Foreign Reserve Management

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FOREIGN RESERVE MANAGEMENT

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Banco de la República
CENTRAL BANK OF COLOMBIA
Bogotá, D. C., Colombia

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Technical Division

Hernando Vargas H.
Deputy Technical Governor

Subdivision of Monetary and Reserves Affairs (*)

José Tolosa B.
Chief Monetary and Reserves Affairs Officer

Ximena Recio C.
Assistant

Ivonne Martínez A.
Junior Researcher

Andrés Pardo A.
Junior Researcher

Foreign Reserves Department

Marco Antonio Ruiz G.
Head

Portfolio Management Area

Diego Felipe Cifuentes P.
Deputy Head

Andrés Mauricio Ramírez R.
Mario Alejandro Acosta R.
Luis Alfonso Vásquez S.
Jack Bohn S.
Verónica Michiels V.

Risk Management Area

Juan Carlos Quintero V.
Deputy Head

Camilo Restrepo V.
Marcela Sierra H.
Ricardo Pedraza G.
Jonathan Combeau L.
Paolo Di Marco G.
Andrea Galeano R.

Development Section

Pedro Sorza M.
Juan Manuel Hernández H.
Camilo Botía Ch.

(*) This report was prepared with the help of Carolina Gómez R., an exchange-market expert who works with the Department of Operations and Market Development in the Monetary and Reserves Affairs Subdivision.

Introduction

The Colombian Constitution and Law 31/1992 (Article 14) assign Banco de la República a mandate to manage Colombia's foreign reserves. Likewise, they also stipulate that the criteria to manage foreign reserves are safety, liquidity and return, in that order. The purpose of this publication is to explain how the country's foreign reserves are managed.

First, the framework and the key concepts associated with the management of foreign reserves at the central bank are reviewed. Second, the management policy and its main operational features are explained in detail. Finally, the current state of Colombia's foreign reserves is outlined, along with the main measures taken by Banco de la República to counter the current global financial crisis and, in doing so, to comply with its constitutional and legal mandate to manage the country's foreign reserves in accordance with the public interest and for benefit of the Colombian economy.[1]

1 Unless indicated otherwise, the figures in this document pertain to the end of December 2008 and are provisional. The figures that have been rounded off may not coincide.

I. Purpose of Foreign Reserves

A. Definition

Foreign reserves are external assets controlled by the country's monetary authority. An external asset must satisfy two conditions to be considered a reserve asset. First, it must be under the direct and effective control of the monetary authority. Secondly, it must be readily available for immediate use. Gold, the country's reserve position in the International Monetary Fund (IMF), and assets denominated in foreign currency, such as cash, deposits or bonds, can be regarded as reserve assets.

B. General Objectives of Foreign Reserve Accumulation

Identifying the objectives of foreign reserves is essential to understanding Banco de la República's reserve management policy. The Bank holds what it deems to be an adequate amount of foreign reserves to intervene in the foreign exchange market and to facilitate access by the government and the private sector to international capital markets.

1. Intervention in the Foreign Exchange Market

Intervention in the foreign exchange market is an important mechanism for achieving Banco de la República's key objectives; namely, price stability, financial stability and proper operation of the payment system.

a. A Complement to Monetary Policy

Banco de la República's primary mission is to preserve the purchasing power of the domestic currency and to keep economic activity stable at levels that are sustainable over time. In practical terms, this implies achieving and maintaining a low and stable rate of inflation and avoiding excessive fluctuations in spending in the economy. To do so, it uses the short-term interest rate as a fundamental policy instrument. It also uses foreign exchange market intervention as a tool to complement the interest rate. For example, when rapid depreciation of the peso threatens the achievement of the inflation target, the Bank can relieve exchange rate pressure by selling foreign currency (mainly U.S. dollars) on the market in an effort to prevent the adjustment from falling exclusively on the interest rate.

b. Proper functioning of the local foreign-exchange market

The financial stability and the appropriate operation of the payment system require the proper functioning of the local foreign exchange market. For that reason, the Bank also intervenes in the local foreign-exchange market to control "disorderly" movements, which are characterized by a great volatility of the exchange rate, an excessive restriction on supply or demand, or large differences between the price an agent is willing to receive and the price the same agent is willing to pay (*bid-offer spread*). In such cases, the Bank intervenes to return the market to normal and to avoid disturbances that might affect the performance of other asset markets that are linked to the foreign exchange market (e.g. financial or government debt markets, among others).

When the Bank intervenes, it does not set a specific target for the exchange rate. As mentioned already, the objectives of foreign exchange market intervention are focused on inflation, economic activity and the proper functioning of the local foreign exchange market. By the same token, the Bank recognizes that foreign exchange market intervention is not always convenient or effective, which is why it is neither constant nor indiscriminate.

2. Access to the international capital markets

Having a sufficient amount of foreign reserves facilitates access to international capital markets for the government and the private sector, since credit rating agencies and foreign lenders take a country's level of foreign reserves into account when judging the payment capacity of local debtors. When its levels of reserves are sufficient, a country can service its obligations in foreign currency, such as imports and debt payments, at times when its access to external financing is closed or limited. Consequently, an adequate amount of

foreign reserves reduces the perceived credit or liquidity risk of the foreign loans to local residents.

In this context, Banco de la República´s policy on accumulating foreign reserves is designed to maintain an adequate level of assets denominated in foreign convertible currencies to comply effectively with the aforementioned objectives. Like other central banks, it places particular emphasis on guaranteeing the safety and liquidity of its reserve investments. However, this does not mean that generating a return on those investments is not important as well.

C. HISTORICAL DEVELOPMENTS IN THE OBJECTIVES OF FOREIGN RESERVE ACCUMULATION BY BANCO DE LA REPÚBLICA

Prior to the 1990´s, foreign reserves were accumulated primarily to support foreign commercial transactions. The criterion for judging the sufficiency of foreign reserves was the number of months of imports they could pay for. At that time, the foreign exchange policy, a crawling-peg regime,[2] had been developed in a market with very limited exposure to foreign capital, due to the restrictive regulations to capital flows.

As of 1991, several phenomena influenced the change in the reasons for having foreign reserves. On the internal front, there were three important events in that respect. In 1991, the Colombian Congress approved Law 9, which removed constraints on the local foreign exchange market in an effort to encourage foreign investment and to facilitate foreign trade. That same year, the crawling-peg regime was replaced gradually by a system of exchange rate bands, and a free-floating exchange rate was introduced in 1999. In light of the new legal framework, the private sector increased its foreign borrowing, and syndicated loans –the traditional method used to finance the public debt in international markets – were replaced by bond issuance. The resulting increase in capital flows heightened the need to have enough foreign reserves to protect the economy from a sudden stop of those flows.

During the 1990´s, the crises in Mexico, Southeast Asia and Russia prompted capital outflows from other emerging countries with strong fundamentals, a situation known as *contagion.* The possibility of dealing with contagion is of serious concern to a developing country, since it implies that a balance-of-payment crisis could occur even if the country's fiscal and monetary policies

2 Within the framework of that policy, Banco de la República set the official exchange rate daily, introducing a small amount of devaluation each day.

are prudent. Nevertheless, the empirical evidence shows that countries with adequate levels of foreign reserves were less vulnerable to contagion.

As a result of those events, the credit ratings of developing countries began to assign more importance to the level of foreign reserves. These ratings measure a government's capacity to service its debt. The recent use of reserve-related indicators, as a measure of country's liquidity, underscores the importance of foreign reserves.

Banco de la República revised the objectives of reserve accumulation not only in response to capital market deregulation, but also due to empirical evidence concerning the effect of contagion among emerging countries and because of the importance of liquidity in foreign currency to the country's credit rating.

D. IMPLICATIONS OF THE OBJECTIVES OF FOREIGN RESERVE ACCUMULATION

Foreign reserves are comprised of: i) the "investment portfolio", which accounts for the bulk of all reserves and is made up of financial instruments in the international market; ii) investments in gold; iii) the positions in supranational entities, such as the IMF and the Latin American Reserve Fund (FLAR, in Spanish),[3] and iv) international agreements. The investments in gold serve to diversify risk; the contributions to the IMF and FLAR allow Colombia to maintain access to contingent credit lines with those entities, and international agreements, like the one with the Latin American Integration Association (commonly known by the Spanish acronym ALADI), serve to facilitate trade among member countries.

