forecasts on global growth have been revised downwards for the second half of this year and for 2009 and 2010.*

*Emerging economies have also been affected, although to a lesser extent. Part of the crisis' effect on growth is associated with the lower international prices of commodities, which in general have shown a significant downward correction since the third quarter of this year. International financial turbulence has also been reflected in capital outflows and in depreciatory pressures.*

*In this context of economic slowdown and lower commodity prices, expectations of lower inflationary pressures in emerging and developed markets have increased.*

*The forecasts on the international scenario show a high level of uncertainty. Although evidences of recession in several developed economies have increased, the future evolution of the international context will depend on the effectiveness of recent measures to restore credibility and normalize credit conditions. The impact on the economies in the region –so far relatively moderate– could be greater should commodity prices continue to decrease, should capital flows declined, and should credit conditions tighten. Another factor of uncertainty is the impact of this crisis on China.*

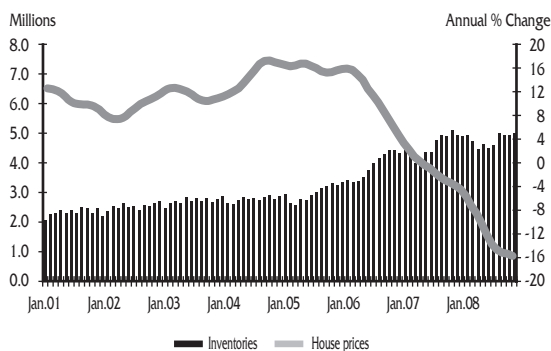
## Growth, inflation and interest rates

1. The clearer evidences of deceleration are being observed in developed economies, particularly the United States and Europe, whose participation in global growth is 60 percent, in terms of current dollars.

Prospects for growth in the **United States** have deteriorated, despite the economy's favorable growth during the first two quarters. The high rate of growth observed in the second quarter (2.8 percent) was based on the dynamism of exports (favored by the depreciation of the dollar) and consumption, the latter supported by the tax return package implemented in the second quarter (estimated at approximately US\$ 100 billion).

Although the growth forecast for 2008 was corrected from 0.8 to 1.5 percent due to the results obtained in the first semester, the prospects for the third and fourth quarters are unfavorable, particularly due to the evolution expected in consumption and investment.

**Graph 1**  
**REAL ESTATE MARKET: PRICES AND INVENTORIES**



2. Consumption would be affected by the recent evolution of employment: year-to-date employment has shown nine consecutive drops, with an accumulated loss of 760 thousand jobs. Moreover, adding to the drop observed in the stock market, the fall of house prices would also have an impact on wealth (both components constituting about 70 percent of households' wealth). The lower prices of houses, adding to credit constraints, would also generate a reduction in Mortgage Equity Withdrawal, an effect implying that part of mortgage loan or refinancing lines will translate into consumption spending.

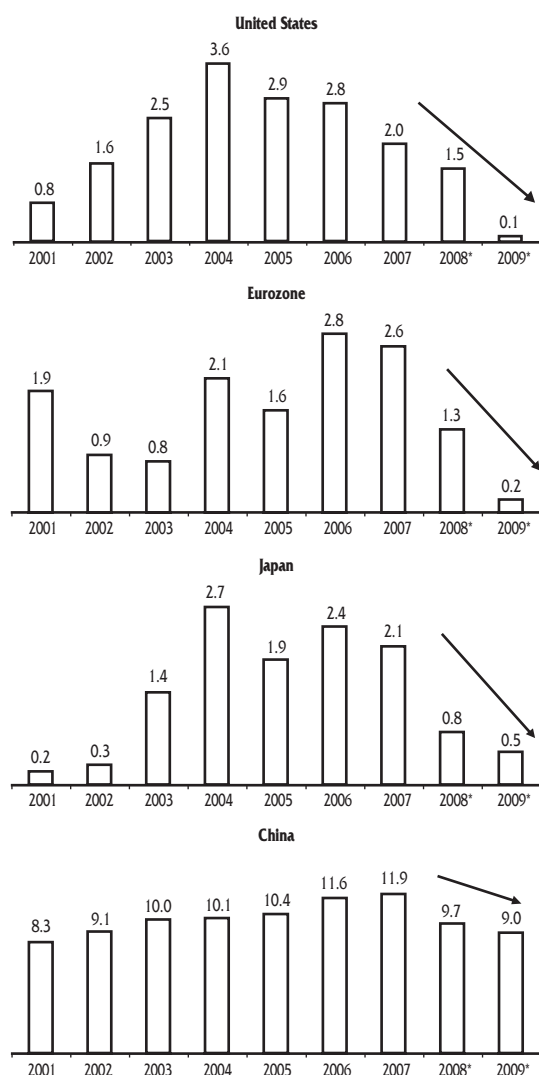
On the other hand, investment would be affected by economic slowdown, the deepening of credit constraints, the reduction of corporate profits, and by a drop of investors' confidence. In the particular case of residential investment, whose contribution to growth has been

**Table 1**

**USA: CONTRIBUTION TO GROWTH**  
(Annualized quarterly rates)

	2005	2006	2007	Q3.07	Q4.07	Q1.08	Q2.08
<b>GDP</b>	<b>2.9</b>	<b>2.8</b>	<b>2.0</b>	<b>4.8</b>	<b>-0.2</b>	<b>0.9</b>	<b>2.8</b>
<i>Of which:</i>							
Per capita consumption	2.13	2.13	1.95	1.44	0.67	0.61	0.87
Fixed investment	1.08	0.32	-0.50	-0.15	-0.97	-0.86	-0.25
Non Residential	0.71	0.77	0.52	0.91	0.36	0.26	0.27
Residential	0.37	-0.45	-1.02	-1.06	-1.33	-1.12	-0.52
Exports	0.71	0.96	0.95	2.54	0.53	0.63	1.54

**Graph 2**  
**GROWTH OF DEVELOPED ECONOMIES AND CHINA**  
(Real percentage change)



negative by approximately one percentage point since end 2006, an even higher reduction may be foreseen due to the high levels of house inventories.

3. In this context, the forecast on growth considers an important deceleration since the third and fourth quarters of 2008. In 2009, growth would decline to 0.1 percent, recovering to 2.1 percent in the following year.

Furthermore, although inflationary pressures have slowed down, they remain high. The consumer price index at September accumulated an annual change of 4.9 percent, while inflation –excluding fuels and food– remains around 2.5 percent. Moreover, the personal consumption deflator has remained above the FED's comfort level of 2 percent.

**Table 2**

**FORECAST ON GDP GROWTH IN PERU'S MAIN TRADING PARTNERS\***  
(In percentage)

	Weighted trade		2008		2009		2010		
	2006	2006	2007	IR May.08	IR Sep.08	IR May.08	IR Sep.08	IR May.08	IR Sep.08
<b>Trade partners</b>	<b>100</b>	<b>4.6</b>	<b>4.5</b>	<b>3.3</b>	<b>3.2</b>	<b>3.2</b>	<b>2.2</b>	<b>3.7</b>	<b>3.4</b>
<b>North America</b>	<b>29%</b>	<b>2.8</b>	<b>2.1</b>	<b>0.9</b>	<b>1.4</b>	<b>1.1</b>	<b>0.3</b>	<b>2.7</b>	<b>2.2</b>
USA	24%	2.8	2.0	0.8	1.5	0.9	0.1	2.7	2.1
Canada	5%	2.8	2.7	1.3	0.7	2.2	1.2	2.7	2.4
<b>Europe</b>	<b>20%</b>	<b>3.0</b>	<b>2.9</b>	<b>1.6</b>	<b>1.5</b>	<b>1.5</b>	<b>0.3</b>	<b>1.8</b>	<b>1.5</b>
Germany	4%	2.9	2.5	1.5	1.8	1.5	0.1	1.8	1.5
Spain	3%	3.9	3.8	2.1	1.3	1.7	-0.2	2.0	1.7
United Kingdom	1%	2.9	3.1	1.5	1.1	1.6	-0.2	2.0	1.7
<b>Asia</b>	<b>21%</b>	<b>7.9</b>	<b>8.1</b>	<b>6.6</b>	<b>6.3</b>	<b>6.4</b>	<b>5.7</b>	<b>6.2</b>	<b>6.1</b>
China	11%	11.6	11.9	9.9	9.7	9.3	9.0	9.0	9.0
Japan	5%	2.4	2.1	1.3	0.8	1.6	0.5	1.7	1.5
<b>Latin America</b>	<b>30%</b>	<b>5.3</b>	<b>5.4</b>	<b>4.4</b>	<b>4.2</b>	<b>4.1</b>	<b>3.1</b>	<b>4.1</b>	<b>3.9</b>
Argentina	2%	8.5	8.7	6.8	6.5	4.5	3.6	4.4	4.2
Brazil	7%	3.8	5.4	4.8	5.0	4.2	3.5	4.2	4.0
Chile	7%	4.0	5.0	4.1	4.1	4.7	3.5	4.7	4.5
Colombia	4%	6.8	7.0	5.3	4.2	4.9	3.5	4.9	4.7
Ecuador	4%	3.9	1.9	2.3	2.2	2.7	2.0	2.7	2.5
Mexico	3%	4.9	3.1	2.6	2.1	3.1	1.5	3.8	3.5
Venezuela	3%	10.3	8.4	5.6	5.3	3.6	3.0	3.4	3.2

IR: Inflation Report.

\* Based on data of the World Economic Outlook (October 2008), Consensus Forecast (October 2008) and information on the banking system.

In this context of economic slowdown and inflationary pressures, the FED maintained its reference rate at 2 percent between April and early October, when it was cut by 50 bps, in a coordinated manner with other central banks. Market expectations would point to additional cuts before the end of the year: a reduction of 25 to 50 basis points in the FED's rate is implicit in the rates on forward contracts for December this year.

**Table 3**

**FORECASTS OF INFLATION IN PERU'S MAIN TRADING PARTNERS\***  
(In percentage)

	2006	2007	2008		2009		2010	
			IR May.08	IR Sep.08	IR May.08	IR Sep.08	IR May.08	IR Sep.08
<b>North America</b>								
United States	3.2	2.8	3.8	4.5	2.4	1.9	2.2	2.2
Canada	2.0	2.1	1.7	2.7	2.0	2.1	2.0	2.0
<b>Europe</b>								
Germany	1.7	2.1	2.5	2.9	1.9	1.4	1.8	1.7
Spain	3.5	2.8	3.9	4.5	2.6	2.6	2.5	2.5
United Kingdom	2.3	2.3	2.7	3.8	2.2	2.9	2.2	2.2
<b>Asia</b>								
China	1.5	4.8	6.4	6.4	3.8	3.6	3.0	3.0
Japan	0.2	0.1	0.7	1.6	0.5	1.2	1.2	1.2
<b>Latin America (Dec./Dec.)</b>								
Argentina	9.8	8.5	9.5	8.8	10.2	10.0	9.3	9.3
Brazil	3.1	4.4	5.1	6.2	4.4	4.4	4.4	4.4
Chile	2.6	7.8	4.7	8.2	3.5	4.7	3.2	3.2
Colombia	4.5	5.7	5.0	7.2	4.5	4.5	4.1	4.1
Mexico	4.1	3.8	4.2	5.7	3.5	3.3	3.4	3.4
Venezuela	17.0	22.5	27.0	28.6	27.6	27.9	26.1	26.1

IR: Inflation Report.

\* Based on data of the World Economic Outlook (October 2008), Consensus Forecast (October 2008) and information on the banking system.

4. **Europe**, which concentrates approximately half of the losses associated with mortgage-backed securities, has also been affected by the deterioration of credit conditions. Other factors adding to this include the correction of real estate in some economies (United Kingdom, Spain, Ireland), the low dynamism of consumption (Germany), the high prices of commodities, and the appreciation of the euro which has affected the performance of the export sector. At the sector level, manufacturing has been showing a generalized slowdown and even a phase of contraction in many countries.

In this context, growth rates of 1.5 and 0.3 percent are estimated for 2008 and 2009, respectively. By countries, the higher downward revisions are observed in Germany, the United Kingdom and Spain (the real estate correction has been more significant in the last two countries).

The monetary policy response of European countries to economic deceleration was constrained by evidence of inflationary pressures. Even in the July, when inflation was 4.0 percent, the European Central Bank raised its interest rate from 4.0 to 4.25 percent. However, in October, amidst strong financial turbulence and growing evidence of economic slowdown and lower inflationary

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pressures, the ECB reduced its rate to 3.75 percent, in a coordinated manner with other central banks.

5. Outside the Eurozone, inflation in the **United Kingdom** was 5.2 percent at September of this year, above its 2 percent target. After having reduced its interest rate at the beginning of the year, the Bank of England maintained its interest rate at 5 percent until October, when it was lowered by 50 bps given indicators of recession (growth in the second quarter was nil and indicators on manufacturing for the third quarter point to recession).
6. The economic outlook for **Japan** also reflects an economic slowdown with a relatively high probability of recession. In the second quarter, GDP dropped 3.0 percent. The export sector has lost dynamism in the last months (as reflected, in turn, by the evolution of manufacturing production), while real estate investment has not recovered as expected. Japan is estimated to grow 0.8 percent in 2008 and 0.5 percent in 2009.

Like other developed economies, Japan has faced inflationary pressures that would be pointing to the end of the deflationary process. Annual inflation, which reached 0.7 percent in 2007, has climbed to 2.1 percent in August, a result reflecting the higher prices of inputs, particularly commodities and oil. The Bank of Japan has maintained its interest rate at 0.5 percent.

7. In general terms, the impact of the economic slowdown of developed countries on the growth of **emerging economies** has been moderate. Simultaneously, emerging countries have faced higher inflationary pressures. In many cases, the impact of the high prices of commodities on domestic prices was reinforced by the dynamism of domestic demand, which led central banks to raise their interest rates until the month of August.

Since September, the evolution of international markets –with commodity prices reducing significantly– would have influenced lower inflationary pressures. In this context, central banks in emerging economies are modifying their monetary policy positions, reflected in pauses in interest rate adjustments or in reductions in said rate.

8. **China** has maintained a rate of growth higher than 10 percent in the first two quarters of the year and a rate of 9 percent in the third quarter. However, the evolution of the



export sector over the last months could be anticipating a lower growth in the rest of the year and in 2009 (although still at high rates).

China is expected to grow close to 9 percent between 2008 and 2010. In the current scenario of deceleration in developed economies, the possible measures the government and the central bank will implement to dynamize domestic demand (particularly consumption) introduce an upward bias to the forecast. The active interest rate and the rate of reserve requirements were reduced since September, which implies a shift in monetary policy in a context of some slowing of inflation.

9. The economic prospects for **Latin America** have also been revised downwards. The current scenario of economic slowdown is being reflected in the drop of commodity prices in the third quarter, a trend which has deepened in the month of October. Additionally, prior to the deepening of the international turbulence, some countries had raised interest rates in order to moderate the growth of domestic demand, which is an additional factor accounting for lower growth rates.

Latin American countries should grow at higher rates than our trading partners in 2008 (4.2 percent), 2009 (3.1 percent) and 2010 (3.9 percent), although these rates are lower than the ones forecast in our Report of May.

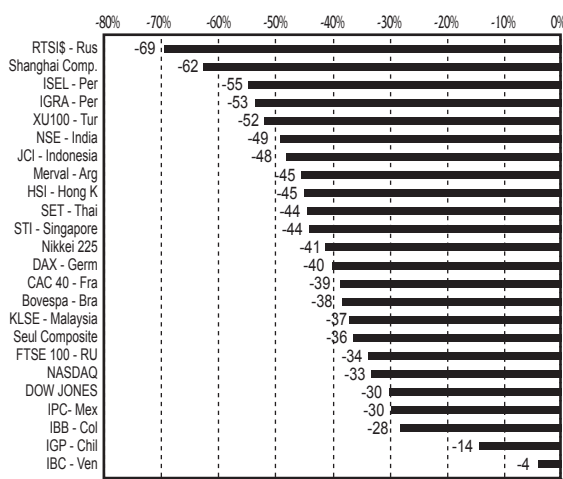
#### **Evolution of financial markets**

10. During this year, fears of insolvency of the main financial entities increased significantly, expanding rapidly among the main economies: USA and Europe. This led to a significant deterioration in the conditions of liquidity and credit, as well as to higher risk aversion which increased the demand for low risk assets.

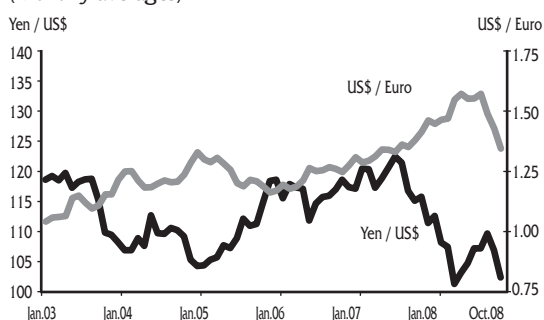
In this context and due to the fears that the financial crisis would trigger a scenario of credit crunch and recession, the governments of developed countries launched a series of programs in October aimed at providing financial entities with liquidity and at improving their solvency.

The US government launched a program to rescue the financial system (Troubled Asset Relief Program or TARP), according to which the Treasury would issue debt for US\$ 700 billion (equivalent to approximately 5 percent of its GDP) to buy mortgage and other devalued securities from financial institutions and, additionally, to inject

**Graph 3**  
**ACCUMULATED EVOLUTION OF MAIN STOCK MARKET INDICES (END OF PERIOD)**  
 (% Chg. Oct.08/Dec.07)



**Graph 4**  
**US DOLLAR AGAINST MAIN COMMERCIAL PARTNERS CURRENCY**  
 (Monthly averages)



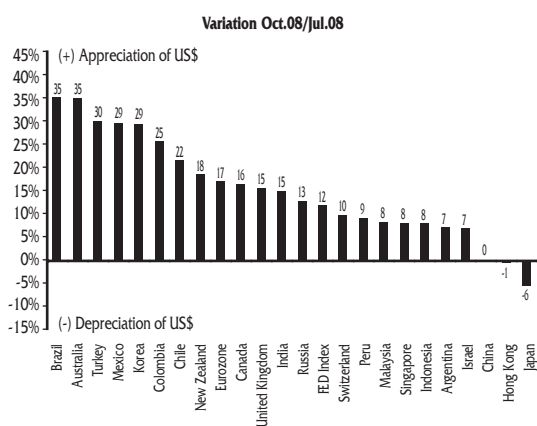
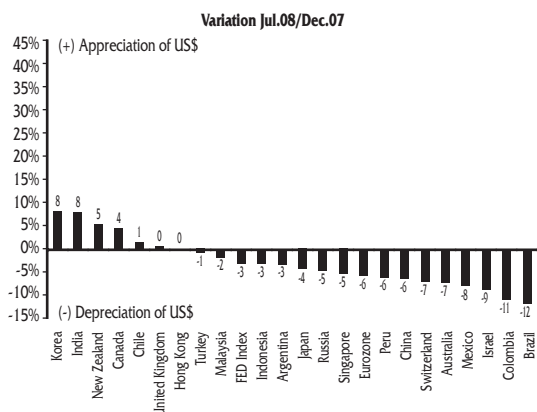
capital to them. Similar measures have been implemented by a series of developed economies, such as the UK and Eurozone countries. In addition to this, the main central banks, in a coordinated manner, announced measures to improve short term injections of liquidity in dollars and an interest rate cut of 50 bps.

As of the second week of October, the markets have reacted favorably to these programs, although without fully reverting the significant losses of the previous weeks. There is still no clear evidence on whether these measures will be sufficient to normalize credit conditions and to restore confidence or not. This measures would also imply the deterioration of the fiscal and external positions of developed economies, particularly the United States, whose fiscal deficit and deficit in current account for 2008 are estimated at 4.1 and 4.6 percent of GDP, respectively.

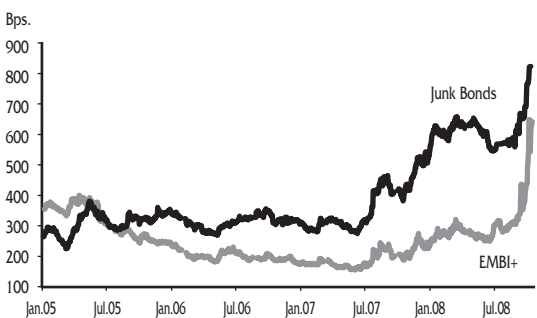
11. The **main stock markets** have been showing high volatility with significant losses, particularly due to the evolution of the financial sector in USA and Europe. Strong risk aversion has led investors to sell off their positions and to seek hedge in low risk assets such as the US Treasury bonds.
12. In **foreign exchange markets**, the dollar showed higher volatility since the beginning of the year. Until July, the dollar had weakened 3 percent against the currency basket of the US main trading partners. Since July, and particularly since financial turbulence was observed, the dollar strengthened in a context of shortage of dollars and negative indicators of growth in other developed economies.
13. Until mid-July, the dollar had strongly depreciated against the **euro**, affected by expectations of rate spreads favoring the Eurozone economies. This evolution reverted subsequently as clearer signals of a higher slowdown emerged in Europe, becoming more evident since September when, due to the financial crisis, liquidity constraints in dollars aggravated in international markets.
14. On the other hand, the dollar showed an appreciatory trend against the **yen** during most of the year due to speculative carry trade operations. However, in the last weeks, the reversal of these operations due to increased risk aversion has generated an appreciation of the yen.

In contrast with what happened in the first half of the year, the currencies of emerging countries have been facing depreciatory pressures over the past few weeks as a

**Graph 5**  
**ACCUMULATED EVOLUTION OF US DOLLAR**  
(At end of period)



**Graph 6**  
**RISK SPREADS OF US TREASURY BONDS**



result of the deepening of the financial crisis, of investors' higher risk aversion, and of the drop of the prices of the main commodities.

Since mid-October, this evolution has begun to revert slightly due to lower risk aversion and to the impulse generated by the recent measures implemented by the governments and central banks of developed economies.

15. The yield on the US Treasury bonds has declined significantly. The liquidity crisis generated a strong demand for short term securities (such as three-month bonds), while fears of recession due to the financial crisis boosted the demand for long term securities.

In September, after the crisis intensified, the yield on the three-month bond reached levels close to zero (0.04 percent on September 17), while longer term securities such as the 10-year bond showed yields below 3.4 percent (a level not recorded since June 2003).

16. The crisis also generated a generalized rise in the spreads of emerging countries' debt (measured through the EMBI+). So far this year, total emerging risk has risen 407 bps. on average, in part also influenced by the 975 bps increase observed in the EMBI+ Argentina.

**Table 4**

**YIELDS ON US TREASURY BONDS AND SPREADS OF EMERGING MARKETS\***

	2003	2004	2005	2006	2007	2008 Oct.	Variation 2008-2007
<b>Percentage</b>							
<b>Rates</b>							
3 month-bond	0.922	2.217	4.079	5.011	3.242	1.083	-2.16
2 year-bond	1.823	3.069	4.404	4.812	3.051	1.700	-1.35
10 year-bond	4.248	4.220	4.393	4.704	4.025	3.843	-0.18
<b>Basis points</b>							
<b>EMBI+</b>	<b>418</b>	<b>356</b>	<b>245</b>	<b>169</b>	<b>239</b>	<b>646</b>	<b>407</b>
Latin America	521	420	283	186	268	677	409
Brazil	463	382	311	192	221	489	268
Colombia	431	332	238	161	195	530	335
Mexico	199	166	126	98	149	452	303
Argentina	5,632	4,703	504	216	410	1,385	975
Peru	312	220	206	118	178	510	332
<b>CDS (Credit Default Swap) 5 years</b>							
Brazil	404	305	225	100	103	323	220
Colombia	441	341	167	114	130	326	196
Mexico	122	80	63	41	69	316	247
Argentina	n.a.	n.a.	367	203	462	2,871	2,409
Peru	292	204	221	91	116	331	216

\* Data at end of period. Data for 2008 include informations as of October 20.  
Source: Bloomberg and Reuters.

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**BOX 1**
**DEVELOPMENTS OF THE INTERNATIONAL FINANCIAL CRISIS**

So far this year, the US financial crisis has spread onto the financial system in Europe, increasing fears of insolvency. Reports of higher losses in the main financial institutions and downgradings in the ratings assigned by the main rating agencies have generated great difficulties among banks to increase their capital due to higher risks of insolvency. The losses announced since the crisis started at end 2007 are already over US\$ 500 billion. The IMF estimates that potential losses could amount to US\$ 1.3 trillion.

The problems of asset devaluation, which initially concentrated on mortgage securities (and their respective financial derivatives), extended to other titles, particularly to those with very short maturities (such as the asset-backed commercial papers or ABCP), generating liquidity constraints in the money market (the problem of “illiquidity” added on to the problem of “quality”).

**CREDIT LOSSES AND CAPITAL CONTRIBUTIONS\***

(US\$ billions)

	Credit losses	Capital contribution
<b>North America</b>	<b>409.6</b>	<b>342.5</b>
<i>Of which:</i>		
Merrill Lynch	58.1	29.9
Citigroup	68.1	74.0
Wachovia Corporation	96.7	11.0
Washington Mutual	45.6	12.1
<b>Europe</b>	<b>227.2</b>	<b>265.4</b>
<i>Of which:</i>		
UBS	44.2	31.8
HSBC	27.4	5.0
IKB Deutsche	13.5	11.1
Royal Bank of Scotland	13.3	55.7
<b>Asia</b>	<b>24.9</b>	<b>22.3</b>
<b>TOTAL</b>	<b>661.7</b>	<b>630.2</b>

Source: Bloomberg.