The evolution in the reasons for accumulating foreign reserves caused changes in the policies on how they are managed. There were three major developments in that respect.

- With a floating exchange rate regime, the likelihood and the amount of interventions in the local foreign exchange market are lower. Therefore, the amount of reserves set aside to cover immediate liquidity needs was reduced. Those reserves are known as working capital and they are invested in very short-term instruments. In 1994, the working capital accounted for about 90% of the country's reserves; it currently represents approximately 5%.

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3 For statistical purposes and in keeping with the methodological criteria outlined in the IMF's *Balance of Payments Manual* on calculating reserve assets, contributions to FLAR are excluded from the balance of international reserves. However, they remain part of the reserve assets shown on Banco de la República's balance sheet.

- Because there is less need for liquidity under the current exchange rate system, it was decided that the rest of investment portfolio would have longer maturities and higher expected returns. This implies assuming more risk.

- Accordingly, Banco de la República has a special internal and external infrastructure designed to enhance its capacity to control any type of risk.

- In keeping with these principles and to ensure the country's capacity to service its foreign obligations, the reserves have been invested in financial assets that are extremely safe, highly liquid and have a broad secondary market.

It important to emphasize that these investment policies are not exclusive to Banco de la República and are consistent with the trends adopted by most central banks over the world.

II. Institutional Framework

A. LEGAL FRAMEWORK

The Colombian Constitution[4] and Law 31/1992 establish a set of norms Banco de la República must follow when fulfilling its functions, one of which is to manage foreign reserves. In Chapter IV of Law 31/1992, which is devoted to foreign reserve management and foreign matters, Article 4 states that "Banco de la República shall manage the country's foreign reserves in keeping with the public interest, for the benefit of the national economy, and to facilitate the country's payments abroad. In this case, management includes the administration, investment, custody and disposal of reserve assets." The same law also indicates that "the investment of those assets shall be subject to the principles of safety, liquidity and return in assets denominated in foreign convertible currencies or gold".

Likewise, the Board of Directors of Banco de la República (BDBR) is authorized to "arrange for contributions to international financial organizations charged against the country's reserves, provided those contributions are reserve assets as well […] to conduct operations of risk hedging, [and] to contract non-monetizable balance-of-payment loans." However, the BDBR is not authorized to extend loans against the country's foreign reserves. The law states the foreign reserves held by Banco de la República cannot be seized.

4 The 1991 Colombian Constitution, Section XII (on the economic system and public finance), Chapter 6 on the central bank, Article 371.

B. ORGANIZATIONAL FRAMEWORK

1. Decision-making bodies

In exercise of its legal and statutory powers, particularly those outlined in articles 14 and 15 and in section ñ of Article 34 of the by-laws of Banco de la República, the BDBR issued Internal Resolution 3 in 1994, which was replaced by Resolution 2 of 2001, to regulate the objectives, functions and responsibilities of the Foreign Reserves Committee and to create the Internal Foreign Reserves Committee.

The objectives, principles and general policies on the management of foreign reserves are decided by the Foreign Reserves Committee. It normally meets at least once every two months and is presided over by the Governor of the Bank. The members of the BDBR sit on the Committee, as does the Minister of Finance and Public Credit (or his representative).

As part of its mandate to set policies on foreign reserve management, the Foreign Reserves Committee is responsible for establishing investment guidelines that define the criteria for the composition of the investment portfolio, the universe of eligible assets, authorized operations and the acceptable level of exposure to different risks.

Banco de la República's Internal Foreign Reserves Committee defines the internal operational framework that is required to comply with the objectives, principles and investment policies established by the Foreign Reserve Committee. The Internal Foreign Reserves Committee normally meets at least once a month and is presided over by the Deputy Technical Governor of the Bank or the Chief Monetary and Reserves Affairs Officer. Its members are the Deputy Technical Governor, the Chief Monetary and Reserves Affairs Officer, and the Head of the Foreign Reserves Department.

The Foreign Reserves Department, which is part of the Subdivision of Monetary and Foreign Reserves Affairs, is responsible for implementing and monitoring the investment policies established by the Foreign Reserves Committee and the Internal Foreign Reserves Committee. Within the Reserves Department, the Portfolio Management Area is responsible for investing the portion of the foreign reserves portfolio that is managed internally, while the Risk Management Area is in charge of risk management, compliance and performance attribution. The Development Group within the Reserves Department conducts economic and financial research and develops new tools to support the process for investing foreign reserves.

2. Supervisory Bodies

Banco de la República has a broad infrastructure to control investments, including staff members from other organizations and different areas within the Bank to ensure impartial and independent control.

According to the Colombian Constitution, control over Banco de la República is exercised by the President of Colombia. Law 31/1992 authorizes the President to delegate that function to the Office of the Auditor General. The Auditor General, as a delegate of the President of Colombia, is responsible for "certifying the Bank's financial statements, complying with the other functions specified for this role in the Commercial Code, and exercising control over the institution's management and results",[5] including the management of foreign reserves. The Auditor is in charge of ensuring that the accounting of reserve assets is consistent with the accounting principles established by the Colombian Financial Superintendency (Superintendencia Financiera de Colombia). The Auditor is also required to present quarterly evaluations of the different aspects of reserve management to the President of Colombia, the Financial Superintendency and the BDBR.

In addition, the power to "inspect and monitor Banco de la República, assigned to the President of the Republic by the Constitution, [...] shall be exercised by the Banking Superintendent (now the Financial Superintendent) [...] in accordance with Decree 239 of 1993".[6] The Office of the Comptroller General (Contraloría General de la República) has jurisdiction to the extent that Banco de la República is involved in fiscal management.

Banco de la República also hires an external auditing firm, which is responsible for the audit opinion report stating that the financial statements are in accordance with international auditing standards. Price Waterhouse Coopers has been responsible for this task since 2008; prior to that year, it was entrusted to Deloitte & Touche Ltd. The involvement of an outside firm is part of the agreements all countries have with the IMF and the importance international markets give to the verification of information on foreign reserves.

The following links provide a sample of the auditors' comments on Banco de la República's financial statements for 2008.

General audit.:
http://www.banrep.gov.co/documentos/el-banco/estados-financieros/dictamen/2008/auditoria08.pdf

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5 Law 31/1992, Section IV (Inspection, Surveillance and Control), Article 48.

6 Article 47, Law 31/1992 and Article 70, Decree 2520/1993.

External audit:
http://www.banrep.gov.co/documentos/el-banco/estados-financieros/auditores/2008/auditores_08.pdf

Finally, there is the Department of Internal Control. It was created under Law 87/1993, which outlines the process that regulates internal control for public agencies. This department is in charge of verifying independently the existence of procedures to invest foreign reserves and the compliance with those procedures.

In addition to the control bodies mentioned above, the Bank presents two annual reports to the Congress of the Republic of Colombia. This is done for the sake of transparency and pursuant to the provisions set forth in Article 5 of Law 31/1992. The reports include information on foreign reserve management policies, composition and performance during the financial period immediately prior to their publication.

Information on foreign reserves also can be found in the Bank's financial statements, which are published monthly in the Revista del Banco de la República, in the statements delivered monthly to the Financial Superintendency, and in the information sent quarterly to the General Accounting Office. At the beginning of each year, the Bank's financial statements for the previous fiscal year ending on December 31 are published in a nationally-circulated economic newspaper, and the notes to the financial statements are posted on Banco de la República's website (www.banrep.org). The notes to the financial statements contain detailed information on items, such as foreign reserves, with comments about the portfolios and risk management policies. Finally, information on the stock of foreign reserves is posted weekly on the Bank's website.

III. Management of the Investment Portfolio and Related Risks

The basic theory of financial portfolio management is based on the relationship between expected return and risk. Therefore, when defining a portfolio, an investor will select a combination of assets that allows the largest possible return for the level of risk the investor is willing to accept. In simple terms, if an investor wishes to obtain a higher return on his assets, he will have to assume additional risk; if he wishes to face less risk, he will have to sacrifice return. Every investment decision is taken in an environment of uncertainty. This means the investor always faces some risk. What may be considered a safe investment at a given point could become a risky investment over the course of time, depending on the economic environment and the financial situation of the issuer of the security.

The need to guarantee the safety and the liquidity of foreign reserves entails a low-risk investment profile for the portfolio. Once this requirement is met, the objective of portfolio management is to generate the largest possible return. Under certain exceptional circumstances, such as those posed by the current international financial crisis, Banco de la República is willing to sacrifice profitability in exchange for greater safety and liquidity of the investments.

The country's foreign reserves generated a return of US$5,810 million between 2000 and 2008. It was necessary to assume financial risks to obtain that return. There are several kinds of risks that every investor must face. The main ones to which all central banks are exposed when managing their foreign reserve portfolios and the way Banco de la República has dealt with them are explained below.

A. MARKET (OR INTEREST RATE) RISK

Market risk is the impact of a change of interest rates on the value of a portfolio. The value of foreign reserve investments is affected negatively when interest rates in the world's leading financial markets increase (see Box 1). By the same token, when international interest rates decline, foreign reserves increase in value.

The main indicator for measuring market risk is the percentage change in portfolio value caused by a 1% change in interest rates (modified duration). For example, if there is a 1% increase in interest rates, a portfolio with a modified duration of two years will lose 2% of its market value. Because of the inverse relationship between interest rates and portfolio value, a reduction in the modified duration implies the reserves will have less risk of suffering losses in the face of an eventual rise in external interest rates. A portfolio with a higher modified duration has a higher expected rate of return, but it also has more market risk. Banco de la República limits that risk by having a low-duration portfolio.[7]

B. LIQUIDITY RISK

The risk that the central bank may not be able to convert a reserve asset into cash quickly and at a minimum cost is known as liquidity risk. Central banks minimize liquidity risk by investing in financial assets that are easy to liquidate on the secondary market, such as securities issued by the governments of industrialized countries (e.g. U.S. government bonds). This risk is managed dynamically, since the liquidity conditions in the market change with the passage of time.

Central banks usually define investment tranches, insofar as the characteristics of liquidity and return differ based on the general objectives of reserve management. Investments with shorter maturity and higher liquidity are used for foreign exchange market intervention, while instruments with longer maturity and higher expected return are part of the portion of reserves that is expected to be used in exceptional cases. Banco de la República divides the investment portfolio into two components: working capital and the investment tranche.

- *The working capital* is intended to satisfy the need for immediate liquidity. It is the portfolio used for intervention in the local foreign exchange market and its investments are concentrated in extremely short-term assets denominated in U.S. dollars. Since the objective

7 The value at risk method (VaR) is another way to measure and control market risk. Applied throughout the world, VaR is used by Banco de la República to estimate the largest possible loss on an investment portfolio during different holding periods, with a given level of confidence (usually 95%).

of this tranche is to provide immediate liquidity for intervention, the working capital is concentrated in deposits or investments that can be liquidated in one day, without excessive costs. The amount of working capital fluctuates between US$390 million and US$2,000 million.

- *The investment tranche* has a maturity and return profile greater than that of the working capital, but it is also highly liquid. This tranche is invested in more asset classes than the working capital, and at longer maturities. The value of the investment tranche on December 31, 2008 was US$20,932 million.

To keep a low liquidity risk for its portfolio, Banco de la República maintains most of its investments in tradable securities with a broad secondary market and with issue sizes in excess of US$250 million. Besides, the maximum permitted exposure to an issue is 10% of the outstanding value.

C. CREDIT RISK

This is the risk of loss due to credit events such as: i) deterioration in the credit quality of issuers or issues and/or ii) default. To control credit risk, central banks set exposure limits on each type of financial asset. The maximum acceptable risk is defined on the basis of the credit ratings issued by international agencies (see Box 2).

To limit credit risk, Banco de la República uses the credit ratings published by S&P, Moody's and Fitch Ratings as a reference. The highest short-term ratings issued by those agencies are A-1+/P-1/F-1+ and the lowest are A-3/P-3/F-3. The highest long-term rating is AAA and the lowest is D. For the average investor, securities with short-term ratings above A-2/P-2/F-2 and long-term ratings above BBB- are considered safe investments (investment grade).

Being aware of the importance of limiting credit risk, Banco de la República requires minimum short-term ratings of A-1/P-1/F-1 and long-term ratings of A-.[8] This is one notch above the recommended short-term rating and three notches above the recommended long-term rating. In 2008, as a further measure to confront the international financial crisis, the Bank raised the minimum required long-term rating for banking and corporate instruments by three notches, placing it at AA-.

8 The minimum rating for bank and corporate issuers is AA-; for supra-national, sovereign and government-backed entities, it is A-.

The following investments, among others, are permitted for the working capital: overnight repurchase agreements with the Federal Reserve Bank of New York (Fed); investments in overnight facilities provided by correspondent banks; U.S. Treasury bills; FIXBIS with the Bank for International Settlements; U.S. dollar denominated short-term instruments issued by sovereign entities or their agencies, or by supranational entities, with a minimum rating of A1/P1/F1 by S&P, Moody's and Fitch Ratings, and overnight deposits with banks or supranational entities (e.g. the World Bank, the Inter-American Development Bank [IDB], and the Andean Development Corporation [CAF, in Spanish]), with a minimum rating of A1/P1/F1 by the same agencies. As with the other tranches, banking institutions must also have a long-term rating of at least AA-.

Money market investments[9] are subject to strict guidelines. Investments in money market instruments are allowed when denominated in any of the following currencies hedged against the U.S. dollar: Canadian, Australian and New Zealand dollars; Japanese yen; Euros; Great Britain pounds; Swiss francs; and Swedish, Danish and Norwegian kroners. In addition, the Foreign Reserves Committee has set the following criteria for money-market investments:

- Bank and corporate issuers must have a long- term rating of at least AA-.

- The approved types of issuers are governments, agencies sponsored by the U.S. government, agencies explicitly guaranteed by governments, supranational entities, banks and corporations. The following are the maximum exposure allowed per sector: 100% for governments, agencies and supranationals, 90% for banks, 75% for corporations and 10% for fully or partially guaranteed Asset-Backed Commercial Paper.

- To reduce the impact of a credit event and to diversify the portfolio, the maximum exposure per individual issuer is 100% for the U.S. government, 3% for bank and corporate issuers, 10% for sovereign (government) and supranational issuers, and 3% for Asset Backed Commercial Paper.

- Instruments issued in tax havens are not permitted.

- Banking and corporate entities in which Banco de la República invests must have at least US$ 2,000 million in capital.

- The debt must have payment priority in the event the entity is liquidated (Senior).

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9 Money market instruments are investment alternatives with high liquidity and maturity under 397 days.

Investments with maturities longer than 397 days are concentrated in U.S., German and Japanese government bonds. Investments in the debt of other governments and high-quality issuers are allowed, but within strict limits. The eligible instruments include bonds issued by agencies explicitly guaranteed by governments, U.S. agencies,[10] banks, and corporations. Investments in Agency Mortgage-Backed Securities in the United States and bonds from authorized issuers, with embedded options,[11] are permitted as well. The Foreign Reserves Committee requires a minimum rating for all of these investments (A- for sovereign and supra-national issuers, and AA-/Aa3/AA- for bank and corporate issuers). The maximum exposure for long-term bank and corporate debt is around 1% and is permitted only in certain portfolios. There are also restrictions on the issue place and on the minimum issue size, among others.

D. EXCHANGE-RATE RISK

The value of foreign reserves is calculated in U.S. dollars. This means that investments in Euros, Japanese yen and other currencies are converted into dollars at the exchange rates prevailing in the market. In other words, the dollar value of the portfolio may be reduced if the currencies in which it is invested depreciate with respect to the U.S. dollar. This exposure to exchange rate fluctuations is known as exchange rate risk.

Exchange rates are extremely volatile and often lack defined long-term tendencies. To smooth the impact of exchange-rate risk on reserve returns, the Bank created a reserve for currency fluctuation. It increases in years when currencies gain strength against the dollar and declines in years when currencies are weaker.

E. OTHER RISKS

In addition to the financial risks associated with managing the reserve portfolio, central banks also face other kinds of risks. The following are the more important ones.

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10 Agencies are known as Government Sponsored Enterprises. These are private entities created for public purposes to reduce borrowing costs for certain sectors of the economy. The best known are Fannie Mae and Freddie Mac; they finance mortgage debt and recently were subject to U.S. government intervention.

11 The embedded-option bonds permitted for reserves are known as callables. They give the issuer the option to redeem the bond before the scheduled maturity.

1. Operational Risk

It is the risk of loss due to deficient internal processes, mistakes made by personnel, fraud, or system or equipment failures. One example of operational risk is the failure to prevent investments in ineligible assets or trades with unauthorized counterparties.