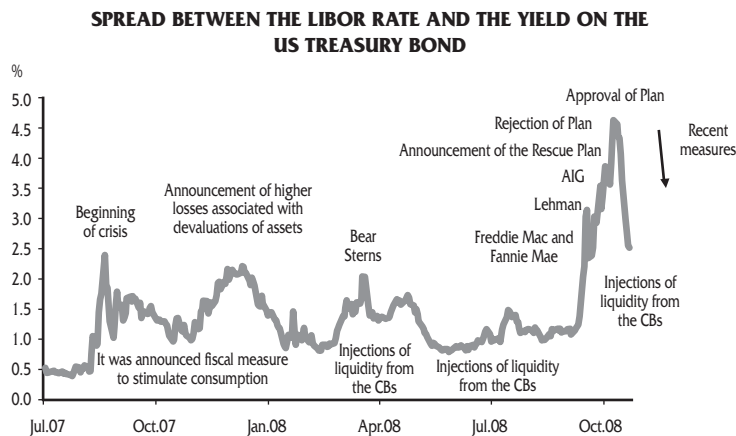
\* Data as of October 20.

During September, after the Lehman Brothers Holding Inc. went bankrupt, these conditions intensified in such a magnitude that the higher liquidity, credit and systemic risks caused funding activities between US financial institutions to close.

Short term rates increased significantly and interbank operations practically disappeared, turning central banks into the only sources of liquidity, particularly in dollars (on September 30 the overnight libor rate in dollars rose from 2.57 to 6.88 percent). This evolution was observed in the main money markets of developed economies.

An indicator of liquidity constraints is the evolution of the TED spread, which measures the difference between the 3-month libor rate and the yield on 3-month Treasury bonds. In September this spread was over 3 percent, reaching even higher levels than the ones recorded during the financial crisis of 1987.

In this context and in coordination with some European central banks and the Central Bank of Japan, the FED increased its injections of liquidity to the money market (both increasing the amounts of liquidity and “softening” the collaterals required). However, uncertainty and lack of confidence prevented reverting the rise of short term rates.



**MAIN EVENTS IN THE FINANCIAL MARKET**

United States	
Date	Event
Sep-07	Government rescues mortgage agencies <b>Fanni Mae and Freddie Mac</b> .
Sep-15	<b>Lehman Brothers</b> declares bankruptcy.
Sep-15	Bank of America announces the purchase of <b>Merrill Lynch</b> .
Sep-16	FED provides credit line to <b>AIG</b> .
Sep-19	<b>US Treasury</b> announces Rescue Plan (US\$ 700 billion)
Sep-22	Investment bank <b>Morgan Stanley</b> transforms itself into a commercial bank.
Sep-22	Investment bank <b>Goldman Sachs</b> transforms itself into a commercial bank.
Sep-26	JP Morgan buys <b>Washington Mutual's</b> assets.
Oct-02, 03	<b>U.S. Senate and House of Representatives</b> approve Rescue Plan.
Oct-13	Wells Fargo reaches definite agreement to acquire <b>Wachovia</b> .
Oct-14	<b>US Treasury</b> announces that US\$ 250 billion will be used to recapitalize banks.
Oct-15	<b>US Treasury</b> injects US\$ 125 billion to capitalize 9 banks.

Europe	
Date	Event
Sep-28	German government and private banks inject 35 billion euros to <b>Hypo Real Estate</b> .
Sep-29	Icelandic government rescues <b>Glitnir Bank</b> (taking control of 75 percent of Glitnir).
Sep-29	<b>Bradford &amp; Bingley</b> nationalized by U.K. government and Santander takes on the bank's retail deposit business and branch network.
Sep-29	<b>Fortis</b> is partially nationalized by the governments of Belgium, France and Luxemburg.
Sep-30	<b>Dexia</b> receives capital injection from the governments of Belgium, France and Luxemburg.
Oct-09	<b>United Kingdom</b> announces rescue plan.
Oct-10,13	Governments of <b>Germany, France, the Netherlands, Spain, Portugal, Italy, Austria and Norway</b> announce rescue plan.
Oct-16	Swiss government announces capital injection to rescue <b>UBS</b> .
Oct-20	Dutch government announces capital injection to <b>ING</b> .
Oct-20	<b>Bayern LB</b> receives capital injection from the German government.

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In this way, uncertainty about the solvency of financial institutions associated with the mortgage sector (government agencies, commercial banks and investment banks) extended to other institutions such as asset insurance companies (MBIA, Ambac and AIG) and finally to institutional investors themselves (mutual funds and other investment funds), jeopardizing the solvency of the US financial system. In this context, the first measures to prevent the expansion of the crisis were aimed at bailing out the two main state-sponsored mortgage firms in the United States. Subsequently, the FED decided to prevent the bankruptcy of AIG (the main insurer of banks' assets) by granting AIG a loan for US\$ 85 billion.

Simultaneously, the largest financial institutions decided to go into merger (through acquisition operations), as a result of which US investment banks virtually disappeared. However, all these measures did not reverse the financial crisis. Insolvency problems intensified and, after the severe financial losses observed, the need for greater capitals generated the deleveraging of financial institutions, worsening credit conditions and raising the risks of having a credit crunch and recession scenario.

In this context, the US government finally launched its plan to bail out the US financial system –the Troubled Asset Relief Program (TARP)–, whereby the Treasury would issue debt for US\$ 700 billion (approximately 5 percent of GDP) to buy up mortgage and other papers held by private banks and financial institutions to restore stability in markets.

However, the delay in approving the TARP (until the first week of October) and pessimism regarding the plan's effectiveness generated greater volatility in all the financial markets. Liquidity and credit constraints intensified and stock markets in general recorded losses. Moreover, the TED spread reached record levels.

As of the second week of October, the need of implementing measures coordinated by the main developed countries (basically the G-7, including both governments and central banks) was acknowledged. These measures consisted primarily of recapitalizing financial institutions and injecting short term liquidity in dollars.

Among the measures coordinated by central banks, it is worth highlighting the decision adopted in an extraordinary meeting by the FED, the central banks of Canada, Switzerland (SNB), Sweden, England (BoE) and the European Central Bank (ECB) of reducing their rates by 50 bps. Later on, the BoE, the ECB and the SNB announced that they would provide all the liquidity required at fixed rates and the FED, on the other hand, expanded swap lines with these institutions.

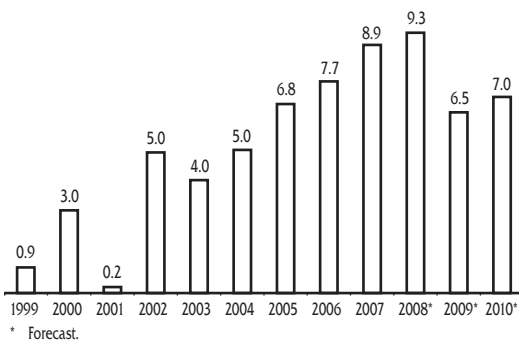
As regards the measures adopted by governments to rescue the financial systems, the United Kingdom announced a £400 billion rescue plan which included £37 billion for the recapitalization of banks; Germany announced a €400 billion plan to guarantee interbank loans with up to 3-year maturities, deposits and other assets, and some €100 billion to recapitalize the financial system; France announced funds for a total of €320 billion to guarantee the interbank debt and €40 billion to recapitalize banks; and Holland, Spain, Portugal, Italy, Austria and Norway announced funds for a total of €481 billion to guarantee banks' debt. Following these announcements, the US Treasury established that some US\$ 250 billion (of the TARP fund) would be used for the recapitalization of the main banks and decided to insure banks' debt issues.

Since October 13, liquidity constraints began to decline and money markets started showing a less unfavorable evolution. However, uncertainty regarding the evolution of markets remains as there is no clear evidence that the measures adopted by developed countries will suffice to ensure the normal functioning of financial markets.

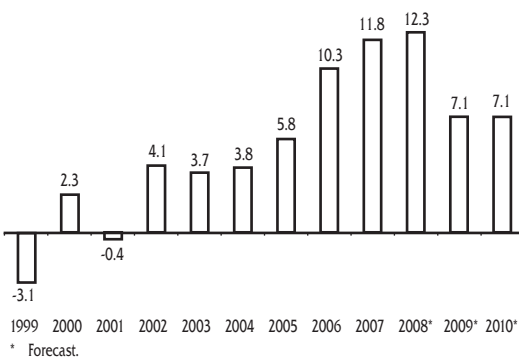
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## II. Economic activity

**Graph 7**  
**GDP GROWTH RATE**  
(Real percentage change)



**Graph 8**  
**GROWTH RATE OF DOMESTIC DEMAND**  
(Real percentage change)



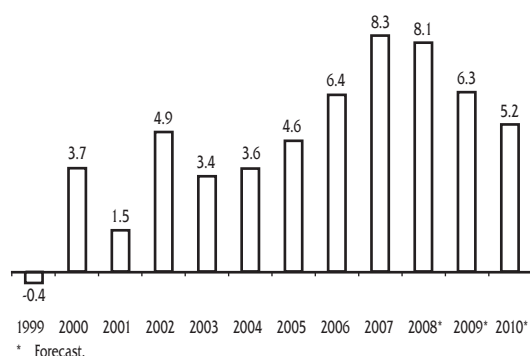
The forecast on growth for 2008 has been revised upwards from 8.0 to 9.3 percent compared to our Inflation Report of May due to the higher economic dynamism observed during the first half of the year. A slowing of the economy is foreseen since the third quarter, in line with a lower pace of growth of the world economy and with a higher deterioration of terms of trade, as a result of the crisis affecting global financial markets and of uncertainty about its effects on global economic activity.

A growth rate of 6.5 percent is projected for 2009 and a higher growth rate (7.0 percent) is expected for 2010, due in part to the impulse generated when Camisea's liquefied natural gas will start to be exported.

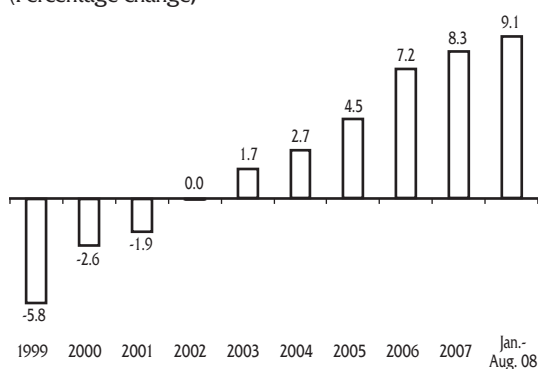
17. The higher growth of **domestic gross product** foreseen for this year is consistent with a growth of **domestic demand** of 12.3 percent –higher than the rate forecast in our May Inflation Report (9.8 percent) and the one recorded last year–, reflecting the evolution of private consumption and private investment. In both cases, the forecast has been revised upwards considering the higher growth already recorded. In contrast, the forecast on public expenditure (consumption and investment) has been revised downwards, in line with the moderation of the growth of fiscal expenditure announced by the Ministry of Economy and Finances for the rest of the year.

18. A deceleration of the national disposable income is expected throughout the forecast horizon, declining from 9.8 percent in 2007 to 7.1 percent in 2010, in line with projected lower rates of growth of economic activity and lower terms of trade.

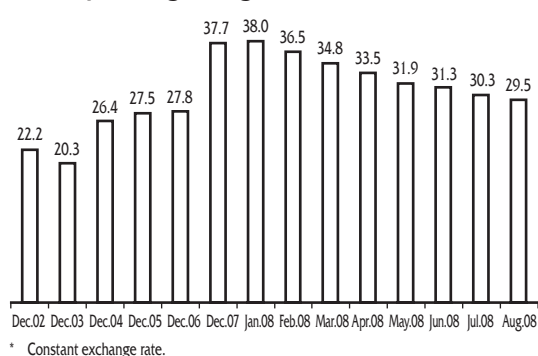
**Graph 9**  
**GROWTH OF PRIVATE CONSUMPTION**  
(Real percentage change)



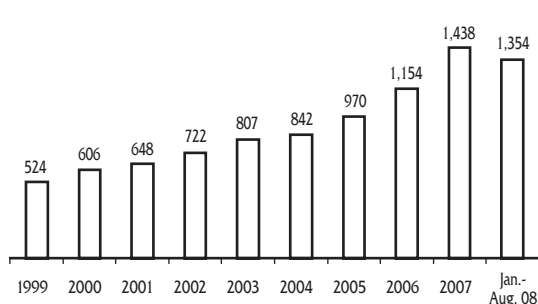
**Graph 10**  
**URBAN EMPLOYMENT IN COMPANIES WITH 10 OR MORE WORKERS**  
(Percentage change)



**Graph 11**  
**CONSUMER CREDIT\***  
(Annual percentage change)



**Graph 12**  
**IMPORTS OF DURABLE CONSUMER GOODS**  
(Millions of US\$)



**Table 5**

**DOMESTIC DEMAND AND GDP**  
(Real percentage change)

	2007		2008*			2009*		2010*	
	Sem. I	Year	Sem. I	IR May.08	IR Sep.08	IR May.08	IR Sep.08	IR May.08	IR Sep.08
1. Domestic demand	11.1	11.8	12.9	9.8	12.3	8.0	7.1	6.6	7.1
a. Private consumption	8.2	8.3	8.7	6.6	8.1	5.5	6.3	5.5	5.2
b. Public consumption	4.2	4.5	6.3	4.7	3.5	2.6	3.0	3.2	3.8
c. Private investment	21.6	23.4	25.9	20.4	26.7	14.5	12.5	11.5	10.3
d. Public investment	5.9	19.7	62.7	42.9	37.2	23.9	26.3	17.6	20.0
2. Exports	4.2	6.2	12.0	6.2	9.1	8.4	6.2	11.4	10.0
3. Imports	19.1	21.3	24.9	15.4	23.3	14.8	9.0	9.2	9.8
4. GDP	8.3	8.9	10.3	8.0	9.3	6.5	6.5	7.0	7.0

IR: Inflation Report.  
\* Forecast.

**Table 6**

**NATIONAL DISPOSABLE INCOME**  
(Real percentage change)

	2007		2008*			2009*		2010*	
	Sem. I	Year	Sem. I	IR May.08	IR Sep.08	IR May.08	IR Sep.08	IR May.08	IR Sep.08
1. GDP	8.3	8.9	10.3	8.0	9.0	6.5	6.5	7.0	7.0
2. Gross national product	9.2	9.3	9.8	9.9	11.0	9.4	10.1	7.0	7.5
3. Gross national income	11.2	9.9	8.3	7.1	8.0	7.8	7.8	7.1	7.2
4. National disposable income <sup>1/</sup>	11.2	9.8	8.1	7.0	7.9	7.7	7.6	6.7	7.1

IR: Inflation Report.  
\* Forecast.

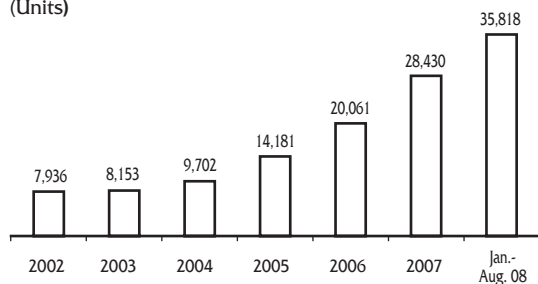
1/ Includes factor income, net gains and losses due to changes in terms of trade and net transfers from non residents.

19. During the first half of the year, **private consumption** maintained a high dynamism with a growth rate of over 8 percent, driven by the increase of national disposable income, the growth of employment and access to consumer credit. Employment, which grew 9.1 percent in the first eight months of the year, continues growing at high rates in several cities of the country, such as Paita, Chincha, Huancayo, Pucallpa, Tarapoto and Arequipa.

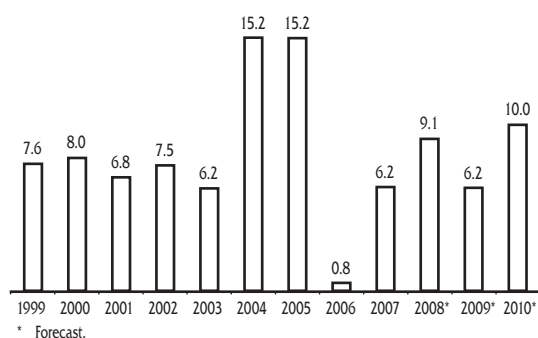
This growth of private consumption was in turn reflected in higher imports of durable consumer goods (which grew 52 percent in the second quarter), and in the sale of new family vehicles (which grew 110 percent in the same period).



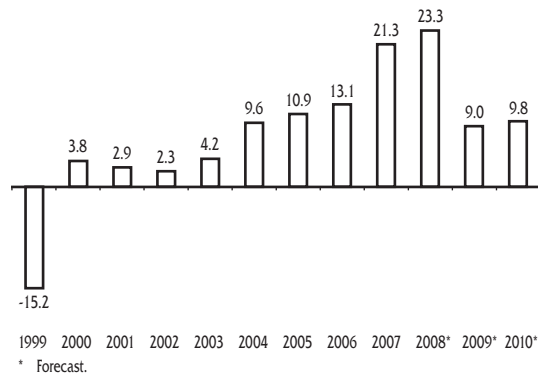
**Graph 13**  
**SALES OF NEW FAMILY VEHICLES**  
(Units)



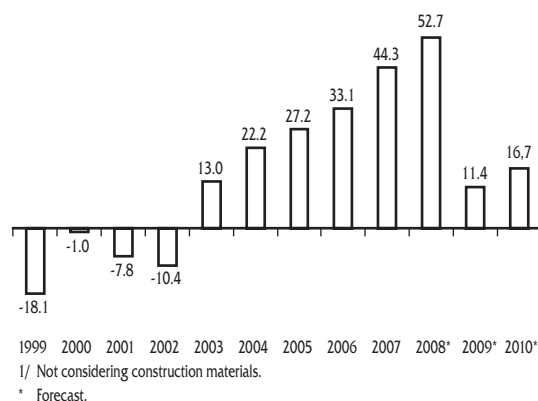
**Graph 14**  
**GROWTH OF EXPORTS OF GOODS AND SERVICES**  
(Real percentage change)



**Graph 15**  
**GROWTH OF IMPORTS OF GOODS AND SERVICES**  
(Real percentage change)



**Graph 16**  
**IMPORTS OF CAPITAL GOODS**  
(Percentage change)<sup>1/</sup>



20. Real **exports** of goods and services would grow 9.1 percent in 2008 due to the higher volumes of both mining and non-traditional products expected. A lower rate of growth is considered for 2009 in a context of lower global demand, although this situation would reverse in 2010 due to the country's increased access to foreign markets through trade agreements and the onset of mining and hydrocarbon projects that should boost traditional exports.

21. Real imports of goods and services would grow around 23 percent in 2008 driven by domestic demand, particularly investment, which has had an important impact on the demand of imports of capital goods. A slowdown of imports is expected since 2009, in line with a scenario of a more moderate growth of GDP and greater global uncertainty.

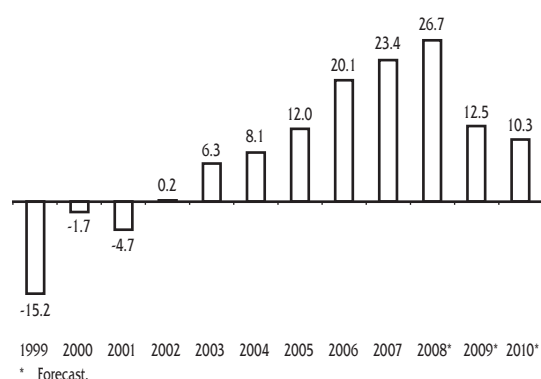
22. **Private investment** continues showing the same dynamism as in previous years, in a context of macroeconomic stability and an optimistic outlook of most firms in all the production sectors. In 2008 it is expected to increase by 26.7 percent, which will allow to continue expanding the economy's productive capacity.

This pace of growth of investment increases both the economy's capital assets and productivity, favoring the growth of the potential output in the next years. Part of this impulse stems from projects such as the works carried out to export Peru LNG's natural gas, Tía María and Toromocho, Southern's expansion in Cujone and Toquepala, as well as from several projects being developed in the sectors of manufacturing, commerce and electricity to expand installed capacity to meet higher levels of domestic demand. In the agricultural sector, it is worth pointing out the projects of modernization and implementation of irrigation infrastructure, and in the fishing sector, the adjustment of equipments to the new legal framework governing the catch of species for indirect human consumption.

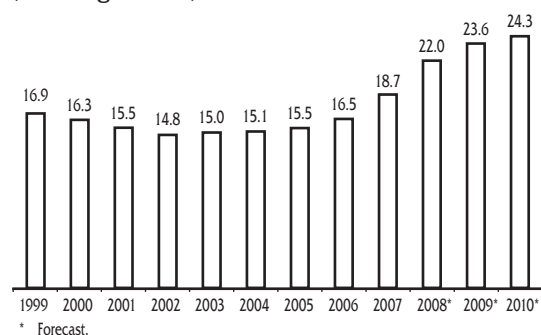
23. According to the BCRP Survey on Macroeconomic Expectations of September 2008, firms' productivity has grown 2.8 percent on average so far this year, particularly in the sectors of agriculture and fishing. According to surveyed firms, this higher productivity results mainly from workers' training, the renewal of machinery, improved logistics, and the optimization of plant spaces, among other reasons.

24. Business' favorable expectations, which remain optimistic (37 percent of entrepreneurs expect the economy to

**Graph 17**  
**GROWTH OF PRIVATE INVESTMENT**  
(Real percentage change)



**Graph 18**  
**FIXED PRIVATE INVESTMENT**  
(Percentage of GDP)



**Table 7**

**GROWTH OF PRODUCTIVITY 2008/2007 (%)**

Sector	Average Productivity
Agriculture and livestock	5.0
Fishing	3.0
Mining and fuel	1.2
Manufacturing	2.8
Electricity, water and gas	1.5
Construction	2.7
Commerce	2.6
<b>Total</b>	<b>2.8</b>

Source: Survey on Macroeconomic Expectations, BCRP, September 2008.

improve in the next 3 months), are reflected in a high number of investment announcements. Together with investment commitments in concessions, announced important projects for the 2008-2010 period would amount to approximately US\$ 35.5 billion.

**Table 8**

**INVESTMENT PROJECTS 2008 - 2010\***  
(Millions of US\$)

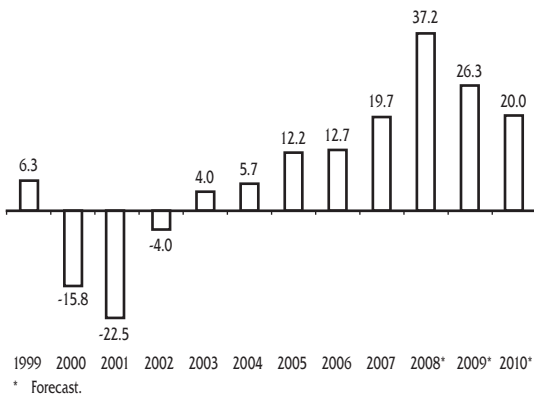
Sector	Investment
Mining	15,377
Fuel	5,168
Electricity	3,328
Telecommunications	1,715
Industrial	4,343
Infrastructure	3,137
Agro-Industry	752
Fishing	160
Other sectors	1,530
<b>Total</b>	<b>35,510</b>

\* Investment in major projects during the period.  
Source: Reports in newspapers, specialized media.

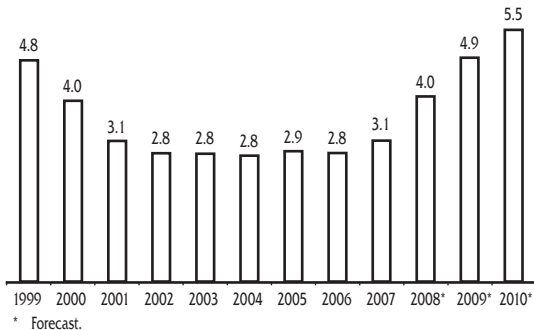
The sustained growth exhibited by private investment and projections for the next years would reflect a private investment to GDP ratio higher than 24 percent in 2010, the highest level observed since the 1950s.

This growth of private investment takes place in a context in which economic agents have raised their expectations of economic growth relative to those discussed in our Inflation Report of May. Financial institutions expect GDP to grow 9.0 percent in 2008, while non-financial firms expect a growth rate of 8.2 percent. Projections for 2009 range between 7.0 and 7.2 percent, while projections for 2010 range between 6.5 and 7.0 percent.

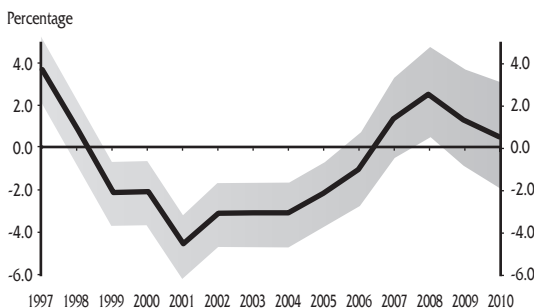
**Graph 19**  
**GROWTH OF PUBLIC INVESTMENT**  
(Real percentage change)



**Graph 20**  
**PUBLIC INVESTMENT**  
(Percentage of GDP)



**Graph 21**  
**GDP GAP**  
(Percentage of potential GDP)



Note: GDP gap estimated with information as of September 2008. The shadowed area represents existing uncertainty in the calculation and forecast of the output gap plus/minus one standard deviation.

Although expectations for 2009 were increasing until August, economic agents have revised their projections downwards due to the international financial crisis.

**Table 9**

**SURVEY ON MACROECONOMIC EXPECTATIONS:**  
**GDP GROWTH**  
(Percentage)

	Survey carried out to:		
	IR May	August	September
<b>FINANCIAL SYSTEM INSTITUTIONS</b>			
2008	7.8	9.0	9.0
2009	7.0	7.1	7.0
2010	6.5	6.5	6.5
<b>ANALYSTS</b>			
2008	7.6	8.7	8.9
2009	6.6	7.2	7.0
2010	6.5	7.3	7.0
<b>NON-FINANCIAL BUSINESSES</b>			
2008	8.0	8.0	8.2
2009	7.0	7.5	7.2
2010	7.0	7.0	7.0

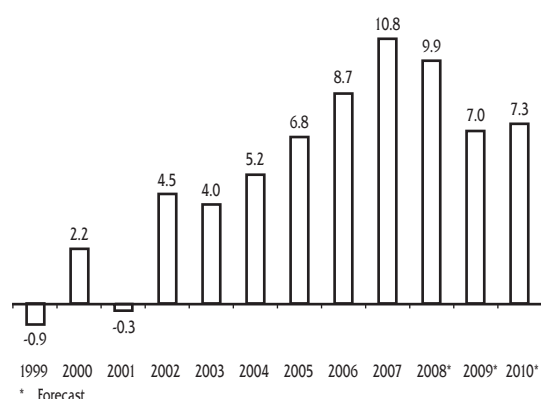
25. The growth of **public investment** has been revised downwards considering the authorities' announcements of expenditure moderation. In the first half of the year, spending in investment would have grown around 60 percent, driven mainly by the expenditure of subnational governments, in contrast with the quite low level of expenditure observed in the first half of 2007. Public investment would grow 37 percent in 2008, while in 2009-2010 it would show increases of over 20 percent.

26. **Potential GDP** should still grow between 7.0 and 7.5 percent during the next years—given committed investment projects or projects currently being implemented— as long as the scenario of international uncertainty does not imply a greater and more prolonged deterioration of growth prospects in the medium term.

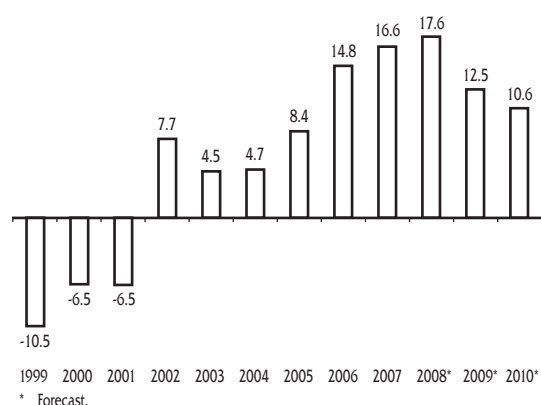
Factors sustaining this growth of potential GDP in the forecast are the accumulation of physical capital derived from investments and the fact that productivity growth rates of 2-3 percent—as estimated in our Inflation Report of May—are being maintained.

GDP in 2008 is estimated to be still above the potential output and should gradually converge to its potential level in the forecast horizon as a result of the deterioration of the international context, a more neutral fiscal position and monetary policy measures aimed at leading inflation gradually back towards the 2 percent inflation target.

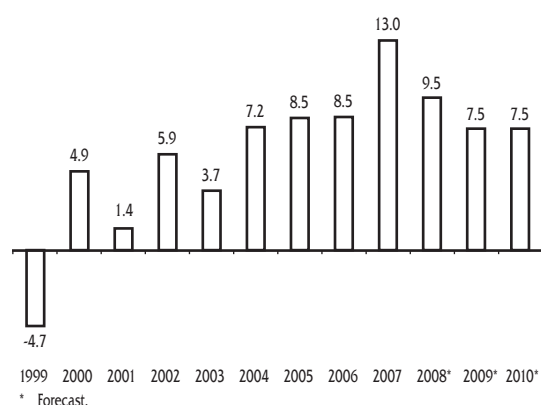
**Graph 22**  
**GROWTH RATE OF NON-PRIMARY SECTORS**  
(Real percentage change)



**Graph 23**  
**GROWTH OF THE CONSTRUCTION SECTOR**  
(Real percentage change)



**Graph 24**  
**GROWTH RATE OF NON-PRIMARY MANUFACTURING**  
(Real percentage change)



## Sector production

27. Non-primary sectors were significantly driven by domestic demand during the first half of 2008. The dynamism of construction was noteworthy due to better levels of incomes associated with higher levels of employment and the implementation of low-cost housing projects, such as the ones promoted by the Mivivienda fund. Road construction, the modernization of infrastructure given in concession and the execution of projects, mainly in the mining sector, also accounted for this growth.

Non-primary manufacturing grew 10.4 percent in the first half of the year, boosted by a higher production of construction materials, massive consumption goods, and products demanded by mining and energy projects. Agroexport-related activities also generated an additional impulse in the production of wood, plastic and glass packing materials.

A deceleration in non-primary sectors is forecast for 2009 due to a more uncertain international environment and to an expected reduction of terms of trade, which would slow down the growth of private consumption. However, led by construction and non-primary manufacturing, these sectors should resume their dynamism as from 2010, in line with the expected recovery of our main trading partners.

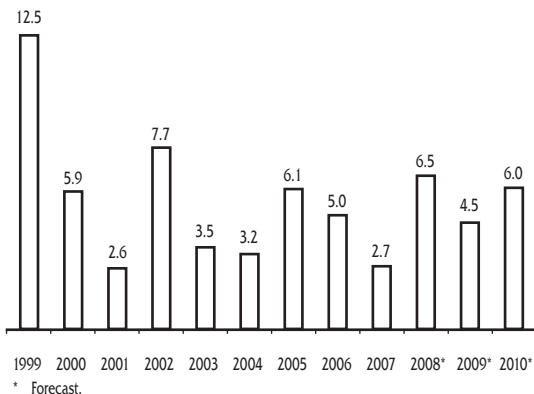
**Table 10**

**GROSS DOMESTIC PRODUCT BY ECONOMIC SECTORS**  
(Real percentage change)

	2007	2008*		2009*		2010*	
		IR May.08	IR Sep.08	IR May.08	IR Sep.08	IR May.08	IR Sep.08
<b>Agriculture and livestock</b>	<b>3.3</b>	<b>2.8</b>	<b>4.9</b>	<b>4.5</b>	<b>3.7</b>	<b>4.5</b>	<b>3.8</b>
Agriculture	2.0	2.4	5.9	5.0	3.6	5.0	3.9
Livestock	5.3	3.5	4.0	3.6	3.3	3.6	3.6
<b>Fishing</b>	<b>6.9</b>	<b>1.5</b>	<b>4.5</b>	<b>5.0</b>	<b>5.1</b>	<b>5.0</b>	<b>5.0</b>
<b>Mining and fuel</b>	<b>2.7</b>	<b>5.2</b>	<b>8.3</b>	<b>5.1</b>	<b>5.3</b>	<b>12.1</b>	<b>9.6</b>
Metallic mining	1.7	5.1	8.6	4.8	5.1	3.5	3.7
Hydrocarbons	6.5	6.0	5.3	8.2	8.2	94.5	67.7
<b>Manufacture</b>	<b>10.8</b>	<b>9.7</b>	<b>9.2</b>	<b>7.8</b>	<b>7.1</b>	<b>7.6</b>	<b>7.0</b>
Raw materials	0.4	6.8	7.5	4.8	5.0	4.7	4.7
Non-primary industries	13.0	10.4	9.5	8.5	7.5	8.2	7.5
<b>Electricity and water</b>	<b>8.5</b>	<b>7.4</b>	<b>8.6</b>	<b>5.6</b>	<b>6.0</b>	<b>6.0</b>	<b>6.4</b>
<b>Construction</b>	<b>16.6</b>	<b>18.0</b>	<b>17.6</b>	<b>11.0</b>	<b>12.5</b>	<b>10.0</b>	<b>10.6</b>
<b>Commerce</b>	<b>9.7</b>	<b>8.2</b>	<b>11.8</b>	<b>6.8</b>	<b>6.8</b>	<b>6.8</b>	<b>6.8</b>
<b>Other services</b>	<b>9.6</b>	<b>7.5</b>	<b>8.2</b>	<b>6.1</b>	<b>6.1</b>	<b>6.3</b>	<b>6.9</b>
<b>GDP</b>	<b>8.9</b>	<b>8.0</b>	<b>9.3</b>	<b>6.5</b>	<b>6.5</b>	<b>7.0</b>	<b>7.0</b>
<b>Primary</b>	<b>2.7</b>	<b>4.3</b>	<b>6.5</b>	<b>4.8</b>	<b>4.5</b>	<b>7.1</b>	<b>6.0</b>
<b>Non-Primary</b>	<b>10.8</b>	<b>8.9</b>	<b>9.9</b>	<b>7.1</b>	<b>7.0</b>	<b>7.0</b>	<b>7.3</b>

IR: Inflation Report.  
\* Forecast.

**Graph 25**  
**GROWTH OF PRIMARY SECTORS**  
 (Real percentage change)



28. In the first half of 2008, **primary sectors** grew at a higher rate than in the first half of the previous year due to the greater dynamism of mining. This evolution was associated with a generalized expansion in the production of all metals, particularly with higher contents of copper in Antamina's production and with the onset of Cerro Verde's project for the production of primary sulfides, as well as with Yanacocha's higher extraction of gold following the completion of its gold mill and onset of operations.

The favorable evolution of the agriculture and livestock sector observed in the first half of the year resulted mainly from increased production for the external and agroindustrial markets in the case of crops such as coffee, sugar cane, asparagus and mango, as well as with a higher production of poultry. Production for the domestic market was affected by high climatic variability, which mainly affected crops in the Sierra (i.e. amilaceous maize) and delayed the harvest of rice and potato.

Normal climatic conditions in agriculture and the onset of operations in mining and hydrocarbon projects are expected for the following years.

Among other products, growth in the agriculture sector would be based on sugar cane, due to the onset of investment projects aimed at expanding cultivation areas, as well as to a better management of maintenance stoppages, which in previous years affected the availability of the raw material. Coffee production would decline after completing a natural cycle of growth, and the production of rice would benefit from the great availability of water stored in reservoirs that we have today.

No significant climatic alterations are expected in the fishing sector and, given the tentative approval of the Vessel Catch Limit (VCL) for anchovy, growth in this sector would be based on extraction for the production of conserves and frozen products, considering also the effect of improved efficiency deriving from mergers and acquisitions carried out in this sector between 2007 and 2008, as well as new investments for the processing of fish for human consumption.

In the case of mining, Cerro Corona's operation at full capacity in 2009 and a steady level of gold production at Yanacocha are considered.

Copper projects, such as Southern's Tía María, should start operations in 2010. Moreover, the gas project at Lot 56 (Pagoreni) developed by Camisea II, which currently produces natural gas liquids, should also start producing and exporting liquefied natural gas as from 2010.

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**BOX 2****ELECTRICITY SUPPLY PROBLEMS: 2008- 2018****The short term (2008-2010)**

Between 2000 and 2007, the maximum demand for electric energy showed an accumulated growth of 49 percent, while effective power supply grew 25 percent. As a result, the reserve margin declined from 55 to 30 percent between 2000 and 2007. Moreover, this margin is estimated to be at around 10 percent at December of this year, while the recommended margin should be at least 20 percent.

Additionally, other supply constraints contribute to reduce this margin today, including the following:

Constraints in terms of hydroelectric generation. The capacity of generating electricity from the potential energy of dammed water declines seasonally between May and November each year due to lower rainfall during this period. However, this reduction has been more restrictive this year than in previous years: the water reserve used to generate electricity in January-July 2008 was 16 percent lower than the average reserve recorded in the same period in 2007 and similar to that of 2005 (the second lowest water reserve in the 2003-2007 period).

Constraints in terms of thermal generation. The thermal generation capacity is currently limited by the capacity of transporting natural gas from Camisea to Lima. This capacity is currently estimated at 293 MMcf per day, of which approximately 200 MMcf are consumed by electricity generators and the rest is consumed by users. Although the total generation capacity of electricity generators today is 1,200 MW, they can only operate at 70 percent of their total capacity due to consumption constraints, and they cannot increase their production because there is no higher effective supply of gas.

In this context, Transportadora de Gas del Perú (TGP), the firm that has the concession of the gas pipeline, has programmed expanding the gas pipeline's capacity to 380 MMcfd for August 2009, implementing a second expansion thereafter to reach a capacity of 450 MMcfd in December of the same year. However, given that new natural gas thermal plants with a generation capacity of 590 MW are projected to be installed in the next two years, the potential demand for natural gas of electricity generators would increase to 430 MMcfd. Therefore, the capacity of the gas pipeline would continue to be a constraint to increase the supply of electric energy even after the expansion works have been completed.

The growth of the demand for electricity with these two constraints has been causing a significant increase in marginal costs at historical maximum levels, such as the US\$ 236 MWh increase recorded in July, also increasing significantly the risk of electricity cuts due to failures at the power plants or to higher demand.

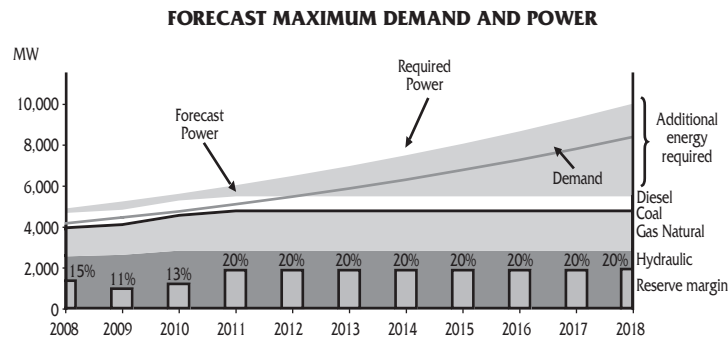
Considering a growth of 7 percent in the next two years and a period of lower rainfall similar to the average one recorded in 2003-2007, similar conditions to the ones observed today are expected in 2009 and 2010 in terms of reserve margin, marginal costs and risks of failure.

In this sense, both a higher growth of demand and a more severe period of lower rainfall would significantly increase the risk of failure, especially between May and November. In practical terms, the suspension of energy supply in a single plant generating 200 MW could result in a transitory rationing of electricity in rush hours during these months.

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## The long term (2008-2018)

In the long term, additional requirements of electricity, consistent with the potential growth of the economy in 2008-2018, are estimated at 5,500 MW, which implies that the supply of electricity should grow at an annual rate of 550 MW.



Note: Average supply/demand balance in each year. Estimates as from 2011 have been calculated using the rate of potential growth (7.5% on average), while data in previous years has been calculated assuming a scenario of average demand (9% in 2008, and 7% in 2009 and 2010). The power required is the additional power (MW) needed to achieve a reserve margin of 20%. Considering the expansion of the natural gas pipeline and commitments of new investments in thermal generation, the capacity should increase by 320 MW in 2009 and by 215 MW in 2011 due to the enhancement of potential capacity at the power stations of Kallpa, Chilca I, Oquendo and Santa Rosa.

Plans of Electricity generation works –included in the Work Program of the last process carried out by Osinergmin to determine electricity block rates– should be implemented between 2008 and 2010 to increase capacity by 826 MW. Therefore, additional projects are still required to increase this capacity by 4,700 MW by 2018. However, the implementation of additional investment projects in generation is still uncertain, increasing significantly the risk of insufficiency of electricity generation in the long term.

Two factors are currently hindering an optimal framework for investment in electricity generation: i) general disincentives to investment in electricity generation due to regulated prices that are significantly lower than marginal costs (during the last 4 years, the average marginal cost was 105 percent higher than the average marginal rate), and tender processes often declared deserted because the maximum prices defined by the regulating entity were lower than the bidders' proposals, and ii) disincentives to investment in hydropower projects, given that the profitability of said projects is lower than in thermal generation projects because the higher initial amount required for the former is not compensated with a lower variable cost.

## Policy recommendations

In balance, policies oriented to the electricity sector should establish two main objectives: in the short term, ensure an unlimited supply of electricity and, in the long term, ensure a growth of supply that is consistent with the growth of demand.

Some measures are currently being implemented today to achieve the short term objective: a) the pipeline of the main grid will be expanded to 450 MMcfd by end 2009, and the possibility of partially and transitorily using the pipeline to export gas to ensure household use is being evaluated; b) lease of generation plants and purchase of small emergency equipments, and c) redistribution of gas consumption to electricity clients in the event of rationing. Since these measures imply direct costs, ensuring the electricity supply implies distributing these costs among the state, generator companies, gas consumers and users of electric energy.

In the long term, policy recommendations would focus on three aspects: i) improve the price formation scheme of energy generation; ii) promote investment in hydroelectricity, and iii) implement complementary measures to ensure the supply of electricity.

As regards the price formation scheme, rates that optimally remunerate investment and marginal costs are required. This would allow evaluating the possibility of: i) flexibilizing administrative interventions in

bidding processes and ii) reducing the disparity between block rates and marginal effective costs. It is worth pointing out that although higher energy rates reduce consumer's wellbeing in the short term, this could have positive effects in the long term as investment opportunities are pinpointed and situations of electricity shortages are prevented.

Moreover, the recent pattern of investment in hydroelectric and thermal generation suggests that it is necessary to implement measures aimed at: i) reducing the profitability differential between these technologies (an additional remuneration for hydropower, the active concession of projects, reducing transaction costs, establishing a tax on gas for electric consumption, etc. could be considered); ii) promoting public investment in hydroelectricity (through PPAs or other modalities), and iii) facilitate access to water resources (e.g. intensifying the use of dams and building new reservoirs).

Finally, additional measures are required to: i) expand the system used to transport gas for domestic consumption, increasing the capacity to at least 1,500 MMcfd by 2018; ii) continue the concession process of transmission grids, and iii) intensify the promotion of natural gas exploration, as well as investment in efficient technologies (natural combined-cycle power plants) and in generation using renewable energies.

### BOX 3

#### METHODS OF ESTIMATING THE GROWTH OF POTENTIAL OUTPUT

The potential output is the flow of GDP that can be sustained over the medium and long term without causing higher inflation. The periods in which GDP remains above the potential level tend to generate upward inflationary pressures, while the periods in which GDP remains below the potential level induce downward inflationary pressures.

This is the reason why one of the determinants of inflation which is continuously monitored for monetary policy purposes<sup>1</sup> is the gap between GDP and its potential level. Other inflation components are imported inflation, production costs, expectations and inflationary inertia, for instance.

It is worth pointing out that the variable measured in each period of time is total GDP, but no information may be inferred from the national accounts about how much of the measured GDP is potential output (non inflationary) and how much is output gap (potentially inflationary). These two variables, which are known as "non observable" variables in economic literature, may be estimated using generally accepted econometric techniques.

$$GDP = \underbrace{Potential\ GDP}_{\substack{\downarrow \\ \text{observable} \\ \text{variable}}} + \underbrace{output\ gap}_{\text{Non-observable variables}}$$

There are several methods to determine the evolution of potential GDP and the gap based on observed GDP. The following methods are used at the BCRP:

1. **The production function method:** A production function in terms of productive factors (capital and labor) and the overall productivity of said factors is established. Capital grows according to the evolution of investment and labor depends on the future growth of the economically active

<sup>1</sup> The connection between estimating the output gap and monetary policy is explained in Box No. 9 of our Inflation Report of September 2006.



population. Additionally, an econometric model explaining the behavior of total factor productivity in terms of possible explanatory variables, such as the growth of terms of trade or the acceleration of investment, is considered. According to this method, the growth of terms of trade and the increase in the growth rate of investment observed in these years account for a productivity gain that sustains part of the increase seen in the growth of the potential GDP.

2. **Output gap consistent with an inflation model:** In this method, an equation is established for the behavior of inflation<sup>2</sup>, which depends on several components including a gap to be estimated. Moreover, it is assumed that the output comprises the potential output and the gap. The product and inflation are observed at every moment, but not the gap behind these two indicators. Using the method devised by Llosa and Miller (2005) for the Peruvian case, an output gap consistent with the two variables observed is derived. According to this method, an increase of inflation which is not explained by factors such as imported inflation is explained by the output gap.
3. **Statistical methods:** Several statistical methods allow decomposing a statistical series into a trend component (potential output) and a cyclical component (output gap). Rodríguez (2007) provides cycle and trend estimations for the Peruvian case using some of these methods. In contrast with the previous methods where the presence of fundamental factors is considered, these methods are only based on the analysis of the statistical properties of the GDP time series.

The production function method allows recording the core factors underlying the sustainable growth of GDP. Thus, a substantial increase is observed in the growth of total productivity factors (TPF) as well as in the growth of capital assets since this decade. Another aspect observed is that the growth rate of capital could up to 4.1 percent as a result of the two-digit growth in fixed gross investment seen in 2007 (23 percent) and of the evolution of this variable expected in the forecast.

The potential GDP would grow 7 percent in the forecast horizon. The factors determining this growth rate mainly include capital, which contributes with a little over 50 percent to this growth rate; labor, which contributes one percentage point; and the increase in total productivity factors, which contributes with nearly 3 points to this growth. Sustaining these growth rates depends crucially on increasing investment and the additional productivity gains that may be generated in the following years.

#### References

Llosa, G. and S. Miller (2005) "Usando información adicional en la estimación de la brecha producto en el Perú: Una aproximación multivariada de componentes no observados", Working paper No. 2005-004, Banco Central de Reserva del Perú. (Reproduced in: The Irving Fisher Committee on Central-Bank Statistics, Bulletin No. 20, April 2005).

Rodríguez, G. (2007), "Application of Three Alternative Approaches to Identify Business Cycles in Peru", Working paper No. 2007-007, Banco Central de Reserva del Perú.

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2 This equation is too known like Neo-Keynesian Phillips curve.

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### III. Balance of payments

*The current account showed a deficit during the first half of the year, reflecting the high growth of domestic demand and the higher prices associated with the international prices of food and fuels, which affected our imports. The evolution of domestic demand was significantly affected by the growth of investment, which translated into a strong increase in imports of capital goods which has a positive impact on the economy's future capacity of production.*

*The current account is expected to continue showing a deficit in 2009 and 2010, considering the effects of the international financial crisis on terms of trade and on the growth of our main trading partners. This would affect the demand for our exports, especially in the case of non-traditional products. On the other hand, considering the levels of domestic saving, growing private investment will have to be in part financed with external saving.*

#### **Current account**

29. In the **first half of 2008** the current account of the balance of payments showed a deficit of 3.8 percent of GDP, compared with a surplus of 0.9 percent of GDP in the same period last year. This is explained by a lower trade surplus associated with the growth of domestic demand and with the higher outlays associated with factor income (mainly foreign firms' profits).
30. Because external conditions, characterized by high uncertainty and great volatility in financial and commodity markets, are expected to deteriorate in the second half of the year, the estimates on our terms of trade have been revised downwards. A lower increase is expected in the prices of exports (5 percentage points below the level expected in May), mainly due to the lower prices expected for copper and zinc. This would be partially

Table 11

**BALANCE OF PAYMENTS**  
(Millions of US\$)

	2007		2008*			2009*		2010*	
	Sem. I	Year	Sem. I	IR May. 08	IR Sep. 08	IR May. 08	IR Sep. 08	IR May. 08	IR Sep. 08
<b>I. CURRENT ACCOUNT</b>									
<b>BALANCE</b>	<b>464</b>	<b>1,516</b>	<b>-2,495</b>	<b>-1,549</b>	<b>-4,222</b>	<b>-4,024</b>	<b>-4,143</b>	<b>-4,299</b>	<b>-4,572</b>
<i>As percentage of GDP</i>	0.9	1.4	-3.8	-1.1	-3.2	-2.7	-3.0	-2.7	-3.0
1. Trade balance	3,783	8,356	2,381	6,352	3,648	3,120	27	3,027	-441
a. Exports	12,488	27,956	16,185	33,407	32,527	35,205	29,712	38,677	32,930
b. Imports	-8,705	-19,599	-13,804	-27,055	-28,879	-32,085	-29,685	-35,651	-33,371
2. Services	-514	-928	-855	-1,668	-1,786	-1,737	-1,472	-1,805	-1,591
3. Investment income	-3,961	-8,408	-5,381	-9,030	-8,939	-8,424	-5,511	-8,805	-5,560
4. Current transfers	1,156	2,495	1,360	2,797	2,855	3,018	2,814	3,284	3,020
Remittances	985	2,131	1,184	2,374	2,454	2,585	2,400	2,840	2,596
<b>II. FINANCIAL ACCOUNT</b>	<b>3,789</b>	<b>8,898</b>	<b>10,324</b>	<b>9,549</b>	<b>10,222</b>	<b>5,924</b>	<b>4,343</b>	<b>5,299</b>	<b>4,772</b>
<i>Of which:</i>									
1. Private sector	3,644	9,002	6,714	9,628	11,343	6,883	5,579	6,814	5,671
2. Public sector	-742	-2,473	-1,490	-2,985	-1,432	-252	-662	-552	-656
3. Short-term capital	607	2,030	3,543	1,558	106	-989	-394	-1,122	-48
<b>III. NIR FLOWS (=I+II)</b>	<b>4,253</b>	<b>10,414</b>	<b>7,830</b>	<b>8,000</b>	<b>6,000</b>	<b>1,900</b>	<b>200</b>	<b>1,000</b>	<b>200</b>
Memo:									
International reserves									
balances	21,528	27,689	35,519	35,689	33,689	37,589	33,889	38,589	34,089
NIR/GDP (%)	21.7%	25.4%	29.3%	26.4%	25.8%	25.4%	24.6%	24.1%	22.4%

IR: Inflation Report.

\* Forecast.

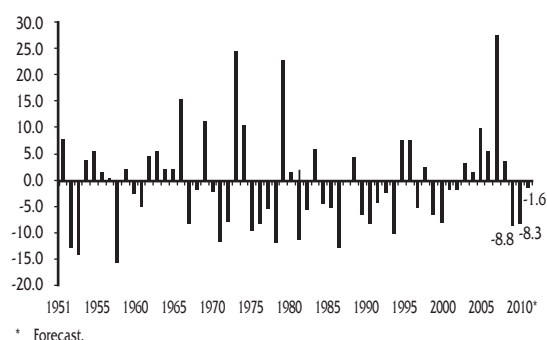
offset by the lower prices of imports, particularly fuels and food. In addition to the effect caused by the deterioration of terms of trade, the volume of imports is estimated to grow by 25 percent this year, which would imply that the deficit in current account will rise to 3.2 percent of GDP (versus the 1.1 percent deficit considered in our previous Report).

This tightening of global economic conditions would continue affecting the volume of trade during **2009** and **2010**, generating a drop in the demand for our export products, lower terms of trade and a reduction in the flow of remittances sent to our country. Consequently, a deficit of 3.0 percent of GDP is projected in the current account in 2009 and 2010. Requirements of external saving would be more than compensated by flows of private capital, particularly long-term capitals associated mainly with the development of investment projects in several sectors of economic activity.