To reduce operational risk, the Reserves Department has documented all critical operational processes and published them internally. It has a database listing the errors that have occurred in the past and the follow-up on each of them. In addition, it has a tool that registers the perception of operational risk for each of the Department's critical processes.

2. Legal Risk

This is the risk to which the Bank is exposed as a result of omissions or imprecision in the contracts for its operations, or the impossibility of legally complying with the agreements established in those contracts.

Banco de la República's Legal Department is responsible for reviewing the contracts related to foreign reserve management. The Foreign Reserves Department provides the Legal Department with support to ensure that the conditions agreed on the contracts reflect the practices of financial markets and correspond to the technical conditions of the operations. The Legal Department also receives support from law firms that specialize in international financial legislation.

3. Reputational Risk

This refers to the possibility that the public might perceive Banco de la República as failing to manage the country's foreign reserves as stipulated in the Constitution and the law. It may result in a poor image and loss of credibility for the Bank.

To address reputational risk, the Bank is transparent about its policies for managing reserves and the problems that arise in reserve management. In its two annual reports to Congress, the Bank explains how reserves have been managed and their results. When events that affect investments occur, it issues press releases and holds press conferences for journalists.

IV. Risk Management Structure

The existence of financial risk, as well as fraud, operational and legal risks, among others, make it imperative to maintain strict practices at every stage of foreign reserve management. A central aspect of the framework for risk management at Banco de la República, and at many other central banks, is the separation of functions assigned to what are known as the front, middle and back offices, which are different, in turn, from the duties of the areas responsible for internal control, auditing and accounting. This separation of functions ensures that the exposures are within the limits established by senior management and minimizes opportunities for fraud. The following are the main elements of this entire risk management structure.

- The front office of the Bank is the Portfolio Management Area of the Foreign Reserves Department, which is part of the Subdivision of Monetary and Reserves Affairs. It is responsible for investing the internally-managed portfolios, pursuant to the policies defined by the Foreign Reserves Committee and the guidelines approved by the Internal Foreign Reserves Committee. It has a staff of eight.

- Back office functions of reserve management are performed by the Booking and Control of International Settlements Unit (URCPI in Spanish). The URCPI is part of the Subdivision of Banking Operations and is in charge of accounting, confirmation, conciliation and settlement for the operations undertaken during the investment process, including the operational aspects related to custodians[12], counterparts,

12 Custodians are the financial entities where the Bank deposits its securities.

correspondent banks and external managers.[13] The URCPI has a staff of 16.

Accordingly, there is a complete separation between those who execute financial transactions and those who record, confirm and settle them. Moreover, the Foreign Reserves Department, which is part of the Subdivision of Monetary and Reserves Affairs, reports to Deputy Technical Governor, while the URCPI, which is part of the Subdivision of Banking Operations, reports to Deputy Executive Governor. In all, this reduces the risk of fraud, particularly considering that the separation of functions is completely transparent.

- The Risk Management Area of the Foreign Reserves Department is responsible for daily follow-up on all the portfolios to ensure the managers comply with the investment policies established by the Foreign Reserves Committee. The managers' investment policies and strategies are analyzed as well. The Risk Management Area has formed working groups to control the risks to which foreign reserves are exposed. These include market, credit, liquidity, operational and legal risks. To control some of them, the Risk Management Area works as a team with other areas within the Bank. Internal Control and the Legal Department are two examples. The Risk Management Area represents the middle office for reserve management and has a staff of seven.

The separation of functions is not restricted to the back and front offices. There also is a separation between those who execute transactions and manage financial exposure (front office) and those who measure it (middle office).

- Other departments in the Bank participate in reserve management and, as such, are part of the risk management framework. The Accounting Department is in charge of the accounting for foreign reserves, a function that it performs independently. The International Affairs Department administrates the Swift system (Society for Worldwide Interbank Financial Telecommunication), which permits a secure exchange of messages among financial entities throughout the world and to which access is restricted. The Reserves Department and the URCPI have access to Swift, with separate access profiles. This allows different offices to participate in the process of receiving, verifying and releasing payment messages. The Internal Control Department, which reports directly to Deputy Executive Governor, verifies that all procedures are properly documented and provides consulting to ensure they are carried out with the highest security. The manuals for processes and

13 Banco de la República hires companies to manage a portion of the country's international reserves. Details on the external management program are provided in Chapter VII of this publication.

procedures are published on the Bank's Intranet and updated frequently. They serve as a training tool for new staff members and clearly define the responsibilities of each office and position. Finally, the Human Resources Department requires a manual of functions for each position, which clearly defines the scope of the responsibilities of each officer of the Bank.

As mentioned earlier, the Office of the Auditor General, as an independent entity, plays a very important role in overseeing the management of foreign reserves. The Auditor General also attends the meetings of the Foreign Reserves Committee. The Auditor General's Office frequently inspects the Reserves Department and the URCPI, analyzing their operations and adherence to guidelines, so as to make recommendations for improving the security of all respective processes and procedures. Representatives of the Auditor General's Office also visit the custodians and the external managers to verify their control mechanisms.

V. Benchmark and Portfolio Management

A. Definition

The vast majority of the world's central banks manage their foreign reserves referenced to a theoretical portfolio or benchmark. In the capital markets, a benchmark is a basket of assets with predetermined weights, according to certain rules that define its composition. In general, an index attempts to replicate, in a broad way, the behavior of a financial asset market and serves as an indicator of the performance of other investment portfolios in that same market.[14]

The benchmark for reserves is the portfolio that reflects the highest possible return under the strict risk criteria defined by the Foreign Reserves Committee. It serves as a frame of reference to measure the performance of each portfolio.

B. Composition

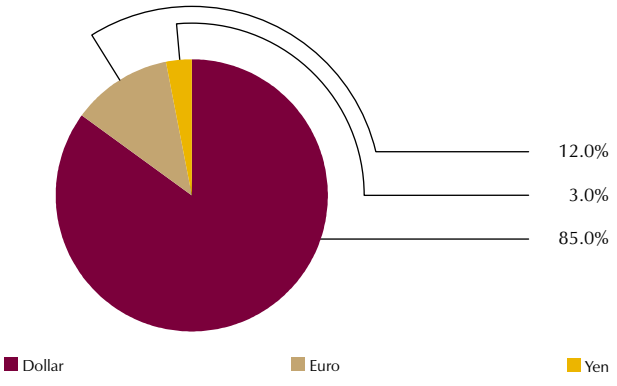
Once Banco de la República has decided to employ a benchmark, its composition must be defined in terms of asset classes and currencies.

1. Currency Composition

Several considerations should be taken into account when selecting the currencies for a benchmark. If one of the main objectives of foreign reserves

14 The IGBC in Colombia and the S&P500 and the Dow Jones in the United States are some of the best known indexes.

Graph 1
Exchange rate composition



Source: Banco de la República.

is intervention, the reserve portfolio should have an important amount of the foreign currencies required for that purpose. By the same token, if reserves are accumulated to meet the country´s obligations in foreign currency such as trade in goods and services and capital transactions, a proportion of the reserves should replicate the outflows in the country's balance of payments. The Foreign Reserves Committee determines the currency composition of Colombia's foreign reserves as a replica of the balance of payments outflows in previous three years.

At present, the composition is 85% U.S. dollar, 12% Euro and 3% Japanese yen (Graph 1). Although there are transactions with many countries, the Bank selects only currencies that have low transaction costs and high liquidity in its financial markets. It also takes into account that the U.S. dollar is, so far, the only currency used by Banco de la República for intervention.

2. Portfolio Composition

After deciding on currency composition, it is necessary to define the asset classes and their maturity. In this process, the instruments chosen meet the required conditions for safety and liquidity.

3. Portfolio Duration

The duration of the portfolio is related directly to market risk; in other words, the risk that the value of an investment may decline as interest rates increase. This decision has to do with three factors: i) the central bank's investment horizon, ii) the expected return, and iii) the variability of that return.

C. CONSTRUCTION

The process for constructing the benchmark is the following:

- It begins with the previously established foreign exchange composition.
- The safest and most liquid admissible assets in the market are selected: U.S., German and Japanese government securities and very short-term bank and corporate investments with top credit ratings.

- The portfolio selected is the one that maximizes expected return. For each risk level, there is a basket of assets or a portfolio, with different weights assigned to the admissible assets, which maximizes the expected return. Therefore, once a risk level is defined, it is possible to find a single combination of assets in a portfolio that is most likely to generate the highest possible return. The composition chosen for the benchmark is the result of a process of financial optimization wherein, besides obtaining maximum return, one attempts to limit the probability of obtaining negative returns during the next twelve months to less than 5%.

The result is a theoretical portfolio that is used as a benchmark.

The admissible assets included in the construction of the benchmark are, in turn, baskets of assets that have been constructed by third parties and are widely used internationally (the associated indexes listed in Table 1). They have the advantage of being transparent, computable, up-to-date and available at no cost.

The current benchmark and its associated indexes for the investment tranche are shown in Table 1.

Table 1
Composition of the Reference Index

Currency	Class of asset	Associated index*	Total
Dollars	Short-term banking investments (money market)	Merrill Lynch 1-month constant maturity	37.1%
	Investments in short-term treasury bills	Merrill Lynch T-Bill	12.0%
	Investments in United States government bonds	Citigroup Government Bond Index 1-3 years	35.9%
	Total market		**85.0%**
Euros	Investments in German government bonds	Citigroup Government Bond Index 1-3 years	12.0%
	Total market		**12.0%**
Yenes	Investments in Japanese government bonds	Citigroup Government Bond Index 1-3 years	3.0%
	Total market		**3.0%**

* Merrill Lynch and Citigroup, etc. build indices that make it possible to measure the performance of different sectors of the fixed income market. The government bond indices include all of the instruments that meet the minimum size and liquidity conditions. Their rules are public knowledge.
Source: Banco de la República.

D. PASSIVE AND ACTIVE TRANCHES

As noted already, considering the different objectives of foreign reserves, the investment portfolio is divided into working capital and the investment tranche. The latter, in turn, is divided into two components: the passive tranche and the active tranche.

- The passive tranche is intended to replicate the composition of the benchmark. The investments in this tranche are solely in U.S. money market assets and bonds issued by the governments of the United States, Germany and Japan. The value of this tranche was US$ 11,531 million on December 31, 2008.

- The active tranche seeks to generate a higher return than the benchmark. To accomplish that objective, the composition of the portfolios in this tranche is different from that of the benchmark. Within a controlled-risk framework, the managers of this tranche apply their experience and resources to define strategies that will increase the long-term return of the country's reserves. The value of the active tranche was US$ 10,123 million at the end of 2008.

The return on the benchmark is compared to the return on the investment portfolios to determine whether or not the managers have been successful. The challenge they face is to obtain higher returns than those on the benchmark, pursuant to the strict investment guidelines.

E. PERFORMANCE MEASUREMENT AND ATTRIBUTION

The performance of the reserve investment portfolio is measured on a daily basis at market prices (mark-to-market), according to the Global Investment Performance Standards (GIPS) of the CFA Institute.[15] A daily time-weighted rate of return is used to calculate the monthly returns. [16]

Performance is measured in a monthly (year-to-date) and annual horizon, using the U.S. dollar as the base currency.[17] This calculation is done for the benchmark and the portfolios, making it possible to measure absolute and relative returns against their respective benchmark. The fees charged by external managers are deducted from the gross returns to determine the net returns.

To identify the most important factors that explain absolute and relative return, a multifactor risk model is used for performance attribution. The

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15 The CFA Institute is one of the most important associations of investment professionals in the world. One of its objectives is to publicize and circulate common standards for measuring portfolio performance.

16 The daily time-weighted rate of return calculates the daily change in the value of the portfolio, excluding withdrawals or additions to the portfolio. The return for any period of time is calculated by geometrically compounding the daily returns. This is the method recommended by the CFA Institute.

17 Most private portfolio managers report their earnings in the client's local currency. The central banks, however, use a foreign currency (the dollar or euro) that pertains, in most cases, to the one used for intervention.

model estimates performance attribution on individual securities, asset classes, countries, currencies, portfolios, mandates and programs. It also allows for a comprehensive analysis of returns and risk factors, so as to determine the effectiveness of investment strategies.

VI. The External Management Program

Many central banks hire external portfolio managers to manage their reserves. They do so, in part, because of limited resources, but other factors also come into play, such as access to the experience of external managers and the tools they use, the opportunity to train personnel involved in internal reserve management, and the chance to have a basis for comparison.

The Portfolio Management Area of the Foreign Reserves Department manages the working capital, the passive tranche and a portion of the active tranche. The Foreign Reserves Committee implemented the external management program in 1994 to manage the remaining assets. The external managers of the active tranche are allowed to invest in assets other than those of the benchmark and in different proportions, pursuant to the policies and strict limits set by the Foreign Reserves Committee.

External managers are hired to add value to the reserve investment portfolio, through the use of strategies and assets that are appropriate for a reserve asset, but require more analytical capabilities and a more sophisticated infrastructure than what the Bank has. The firms selected meet both of these requirements, in addition to having access to numerous sources of information. The assets managed by external firms are located in custody accounts managed by Banco de la República, and the contracts for external management may be terminated when the Foreign Reserves Committee deems it necessary.

The external management program has provided Banco de la República with the following benefits, from the beginning.

- The external managers' capacity for analysis has enabled them to select investments with a good risk/return profile that is consistent with investment guidelines.

- The external managers have trained officers of the Bank, thereby contributing to the development of qualified staff. In addition, the advice and assistance provided by the external managers have helped to improve the Reserves Department's processes for investment and risk analysis.

- The Reserve Department receives information and analysis from experts who specialize in the financial markets where Colombia's reserves are invested. Moreover, the firms participating in the external management program have a solid group of credit analysts. This allows the Bank to complement and improve the analysis of the rating agencies.

Table 2
External Managers

Company	Amount under management (millions of dollars)
DB Advisors (Before Deutsche Asset Management)	914
Goldman Sachs Asset Management	2,248
Wellington Management	1,182
Barclays Global Investors	2,859
Western Asset Management	911
BlackRock Financial Management	1,288
Total	**9,401**

Sourcee: Banco de la República.

Currently, the firms involved in the external management program are Barclays Global Investors, Western Asset Management, Deustche Bank Advisors, Goldman Sachs Asset Management, BlackRock Financial and Wellington Management (Table 2). The last three firms were hired recently by the U.S. Federal Reserve to manage the resources of the bailout programs it created to counter the financial crisis.

The external managers are chosen from among world's leading firms in fixed-income portfolio management. Pre-selected firms are invited to answer a Request for Proposal (RFP), which allows for an evaluation of aspects such as the company's structure, organization, investment process, risk management, production reports, technology transfer services and historic returns. The last stage of the selection process consists of a visit to the firms selected as finalists. The final choice of the firm takes into account the proposed fees and the results from the entire process.

When an advisory agreement begins, the Reserves Department initiates a strict process designed to monitor the manager closely, and submits monthly reports on its performance to the Internal Foreign Reserves Committee and Foreign Reserves Committee. Although the results of the program are monitored continuously, the Foreign Reserves Committee receives a detailed report of the managers' performance every three years to determine whether adjustments in the portfolio are needed. This report includes a review of gross and net returns, excess returns, risk-adjusted excess returns, the attribution of excess returns to different factors, and other operational aspects. Depending on the results

of each manager´s assessment, the Bank may decide to modify the assigned amount or to terminate the contract.

At its May 2002 meeting, the Foreign Reserves Committee agreed to divide the external management program between two mandates: global and asset rotation. The purpose of the global mandate is to generate excess returns through yield curve and foreign exchange strategies [18] and through debt issued by entities with low credit risk, such as supranational and government-sponsored enterprises (with at least an A- rating). The asset rotation mandate is intended to generate value by diversifying the composition of the portfolio into high quality investments in the U.S. market, such as agency mortgages, corporate bonds and Asset Backed Securities.[19]At present, the managers of the asset rotation mandate are Goldman Sachs, BlackRock and Wellington; those of the global mandate are Barclays, DB Advisors and Western Asset Management.

18 The interest rate strategies involve buying or selling bonds depending on the expectations about changes in interest rates. The foreign exchange strategies modify the currency composition of the portfolio according to how exchange rates are expected to behave.