**Terms of trade**

*In 2008, terms of trade would decline 8.8 percent due to the 18.0 percent increase observed in the prices of imports, particularly oil and food (wheat, maize and rice). The prices of*

**Graph 26**  
**TERMS OF TRADE**  
(Percentage change)



\* Forecast.

exports, on the other hand, would show an annual average growth of 7.6 percent. These forecasts are made in a context of high uncertainty regarding the real effects of the international financial crisis.

31. The higher prices of imports and exports are explained by the evolution of prices during the first 7 months of the year (in July, the price of copper was above US\$ 4 per pound and oil reached a record level of US\$ 145.3 per barrel). However, the prices of commodities recorded a significant downward correction since July, and particularly in October, in line with expectations of a global slowdown in a context of a deeper financial crisis.

At current prices, it is estimated that terms of trade would decline 8.3 and 1.6 percent in 2009 and 2010, respectively.

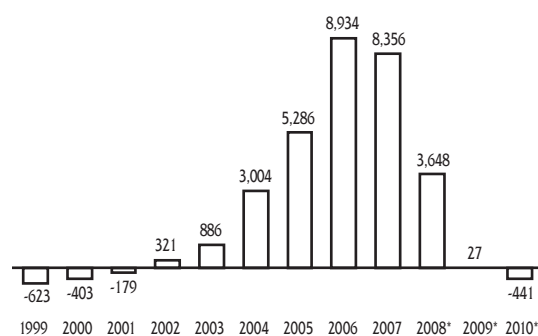
**Table 12**

**TERMS OF TRADE, EXPORT AND IMPORT PRICES**

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*	2009*	2010*
<b>Indices (1994=100)</b>												
Terms of trade	89.6	88.0	86.5	90.8	90.9	99.5	105.1	133.9	138.8	126.6	116.0	114.1
Export price index	95.1	98.4	93.6	96.5	105.4	129.3	151.1	206.9	235.7	253.8	221.2	221.9
Import price index	106.1	111.7	108.2	106.3	115.9	130.0	143.8	154.5	169.9	200.5	190.6	194.5
<b>Var%</b>												
Terms of trade	-8.1	-1.8	-1.7	5.0	0.1	9.5	5.6	27.4	3.6	-8.8	-8.3	-1.6
Export price index	-7.7	3.5	-4.9	3.2	9.2	22.7	16.8	36.9	14.0	7.6	-12.8	0.3
Import price index	0.5	5.3	-3.2	-1.7	9.0	12.1	10.6	7.4	10.0	18.0	-4.9	2.0

\* Forecast.

**Graph 27**  
**TRADE BALANCE**  
(Millions of US\$)



\* Forecast.

**Trade balance**

32. The trade balance would deteriorate along the forecast horizon, showing a negative result of US\$ 0.4 billion in 2010 due to the deceleration of economic activity in our main trading partners and to its impact on exports –mainly on non traditional exports–, as well as to the lower price of metals, particularly copper and zinc. However, the trade deficit would be offset in 2010 by the onset of operations of the Camisea gas project for the external market and by the recovery of global demand.

Table 13

**TRADE BALANCE**  
(Millions of US\$)

	2007		2008*			2009*		2010*	
	Sem. I	Year	Sem. I	IR May. 08	IR Sep. 08	IR May. 08	IR Sep. 08	IR May. 08	IR Sep. 08
<b>EXPORTS</b>	<b>12,488</b>	<b>27,956</b>	<b>16,185</b>	<b>33,407</b>	<b>32,527</b>	<b>35,205</b>	<b>29,712</b>	<b>38,677</b>	<b>32,930</b>
<i>Of which:</i>									
Traditional products	9,587	21,493	12,454	25,750	24,512	26,276	21,179	28,285	23,194
Non-traditional products	2,827	6,288	3,630	7,467	7,781	8,731	8,328	10,185	9,517
<b>IMPORTS</b>	<b>8,705</b>	<b>19,599</b>	<b>13,804</b>	<b>27,055</b>	<b>28,879</b>	<b>32,085</b>	<b>29,685</b>	<b>35,651</b>	<b>33,371</b>
<i>Of which:</i>									
Consumption goods	1,424	3,191	2,076	4,126	4,382	4,926	4,753	5,831	5,203
Raw materials	4,573	10,416	7,456	14,659	14,969	16,921	14,318	17,635	15,776
Capital goods	2,663	5,885	4,220	8,154	9,418	10,121	10,500	12,064	12,276
<b>TRADE BALANCE</b>	<b>3,783</b>	<b>8,356</b>	<b>2,381</b>	<b>6,352</b>	<b>3,648</b>	<b>3,120</b>	<b>27</b>	<b>3,027</b>	<b>-441</b>
Note: % Change									
Exports	19.3	17.5	29.6	19.5	16.4	5.4	-8.7	9.9	10.8
Imports	24.0	31.8	58.6	38.0	47.3	18.6	2.8	11.1	12.4
Export volume index	2.2	3.1	10.3	5.8	8.9	7.2	7.4	12.2	8.6
Import volume index	22.1	19.8	48.8	14.6	25.1	16.1	8.2	10.3	10.2

IR: Inflation Report.  
\* Forecast.

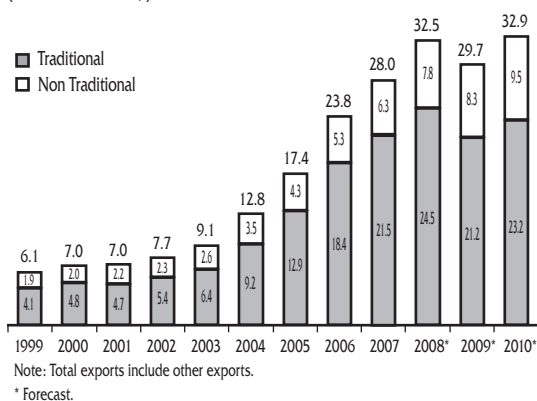
**Exports**

33. Exports grew 30 percent in the **first half of 2008**, following the recent trend associated with a greater diversification of products and access to new markets for non-traditional products. The increase observed in exports of copper and gold was noteworthy in the case of traditional exports, while higher exports of agricultural, textile and chemical products were noteworthy in the case of non-traditional exports.

The value of exports would decline in **2009** since the price of traditional products is expected to drop and lower demand is expected for non-traditional products due to economic slowdown in USA, the European Union and Japan, which together account for approximately 46 percent of our exports of goods. This would mainly affect exports of textile products, whose main market is the United States (textile exports to USA grew 7 percent in 2006, but have slowed down at a rate of 1 percent in the first eight months of 2008).

Exports would then recover in **2010** due to the onset of operations at Camisea II and several mining projects (Tía María, Southern's expansion, among other projects), which would increase traditional exports. On the other hand, non-traditional exports would recover, in line with projections of global growth and due to the continuous diversification of markets, a trend that would be

**Graph 28**  
**EXPORTS OF GOODS**  
(Billions of US\$)

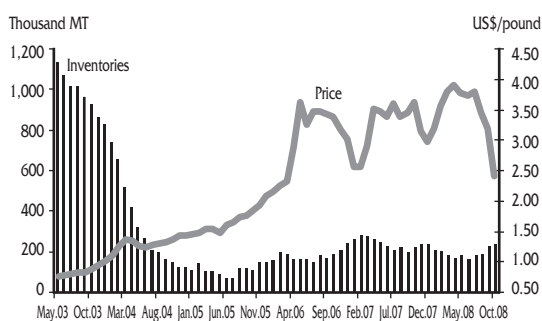


accentuated given the international context expected for 2009.

Because of the deepening of the international crisis and of its impact on global demand for raw materials, the prices of the main basic metals are being corrected downwards since July 2008. In a context of increased risk aversion and uncertainty, the price of gold, on the other hand, maintains its attraction as a hedge, which sustains its price.

### Copper

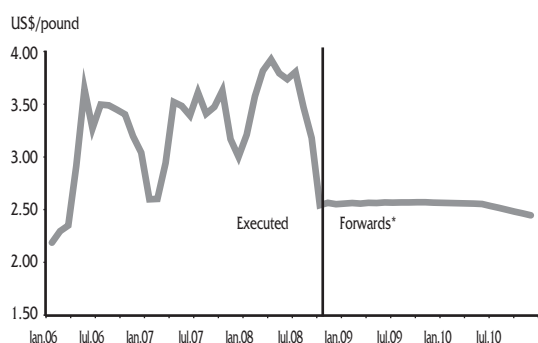
**Graph 29**  
**COPPER PRICE AND INVENTORIES**



Source: Bloomberg, London Metal Exchange, COMEX and Shanghai Metal Exchange.

34. Compared with December 2007, the price of copper has fallen around 35 percent during 2008 (the average price on October 22 reached US\$ 1.94 per pound). However, the evolution of the price of copper has been quite volatile during the year, with three different periods having been observed: (i) a first period between January and April, when the price of copper increased by 33 percent; (ii) a period of high volatility, between April and June, when copper reached a maximum price of US\$ 4.07 per pound, and (iii) a period of declining prices between July and October (37 percent).

**Graph 30**  
**COPPER: SPOT AND FORWARD PRICES**

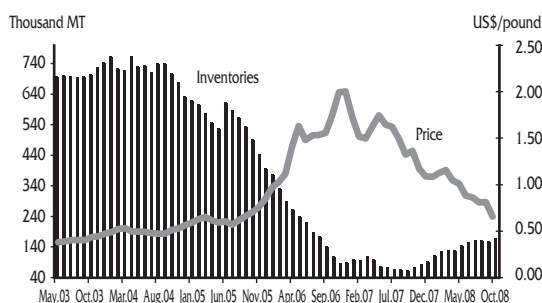


\* Average price in the last 15 days as of October 16, 2008.

The lower prices observed since early July were associated with expectations of a lower global demand –particularly in the automotive and construction sectors of USA, Europe and Japan– and with higher inventories in metal exchange markets. In the last weeks, the price’s downward trend was sharper and only partially offset by production problems in Indonesia (Grasberg mine) and Chile (La Escondida). The price of copper would range between US\$ 2.40 and US\$ 2.60 per pound in the forecast horizon.

### Zinc

**Graph 31**  
**ZINC PRICE AND INVENTORIES**



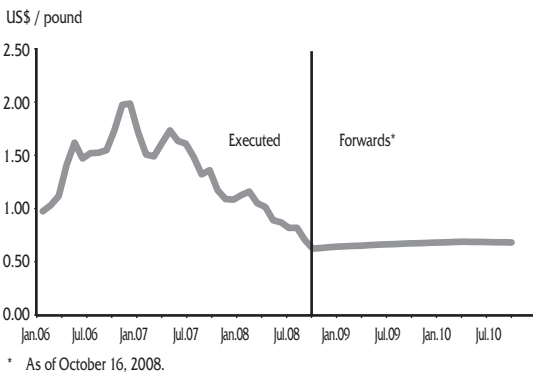
Source: Bloomberg and London Metal Exchange.

35. The price of zinc has dropped 50 percent so far in 2008, reaching a level of US\$ 0.51 per pound on October 22. In addition to fears of a global slowdown, this reflects the ample balance between supply and demand in the case of this basic metal.

Data for the first half of the years show that the supply of zinc concentrates grew 10 percent compared to the same period in 2007 due to higher production in Australia, Bolivia, China and Peru, while the production of refined zinc increased 3.2 percent due to increased supply from China, India, Japan and Korea.

No pressures are observed on the demand side either; the demand for zinc grew 2.1 percent mainly because China shifted from being a net exporter (121 thousand tons) to being a net importer (28 thousand tons) of zinc. In Europe,

**Graph 32**  
**ZINC: SPOT AND FORWARD PRICES**



on the other hand, the demand for this metal decreased 7.8 percent (France, Germany and Italy), while USA and Japan recorded a similar demand to the one observed in the same period in 2007. The average price of zinc would range between US\$ 0.6 and US\$ 0.7 per pound in the next two years.

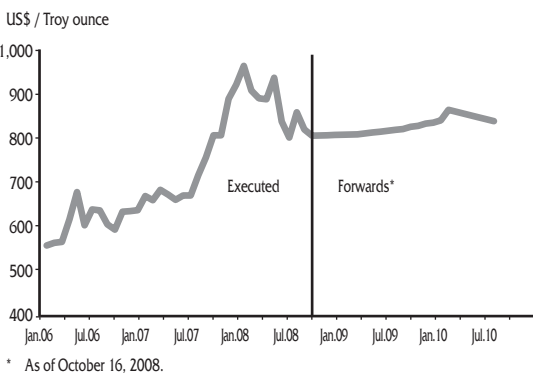
**Gold**

36. Until October 8, the price of gold increased 9.6 percent relative to December 2007 and reached a level of US\$ 916 per troy ounce (declining thereafter to US\$ 744 on October 22). Until March 2008, it showed a sustained upward trend, posting a record level of US\$ 1,011 per ounce due to increased uncertainty and international financial turbulence –which increased risk aversion–, the depreciation of the dollar, inflationary pressures and the high prices of oil.

As from April, the price of gold began showing a downward correction, reaching US\$ 741.8 per ounce in the first week of September, in a context of a drop in the price of oil and a strengthening of the dollar against the euro.

The price of gold has rebound again in the last weeks due to global financial developments, which has increased the demand for gold as a hedge asset. More recently, the price of gold has stabilized again as a result of higher confidence in the financial rescue plans implemented by the United States and Europe. The price of gold is expected to range between US\$ 790 and US\$ 850 per ounce in the forecast horizon.

**Graph 33**  
**GOLD: SPOT AND FORWARD PRICES**

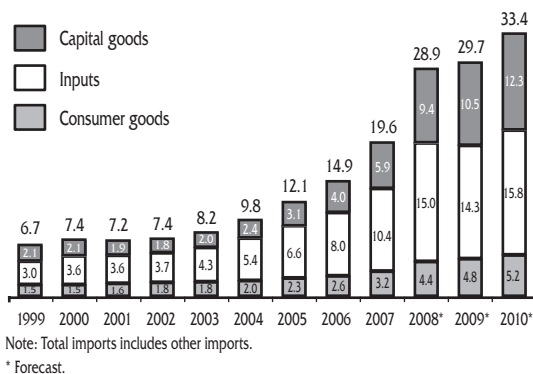


**Imports**

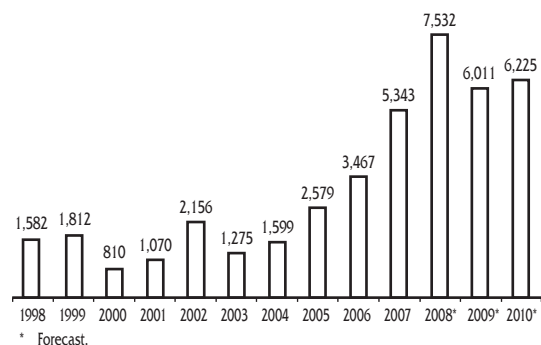
37. In the **first half of 2008**, imports grew 59 percent, boosted by the dynamism of private investment and economic activity. The higher imports of raw materials and capital goods for industry were noteworthy. Likewise, food imports increased significantly, mainly because of the prices of wheat and soy bean, while imports of oil and derivatives increased due to the higher price of crude in the international market of fuels. During the second half of 2008 imports would continue showing a high growth, although lower than the one observed in the first half of the year.

In **2009 and 2010**, the rate of growth of imports should gradually decline, in part due to the lower growth expected in demand and in part due to the onset of the pre-operation stage of several investment projects. Projects to be implemented in the forecast horizon would include Camisea II (in the south of the country),

**Graph 34**  
**GOOD IMPORTS**  
(Billions of US\$)



**Graph 35**  
**FLOW OF FOREIGN DIRECT INVESTMENT**  
(Millions of US\$)



\* Forecast.

Tía María (Arequipa), Toromocho (Junín), Lot 67 (Amazonas), and Bayovar's Fosfate Plant (Piura), among other projects.

### Financial account

38. During the **first half of 2008**, the financial account of the balance of payments was characterized by a strong increase in the flow of short term external flows –due mainly to indebtedness in the sector of non-financial firms–, as well as by an increase in long term private sector disbursements and direct foreign investment.

In **2008**, foreign investment and new disbursements for long term loans would amount to US\$ 10.3 billion, a result mainly explained by a flow of US\$ 7.5 billion of direct foreign investment (DFI), as well as by lower outflows of domestic capitals.

**Table 14**

### PRIVATE FINANCIAL ACCOUNT AND SHORT-TERM CAPITALS

(Millions of US\$)

	I Sem.07	2007	I Sem.08	2008*	2009*	2010*
<b>DIRECT INVESTMENT AND LONG-TERM LOANS</b>	<b>4,253</b>	<b>8,678</b>	<b>5,476</b>	<b>9,794</b>	<b>6,666</b>	<b>6,997</b>
A. Direct investment	3,023	5,343	4,344	7,532	6,011	6,225
B. Long-term loans	1,230	3,336	1,132	2,262	655	772
<b>PORTFOLIO INVESTMENT</b>	<b>-609</b>	<b>323</b>	<b>1,238</b>	<b>1,549</b>	<b>-1,087</b>	<b>-1,325</b>
A. Bonds and capital participation	89	130	137	137	0	0
B. Other external assets and liabilities	-698	194	1,101	1,412	-1,087	-1,325
a. Assets						
(foreign investment) 1/	-959	-485	260	1,072	-1,150	-1,381
b. Liabilities						
(investment from non-residents) 2/	261	679	841	339	64	56
<b>SHORT-TERM CAPITAL</b>	<b>607</b>	<b>2,030</b>	<b>3,543</b>	<b>106</b>	<b>-394</b>	<b>-48</b>
A. Banks	1,355	2,538	1,746	-891	-394	-48
Of which BCRP	330	850	1,043	-408	-394	-48
B. Others	-748	-508	1,797	997	0	0

\* Forecast.

1/ Including AFPs, Mutual Funds, Insurance companies and other entities. The positive (negative) sign indicates capital inflows (outflows), that is, sales (purchases) of foreign assets by local institutional investors.

2/ The positive (negative) sign indicates capital inflows (outflows), that is, sales (purchases) of domestic assets by non-residents.

Considering that the favorable expectations on the evolution of economic activity will remain unchanged, investments of US\$ 6.0 billion and US\$ 6.2 billion are estimated in the baseline forecast scenario for 2009 and 2010, respectively. It should be pointed out that an eventual negative impact of the international financial crisis could imply a reduction in the credit lines for some investment projects, in which case DFI could decline.



The flow of foreign investment considered is mainly oriented to the mining and hydrocarbon sector, as well as to telecommunications, electricity, road infrastructure, agroindustry and the petrochemical sector.

Local institutional investors would continue diversifying their portfolio towards financial assets abroad in an international context of moderate uncertainty.

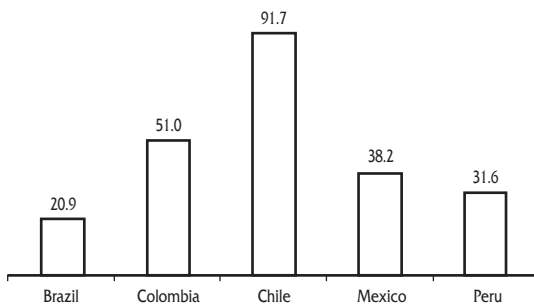
39. The reserve requirement measures announced by the BCRP since last year were aimed at fostering financial entities' long term financing, seeking to prevent in this way that banks could be exposed to abrupt financing cuts as the one seen in September 1998, when short term credit lines contracted in the context of the Russian crisis. As a result of this, long term funding from abroad has increased by 546 percent, reaching a level of US\$ 3,454 million at September, while short term credit lines have only increased 31 percent and amount to US\$ 2,460 million.

Table 15

**BANKS' EXTERNAL FUNDING**  
(Millions of US\$)

	Short-Term		Long-Term	
	Millions of US\$	% of total	Millions of US\$	% of total
December 2006	754	72	300	28
August 2007	1,747	77	532	23
December 2007	2,238	50	2,230	50
August 2008	2,860	45	3,453	55
September 2008	2,460	42	3,454	58
% change Sep 08/07		31%		546%

**Graph 36**  
**EXTERNAL VULNERABILITY**  
(Short-term liabilities / NIR)



Projected data for 2008.

Source: Moody's, May 2008 and BCRP.

40. It is worth pointing out the importance of this type of long term external financing for the sustainability of the balance of payments, as it reduces the economy's vulnerability face adverse external events. International Reserves at the Central Bank would remain around US\$ 34 billion during 2008-2010, a sum representing over three times Peru's total amount of short term liabilities, both public and private, which makes the Peruvian economy one of the least vulnerable economies in the region.

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## IV. Public finances

*In a scenario characterized by uncertainty in international financial markets and by high volatility in commodity prices, public finances are expected to continue showing a surplus position in the forecast period. An economic result of 2.4 percent of GDP is estimated for 2008, which represents an increase compared to the level forecast in our previous Report (2.2 percent), while an economic result of 1.1 and 0.9 percent of GDP is expected for 2009 and 2010, respectively.*

*The saving generated will allow to moderate pressures on the current account of the balance of payments, in a context in which maintaining a cautious position vis-à-vis the probable negative effects stemming from international financial markets is advisable.*

### Overall balance

41. In the **first half of 2008**, the Non Financial Public Sector (NFPS) showed a surplus of 5.1 percent of GDP, a result 1.6 percentage points lower than the one recorded in the same period in 2007.

This lower result is explained by the strong growth of public investment (64.7 percent in real terms) compared with the first half of 2007, when difficulties were observed in the execution of projects, particularly in regional and local governments.

Broken down by government levels, this surplus was mainly due to the national government (4.8 percent of GDP) and to all regional governments (1.0 percent). In contrast, the rest of the general government, which includes local governments, and public enterprises showed a deficit of 0.7 percent of GDP.

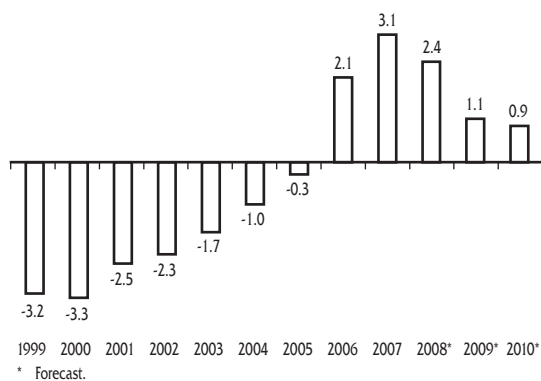
Table 16

**NON-FINANCIAL PUBLIC SECTOR**  
(Percentage of GDP)

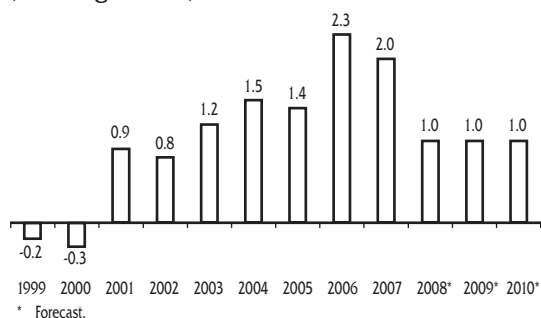
	2007		2008*			2009*		2010*	
	I Sem.	Year	I Sem.	IR May. 08	IR Sep. 08	IR May 08	IR Sep. 08	IR May. 08	IR Sep. 08
<b>1. General government</b>									
<b>current revenue</b>	21.8	20.7	21.7	20.4	20.8	20.3	19.4	20.3	19.2
Real percentage change	15.5	13.6	7.9	5.3	6.9	4.4	-3.1	6.5	5.5
<b>2. General government</b>									
<b>non-financial expenditure</b>	13.6	16.0	14.7	16.7	16.8	17.2	17.0	17.5	17.1
Real percentage change	5.2	6.9	17.5	12.1	11.6	7.7	5.1	7.9	7.6
Of which:									
a. Current	11.8	12.9	12.0	12.8	12.9	12.6	12.4	12.4	12.0
Real percentage change	5.3	4.5	10.1	5.9	6.2	3.2	-0.5	4.2	3.4
b. Capital	1.7	2.9	2.6	3.7	3.7	4.4	4.4	4.9	5.0
Real percentage change	3.7	19.4	68.3	40.6	38.1	21.9	24.6	18.4	19.5
<b>3. Other</b>	0.3	0.2	-0.2	0.1	0.0	0.0	0.1	0.0	0.1
<b>4. Primary balance (1-2+3)</b>	8.5	4.9	6.7	3.7	4.0	3.1	2.6	2.8	2.2
<b>5. Interests</b>	1.8	1.8	1.6	1.5	1.6	1.4	1.5	1.3	1.3
<b>6. Overall balance</b>	<u>6.7</u>	<u>3.1</u>	<u>5.1</u>	<u>2.2</u>	<u>2.4</u>	<u>1.7</u>	<u>1.1</u>	<u>1.5</u>	<u>0.9</u>
Central government current revenues	19.2	18.2	19.1	17.9	18.2	17.8	16.7	17.8	16.5
Central government non-financial expenditure	14.2	14.9	12.0	14.8	14.7	14.9	14.1	15.1	13.9

\* Forecast.

**Graph 37**  
**OVERALL BALANCE OF THE NON FINANCIAL PUBLIC SECTOR**  
(Percentage of GDP)



**Graph 38**  
**STRUCTURAL PRIMARY BALANCE OF THE NON FINANCIAL PUBLIC SECTOR**  
(Percentage of GDP)



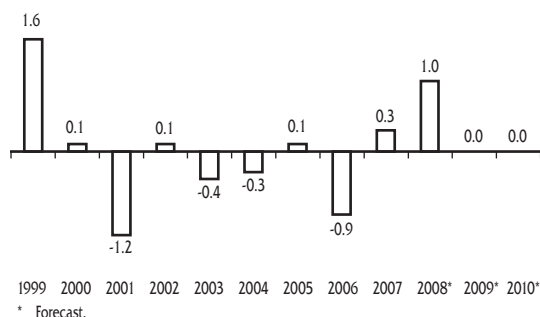
42. In the second half of 2008, public investment (which includes the investment of the general government and state enterprises) is expected to moderate its dynamism, accumulating a real increase of 37.2 percent at end 2008. This deceleration of expenditure in the second half of the year would lead to an economic result of 2.4 percent in the Non Financial Public Sector in **2008**.