19 The internal active portfolio is managed similarly to the global mandate, but with stricter limits.

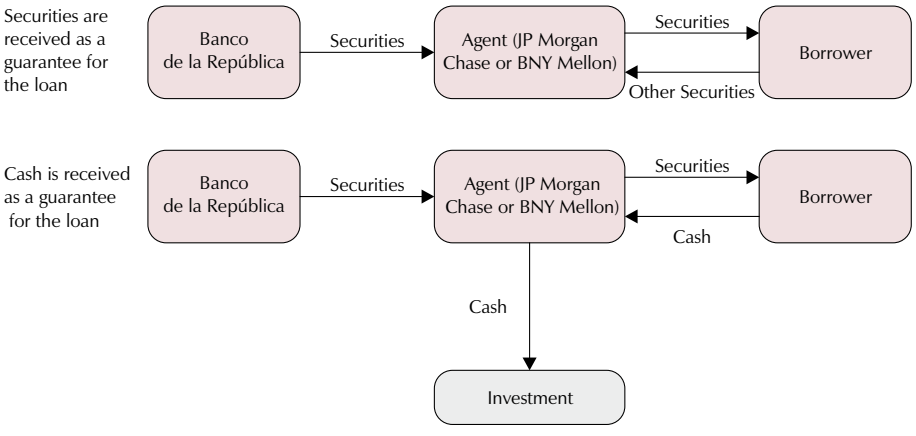
VII. The Securities Lending Program

Securities lending is normally used by central banks to increase the return of foreign reserves and to cover the cost of holding securities in custody. Under this type of operation, the central bank authorizes the entities that have custody of the securities to lend them through a repurchase agreement. The program was implemented by Banco de la República in 1994 and, since then, has generated US$43 million in after-fee returns. However, securities lending was suspended in March 2008 as part of the measures adopted to reduce credit risk in the face of the international financial crisis. The custodians authorized to participate in this program were JPMorgan Chase and Bank of New York Mellon. The latter was selected by U.S. Federal Reserve for some of the programs it has undertaken to counter the current financial crisis. Under the program, Banco de la República was receiving cash or securities with the highest credit ratings as collateral for such loans.

The securities lending program operated separately from the external management program. Although the custodians lent the securities bought by the external managers, all decisions were taken by the custodians, subject to the guidelines established by the Foreign Reserves Committee. Legally, the securities lending program and the external management program operated under separate contracts and with different responsibilities.

Figure 1 is a basic outline of how the securities lending program operates. When securities are received as collateral, the agent and the Bank try to earn additional interest by lending securities that are attractive on the repo market and receiving securities for which there is a normal demand. In the receipt of cash as collateral, the agent proceeds to invest it in instruments with a return that is higher than the interest rate paid in the repurchase agreement (repo rate for the security on loan). The primary objective of such programs is to take advantage of market

Figure 1
Operation of Securities Loan Program



circumstances in which the repo rates on the securities in the portfolio are quite low and additional return can be obtained without substantial risk.

Within the guidelines of Banco de la República´s program, the agent was allowed to receive government, agency and supranational securities as collateral. When it received cash as collateral, alternatives such as term deposits, certificates of deposit, floating rate notes[20] and reverse repos were permitted.

Considering the various risks, Banco de la República´s program had guidelines for loans and investments. In general, the main risks assumed in a security lending program were the following:[21]

- *Counterparty risk:* this occurs when an entity to which the agent has lent securities goes bankrupt, since there is a risk the securities will not be returned. To limit counterpart risk, the Bank required the borrowers to have high short-term credit ratings (A1/F1/P1). Besides there were restrictions on the maximum amount, the maximum maturity of the repo and the value of the securities received. To reduce this risk even more, only cash or securities with the highest credit rating were accepted as collateral.

- *Market risk:* although there is collateral (securities or cash), whenever counterpart risk occurs there is the chance that assets received as collateral may be worth less than the security on loan. To reduce that risk, the investment guidelines of Banco de la República´s program required loans to be over collateralized. In other words, the collateral it

20 Bonds with a floating rate pay coupons according to a market interest rate that fluctuates constantly.

21 The Bank remains exposed to some of these risks, because it continues to hold some of the investments it had on March 18, 2008 and, in the meantime, it is necessary to maintain a balance between the value of the investments and the value of the loans.

received should exceed the value of the security that was lent. In such cases, if at any moment the value of the collateral was lower than the market value of the assets given on loan, the agent should had asked for additional collateral.

When the agent received cash as collateral, the Bank faced additional risks related to reinvestment. The following are the main ones:

- *Credit risk:* this occurs if the issuer of the security or the entity in which cash is invested declares bankruptcy. Credit risk includes, for example, a default by depository institutions, by issuers of commercial paper, by repo counterparts or by counterparts/issuers of any other eligible instrument in which cash may be invested. The Bank limited credit risk by requiring credit ratings of A1/F1/P1 for repo counterparties and issuers of eligible assets. For securities that matured in over a year, the minimum credit rating was A1/P1/F1; however, in the absence of short-term ratings, the minimum rating was AA-. There were also restrictions on the types of assets that could be bought, on the maturity of the securities in question, on the reset date for floating-rate notes,[22] on the denomination of the investments and on the place of issue. Another way in which this risk was reduced was by limiting investments per issuer to 5% of all the assets available for investment.

- *Market risk*: this is the risk that the rate of return on investments might be lower than the rate paid in the repurchase agreement. The more volatile the price of an investment is, the greater the probability of losses due to this factor. The Bank mitigated market risk by reducing the types of eligible assets and limiting the maximum difference between the average term of the loans and that of the investments (duration mismatch) to thirty days. Moreover, it did not allow investments in assets denominated in currencies other than those of the collateral received, so as to hedge any exchange rate risk.

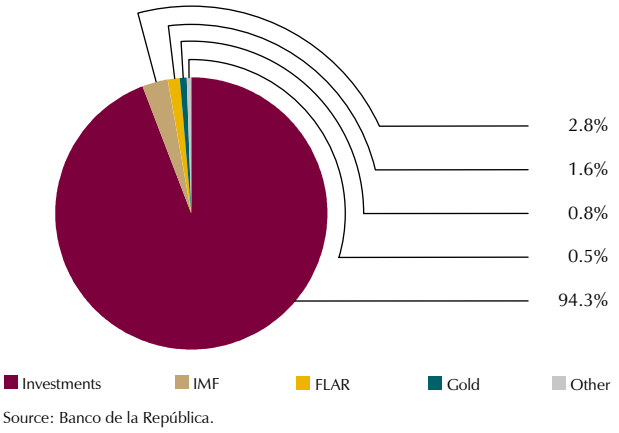
As mentioned, due to the financial crisis and in order to reduce credit risk, Banco de la República suspended new loans of securities in March 2008 and, at the same time, ordered a gradual reduction in outstanding transactions. As a result, the program declined from US$4,177 million to US$ 898 million in December 2008, and its value has continued to decline so far this year.

22 The reset date is the point in time when the coupon rate for floating-rate notes is set. According to the guidelines, 90 days was the maximum reset period. Yet, on average, it could be no more than 30 days.

VIII. Current Situation of Colombia's Foreign Reserves

The investment portfolio is the main component of the country's foreign reserves as of December 31, 2008, accounting for 94.3% of the total (US$22,665 million). The remaining balance is distributed among: i) the IMF quota and special drawing rights holdings (SDR) (US$ 670 million); ii) contributions to the Latin American Reserve Fund (FLAR in Spanish) (US$ 369 million), and iii) gold, Andean pesos and the positive balances on international agreements (US$ 336 million). Gross foreign reserves amount to US$24,041 million,[23] and external short-term liabilities, to US$ 11 million. The result is US$24,030 million in net foreign reserves (Graph 2).

Graph 2
Net foreign reserves



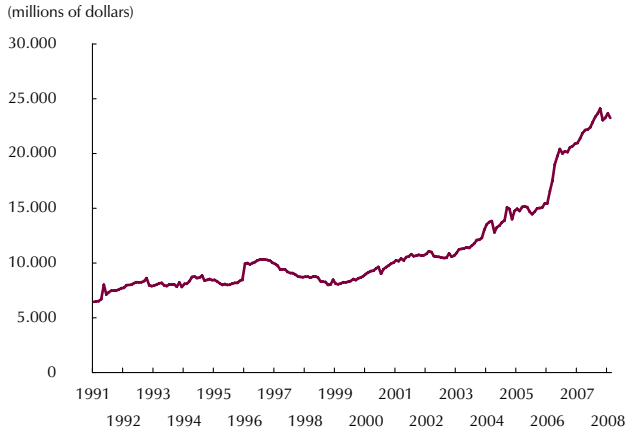
Source: Banco de la República.