**Economic surpluses** of 1.1 and 0.9 percent of GDP are expected for **2009 and 2010**, respectively. These results are lower than the ones estimated in our Report of May.

**Primary structural balance**

43. The primary structural balance, which isolates the effects of the economic cycle and of the prices of main mineral exports from the primary conventional result, shows the performance of fiscal accounts in a scenario where the product is permanently at its potential level. Therefore, this indicator provides an evaluation of fiscal policy decisions. This result would decline from a surplus of 2.0 percent of GDP in 2007 to 1.0 percent in the forecast horizon.

**Graph 39**  
**FISCAL IMPULSE**  
(Percentage of GDP)

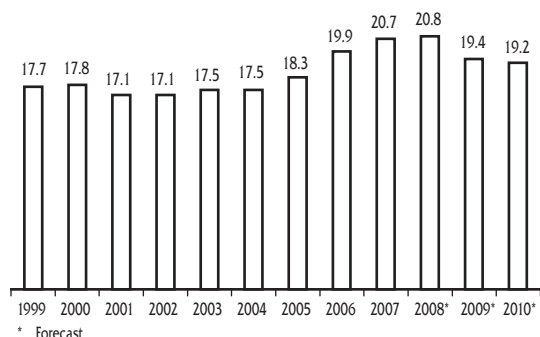


44. The fiscal impulse –indicator showing the net effect of fiscal policy on domestic demand– would be 1.0 percent of GDP in 2008, indicating that, despite the expected fiscal surplus, fiscal policy would be expansionary this year –even more than in the previous year–, whereas the fiscal impulse would be neutral in the next years.

**Evolution of fiscal revenue**

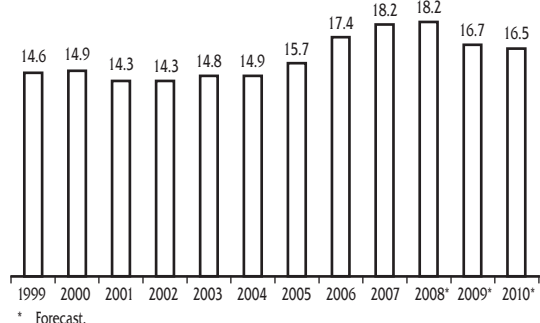
45. In the **first half of 2008**, the current revenue of the general government amounted to 21.7 percent of GDP –which represented a growth of 7.9 percent in real terms–, mainly as a result of economic dynamism, the high international prices of exports and crude, and the growth of employment.

**Graph 40**  
**GENERAL GOVERNMENT CURRENT REVENUE**  
(Percentage of GDP)



In **2008** the revenue of the general government would amount to 20.8 percent of GDP, which represents a growth of 6.9 percent in real terms –a higher result than the one estimated in our previous report (5.3 percent)–, explained mainly by the higher dynamism of economic activity observed in 2008 compared with that expected in the Inflation Report of May.

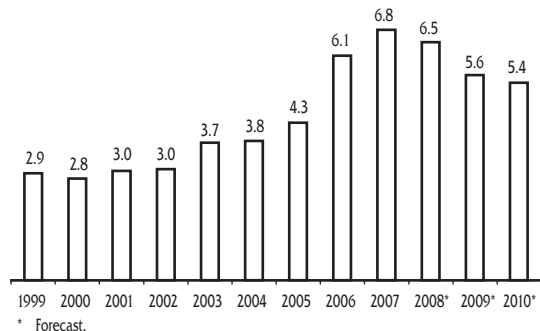
**Graph 41**  
**CENTRAL GOVERNMENT CURRENT REVENUE**  
(Percentage of GDP)



The revenue of the general government in **2009 and 2010** would be lower than the ones foreseen in the May Report, basically due to the drop projected in the prices of our exports which would have a direct impact on the collection of income tax in the mining and hydrocarbon sector. The forecasts also include programmed reductions in the rates of the tax on financial transactions –ITF– (from 0.07 percent to 0.06 percent in 2009) and in the temporary tax on net assets –ITAN– (from 0.5 percent to 0.4 percent in 2009).

**Evolution of fiscal expenditure**

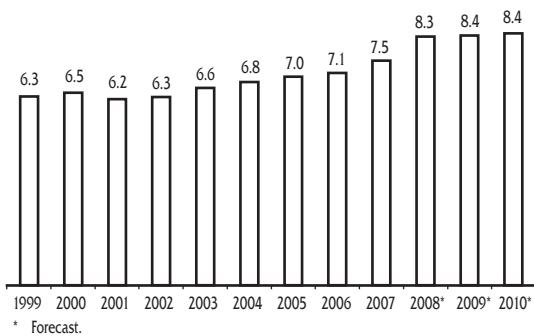
**Graph 42**  
**INCOME TAX**  
(Percentage of GDP)



46. In the **first half of 2008**, the **non financial expenditure of the general government** increased 17.5 percent in real terms, mainly due to a real 68.3 percent increase observed in gross capital formation in the general government compared with the first half of 2007. Although public investment increased in all the government levels, this was led by local governments (100 percent in real terms), followed by regional governments (53.4 percent), public enterprises (38.3 percent) and the national government (23.0 percent). Moreover, the current expenditure of the general government also increased, although at a lower rate (10.1 percent).

Public investment is expected to moderate its dynamism in the second half of the year, thus increasing by a real

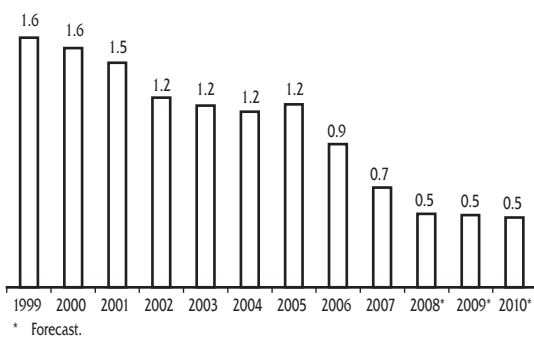
**Graph 43**  
**VALUE ADDED TAX**  
(Percentage of GDP)



37.2 percent in 2008. Accordingly, the real growth of non financial expenditure would be 11.6 percent, slightly lower than the one considered in our May Report.

Payments for a total of S/. 2,150 million to refineries and fuel importers, executed in the frame of the Fuel Price Stabilization Fund, are considered in the 2008 non financial expenditure. The resources that will be used for this purpose are expected to decline next year as the international price of crude declines, and the Fund's debt could even be completely compensated.

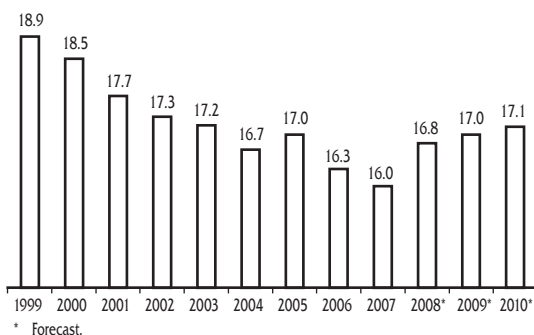
**Graph 44**  
**REVENUE FROM IMPORT DUTIES**  
(Percentage of GDP)



In **2009 and 2010**, the non financial expenditure of the general government is expected to grow by a real 5.1 and 7.6 percent. This growth is mostly explained by the dynamism of public investment, which would grow at faster pace than GDP, showing levels of over 5 percent of GDP in 2010.

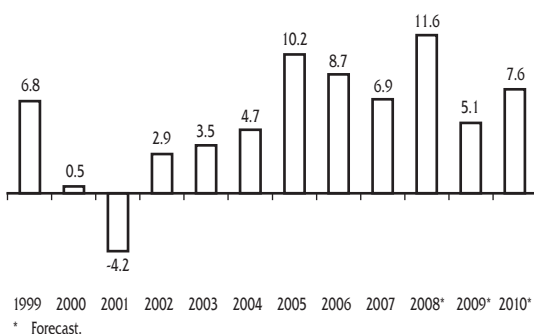
In the forecast horizon, current expenditure would grow at a lower pace than economic activity, given that public investment would show a higher yet sustainable dynamism. Given the infrastructure gap, an increase in public investment is justified to increase the economy's productivity in general. A mechanism that would contribute to improve the quality of expenditure on the side of investment is the Regional and Local Public Investment Promotion Fund (FONIPREL), a contestable fund that will co-finance as from this year the projects of local and regional governments that have high social profitability.

**Graph 45**  
**GENERAL GOVERNMENT NON-FINANCIAL EXPENDITURE**  
(Percentage of GDP)



47. Forecasts on the growth of expenditure between 2008 and 2010 are in line with the limits set forth in the Fiscal Responsibility and Transparency Law, which establishes that the annual increase of the central government's expenditure in consumption shall not be higher than 4 percent in real terms, including total spending in salaries, pensions, goods and services.

**Graph 46**  
**GENERAL GOVERNMENT NON-FINANCIAL EXPENDITURE**  
(Real percentage change)



Moreover, it should be pointed out that due to the public saving generated over the last years, the Fiscal Stabilization Fund shows a balance of US\$ 1,787 million (1.4 percent of GDP) at September 30. Furthermore, increasing the limit of saving that can be accumulated in this Fund from 2 to 4 percent has been considered in the draft law of Financial Equilibrium for 2009.

## Financial requirements

48. Together with projected external disbursements and bond placements, the positive overall balance that would be obtained in the NFPS during this year and in the next years would allow increasing the NFPS deposits, even after settling programmed public debt amortizations. This is reflected in the evolution of internal sources, which show an accumulation throughout the forecast period that would increase the public sector assets.

Table 17

### FINANCIAL REQUIREMENTS OF THE NON-FINANCIAL PUBLIC SECTOR 1/

(Millions of US\$)

	2007		2008*			2009*		2010*	
	I Sem.	Year	I Sem.	IR May. 08	IR Sep. 08	IR May. 08	IR Sep. 08	IR May. 08	IR Sep. 08
<b>I. Uses</b>	<b>-2,636</b>	<b>-1,743</b>	<b>-2,209</b>	<b>-929</b>	<b>-1,246</b>	<b>-966</b>	<b>-261</b>	<b>-744</b>	<b>17</b>
1. Amortization	771	1,506	1,117	1,968	2,002	1,541	1,190	1,734	1,358
a. External	621	1,172	971	1,335	1,450	756	965	907	1,110
b. Internal	150	334	145	633	552	785	225	827	248
Of which:									
Pension bonds	74	134	51	131	126	137	137	144	144
2. Overall balance (negative sign indicates surplus)	-3,407	-3,250	-3,326	-2,897	-3,248	-2,507	-1,450	-2,478	-1,341
<b>II. Sources</b>	<b>-2,636</b>	<b>-1,743</b>	<b>-2,209</b>	<b>-929</b>	<b>-1,246</b>	<b>-966</b>	<b>-261</b>	<b>-744</b>	<b>17</b>
1. External	104	974	641	1,158	966	656	355	479	479
2. Bonds 2/	386	869	473	1,042	473	500	326	500	310
3. Internal 3/	-3,127	-3,586	-3,323	-3,129	-2,684	-2,121	-941	-1,723	-771

Memo:

Balance of gross public debt

Millions of US\$	29,833	31,870	30,573	32,447	30,988	32,024	30,665	31,481	30,372
As percentage of GDP	30.1	29.6	25.2	24.0	23.8	21.7	22.2	19.6	20.0

Balance of net public debt 4/

Millions of US\$	18,928	19,061	15,864	16,318	16,387	13,122	14,690	10,126	13,151
As percentage of GDP	19.1	17.5	13.1	12.1	12.6	8.9	10.7	6.3	8.6

IR: Inflation Report.

\* Forecast.

1/ The effect of exchanging treasury bonds by longer-maturity bonds, as well as the effect of placements made for the prepayment of both internal and external operations has been isolated in the case of amortization and disbursements.

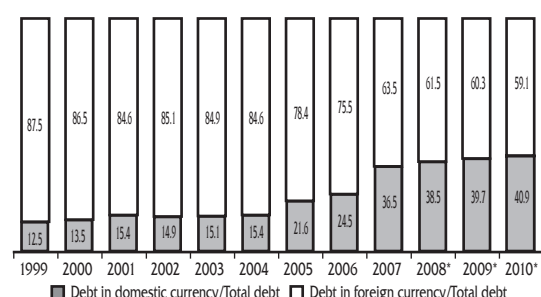
2/ Includes domestic and external bonds.

3/ Positive sign indicates overdraft and negative sign indicates higher deposits.

4/ Defined as the difference between gross public debt and NFPS deposits.

Source: BCRP and MEF.

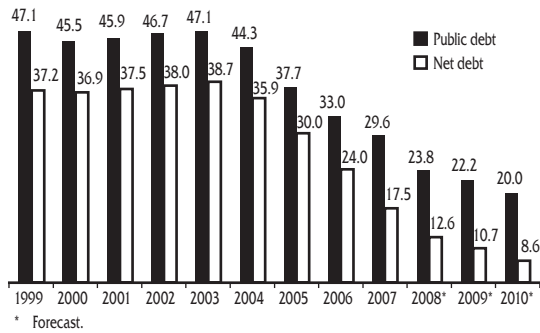
Graph 47  
PUBLIC DEBT BY CURRENCY  
(Percentage share)



\* Forecast.

49. Through an appropriate management of liabilities, the government has been able to reduce the debt by US\$ 1,005 million in 2008 –US\$ 167 million with the CAF and US\$ 838 million in Brady Bonds–, of which 85 percent was paid with own resources. As a result of these operations, the risk of refinancing the debt has been reduced given that the average life of the debt has been increased to 11.47 years as of June 2008. Additionally, the exchange risk has also been decreased: it is estimated that the debt in domestic currency as of December 2008

**Graph 48**  
**PUBLIC DEBT**  
(Percentage of GDP)



should reach 38.5 percent and that this trend should continue to increase reaching levels of over 41 percent of the overall public debt in 2010.

50. A reduction is also observed in the net debt –indicator of the position of net liabilities and of the public sector’s insolvency–, which is expected to decline by 4.9 percentage points to a level of 12.6 percent of GDP. The net debt should continue to decline even further thereafter reaching a level of 8.6 percent of GDP in 2010. This lower net debt will be achieved due to the public sector’s lower financing requirements as a result of the fiscal surpluses foreseen and, consequently, of the respective accumulation of deposits.

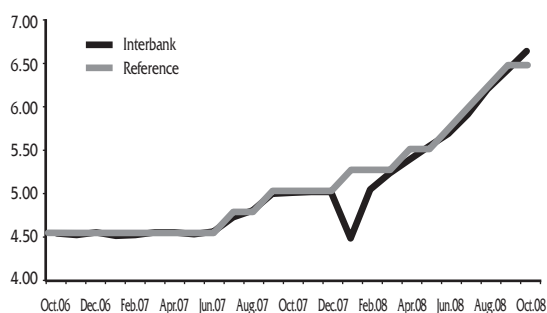
## V. Monetary policy

Since the publication of our last Inflation Report and until the month of September, the Central Bank has raised the monetary policy reference on several occasions, increasing it from 5.50 to 6.50 percent between May and September 2008 with the aim of leading inflation to gradually return to the target range and of preventing that the rises seen in the international prices of food and fuels would translate into inflation expectations, in a context of high growth of domestic demand.

After the international crisis aggravated in the second half of September, extreme volatility was generated in international markets, with the prices of metal, hydrocarbon and food commodities dropping very significantly and the world's stock markets plunging due to fears that this could lead to a more severe recession or, a financial turmoil, with insolvent banks and the disruption of money markets.

In this context, in October the Central Bank decided to make a pause in its monetary policy position adjustments and decided to maintain the reference interest rate at 6.50 percent, responding to economic agents' higher preference for liquidity –associated with international uncertainty– through the use of BCRP market instruments and through the flexibilization of the reserve requirement regime.

**Graph 49**  
**INTERBANK INTEREST AND REFERENCE INTEREST RATE\***  
(In percentage)



\* As of October 22.

51. The BCRP is continuously monitoring the evolution of inflation in order to adopt the necessary preventive measures required so that inflation falls within the target range, considering the lags with which monetary policy affects the economy and prices. The instrument used by the Central Bank for this purpose is the reference interest rate for operations in the interbank market.

The Board's Communiques on the Monetary Program have emphasized that the evolution of accumulated inflation in

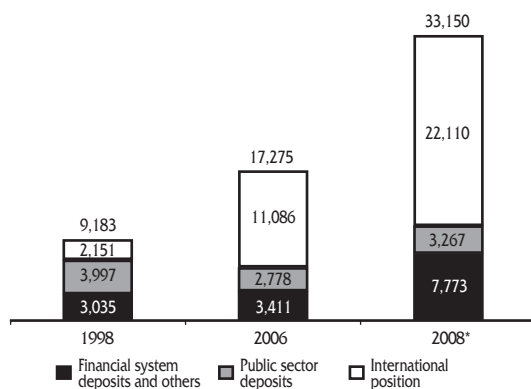


the last 12 months has been mainly influenced by rises in the international prices of food and fuels, in a context of high dynamism of domestic demand.

During 2008, inflation continued falling above the upper band of the target range (3 percent), mainly due to the effect of the higher international prices of grains and fuels on the prices of domestic foodstuffs and to the second-round effects observed in the prices of the rest of the products included in the basic consumer basket (CPI goods not associated with food and energy).

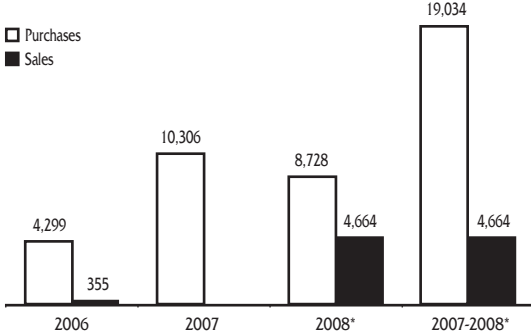
This evolution of inflation has increased the public's expectations of inflation in the forecast horizon. Thus, expectations of inflation for 2009 have increased from between 3.0 and 4.0 percent in May to between 4.0 and 4.2 percent in September. Moreover, expectations of inflation for 2010 have also increased from a range of 2.5 - 3.6 percent to a range of 3.0 - 4.0 percent.

**Graph 50**  
**NET INTERNATIONAL RESERVES**  
(Millions of US\$)



\* Data as of October 20.

**Graph 51**  
**PURCHASES AND SALES OF US DOLLARS IN THE EXCHANGE MARKET**  
(In millions of US\$)



\* Data as of October 23.

52. In this context, the Central Bank raised the reference interest rate on four successive occasions (by 25 basis points each), as a result of which this rate increased from 5.50 in May to 6.50 percent in September 2008. However, in October the Board of the Central Bank decided to make a pause in monetary policy adjustments, and approved to maintain the reference interest rate at 6.50 percent due to high uncertainty on the evolution of global economy and its impact on global economic activity, terms of trade and international financial flows.

53. Furthermore, in order to act effectively when required, the BCRP has been preventively accumulating international reserves. The accumulation of reserves acts as a level of self-insurance that guarantees the availability of international liquidity in the event of a financial crisis. Thus, complementing the accumulation of international reserves through reserve requirements in foreign currency, purchases of dollars in the exchange market between the beginning of 2007 and April 2008 amounted to US\$ 19,304 million, while sales of foreign currency since June amount to only US\$ 4,664 million. In this sense, the international financial position of the BCRP is quite sound since net international reserves as of October 20 amount to US\$ 33,150 million, a sum 3.6 times higher than that of December 1998.

54. In the current context of international financial uncertainty, the Central Bank adopted measures to provide financial entities with greater flexibility to manage liquidity.

Reserve requirements on long term loans/debits from abroad were eliminated in October, which allowed the immediate injection of US\$ 100 million to the financial system and a total of US\$ 2,495 million was sold to banks as of October 24. Additionally, the Central Bank implemented a new instrument to provide liquidity in dollars to banks by carrying out repo operations in foreign currency, both through auctions and through direct sales (which until then had been restricted only to soles).

The rate of reserve requirements in domestic and foreign currencies was reduced on October 22. The marginal reserve requirements in foreign currency was lowered from 49 to 35 percent as from October, and increases in loans from abroad in domestic and foreign currency were also exempted from reserve requirements. Moreover, the marginal reserve requirement in soles was also eliminated, which implied that the average rate of reserve requirements declines from approximately 11 percent to 9 percent.

55. A series of monetary policy are in place in order that the Central Bank can act immediately and as required to meet banks' needs of liquidity. These instruments have recurrently been used to face the international crisis, which was initially reflected in the reduction of preferences for emerging debt, the dollarization of institutional investors' positions, and an increase in the balance of net purchases in the market of forwards.

**Table 18**

**CENTRAL BANK INSTRUMENTS**

Domestic currency	Foreign currency
Repo auctions	Repo auctions
Direct Repos	Direct Repos
Rediscount operations	Rediscount operations
Swaps (auctions and desk)	Swaps (auctions and desk)
Purchases of US dollars	Sales of US dollars
Change in average and marginal reserve requirements	Change in average and marginal reserve requirements

56. Thus, the Central Bank actions implemented between September and October 24 have been oriented to ensuring that there is liquidity in the financial system. The BCRP has intervened in the money and exchange market, and has injected liquidity in soles and in dollars through:

- Sales of dollars: the BCRP has sold US\$ 4,502 million of the US\$ 8,728 million accumulated since January 2008 to provide liquidity in dollars to the financial system during the crisis.

- Placement of CDRBCRP for a total of S/. 1,985 million. The CDR is an instrument indexed to the exchange rate through which banks can hedge their forward operations.
- The term for REPO operations was extended to up to three months.
- Swaps in dollars to provide liquidity in soles to the financial entities that do not have BCRP Certificates or BTPs as collaterals.

**Table 19**

**OPERATIONS OF THE BCRP**

(Millions of nuevos soles)

	2006	2007	2008*	Oct.2008
<b>I. INTERNATIONAL POSITION</b>	<b>11,696</b>	<b>26,464</b>	<b>4,783</b>	<b>-9,309</b>
<b>(Millions of US\$)</b>	<b>3,636</b>	<b>8,536</b>	<b>1,955</b>	<b>-3,008</b>
1. Foreign exchange operations	2,861	7,070	1,851	-2,522
A. FOREX trading	3,944	10,306	3,947	-2,495
B. Public sector purchases	-1,084	-3,275	-2,235	-125
C. Other entities	1	39	139	97
2. Other operations	775	1,466	105	-486
<b>II. DOMESTIC ASSET NET</b>	<b>-10,044</b>	<b>-23,294</b>	<b>-3,855</b>	<b>9,255</b>
1. Public Sector Deposits (Net)	-5,434	-6,751	-6,711	-188
2. Temporary purchases of securities	-2,850	0	5,739	5,739
3. BCRP Certificates of Deposit	-389	-13,393	11,189	1,443
4. BCRP indexed Certificates of Deposits (CDR)	1,202	0	-1,985	-1,985
5. BCRP Certificates of Deposits of Restricted Negotiation	0	0	-12,118	2,726
6. Term deposits	0	0	-283	0
7. Overnight deposits	-188	227	-259	209
8. Reserve deposits in domestic currency	-488	-746	-1,693	-319
9. Rest	-1,897	-2,631	2,266	1,629
<b>III. MONETARY BASE</b>	<b>1,652</b>	<b>3,170</b>	<b>928</b>	<b>-54</b>
<b>Memo 1: Balances associated at Net International Assets components</b>				
1. Public sector deposits	10,172	16,922	23,635	23,635
2. Temporary purchases of securities	0	0	5,739	5,739
3. CDBCRP	8,066	21,458	10,269	10,269
4. CDRBCRP	0	0	1,985	1,985
5. CDBCRP-NR	0	0	12,118	12,118
6. Term deposits	0	0	283	283
7. Overnight deposits	247	20	279	279
8. Reserve deposits in domestic currency	2,176	2,922	4,615	4,615
<b>Memo 2: Balance at the end of period</b>				
+ Monetary base	11,687	14,857	15,786	15,786
+ Total balance sterilized	18,598	38,712	49,026	49,026

Source: BCRP.

\* As of October 24.

57. The BCRP will continue evaluating developments in the current international financial context and their possible implications in the domestic market, and should this be required, will adopt any necessary measures to ensure monetary stability and to safeguard stability in terms of payments and credit.

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**SUMMARY OF THE BCRP COMMUNIQUÉS ON THE  
MONETARY PROGRAM  
June 2008 – October 2008**

**June:** The Board of the Central Reserve Bank of Peru approved to raise the monetary policy reference interest rate from 5.5 to 5.75 percent. Together with the series of monetary adjustments implemented so far this year, this increase in the reference interest rate is aimed at preventing that the rises observed in the international prices of food and fuels will translate into higher inflation expectations in a context of a high pace of growth of both public and private expenditure. In this way, inflation is expected to gradually return to the target range in a context of high and sustained economic growth. The Board will continue to oversee the evolution of inflation and its determinants, particularly in terms of indicators of pressures on demand and inflation expectations.