A. External Vulnerability Indicators

An adequate level of reserves depends on a variety of factors: the degree of intervention in the foreign-exchange market, the size of the central bank's balance sheet, the opportunity costs of holding external assets, the degree of openness in the economy, and the depth of the local foreign-exchange market for dollars.

23 Net reserves are equal to the total stock of international reserves, or gross reserves, minus Banco de la República's short-term external liabilities. The latter are comprised of short-term obligations in foreign currency with non-resident agents.

Graph 3
Evolution of Colombia's net international reserves



Source: Banco de la República.

The Bank's strategy for accumulating foreign reserves recognizes the importance of having enough international liquidity to deal with capital flights from the country, which could be provoked by factors such as deterioration in terms of trade, financial panic or financial crises in neighboring countries. In this context, maintaining an adequate level of foreign reserves also serves to improve confidence in the country and, as a result, helps to reduce the negative effects of external crises (Graph 3).

Several indicators of external vulnerability are used to determine whether a country's foreign reserves are sufficient to prevent and counter external shocks. The most important are foreign reserves/money supply ratios and the *ratio of foreign reserves to external public debt amortizations in the next 12 months* plus the current account deficit. A comparison of reserves to monetary aggregates, such as M2 or M3, is intended to determine the economy's capacity to respond to capital flights provoked by a speculative attack. The reserve/short-term foreign debt ratio, plus the current account deficit, indicates the country's capacity to meet its credit obligations to the rest of the world in an extreme scenario where the country is shut out of international capital markets. In general, international markets infer low values for these indicators as possible warning signals of an economy's external vulnerability (Table 3).

Table 3 shows how the various indicators of net foreign reserves evolved between 2003 and 2008 in the Colombian case. The indicators for groups A and B are currently above one, which is the IMF recommended level. All the indicators for these groups posted a substantial improvement during the period. The ratios in Group C have remained stable and are at adequate levels. In particular, the net foreign reserves/goods imports ratio has stayed close to eight months.

When comparing several indicators of Colombia's international liquidity to those of other countries in the region, one sees that the foreign reserves/GDP ratio is at an intermediate level, near Brazil, Mexico and Chile (Graph 4). The growth and level of Peru's ratio stand out, due to the fact that domestic banks are able to receive deposits in dollars and the reserve requirements for those deposits are accounted for as foreign reserves.

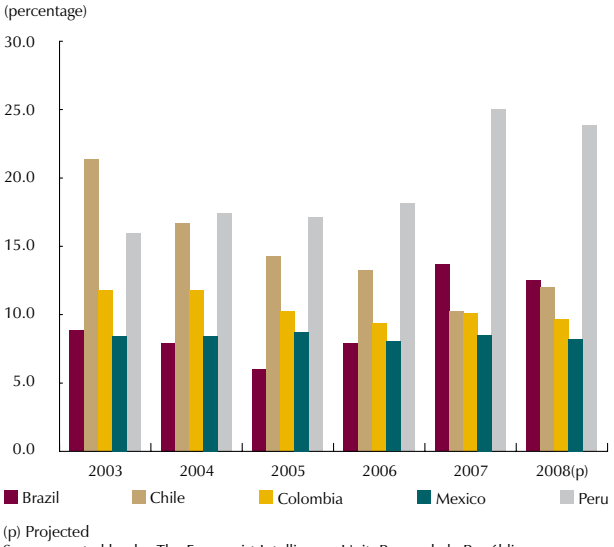
Another indicator of international liquidity; namely, foreign reserves measured by months of goods imports, shows that Colombia has a relatively better standing than Chile and Mexico, but not as good as Brazil and Peru (Graph 5).

Table 3
International reserves indicators for Colombia

	2003	2004	2005	2006	2007	2008
Balance						
Net International Reserves (NIR) (millions of dollars)	10,921	13,540	14,957	15,440	20,955	24,030
Indicators						
A. External debt amortization indicator						
External debt amortization (millions of dollars)	8,881	13,114	13,314	10,330	10,549	10,293
Net reserves / current year external debt amortization	1.1	1.5	1.1	1.1	2.0	2.2
Net reserves / next year external debt amortization	1.2	1.0	1.1	1.5	2.0	2.3
B. Adequate external liquidity position						
NIR/ (current year debt amortization)	1.2	1.7	1.5	1.4	2.1	2.7
NIR/ (next year debt amortization)	1.4	1.3	1.4	1.5	2.4	2.6
NIR/ (current year debt amortization + current year, current acount defficit)	1.0	1.4	1.0	0.9	1.3	1.4
NIR/ (next year debt amortization + next year, current acount defficit)	1.1	0.9	0.9	0.9	1.3	1.3
C. Other international reserve indicators						
NIR as months of good imports	9.8	10.1	8.8	7.4	8.0	7.7
NIR/M3	36%	32%	30%	26%	27%	28%
NIR/GDP	11.8%	11.8%	10.2%	9.4%	10.1%	9.7%

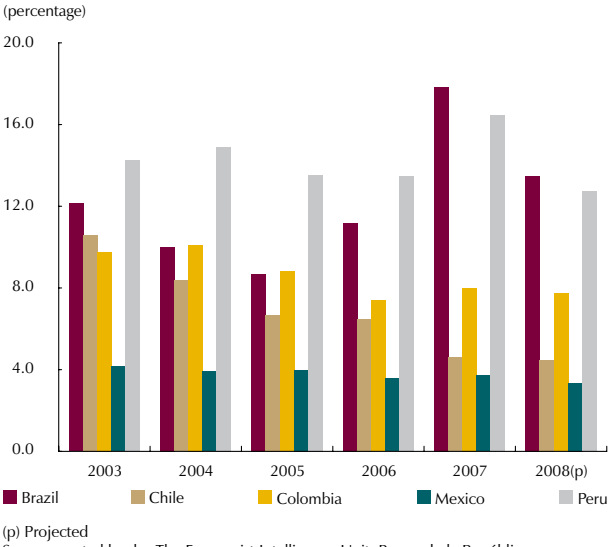
Source: Banco de la República

Graph 4
International reserves / GDP



(p) Projected
Source: central banks, The Economist Intelligence Unit, Banco de la República.

Graph 5
International reserves as months of good imports

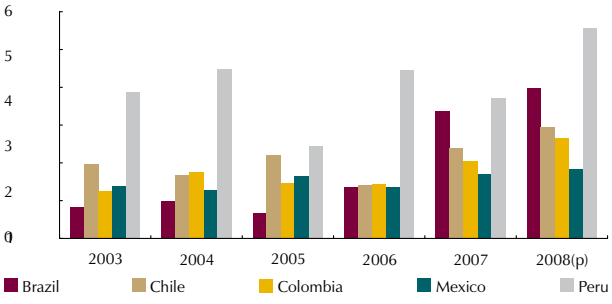


(p) Projected
Source: central banks, The Economist Intelligence Unit, Banco de la República.

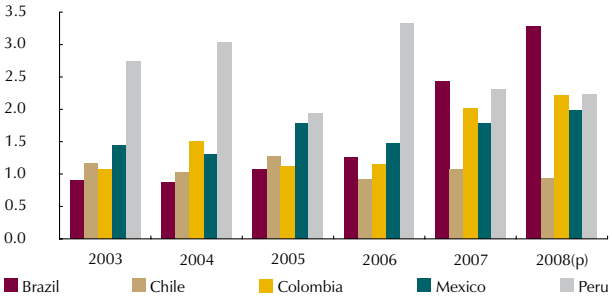
With regard to the ratio of foreign reserves to debt service and the ratio of foreign reserves to the current account deficit, plus amortization, Colombia's indicators are higher than those of Chile and Mexico, and lower than those of Peru and Brazil (Graph 6).