**July:** The Board of the Central Reserve Bank of Peru approved to raise the monetary policy reference interest rate from 5.75 to 6.0 percent. Together with the series of monetary adjustments implemented so far this year, this increase in the reference interest rate is aimed at preventing that the rises observed in the international prices of food and fuels will translate into higher inflation expectations in a context of a high pace of growth of both public and private expenditure. The Board also approved to raise banks' reserve requirements in domestic currency and in foreign currency as from August. The Board will continue to oversee the evolution of inflation and its determinants, particularly in terms of indicators of demand pressures and expectations of inflation. The Board also reiterates that any required adjustments will be implemented in order to ensure inflation's gradual convergence to the target range in a context of sustained economic growth

**August:** The Board of the Central Reserve Bank of Peru approved to raise the monetary policy interest rate from 6.0 to 6.25 percent, thus accumulating an increase of 175 basis points in this rate since July 2007. Together with the other monetary adjustments implemented since the beginning of this year, these measures are aimed at steering inflation to gradually return to the target range and at preventing that the rises in the international prices of food and fuels may translate into inflation expectations in a context of a higher growth of domestic demand than that of the potential output. The Board will continue to oversee the evolution of inflation and its determinants, particularly in terms of indicators of demand

pressures and expectations of inflation. The Board also reiterates that any required adjustments will be implemented in order to ensure inflation's gradual convergence to the target range.

**September:** The Board of the Central Reserve Bank of Peru approved to raise the monetary policy interest rate from 6.25 to 6.50 percent, thus accumulating an increase of 200 basis points in this rate since July 2007. Together with the other monetary adjustments implemented since the beginning of this year, these measures are aimed at steering inflation to gradually return to the target range and at preventing that the rises in the international prices of food and fuels may translate into inflation expectations in a context of a higher growth of domestic demand than that of the potential output. However, a reduction is being observed in the international prices of food inputs and fuels, originated in the slowing of industrialized economies, and should be reflected in domestic prices. Together with the slower pace of growth expected in the expansion of domestic demand and in inflation expectations, this trend should allow inflation's convergence to the target range. The Board will continue to oversee the evolution of inflation and its determinants, particularly in terms of indicators of demand pressures and expectations of inflation, and will continue to adjust the monetary stance to ensure inflation's gradual convergence to the target range

**October:** The Board of the Central Reserve Bank of Peru approved to maintain the monetary policy reference interest rate at 6.50 percent. This decision has been made considering high uncertainty regarding the evolution of global economy and its impact on global economic activity, the international prices of our exports and imports, and international financial flows. It should be pointed out that the recent drops observed in the prices of commodities and fuels, as well as the downward trend observed in the prices of imported foodstuffs favor a gradual reduction of inflation in the country. The Board will continue to oversee the development of the national and international economic and financial situation, as well as the evolution of inflation and its determinants in order to adopt any necessary measures required to preserve monetary stability in a context of sustained growth.

- 
58. The monetary operations carried out by the Central Bank are aimed at regulating liquidity in the money market in order to influence the interbank interest rate to converge towards the monetary policy reference rate. The interbank interest rate serves as a benchmark for other rates in nuevos soles, affecting especially operations with lower risks and shorter maturities, given that these type of operations depend less on other factors, such as credit risks or long-term inflation expectations.

59. The rates on passive operations in nuevos soles showed higher levels than in May, particularly in the case of longer terms. Thus, the rates on 6-month and 12-month deposits increased from 5.0 to 5.6 percent and from 5.5 to 5.7 percent, respectively.

60. The 3-month corporate prime rate increased from 6.2 to 7.2 percent (100 bps) between May and September 2008, an evolution explained by the fact that the reference interest rate was raised from 5.50 to 6.50 percent in the same period. With this, the spread between the interbank interest rate and the corporate prime rate in soles was around 60 basis points in September 2008.

**Table 20**

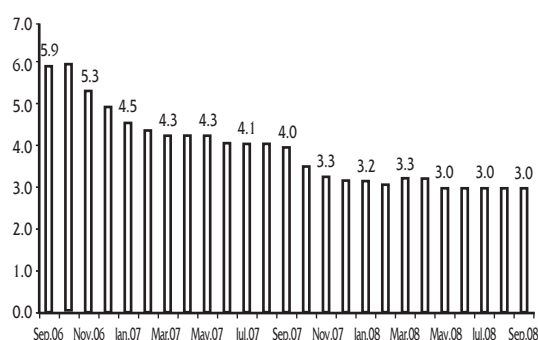
**INTEREST RATES IN NUEVOS SOLES**

(In percentage)

	May. 2007	Sep. 2007	Dec. 2007	May. 2008	Sep. 2008	Oct.* 2008
1. Reference interest rate	4,5	5,0	5,0	5,5	6,5	6,5
2. Deposits up to 30 days	4,5	4,9	4,8	4,8	5,8	6,3
3. Rate on 31-day to 180-day	4,8	5,0	5,3	5,0	5,6	5,8
4. Rate on 31-day to 180-day term deposits	5,5	5,5	5,6	5,5	5,7	5,7
5. Corporate prime rate	5,2	5,5	5,6	6,2	7,2	7,7
6. Average rate on loans up to 360 days	13,3	12,8	13,2	13,6	14,4	14,7
7. Average lending rate, constant structure	16,5	16,1	16,3	16,6	16,9	16,9

\* As of October 14.

**Graph 52**  
**RATIO OF NON PERFORMING LOANS/CURRENT DIRECT CREDITS LENT BY BANKS TO MICROBUSINESSES**



61. The other interest rates on banks' active operations showed a mixed conduct. The rates on commercial loans increased from 9.6 to 10.5 percent, while the rates on consumer loans and on loans to microbusiness declined from 32.8 to 31.6 percent and from 35.3 to 35.0 percent, respectively. Strong competition for this market segment and lower credit risk perception given declining levels of non-performing loans would account for this evolution.

**Table 21**

**INTEREST RATES IN NUEVOS SOLES**

(In percentage)

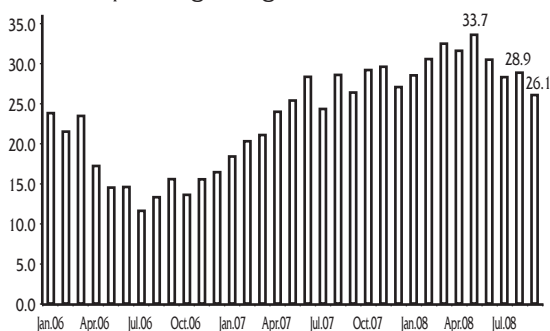
Date	Monetary policy rate	Corporate	Interbank	Commercial	Microbusiness	Consumer
Dec. 06	4.50	5.23	4.51	9.46	39.05	34.79
Dec. 07	5.00	5.60	4.99	8.99	35.60	33.54
Jan. 08	5.25	5.56	4.44	8.97	35.47	33.83
Feb. 08	5.25	5.54	5.02	8.97	35.29	35.10
Mar. 08	5.25	5.59	5.21	9.20	35.44	34.10
Apr. 08	5.50	6.05	5.37	9.46	35.43	33.65
May. 08	5.50	6.20	5.53	9.64	35.34	32.82
Jun. 08	5.75	6.27	5.68	9.65	35.13	32.47
Jul. 08	6.00	6.59	5.91	9.85	35.01	32.06
Aug. 08	6.25	6.84	6.21	10.10	35.03	31.99
Sep. 08	6.50	7.18	6.43	10.45	35.02	31.80
Oct. 08*	6.50	7.72	6.80	10.52	34.95	31.60

\* As of October 14.

62. Moreover, the average active rate on credit operations (TAMN) carried out in this period, which includes operations with different risk levels, rose from 23.6 percent in May to 24.3 percent in September 2008.

### Evolution of currency

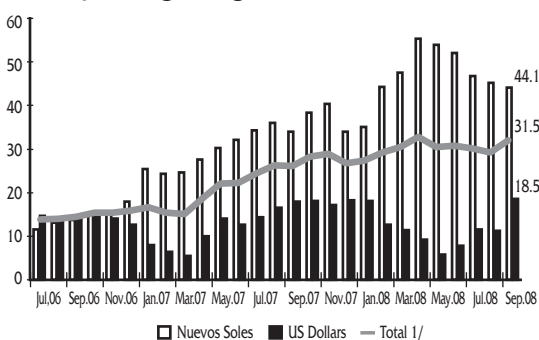
**Graph 53**  
**CURRENCY**  
(12 month percentage change)



63. During 2008, the evolution of currency in circulation has been influenced by the dynamism of economic activity, the pace of dedollarization, and interest rates. In the first half of the year, the high growth of currency in circulation, which increased from 27.1 percent in December 2007 to 30.6 percent in June, was mainly associated with GDP's high growth (9.7 and 10.9 percent during the first and the second quarter, respectively) and with a rapid decline in the dollarization ratio, which fell from 47 to 40 percent between December 2007 and March 2008. This ratio continued showing similar levels in the second quarter.

In the third quarter, the lower pace of growth of currency in circulation was associated with the slowing of economic activity (GDP would have grown 8.2 percent during this period), with a slight increase in the dollarization ratio, and with a stricter monetary policy stance, aimed at leading inflation back to the target.

**Graph 54**  
**LIQUIDITY OF THE PRIVATE SECTOR**  
(Annual percentage change)



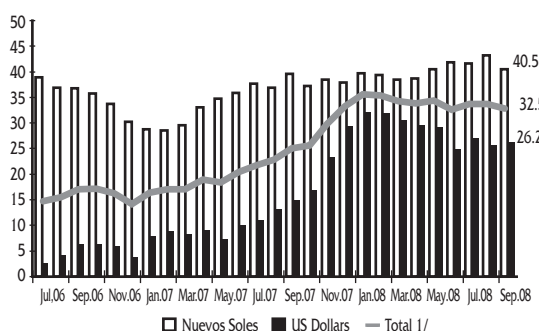
1/ At constant exchange rate at December 2007.

### Liquidity and credit

64. Liquidity in the private sector (currency in circulation plus deposits) as of September showed a higher dynamism. The annual rate of growth of overall liquidity increased from 29.9 to 31.5 percent between May and September.

As regards liquidity components by currencies, liquidity in nuevos soles showed a last-12 month growth of 44.1 percent as of September. On the other hand, liquidity in foreign currency showed a faster pace of growth, recording a last-12 month growth of 18.5 percent in the same period (higher than the 5.8 percent rate observed in the month of May 2008). The expansion of term deposits (27.1 percent in the last 12 months) was noteworthy in terms of liquidity components.

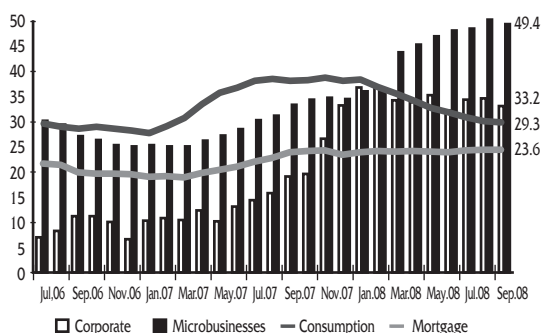
**Graph 55**  
**CREDIT TO THE PRIVATE SECTOR**  
(Annual percentage change)



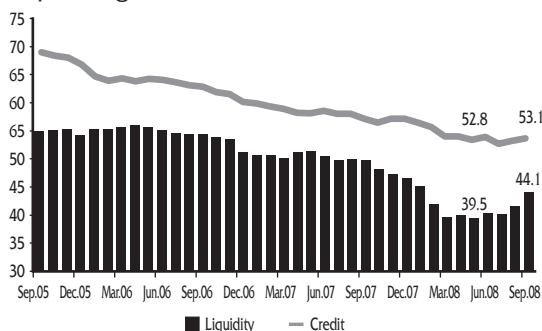
1/ At constant exchange rate at December 2007.

65. The growth of credit to the private sector declined slightly between May and September 2008. Thus, in September, credit to the private sector showed a last 12-month growth of 32.5 percent (34.1 percent in May). This lower dynamism was more evident in the case of credit in foreign currency, whose rate of growth declined by 2.9 percentage points (from 29.1 to 26.2 percent between May and September), while credit in domestic currency maintained a rate of growth of 40.5 percent.

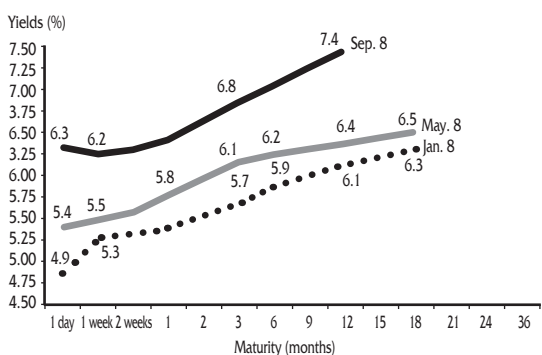
**Graph 56**  
**CREDIT TO THE PRIVATE SECTOR BY TYPE**  
(Annual percentage change)



**Graph 57**  
**DOLLARIZATION OF LIQUIDITY AND CREDIT TO THE PRIVATE SECTOR**  
(In percentage)

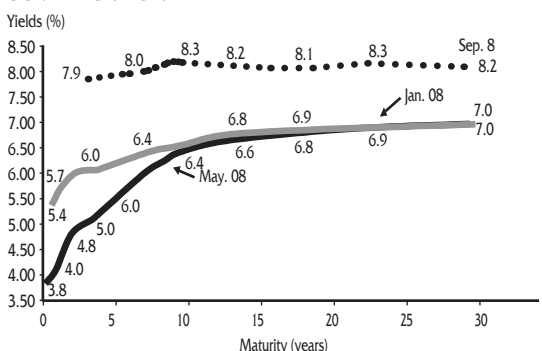


**Graph 58**  
**PRIMARY MARKET OF CDBCRP<sup>1/</sup>**



<sup>1/</sup> Average yield auctioned in the period.  
The Jan. 8 and Sep. 7 rates are for CDBCRP and the ones of May, 8 are for CDBCRP-NR.

**Graph 59**  
**SECONDARY MARKET OF PUBLIC TREASURY SOVEREIGN BOND<sup>1/</sup>**



<sup>1/</sup> Average of the yields negotiated in the period.

By type of credit, consumer loans showed a lower pace of growth, with its last 12 month growth rate declining from 32.2 percent in May to 29.3 percent in September. The expansion of corporate loans declined by 2.1 percentage points, showing a rate of growth of 33.2 percent in the last 12 months at September. Credit to microbusinesses continued showing the upward trend observed in the previous months, recording a rate of 49.4 percent as of September, while mortgage loans continued growing at an annual rate of 23.6 percent.

66. Between May and September the dollarization ratio of liquidity increased from 39.5 to 44.1 percent (4.6 percentage points) due to higher taking of deposits in foreign currency and to the appreciation of the dollar against the nuevo sol. The dollarization ratio of credit increased slightly (0.3 percentage points).

**Fixed income market**

67. Interest rates for different maturity terms react differently to monetary policy actions. The transmission of rates is greater in the case of short-term rates which respond more to the conditions of the overnight market where the Central Bank's operations with entities in the financial system concentrate, whereas longer-term rates are also affected by risk factors associated with liquidity, credit, and inflation.

68. A tendency towards higher short and long term interest rates is observed in the fixed income market in response to the successive increases implemented in the Central Bank's reference interest rate (this rate was raised by 100 basis points, from 5.50 percent in May to 6.50 percent in September). Thus, for example, the interest rates on 1-year BCRP certificates of deposit of restricted negotiation (CDBCRP-NR) increased from 6.4 percent in May to 7.4 percent in September. A reduction is observed in the maturity terms of primary placements of CDBCRP-NR. On the other hand, the amounts negotiated in the secondary market of CDBCRP and CDBCRP-NR have increased significantly since July and amounted to S/. 7,156 million in July (a sum higher than the amounts recorded since January this year).

69. A significant increase has been observed in the yield on domestic sovereign bonds (BTP) since June, especially in shorter term bonds where non residents' holding is greater, given that the deepening of the international financial crisis has led to an increase in the country risk of emerging countries. Thus, Peru's country risk has increased by 160 bps. over the past 4 months, recording a level of 310 bps. at end May. As a result of this, the yield



curve in September was higher than the levels observed in January, reverting the drop observed in the yield on the short bracket of the curve since end January.

70. The rating agency Standard & Poor’s assigned an investment grade (BBB-) to Peru’s sovereign debt in foreign currency on July 14 of 2008, after Fitch Ratings had done so on April 2. Moreover, on August 19 the rating agency Moody’s upgraded Peru’s sovereign debt in dollars to Ba1, a level below investment grade. It should be pointed out that Peru’s sovereign debt in nuevos soles has already been assigned an investment grade by the three main risk rating agencies. The rating assigned to the Peruvian sovereign debt in nuevos soles by Standard & Poor’s and Fitch is BBB+, two levels above the rating assigned to the sovereign debt in foreign currency, while the rating assigned by Moody’s to this debt is Baa3, one grade above the one assigned to the sovereign debt in domestic currency.

71. The information available at September shows a S/. 503 million reduction in non-residents’ holdings of sovereign bonds in this month (7 percent of the balance are held by non-residents). The lower share of non-residents in the balance of sovereign bond holdings observed in July is also associated with the maturity of the July-21-2008 bond, where the participation of non-residents was 80 percent.

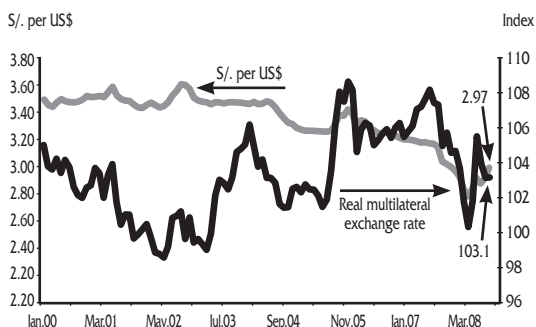
Table 22

**VOLUME NEGOTIATED IN THE SECONDARY MARKET AND NON-RESIDENTS’ HOLDINGS OF TREASURY BONDS AT FIXED RATE**

	VOLUME NEGOTIATED 1/ (Mill. S/.)	% BALANCE OF TREASURY BONDS HELD BY NON-RESIDENTS AT FIXED RATE
Dec. 07	314	29.6%
Jan. 08	1,952	31.4%
Feb. 08	2,871	39.8%
Mar. 08	763	40.3%
Apr. 08	1,125	40.0%
May. 08	1,687	41.9%
Jun. 08	639	41.1%
Jul. 08	882	39.7%
Aug. 08	1,671	39.3%
Sep. 08	1,207	36.5%

1/ Excludes primary transfers from issuers in the secondary market. Source: DATATEC and MEF.

Graph 60  
NOMINAL AND REAL EXCHANGE RATES



**Exchange rate**

72. Year-to-date, the nuevo sol has appreciated 0.5 percent in nominal terms against the dollar. The exchange rate has moved from an average of S/. 2.982 in December 2007 to S/. 2.967 per dollar in September 2008, although a relative reversal of this trend is being observed since May.

As regards the currency basket of our 20 main trading partners, the nuevo sol moved from S/. 0.556 at end 2007 to S/. 0.55 in September, reflecting the relative strengthening of the nuevo sol against the currencies of our main trading partners. In real terms the multilateral exchange rate has appreciated 1.4 percent.

Table 23

**BREAKDOWN BY COMPONENTS OF THE MULTILATERAL EXCHANGE RATE**  
(Percentage changes)

	Real multilateral exchange rate	Nominal exchange rate with currency basket	Domestic inflation	Inflation in main trading partners
2000	-2.3	-4.8	3.7	6.4
2001	-2.6	-5.7	-0.1	3.1
2002	-0.8	-3.9	1.5	4.8
2003	5.9	4.9	2.5	3.4
2004	-2.4	-2.4	3.5	3.5
2005	6.1	4.0	1.5	3.5
2006	-2.3	-4.0	1.1	3.0
2007	-1.7	-2.5	3.9	4.8
2008 1/	-1.4	-1.0	5.3	4.9

1/ Accumulated change September 8 - December 7.

Table 24

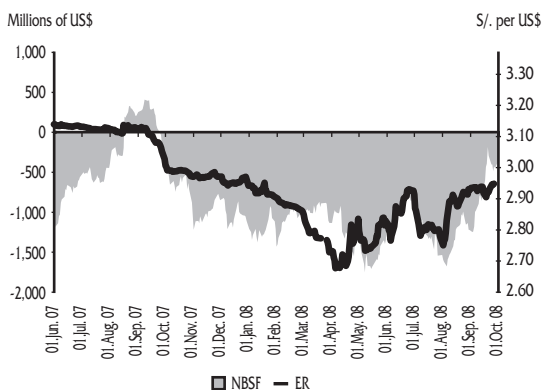
**BILATERAL EXCHANGE RATES**  
(S/. per M.U.)

	Weighted *	Nominal		Real	
		Var. Dec. 07/ Dec. 06	Var. Sep. 08/ Dec. 07	Var. Dec. 07/ Dec. 06	Var. Sep. 08/ Dec. 07
United States	29.2%	-7.0	-0.5	-7.0	-1.4
Eurozone	12.3%	2.4	-2.0	1.2	-4.5
Japan	4.0%	-3.1	4.8	-6.5	1.3
Brazil	5.5%	11.8	-1.1	12.1	-1.6
United Kingdom	1.3%	-4.6	-17.1	-6.4	-18.2
Chile	6.7%	-1.6	-6.9	1.7	-5.2
China	11.4%	-1.3	7.3	2.2	6.0
Colombia	4.2%	4.6	-3.4	5.9	-2.1
Mexico	2.9%	-6.9	1.4	-6.9	0.1
Argentina	2.6%	-10.5	-0.6	-6.5	0.4
Korea	2.2%	-7.7	-18.3	-8.0	-18.7
Taiwan	1.9%	-6.7	0.8	-7.5	-0.8
Venezuela	3.1%	-7.0	-0.5	9.6	14.7
Canada	4.8%	7.0	-5.6	5.8	-7.3
Ecuador	4.6%	-7.0	-0.5	-8.1	2.3
Switzerland	3.4%	-1.4	2.1	-3.5	-1.8
Basket	100.0%	-1.7	-1.0	-2.5	-1.4

\* Weighted relative to 2005 trade.

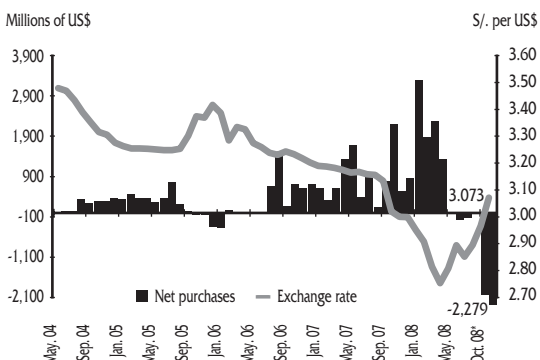
73. In the last months the exchange rate showed a higher upward volatility in a context of greater uncertainty generated by the current international financial crisis.

**Graph 61**  
**BALANCE OF NET FORWARD SALES<sup>1/</sup> AND EXCHANGE RATE**



<sup>1/</sup> Banks' operations with the public (sales minus purchases).

**Graph 62**  
**BCRP NET PURCHASES OF US DOLLAR AND EXCHANGE RATE**



<sup>\*</sup> As of October 23.

In August, the evolution of the exchange rate was influenced by non-residents' closing of positions and by the strengthening of the dollar. During the first half of the month, the non-renewal of maturities of non-deliverable forward purchase contracts and recorded deliverable forward sale contracts (CK) generated a demand for dollars in the spot market, generating upward pressures on the exchange rate. In September, downward pressures were observed both in the forward and spot markets in a context of higher demand for dollars.

74. Influenced by uncertainty associated with the international financial crisis, expectations regarding future exchange rate have been volatile, which was reflected in the higher volatility observed in the spot exchange rate. On the other hand, the balance of net forward sales went from a negative balance of US\$ 773 million on June 23 to minus US\$ 1,669 million (appreciatory expectations) on August 4, reversing thereafter to minus US\$ 413 million on September 30.

75. In this scenario of high volatility, the BCRP intervened in the exchange market selling US\$ 164 million, US\$ 115 million and US\$ 2,008 million in the months of June, July and September, respectively.

76. In the second quarter, Net International Reserves (NIRs) increased by US\$ 1,942 million, mainly due to bank's higher deposits at the Central Bank (US\$ 1,281 million). In the third quarter, NIRs declined by US\$ 817 million due to the BCRP sale of dollars (US\$ 2,123 million), which was offset by banks' higher deposits (US\$ 1,644 million).

**Table 25**

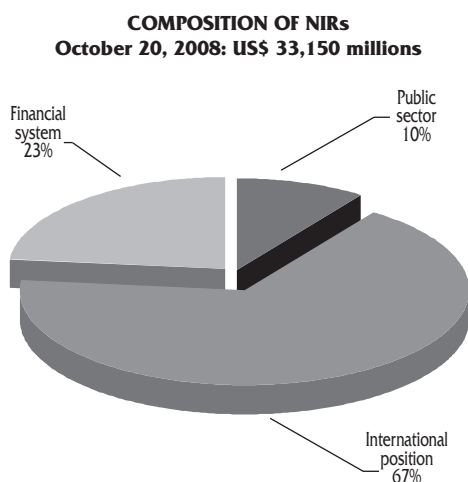
**FLOW OF NET INTERNATIONAL RESERVES**  
(Millions of US\$)

	2004	2005	2006	2007	IQ 2008	IIQ 2008	IIIQ 2008
<b>I. FOREIGN EXCHANGE OPERATIONS</b>	<b>1,854</b>	<b>767</b>	<b>2,861</b>	<b>7,070</b>	<b>6,493</b>	<b>338</b>	<b>-2,458</b>
1. FOREX trading	2,340	2,699	3,944	10,306	7,409	1,155	-2,123
a. Purchases	2,340	3,130	4,299	10,306	7,409	1,319	0
b. Sales	0	-431	-355	0	0	-164	-2,123
2. Net purchases of the public sector	-487	-1,935	-1,084	-3,275	-952	-820	-337
3. Other net operations	2	3	1	39	36	3	2
<b>II. FINANCIAL SYSTEM DEPOSITS</b>	<b>23</b>	<b>1,251</b>	<b>-684</b>	<b>1,154</b>	<b>-604</b>	<b>1,281</b>	<b>1,644</b>
<b>III. PUBLIC SECTOR DEPOSITS</b>	<b>359</b>	<b>-587</b>	<b>245</b>	<b>630</b>	<b>-921</b>	<b>434</b>	<b>244</b>
<b>IV. OTHER</b>	<b>201</b>	<b>35</b>	<b>756</b>	<b>1,560</b>	<b>920</b>	<b>-110</b>	<b>-247</b>
<b>V. TOTAL</b>	<b>2,437</b>	<b>1,466</b>	<b>3,178</b>	<b>10,414</b>	<b>5,888</b>	<b>1,942</b>	<b>-817</b>
<b>BALANCE OF INTERNATIONAL RESERVES</b>	<b>12,631</b>	<b>14,097</b>	<b>17,275</b>	<b>27,689</b>	<b>33,576</b>	<b>35,518</b>	<b>34,702</b>

## BOX 4

## PREVENTIVE ACCUMULATION OF INTERNATIONAL RESERVES

Peru's international reserves consist of highly liquid assets, which are managed by the Central Reserve Bank of Peru. These assets are immediately available and may be used to deal with adverse macroeconomic shocks, such as unexpected capital outflows<sup>3</sup>.



Growing financial globalization has generated a greater mobility of capitals which is not always associated with a change of perception of risk in an economy with sound economic fundamentals (fiscal and monetary disciplines). In some cases, this flow of capitals is originated by "contagion" due to adverse developments occurring in other economies. In these circumstances, there is always the possibility of an abrupt outflow of capitals, in which case liquid assets in foreign currency must be available to deal with the effects this would entail.

In this sense, international reserves allow the Central Bank to:

**Reduce excessive volatility in the exchange rate.** International reserves allow the Central Bank to intervene in the exchange market to stabilize abrupt movements in exchange rate given that they may be used to provide liquidity to the exchange market in a situation of shortage of foreign currency.

**Provide liquidity in foreign currency in a context of external shocks.** International reserves allow dealing with unexpected capital outflows that affect liquidity in financial entities. In the event of capital outflows, the central bank uses international reserves to provide the entities of the financial system with funds in foreign currency thus offsetting the effects resulting from the contraction of liquidity and preventing a possible drastic reduction of credit to the private sector.

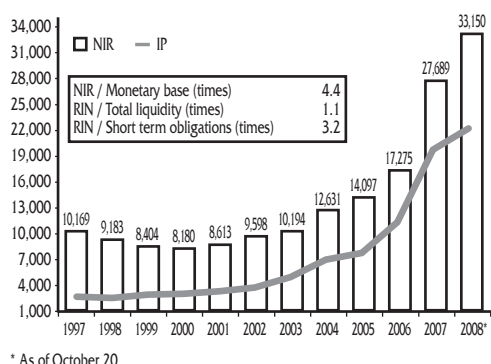
**Act as foreign currency lender of last resort.** In dollarized economies, international reserves allow the central bank to act as a foreign currency lender of last resort<sup>4</sup> face potential withdrawals of deposits, thus contributing to strengthen confidence in the financial system and the system's soundness.

**Generate confidence in the soundness of the economy.** The accumulation of reserves has a positive effect on the country risk. Higher levels of international reserves reflect a more liquid position, generating increased confidence and credibility in the economy among economic agents participating in international markets and improving the sustainability of the external position and, therefore, of credit ratings.

3. Jeanne, Olivier and Romain Rancière. 2006. "The Optimal Level of International Reserves for Developing Countries: Formulas and Applications." IMF: Working Paper 06/229.

4. Green, Russell and Torgerson, Tom. 2007. "Are High Foreign Exchange Reserves in Emerging Markets a Blessing or a Burden?" Department of Treasury: Office of International Affairs. Occasional Paper No. 6.

**INTERNATIONAL RESERVES (NIR) AND INTERNATIONAL POSITION (IP) OF THE BCRP**  
(Millions of US\$)



As important as maintaining an appropriate level of international reserves is to count on the instruments required to make them immediately available to the financial system should abrupt capital outflows occur. Therefore, the BCRP has a wide range of instruments which serve for this purpose and which allow providing the financial system with the required amounts of liquidity on a timely basis should this be necessary. These instruments are:

- a. **Sales of dollars in the exchange market**, which allows the Central Bank to deal with upward pressures in the exchange rate and which simultaneously provides liquidity in dollars to banks.
- b. **Permanent and/or temporary repurchases of CDBCRP and CDBCRP-NR**, which allows to swap the BCRP Certificates for liquidity in foreign currency.
- c. **Auctions of BCRP certificates adjustable to the exchange rate**, which allow to withdraw nuevos soles in exchange for a certificate indexed to the exchange rate.
- d. **Repos and Monetary Regulation Credits to provide liquidity in foreign currency**. These operations must be adequately collateralized in order to address financial entities' liquidity problems and not solvency problems.
- e. **Reduction of the rate of reserve requirements in dollars**, which allows withdrawing reserve requirement funds. The average rate of banks' reserve requirements is currently 31.7 percent, amount equivalent to US\$ 5.7 billion.

**BOX 5**

**CORRELATION BETWEEN MONEY GROWTH AND INFLATION**

This article analyzes the evolution of the correlation between the rate of growth of money and inflation in the Peruvian economy. This correlation shows how indicative monetary aggregates are in terms of the evolution of inflation. Thus, when the correlation is high, there are common factors that explain the evolution of these two variables. However, it should be pointed out that since correlation does not mean causality, a high correlation does not necessarily mean that the rate of growth of money accounts for the rate of inflation. Likewise, a low correlation does not mean that monetary policy is less effective. Because both the rate of growth of money and inflation are simultaneously determined in the money market, the correlation between these variables will depend both on the shocks affecting this market and on the monetary regime, as discussed below.

It is worth highlighting that a lower correlation between money and inflation does not mean that monetary policy is less effective to control inflation. On the contrary, the absence of such a correlation would be indicating monetary policy's effectiveness. In the extreme case that the Central Bank maintained inflation always within the target range, the correlation between inflation and money would be close to zero. This

is confirmed by the results shown herein. In economies, such as the Peruvian economy, where modern monetary policy is based on the control of interest rates, and where inflation expectations are maintained anchored, monetary aggregates play a less important role in determining inflation.

International cross-section empirical studies show that there is a high correlation between money and inflation. As pointed out by McCandless and Weber (1995), high rates of growth of money are generally associated with high rates of inflation, in line with the basic postulates of the Quantitative Theory of Money. However, international evidence also suggests that this relation is not stable in the short term over time, as documented by De Gregorio (2003), King (2002) and Cochrane (1998). In the case of Chile, Chumacero (2005) finds that although there is a positive correlation, monetary aggregates do not provide relevant information to project inflation and that, in some cases, there is an inverse causality in the sense that statistical precedence goes from inflation towards monetary aggregates and not viceversa.

A similar evolution is observed in the case of Peru. Based on a correlation analysis at different frequencies (to capture short- and long-term relations) and Granger causality tests, **we find that the correlation between money and inflation in the case of Peru has significantly declined since the inflation targeting regime was adopted in 2002**, and that there are even negative correlations for some frequencies.

#### CORRELATION RATIO BETWEEN THE GROWTH OF MONETARY AGGREGATES AND INFLATION (LAST 12 MONTHS)

	High frequency 1/	Lower than 2 years 3/	2 to 4 years 3/	More than 4 years 3/
<b>1993:01 a 2001:12</b>				
Monetary base	0.78	0.66	0.69	0.88
Currency	0.74	0.63	0.62	0.88
Money	0.78	0.70	0.67	0.88
Quasi money in DC	0.56	0.53	0.47	0.66
Liquidity in DC	0.69	0.64	0.60	0.79
Liquidity in FC	0.69	0.51	0.68	0.71
Total liquidity	0.95	0.87	0.95	0.96
Total liquidity_tcc 2/	0.71	0.60	0.69	0.73
<b>2002:01 a 2008:02</b>				
Monetary base	0.46	-0.04	0.41	0.68
Currency	0.34	-0.13	0.26	0.62
Money	0.38	-0.21	0.35	0.69
Quasi money in DC	0.25	-0.64	0.16	0.62
Liquidity in DC	0.31	-0.55	0.23	0.70
Liquidity in FC	0.28	0.67	0.23	0.20
Total liquidity	0.37	0.27	0.31	0.49
Total liquidity_tcc 2/	0.40	0.00	0.32	0.56

1/ The high frequency series is the original series (growth of monetary aggregates in the last 12 months).

2/ Constant exchange at December 2007.

3/ The correlation series were estimated on the basis of a series filtered using the Christiano-Fitzgerald method for frequencies of 2 to 4 or more years.

Likewise, the results of causality tests in the sense of Granger show no clear evidence of a causality between monetary aggregates and inflation in the period where inflation targeting has been implemented, while this causality is clearer in the period of control of monetary aggregates. These results are robust, even though the evolution of the inflation target and economic activity was controlled to calculate correlations and causality tests.

Moreover, based on a dynamic model that relates monetary aggregates and inflation, we find that the impact that exogenous changes in monetary aggregates have on inflation has drastically declined in the period 2002-2008, after the adoption of inflation targeting.

**INFLATION'S RESPONSE TO A ONE PERCENTAGE POINT  
CHANGE IN MONETARY AGGREGATES**

	1993 - 2008	1993 - 2001	2002 - 2008
Monetary base	0.19	-0.10	-0.02
Currency	0.11	-0.27	0.02
Money	0.03	-0.23*	-0.10
Quasi money in DC	0.11	-0.14	-0.05
Liquidity in DC	0.04	-0.13	-0.09
Liquidity in FC	0.27*	0.29*	-0.09
Total liquidity	0.31*	0.25*	-0.04
Total liquidity_tcc	0.29*	0.25*	-0.11

\* The result is significant at 5 percent.

Why is the correlation between money and inflation unstable? The positive correlation between rates of growth of money and inflation is usually derived from Irving Fisher's quantitative equation (1911), assuming that both the velocity of circulation and the growth of economic activity are not correlated with inflation or the amount of money. However, it is worth remembering that the quantitative equation<sup>5</sup> is an accounting identity that does not necessarily establish a causality relationship and, therefore, the money-inflation correlation deriving from this identity depends both on the source of shocks that affect the economy and on the monetary regime. Given that all the variables involved in the quantitative equation are variables that are simultaneously determined, there are several cases in which the correlation between money and inflation is not positive.

For example, let us consider that the economy experiences a productivity improvement and that the Central Bank's interest rate is set according to inflation. In this case, the economy's potential output will grow generating a negative output gap that will cause downward pressures on inflation. In response, the Central Bank will reduce its interest rates, which, together with increased economic activity, will induce a greater demand for money. Therefore, if the data of this economy are used to calculate the correlation between money and inflation, we will find a negative correlation between these variables and not a positive one.

Obtaining a positive correlation between money and inflation is much more probable when there is no clear nominal anchor in the economy. In this case, any shock affecting the economy will divert inflation expectations from the inflation target in a permanent manner. Let us suppose, for example, that the economy faces a negative productivity shock that temporarily generates higher inflation. If inflation expectations increase because of this shock, the velocity of circulation of money will also increase, generating a lower demand for money, which, given the supply of money, will generate higher inflation in the end. In contrast, in economies with a clearly defined nominal anchor, such as the countries where monetary policy is implemented with inflation targeting, shocks affecting the economy only have transitory effects on inflation because inflation expectations do not divert permanently from the target and because the central bank's actions seek inflation's convergence to the target range. In this sense, the reduction of the correlation between money and inflation in Peru after the adoption of the inflation targeting regime would evidence the credibility gain obtained in the Central Bank's capacity to meet the inflation target and to maintain inflation expectations anchored.

**References:**

- Chumacero, R. (2005). "No estaba muerta: La teoría cuantitativa y la relación entre dinero e inflación", Working paper, Banco Central de Chile.
- Cochrane, J. (1998). "A Frictionless Model of U.S. Inflation", in: B. Bernanke and J. Rotemberg (editors), NBER Macroeconomics Annual. MIT press.
- De Gregorio, J. (2003). "Dinero e Inflación: En Qué Estamos?", *Economía Chilena* 6, 5-19.
- De Gregorio, J. (2003). "Mucho Dinero y Poca Inflación: Chile y la Evidencia Internacional", *Cuadernos de Economía* 40, 716-24.
- King, M. (2002). "No Money, No Inflation - The Role of Money in the Economy", *Bank of England Quarterly Bulletin* 2, 162-77.
- McCandless, G y Weber, W. (1995), "Some Monetary Facts", *Federal Reserve Bank of Minneapolis Quarterly Review*, Vol. 19, No 3, 2-11

5.  $MV=PY$ , where M is the money supply, V is the velocity of circulation of money, P is the level of prices, and Y is the level of GDP.

## BOX 6

## EXCHANGE RATE-TO PRICES PASS-THROUGH

The pass-through measures the impact of exchange fluctuations on the rate of inflation. When the pass-through is high, exchange rate increases are rapidly transmitted to inflation, hindering monetary control. Studies such as the one carried out by Obstfeld (1982) conclude that a high pass-through may degenerate into a depreciation-inflation spiral that can compromise monetary stability. However, the level of pass-through is not independent of the performance of monetary policy and inflation. With low inflation, firms do not have many incentives to set their prices in foreign currency because, in this case, any increase (decrease) in the exchange rate makes their products more (less) expensive, thus generating volatility in the demand for their goods.

Several studies have estimated the ratio of pass-through from exchange to prices in the case of Peru. As shown in the table below, these estimates vary considerably.

## STUDIES ON PASS-THROUGH

Author(s)	One year Pass - Through	Average life (months)	Analyzed period
Armas et al (2001)	12	-	1991-2000
Clinton and Perrault (2001)	22	-	1990-1999
Gonzales (2000)	22	12	1992-1999
Hausmann et al (2000)	49	5	1990-2000
Mihaljek and Klan (2001)	22	-	1990-2000
	13	-	1996-2001
Moron and Winkelried (2002)	10	More than 30	1992-2001
Miller (2003)	15	6	1994-2002

Source: Winkelried (2003).

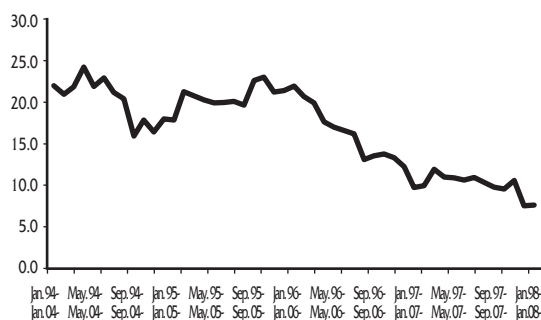
Authors like Cunningham and Haldance (1999), Goldfajn and Werlang (2000), and Taylor (2000) have found a salient reduction in the influence of exchange fluctuations on the level of prices in many countries during the 1990s and argue that this is due to factors such as increased trade openness and the disinflationary processes experienced.

In Peru, price stability has led to a reduction in the ratio of exchange rate-to-prices pass-through. Winkelried (2003) highlights the instability of the pass-through ratio, pointing out that the instability in the parameters does not have the connotation of "specification error" or "econometric problem", but that this is rather associated with the state of the economy and, particularly, with the price stability achieved during the last decade.

The graph below illustrates the estimates of one-year pass-through ratios for the Peruvian economy based on a sample of more recent data. As shown in the graph, the downward trend in the level of pass-through reported in previous studies has continued. Thus, in 2008 this ratio was around 10 percent, below the value estimated in early 2004 when the one-year pass-through reached 20 percent.

## PASS-THROUGH ESTIMATES IN THE SAMPLE PERIOD

(As a percentage of depreciation)





However, it is worth highlighting that the level of pass-through is not independent of the economic cycle or of the level of depreciation. As Winkelried (2003) shows, the value of the pass-through can be twice as much as its normal value in periods of economic expansion. Likewise, it can be between 8 and 10 percent higher when depreciation is higher than 10 percent. This non-lineality in the pass-through would be associated with the frequency with which firms adjust their prices due to cost variations, as well as with the facility with which these higher costs may be translated into prices. Thus, for instance, it is much easier for firms to raise their prices in periods of economic expansion because, in these cases, the demand is less elastic to prices. Similarly, if big shock costs occur, their impact on industry will be greater and a larger number of firms will readjust their prices, generating a higher pass-through.

**References:**

- Cunningham, A. and A. Haldane (1999), "The monetary transmission mechanism in the United Kingdom: Passthrough and policy rules", Bank of England, mimeo.
- Goldfajn, I. and S. Werlang (2000), "The pass-through from depreciation to inflation: A panel study", Central Bank do Brasil, Working Paper, 5.
- Miller, S. (2003), "Estimación del pass-through del tipo de cambio a precios: 1995 – 2002", Banco Central de Reserva del Perú, mimeo.
- Obstfeld, M. (1982), "Aggregate spending and the terms of trade: Is there a Laursen –Metzler effect?", *Quarterly Journal of Economics*, 97, pp. 251 – 270.
- Taylor, J. (2000), "Low inflation, pass-through, and the pricing power of firms", *European Economic Review*, 44, pp. 1389 – 1408.
- Winkelried, D. (2003), "¿Es asimétrico el Pass-Through en el Perú?: Un análisis agregado", Banco Central de Reserva del Perú, mimeo.
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## VI. Inflation

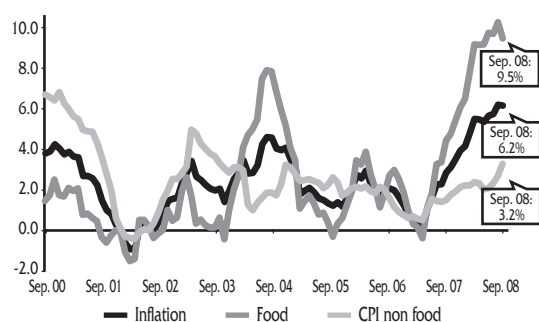
Sustained rises in the international prices of foodstuffs, such as maize, wheat and soybean, were observed between December 2007 and June 2008 due to the higher demand seen mainly in emerging countries as a result of climatic factors and of historically low inventories of these products, in a context of increased prices of oil.

However, the current financial crisis and growing expectations of a global deceleration have prevailed over projections of commodity prices and the prices of foodstuffs have also been affected by this tendency. In this context, the upward trend observed in the prices of commodities since last year started reversing since July and reached levels even below the ones recorded in December 2007.

The effects of this on the domestic market are being reflected, although very slowly, in the prices of goods with a high imported component.

Last 12-month inflation as of September was 6.22 percent. The prices of foodstuffs and beverages rose 9.49 percent, while the prices of the rest of the basket goods rose 3.22 percent, which reflects the rise in urban fares and fuels (5.7 and 5.2 percent, respectively) in the last twelve months.

**Graph 63**  
**OVERALL CONSUMER PRICE INDEX AND FOOD AND BEVERAGES CPI**  
(Last 12-month percentage change)



### Inflation

77. The Consumer Price Index (CPI) accumulated an increase of 5.3 percent due to the effects of the food supply shocks that started in March 2007 and continued until September, and to the rise of fuel prices and urban fares. As a result of this, last 12-month inflation reached 6.22 percent in September.

78. The items that contributed most heavily to accumulated inflation in the January-September period were meals outside the home, urban fares, potato, chicken meat, rice and fuels. On the other hand, the items that contributed negatively to inflation were electricity, sugar, domestic transport, and telephone rates.

**Table 26**

**WEIGHTED CONTRIBUTION TO INFLATION  
JANUARY - SEPTEMBER 2008**  
(Percentage points)

Items	Weight	% Chg.	Positive contribution	Items	Weight	% Chg.	Negative contribution
Meals outside the home	12.0	6.7	0.77	Electricity	2.2	-7.5	-0.16
Urban fares	8.0	5.4	0.44	Sugar	1.4	-7.8	-0.10
Potato	1.5	27.2	0.42	National transport	0.3	-15.8	-0.06
Chicken meat	4.0	11.8	0.41	Telephones	1.3	-4.1	-0.03
Rice	2.3	13.8	0.33				
Fuels	3.9	5.1	0.29				
<b>Total</b>			<b>2.66</b>				<b>-0.35</b>

79. Since mid-2007, the CPI excluding foodstuffs has grown at a lower pace than overall CPI. In September, the last 12-month rate was 3.2 percent. Moreover, the indicator that additionally excludes fuels and electricity recorded a variation of 3.4 percent.

**Table 27**

**INFLATION**

	Weighted	2002	2003	2004	2005	2006	2007	2008 Jan.-Sep. 12 months	
<b>CPI</b>	<b>100.0</b>	<b>1.52</b>	<b>2.48</b>	<b>3.48</b>	<b>1.49</b>	<b>1.14</b>	<b>3.93</b>	<b>5.29</b>	<b>6.22</b>
Food and beverages	47.5	0.50	1.89	4.00	1.13	1.76	6.02	8.2	9.5
Fuels and electricity	6.2	12.81	4.23	15.93	4.01	-3.16	5.21	1.8	2.1
Rest of goods and services	46.3	1.06	2.86	1.09	1.36	1.28	1.49	2.8	3.4
Goods	21.0	1.44	0.58	-0.36	1.03	0.56	1.79	1.9	2.5
Transport	8.4	0.11	10.99	3.49	1.29	1.12	0.82	4.4	5.8
Public services	2.4	-3.62	0.81	0.46	-0.83	1.22	-1.44	2.7	2.7
Other services	14.5	1.81	1.76	1.72	2.47	2.28	2.03	3.0	3.3
<b>Memo:</b>									
Core inflation	60.6	1.23	0.73	1.23	1.23	1.37	3.11	3.9	5.3
Core inflation excluding food	35.5	1.60	1.11	0.49	1.53	1.33	1.85	2.4	2.9
Non-core inflation	39.4	1.96	5.16	6.75	1.87	0.83	5.07	7.1	7.5
Inflation excluding food and beverages	52.5	2.45	3.03	3.03	1.75	0.61	2.02	2.6	3.2

80. The evolution of the main items of non-core inflation are discussed below:

**Meals outside the home:**

The rise accumulated in this item in January-September (6.7 percent) is associated with the higher prices of food and beverages (8.2 percent), mainly as a result of the higher international prices of food inputs –which affected

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especially products, such as chicken, oils, noodles and rice— and of the higher production costs of agricultural products, among other factors.

**Urban fares:**

The rise of urban fares (5.4 percent) was associated with the higher prices of fuels observed since June. The price of gasoline accumulated an increase of 6.7 percent, while the price of diesel increased 16 percent.

**Potato:**

The rise in the price of potato (27.2 percent) is mainly explained by the culmination of the long crop year in the Mantaro Valley and by the lower production of Huánuco and Ica. The latter reflects both the higher prices of fertilizers and pesticides and a higher production oriented to more profitable crops, such as hard yellow maize which in the sowing season had more attractive prices.

**Chicken meat:**

The rise in the price of chicken meat (11.8 percent) was connected to increased demand, to which the lower supply of substitute products contributed —especially in the case of the supply of yellow mackerel, which declined 33 percent in January-September compared with the same period last year. Placements of baby chicken —main indicator of the level of supply of chicken meat— increased 6 percent relative to the same period in 2007.

The price of maize, the main input used to elaborate balanced foodstuffs, grew sustainably until June (67 percent), reaching a price of US\$ 280 per ton and declining thereafter following the evolution of the price of crude (biofuels). In early October, the price was US\$/MT 160, similar to the average price in December 2007 (US\$/MT 159). The evolution of the price of maize would be influenced by the downward trend of the price of crude, in a context of deceleration of global activity. The price of maize reached US\$/MT 146.8 on October 21.

**Rice:**

The rise in the domestic price of rice (13.8 percent) reflects the higher international prices (90 percent at September compared to December 2007) resulting mainly from the reduction of global inventories and from the implementation of export restrictions in several exporting countries. This was offset by the favorable evolution of

domestic production –the production of husk rice grew 10 percent in January-August 2008 compared with the same period in 2007–, which accounted for over 90 percent of total supply for Metropolitan Lima.

After increasing 190 percent until May 2008 (US\$/MT 1,100), the price of Thai rice (of 100 percent B quality, in terms of the international market) has been slowly correcting downwards, reaching US\$/MT 680 in October. This correction was associated with the suspension of commercial restrictions on rice exports in the main producer and exporter countries.

#### **Sugar:**

The price of sugar dropped 7.8 percent due mainly to the higher production of sugar cane (14.3 percent in January-August compared with the same period last year) associated with management improvements in sugar producer companies in La Libertad and Lambayeque.

#### **Fuels:**

The higher price of fuels (5.1 percent) is associated with the rises recorded in the international price of crude.

During the third quarter of 2008, the policy of containing the fiscal cost of the Fund continued to be based on increasing the Fund's price bands and on methodology adjustments to calculate the reference prices used to determine compensations. The state guarantee of the Fund was also increased by S/. 1,500 million (as a result of which it amounted to S/. 3,760 million) and payments to refineries were authorized for a total of S/.750 million to reduce liabilities with these enterprises. As a result of this, the payments carried out during this year amount to S/. 2,150 million.

The band prices for the 84 octane gasoline, diesel and residuals were increased on August 12 (by S/. 0.50 per gallon, S/. 0.40 per gallon, and S/. 0.85 per gallon, respectively). This measure generated an average increase of 4 percent in the final prices of the fuel basket, which was not mitigated by additional reductions in the excise tax on these products. This measure is estimated to have reduced the Fund's compensations by S/. 93 million during the third quarter of 2008.

The Fund's compensations executed in the third quarter are estimated at S/. 1,088 million, with which liabilities with refineries at end September would amount to S/. 1,677 million, excluding the payment of S/. 750 million carried out in the first days of October.

**Table 28**

**FUEL PRICES**

(Annual percentage change)

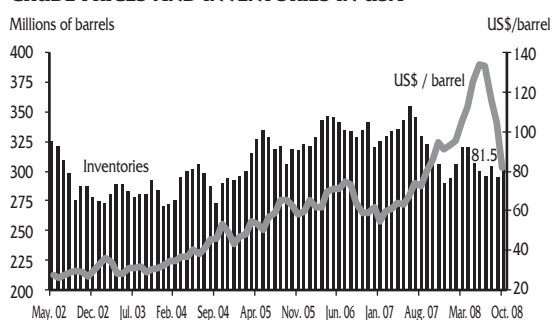
	2002	2003	2004	2005	2006	2007	2008 Jan.-Sep. 12 months	
<b>Fuels</b>	<b>15.6</b>	<b>8.9</b>	<b>17.8</b>	<b>6.9</b>	<b>-1.5</b>	<b>6.4</b>	<b>5.1</b>	<b>5.2</b>
Gasoline	15.7	9.7	17.7	9.2	-6.2	10.7	6.7	6.4
Gas	11.3	4.2	15.3	-10.9	0.3	1.3	4.1	4.1
Kerosene	20.4	13.0	20.3	21.0	2.2	5.8	4.3	4.7

**Price of WTI oil (end period)**

US Dollars	29.4	32.1	43.3	59.4	61.9	91.7	106.5
Nuevos soles	103.5	111.3	142.0	203.3	198.6	273.4	315.9

Source: INEI and Bloomberg.

**Graph 64  
CRUDE PRICES AND INVENTORIES IN USA**



**Graph 65  
CRUDE: SPOT AND FUTURE PRICES**



\* At the close of October 16, 2008.

Between December 2007 and October 2008, the price of crude has fallen by around 30 percent. Three different periods are observed in the evolution of the price of crude: i) expectations of growth in the demand for oil and temporary supply constraints (between December 2007 and June 2008, the price rose 51 percent to a record of US\$/bl. 145.3), ii) growing fears of global economic slowdown (between July and September the price dropped, posting US\$/bl. 91.1 on September 15), and iii) high uncertainty on the evolution of financial markets and on its impact on global demand, which generated a period of high volatility.

In addition to structural factors –such as constraints in the supply of crude due to lack of investment for exploration and refining, low levels of inventories in the United States, and China’s and other emerging countries sustained demand–, a series of temporary events –including climatic factors (hurricane season in the Gulf of Mexico: Gustav and Ike), strikes and stoppages (Nigeria), and geopolitical tensions– have been sustaining the high price of crude. Thus, the international price of WTI oil would range between US\$ 70 and US\$ 80 per barrel in the forecast horizon.

**Electricity:**

The drop in the price of electricity (7.5 percent) is associated with the rate adjustments approved by Osinergmin, considering changes in generation costs and in the price of energy contracted by distributors through bidding processes. The costs of electricity have been varying according to the exchange rate and the type of energy used (higher use of natural gas to substitute oil).

**Table 29**

**PUBLIC UTILITY RATES**  
(Percentage change)

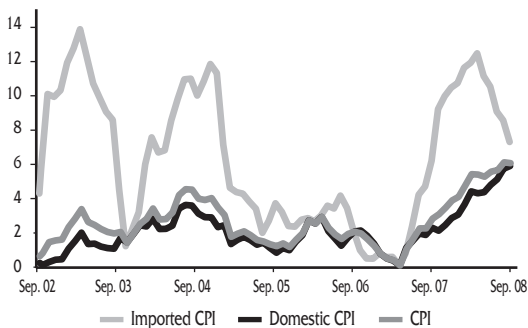
	2002	2003	2004	2005	2006	2007	2008 Jan.-Sep. 12 months	
<b>Public utilities</b>	<b>2.0</b>	<b>-2.0</b>	<b>6.2</b>	<b>-1.7</b>	<b>-3.2</b>	<b>0.2</b>	<b>-2.5</b>	<b>-2.1</b>
Electricity	7.9	-4.6	12.0	-2.5	-7.3	1.9	-7.5	-6.7
Telephone	-8.3	0.3	-2.0	-7.0	-6.2	-7.2	-4.1	-4.1
Water	2.3	0.9	3.0	5.2	8.5	3.2	8.1	8.1

Source: INEI, Bloomberg.

**Imported inflation**

81. Imported inflation as of September showed an annual change of 7.2 percent (lower than the 11.2 percent variation recorded in May). This decline is explained by the evolution of the component of imported food, whose annual rate decreased from 23.3 percent in May to 12.4 percent due to the effect of the deceleration of commodity prices on the prices of bread (from 19 percent in May to 9 percent in September), noodles (from 17 to 11 percent), and edible oils (from 55 to 32 percent).

**Graph 66**  
**DOMESTIC AND IMPORTED INFLATION**  
(Last 12-month percentage change)



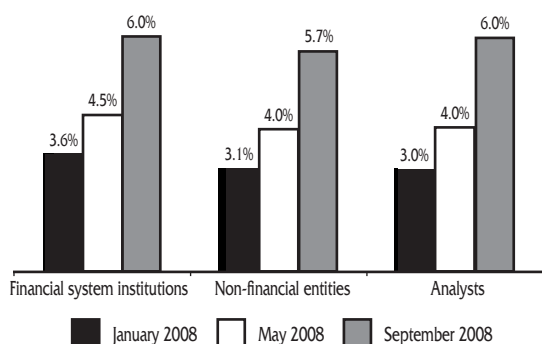
**Table 30**

**DOMESTIC AND IMPORTED INFLATION**  
(Accumulated percentage change)

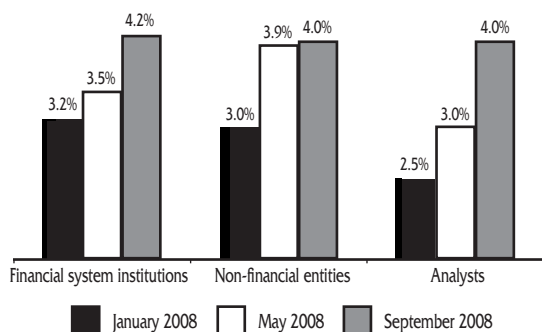
	Weight	2002	2003	2004	2005	2006	2007	2008 Jan.-Sep. 12 months	
<b>I. IMPORTED CPI</b>	<b>12.1</b>	<b>10.3</b>	<b>3.0</b>	<b>11.3</b>	<b>2.2</b>	<b>0.3</b>	<b>10.5</b>	<b>4.2</b>	<b>7.2</b>
Food	5.4	10.0	-0.1	10.9	-1.5	2.1	18.8	5.2	12.4
Fuels	3.9	15.6	8.9	17.8	6.9	-1.5	6.4	5.1	5.2
Domestic appliances	1.0	3.4	-1.9	-2.8	-1.2	-1.3	-1.5	-0.6	-1.3
Other	1.8	3.4	1.4	3.2	2.3	0.6	0.5	-0.8	-1.4
<b>II. DOMESTIC CPI</b>	<b>87.9</b>	<b>0.3</b>	<b>2.4</b>	<b>2.3</b>	<b>1.4</b>	<b>1.3</b>	<b>2.8</b>	<b>5.5</b>	<b>6.0</b>
<b>III. CPI</b>	<b>100.0</b>	<b>1.5</b>	<b>2.5</b>	<b>3.5</b>	<b>1.5</b>	<b>1.1</b>	<b>3.9</b>	<b>5.3</b>	<b>6.2</b>
<b>Exchange rate</b>		<b>2.3</b>	<b>-1.2</b>	<b>-5.5</b>	<b>4.4</b>	<b>-6.4</b>	<b>-7.0</b>	<b>-0.5</b>	<b>-5.4</b>
Imported CPI excluding food	6.7	10.6	5.6	11.7	5.0	-1.0	4.3	3.3	3.2
Food and beverage domestic CPI	42.1	-0.7	2.2	3.0	1.5	1.7	4.1	8.7	9.0
Domestic CPI excluding food	45.8	1.2	2.6	1.6	1.3	0.9	1.6	2.5	3.2

As regards the international evolution of wheat, the average price of wheat has declined 22 percent between December 2007 and September 2008. This downward trend has been observed almost uninterruptedly since May, with the sole exception of June, when the price of wheat showed volatility due to floods in the United States. Since September, the international price of wheat has been US\$/MT 227. This price is biased downwards due to increased evidence of a global slowdown and to

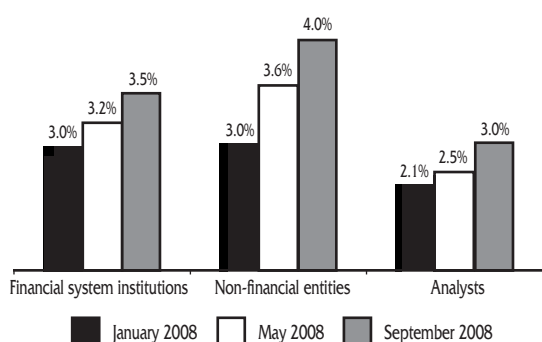
**Graph 67**  
**INFLATION EXPECTATIONS FOR 2008**



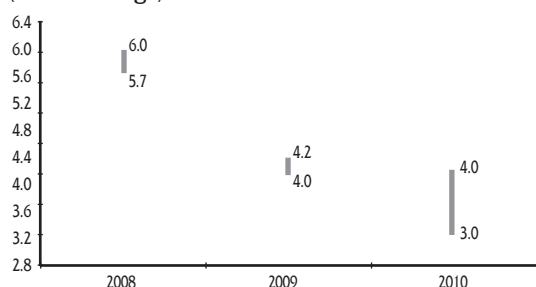
**Graph 68**  
**INFLATION EXPECTATIONS FOR 2009**



**Graph 69**  
**INFLATION EXPECTATIONS FOR 2010**



**Graph 70**  
**INFLATION EXPECTATIONS\***  
(Deviation range)



\* Survey on Macroeconomic Expectations: September 2008.

favorable production prospects in Argentina, Australia and USA (the price of wheat on October 21 was US\$/MT 195).

The price of **soybean oil** declined 2.4 percent between December 2007 and September 2008. The evolution of this price was quite erratic during this period until July, when the price began to decrease sustainedly. This last period was characterized by a downward trend in the price of crude. The prices of soybean (grain) and soybean oil closed at US\$/MT 370 and US\$/MT 924, respectively, at end September (on October 21 the price of soybean was US\$/MT 329 and the price of soybean oil was US\$/MT 759). Like the maize market, this market is strongly influenced by the evolution of the price of crude.

**Expectations of inflation**

82. The rise observed in last 12-month inflation (from 5.39 percent in May to 6.22 percent in September) in a context of higher uncertainty in international markets has been reflected in the perceptions of all the economic agents who, without exceptions, have raised their inflation forecasts for 2008, 2009 and 2010

83. Thus, the results of the Survey on Macroeconomic Expectations show that economic agents have revised their forecasts between May and September. For 2008, non-financial firms have increased their projections of inflation from 4.0 to 5.7 percent, while economic analysts and financial entities increased them from 4.0 and 4.5 percent to 6.0 percent, respectively. In 2009, inflation is expected to range between 4.0 and 4.2 percent (versus 3.0 and 3.9 percent in our previous report), while in 2010 inflation is expected to range between 3.0 and 4.0 percent according to the different economic agents, which shows a downward trend compared to the inflation levels forecast in previous years.

**Input prices**

84. Despite the higher expectations of inflation reflected in the surveys, with respect to the evolution of costs and prices in non-financial firms, a reduction is observed in the percentage of these firms that have experienced or expect higher prices.

Thus, the percentage of firms expressing that they experienced price rises in their inputs decreased from 45 percent in May to 37 percent in September.

Likewise, a lower proportion of the firms that experienced higher input prices transferred these increases to the sale



prices of their final goods. These percentages fell from 19 to 16 percent between the surveys of May and September.

As regards entrepreneurs' expectations about the price of their inputs in 3 or 4 months' time, a reduction is also observed in the percentage of entrepreneurs who expect an increase (44 percent in the May survey versus 41 percent in the September survey).

The percentage of entrepreneurs expecting to increase their sale prices in the next 3 or 4 months has stabilized around 33 to 34 percent between May and September of this year.

**Table 31**

**PRICES OF INPUTS AND SALE PRICES**  
(% of surveyed firms)

	May 2008			September 2008		
	Increased	No change	Decreased	Increased	No change	Decreased
Price of inputs (month of survey / previous month)	45	54	0	37	58	6
Sale price (month of survey / previous month)	19	75	7	16	72	12
Price of inputs (next 3 to 4 months / month of survey)	44	53	3	41	54	5
Sale price (next 3 to 4 months / month of survey)	33	63	3	34	60	6

Source: Survey on Macroeconomic Expectations, BCRP.

**Inflation forecasts**

85. Projected inflation for the 2008-2010 period has been revised upwards, especially in the short term. This is explained, above all, by the higher initial point of the forecast. Thus, the evolution of inflation in the June-September period has been higher than the central forecast of the May Inflation Report, because the inflationary risks discussed in said report (rises in the prices of fuels and food, coupled by a context of increased domestic demand pressures) rapidly materialized. The persistence of this process of price rises was nourished by a feedback between price rises and inflation expectations, the latter of which have been increasing according to the BCRP surveys. On the other hand, the nominal depreciation of the nuevo sol in the third quarter also accounts for the higher initial point of the forecast.

86. Inflation is expected to converge to the target during the second half of 2009. The factors supporting this forecast are, on the one hand, the gradual reduction of demand impulse and the reduction of imported inflation compared to the levels observed in 2008, on the other.

87. The reduction of demand impulse on inflation is expected to take place in a context of higher deterioration of global growth than the one considered in our previous Inflation

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Report. This worsening of external conditions would also favor a greater reversal of imported inflation. Moreover, inflation expectations should also return to levels consistent with the target in this context.

88. The forecast considers the dynamism of economic activity reflected in the 12.9 percent growth that domestic demand showed in the first half of 2008, which was higher than the 10.8 percent forecast in our May report. However, this higher initial impulse is expected to be offset by external conditions and reflected in terms of trade, which would fall 8.8 and 8.3 percent in 2008 and 2009, respectively, as well as by lower global growth.
89. The rise in the prices of food commodities and oil has been more persistent than expected. Furthermore, the pass-through of the international price of crude to the domestic prices of fuels has been relatively greater in the last months due to the gradual reduction of the compensations of the Fuel Price Stabilization Fund.
90. Despite the high volatility in commodity prices generated after the recent episode of global financial turmoil, the prospects of a weakening in the world economy imposes a downward bias on the forecast of these prices. In the particular case of the domestic prices of fuels, the compensations of the Fuel Price Stabilization Fund should continue acting as a buffer in terms of the impact of oil prices. The base scenario considers that the average international price of WTI oil will decline from an average of US\$ 105 in 2008 to US\$ 75 in 2009.
91. The nuevo sol has depreciated nearly 3 percent against the dollar in the June-September period, while the annual average rate of inflation's imported wholesale component has been higher than 8 percent. These elements are a source of pass-through of imported inflation and exchange to inflation, associated with cost increases. Given the international scenario of global recession and drop of imported commodity prices, this indirect pass-through component to inflation should gradually moderate in the forecast horizon.
92. Additionally, the central scenario considers a moderate increase in electricity rates in 2009 given that no constraints should be observed in the supply of electric energy.

In a context of food and fuel prices increases and of high growth of demand, expectations of inflation have been showing upward adjustments. The counter cyclical orientation of monetary policy, implemented by raising the reference interest rate and the rates of reserve requirements, is aimed at anchoring long term

expectations of inflation around the target in order to prevent a feedback between currently observed inflation deviations and executed inflation. Inflation expectations are therefore expected to start moderating in the next months in line with the factors underlying inflation's convergence towards the target in the forecast horizon.

## VII. Balance of risks

93. The balance of risks shows the way in which different factors affect the inflation forecast in the central scenario. In our Inflation Report of May, weighing the risks against the baseline scenario showed an upward balance in the inflation forecast in the short term. In fact, the upward asymmetry considered at that time has materialized in inflation's evolution given that between June and September inflation was close to the upper band of the inflation forecast considered in our Report of May.
94. After the current episode of financial stress in the United States, volatility in international markets has increased considerably. Moreover, the magnitude of the consequences of this crisis on the real sector of the global economy is still uncertain. This context generates greater uncertainty on the domestic macroeconomic evolution and, in this sense, there is higher uncertainty in terms of the inflation forecast.
95. Given the recent developments observed in the domestic economy and in the international environment, the risks considered in our Report of May are still the same, although their weight has varied. Additionally, a factor that was considered in previous reports is again included herein due to the importance it may have in the current conditions: the risk of constraints in the supply of electric energy.

The main risks that could deviate inflation from the forecasts in the central scenario include the following:

- **Higher deterioration of the world economy.** The deepening of the financial crisis in the United States is consistent with the expectation of an adverse international environment, particularly with the reduction of terms of trade considered in the baseline

scenario. Moreover, a deceleration of global growth affecting especially the United States is assumed. However, the magnitude of the impact of the crisis could be even greater. This risk of higher world recession, lower terms of trade and financial volatility could entail in the short run a rise in the country risk which would pressure the depreciation of the currencies of emerging countries against the dollar. In this scenario, the Central Bank's sound position of international reserves would allow the BCRP to intervene in the exchange market to moderate exchange volatility and provide the financial system with liquidity. Other liquidity injection mechanisms in both currencies are also in place to be used if necessary to maintain the normal functioning of financial markets.

In the medium term, the dynamism of economic activity could decline. In such case, a more flexible monetary policy stance, consistent with anchoring inflation to the target level, would be adopted.

- **Constraints in the supply of electricity.** The central scenario considers some increases in electricity rates given that the strong expansion of demand for electricity has been higher than the growth of supply. There is the possibility that the imbalance between the demand and supply of electricity may aggravate and, therefore, the possibility of rationing in the forecast horizon cannot be excluded. In such a context of electricity constraints, the increase of electricity rates would be higher and the increase of marginal production costs would imply a reduction of the economy's potential growth.

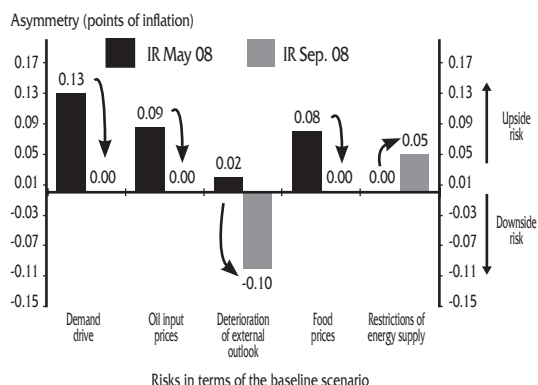
This factor would not alter monetary policy as long as the inflationary impact does not affect inflation expectations nor generate a second-round effect.

**Table 32**

**BALANCE OF RISKS COMPARED WITH THE INFLATION REPORT OF MAY 2008**

Risk	May 2008 IR		Sep. 2008 IR
	Balance	Expost	Balance
Price of fuels	Upside	Materialized	Neutral
Price of food commodities	Upside	Materialized	Neutral
Demand pressures due to higher domestic expenditure	Upside	Materialized	Neutral
External financial volatility	Upside	Materialized	Downside
Restrictions of energy supply	Neutral	Upside	Upside

**Graph 71**  
**INFLATION FORECAST: BALANCE OF RISKS<sup>1/</sup>**  
 (2 year-ahead inflation deviations in percentage points)



<sup>1/</sup> This graph shows changes in risk perception compared with the May 2008 Inflation Report. The size and sign of bars show the asymmetry of each risk factor in the inflation forecast distribution. In contrast with the previous report, added total effects produced a slightly downward asymmetry in the inflation forecast.

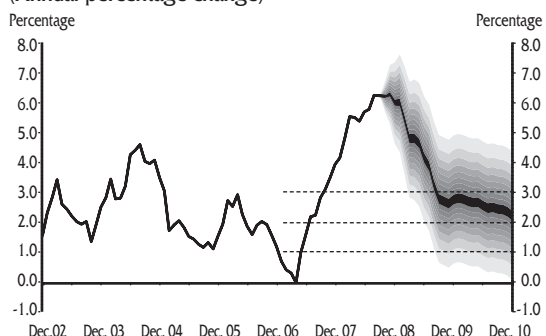
96. In a context of high uncertainty about the evolution of the global economy, weighing the above mentioned risks against the baseline scenario shows a neutral balance for the inflation forecast.

97. This implies a practically symmetric density forecast of inflation in the forecast horizon. Inflation tends to converge to the target in the second half of 2009.

98. On the other hand, the balance of risks shows a neutral balance in the forecast of GDP growth, in contrast with the May report which showed a balance on the upside. This revision is explained by the context of external financial fragility and its possible effects on the real sector of global economy.

**CONCLUSION**

**Graph 72**  
**INFLATION FORECAST DENSITY**  
 (Annual percentage change)

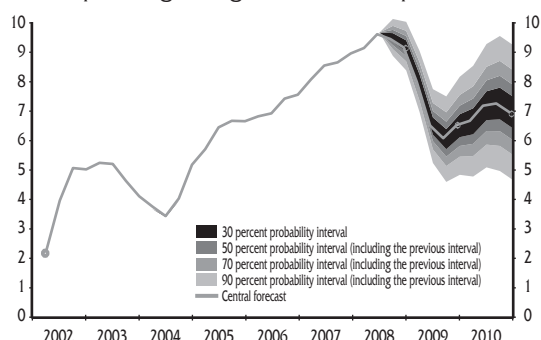


Note: The graph shows the inflation prediction bands along the forecast horizon. The darkest band around the central forecast represent a 10 percent probability of occurrence, while all the other bands represent a 90 percent probability of occurrence.

99. Inflation is expected to revert in the next months and start gradually converging to the 2 percent target. According to the central forecast scenario, inflation should fall in the upper band of the target range (3 percent) during the second half of 2009 and continue converging to the 2 percent target thereafter. The forecasts included herein have been made in a context of high international volatility and uncertainty. Face this context, domestic monetary policy is oriented to preserving price stability and contributing to sustained economic growth in the medium- and long-terms.

100. The Central Bank is permanently overseeing the different risk factors that may affect inflation. Weighing the above mentioned risks against the baseline scenario shows a neutral balance for the inflation forecast

**Graph 73**  
**GDP GROWTH DENSITY FORECAST**  
 (Annual percentage change of GDP in each quarter)



Note: The graph shows the inflation forecast bands along the forecast horizon. The darkest band around the central forecast has a 30 percent probability of occurrence, while the bands together have a 90 percent probability of occurrence.

Appendix

INFLATION REPORT FORECAST

	2007	2008 <sup>1/</sup>		2009 <sup>1/</sup>		2010 <sup>1/</sup>	
		IR May. 08	IR Sep. 08	IR May. 08	IR Sep. 08	IR May. 08	IR Sep. 08
<b>Real % change</b>							
1. GDP	8.9	8.0	9.3	6.5	6.5	7.0	7.0
2. Domestic demand	11.8	9.8	12.3	8.0	7.1	6.6	7.1
a. Private consumption	8.3	6.6	8.1	5.5	6.3	5.5	5.2
b. Public consumption	4.5	4.7	3.5	2.6	3.0	3.2	3.8
c. Private fixed investment	23.4	20.4	26.7	14.5	12.5	11.5	10.3
d. Public investment	19.7	42.9	37.2	23.9	26.3	17.6	20.0
3. Exports (goods and services)	6.2	6.2	9.1	8.4	6.2	11.4	10.0
4. Imports (goods and services)	21.3	15.4	23.3	14.8	9.0	9.2	9.8
5. Main trade partner's economic growth	4.5	3.3	3.2	3.2	2.2	3.7	3.4
<b>Note:</b>							
Output gap <sup>2/</sup> (%)	1.45	2.0-2.5	2.5-3.0	1.0-1.5	1.0-1.5	0.5-1.0	0.5-1.0
<b>% change</b>							
6. Forecast inflation	3.9	4.0-4.5	5.5-6.0	2.5-3.0	2.5-3.0	1.5-2.5	2.0-2.5
7. Average price of crude	9.4	57.5	44.8	1.8	-28.1	-2.4	0.0
8. Average price of wheat	45.2	42.1	37.7	-2.0	-26.3	-0.7	0.0
9. Nominal exchange rate <sup>3/</sup>	-6.3	-5.5	-3.3	2.5	2.1	2.6	0.8
10. Real Multilateral exchange rate <sup>3/</sup>	-2.8	0.4	-5.4	1.1	1.1	1.1	1.4
11. Terms of trade	3.6	-6.3	-8.8	-3.8	-8.3	-2.8	-1.6
a. Export price index	14.0	12.9	7.6	-1.7	-12.8	-2.1	0.3
b. Import price index	10.0	20.5	18.0	2.2	-4.9	0.8	2.0
<b>Nominal % change</b>							
12. Monetary base	27.0	22.6	21.5	14.0	13.5	14.0	14.0
13. Credit to the private sector	28.0	17.0	23.8	16.0	15.4	16.5	16.2
<b>% of GDP</b>							
14. Domestic saving rate	24.3	24.5	24.2	25.4	25.7	26.2	27.1
15. Domestic investment rate	22.9	25.7	27.5	28.1	28.7	28.8	30.1
16. Current account of the balance of payments	1.4	-1.1	-3.2	-2.7	-3.0	-2.7	-3.0
17. Trade balance	7.8	4.7	2.8	2.1	0.0	1.9	-0.3
18. Gross external financing to the private sector <sup>4/</sup>	8.6	7.5	7.9	6.3	5.4	6.0	5.1
19. Current revenue of the general government	20.7	20.4	20.8	20.3	19.4	20.3	19.2
20. Non-financial expenditure of the general government	16.0	16.7	16.8	17.2	17.0	17.5	17.1
21. Overall balance of the non-financial public sector	3.1	2.2	2.4	1.7	1.1	1.5	0.9
22. Total public debt balance	29.6	24.0	23.8	21.7	22.2	19.6	20.0
23. External public debt balance	18.7	13.0	14.5	11.8	13.3	10.7	11.7

IR: Inflation Report.

1/ Forecast.

2/ Differential between GDP and potential GDP (percentage).

3/ Expectations regarding the evolution of exchange rate according to the results of the survey on macroeconomic expectations.

4/ Includes foreign direct investments and private sector's long term disbursements.