Graph 6

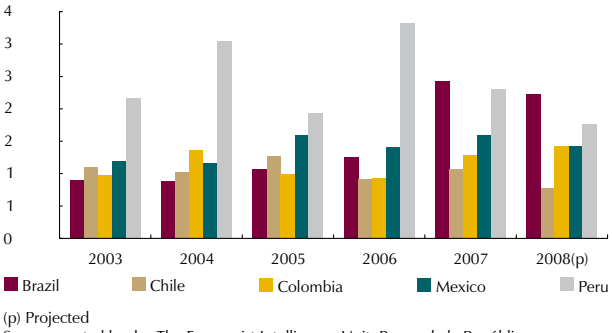
A. International reserves / foreign debt servicing



B. International reserves / foreign debt amortizations

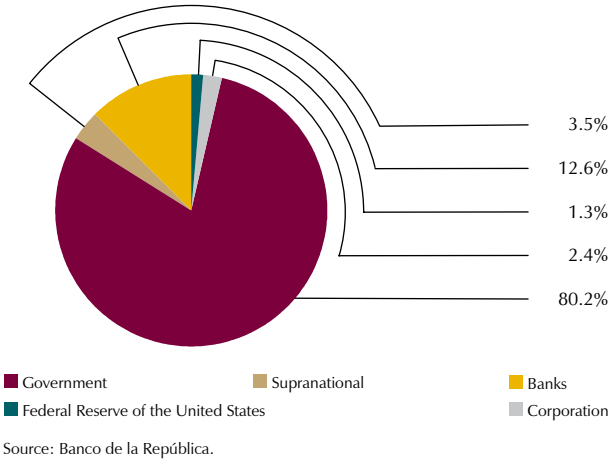


C. International reserves / (current account deficit + amortizations)



(p) Projected
Source: central banks, The Economist Intelligence Unit, Banco de la República.

Graph 7
Composition by type of issue of investment portfolio



Source: Banco de la República.

B. COMPOSITION OF THE FOREIGN RESERVE INVESTMENT PORTFOLIO

Nearly 85% of the portfolio is invested in government securities, the Federal Reserve Bank of New York and supranational entities (e.g. the World Bank, IDB and CAF).[24] The remainder is invested in assets issued by banks (12.6 %) and corporations (2.4%). Graph 7 shows the current composition by type of issuer.

Another important part of the investment portfolio is its composition in terms of asset classes. In this case, the composition is bonds (46.2%), commercial paper (18.8%), U.S. Treasury bills (16.1%), cash or its equivalents (5.6%), and Agency Mortgage-Backed Securities[25] (4.9%). Table 4 shows the structure of the portfolio by asset classes.

The credit characteristics of the investment portfolio are illustrated in Table 5: 45.1% of the portfolio is in short-term investments and 54.9%, in long-term investments. The majority of the investments are rated P-1 or AAA (the highest short-term and long-term levels, in that order). These figures are evidence of the high quality of the assets in the investment portfolio.

As of December 2008, the minimum rating for new investments in banking and corporate issuers is AA- . Nevertheless, the portfolio contains some lower-rated investments that were made prior to December 2008 or investments with a credit rating that has fallen since then. Each of these investments has been analyzed in detailed and their risk is considered to be less than the cost of liquidation, which is why they are being held to maturity. Within the previously defined risk framework, the Foreign Reserves Committee usually decides to sell investments with a risk that is higher than their liquidation cost.

24 The U.S. agencies are included in the "governments" group.

25 Commercial paper refers to short-term debt instruments issued by banks and companies. U.S. Treasury Bills are securities issued by the U.S. government that mature in less that a year.

Table 4
Composition by type of asset of investment portfolio

Instrument	Total percentage
Commercial paper backed by assets	0.65
Securities backed by assets	1.07
Repurchase agreements	1.32
Bonds	46.21
Floating bonds	0.35
Certificates of deposit	2.53
Securities backed by mortgages	4.92
United States T-bills	16.13
Money Market Fund	1.93
Commercial paper	18.82
Time deposits	0.47
Cash or its equivalents*	5.60
Grand Total	100.00

*exchange operations are included
Source: Banco de la República

Table 5
Distribution by credit rating of investment portfolio

Long-term rating	Total percentage
AAA	92.9
AA+	0.0
AA	1.4
AA-	4.4
A+	0.5
A	0.4
A-	0.1
BBB	0.0
Total largo plazo	**100.0**
Short-term rating	Total percentage
P-1	99.3
P-2	0.2
N.A.*	0.5
Total corto plazo	**100.0**

*This includes accounts payable, accounts receivable, profit from securities lending program, cash and futures margins.
Source: Banco de la República

C. HISTORICAL RETURNS OF FOREIGN RESERVES

In 2008, the net return on the country's foreign reserves was US$1,004 million, which is equivalent to a 4.5% rate of return in dollars.[26] This is explained largely by positive price performance and interest accrual. Investment performance in the midst of the financial crisis was satisfactory, inasmuch as the average rate of return during the past five years was 4.2%. Table 6 shows the return on Colombia's foreign reserves in the past five years. Since 2004, total returns on reserves were US$3,551 million.

The return on the country's foreign reserves in 2008 was influenced by the decrease in the interest rates decided by the Federal Reserve Bank and the European Central Bank in response to the dire economic and financial situation. Lower interest rates meant higher prices for the securities in the investment portfolio. The yield on the two-year U.S. Treasury note, which serves as a reference for short-term bonds in which reserves are invested, was 3.05% in December 2007 and ended 2008 at 0.77%.

Table 7 illustrates the rates of return on the tranches in the foreign reserve investment portfolio (the active tranche is divided into different mandates and the internationally-managed portion is shown separately).

D. OUTLOOK

Despite a high return on foreign reserves during the past eighteen months, due to the appreciation of the securities in the portfolio, returns in 2009

26 This includes the losses incurred in the securities lending program with Bank of New York Mellon and on Lehman Brothers' debt, as described later.

The return on international reserves is included in Banco de la República's income statement. This is calculated by multiplying the return denominated in dollars by the respective peso-dollar exchange rate. In turn, the amount of reserves in dollars is multiplied by the respective peso-dollar exchange rate. The variation in reserves in pesos, compared to the previous period, is listed on the equity statement, under the "Exchange Adjustment" account. If the return of reserves in pesos takes the exchange adjustment into account, it would be 16.4% for 2008.

Table 6
Historical return on foreign reserves

Year	Rate of return (percentage)	Yield in millions of dollars
2008	4.50	1,004.5
2007	7.40	1,326.1
2006	5.50	815.2
2005	0.60	81.4
2004	2.70	324.5

Source: Banco de la República

Table 7
Return on investment portfolios by tranches (percentage)

	Annualized return (October, 2002 to December, 2008)	Return in 2008
Indexed tranche	4.09	4.63
Non-indexed tranche managed by the Banco de la República	4.38	6.00
Global mandate	5.14	5.39
Rotating mandate	3.46	5.28
Working Capital	2.96	2.34

Source: Banco de la República

are expected to be low. The U.S. Federal Reserve's decision to lower its reference rate to a range between 0% and 0.25% means the expected return on reserve investments will be less than 1%, since the expected interest income from the investments is very low. Moreover, low interest rates expose the portfolio to significant market risk, because investments may depreciate when the Federal Reserve decides to normalize its monetary policy.

IX. Measures Taken to Counter the International Financial Crisis[27]

Given the depth and duration of the current international financial crisis, investments regarded as safe and reliable under normal economic conditions are perceived as risky from a credit perspective. Since 2007, Banco de la República has followed events closely and stepped-up its investment monitoring. In 2008, it adopted the following measures to reduce the risk posed by foreign reserve investments:

- In March, the securities lending program was suspended to reduce credit-risk.

- In April and May, the range of instruments eligible for investment was reduced. All new investments in Asset-Backed Securities were suspended and the maximum exposure to Asset-Backed Commercial Paper was cut by 80%.[28] This measure was adopted to reduce credit risk.

- In September, stricter rating requirements for issuers and instruments were adopted to reduce credit risk. Before that decision, investments with a minimum credit rating of A- were allowed. However, given the current uncertainty, new investments in banking and corporate issues

27 See Box 3 for the causes and some of the consequences of the international financial crisis. Its impact on global wealth is discussed in Box 4.

28 The maximum limit for Asset-Backed Commercial Paper declined from 50% of the value of the money market to 10%.

must be AA-, at the least. This is three notches above the previous rating requirement.

- Throughout the year, Banco de la República increased the participation of government-backed securities, investments in the Federal Reserve, and supra-national entities in the portfolio. Between June 30, 2007 and December 31, 2008, these securities increased from 55.3% to 88%, as a share of total investments (Table 8).

Table 8
Evolution of foreign reserves composition

	June 30, 2007			December 31, 2008		
	Value	Share	Minimum credit rating	Value	Share	Minimum credit rating
I. Investment portfolio	**18,835.2**			**22,699.0**		
Governments	9,801.6	52.0%	A-	18,204.4	80.2%	A-
Bank	5,796.2	30.8%	A-	2,863.5	12.6%	AA-
Non-banking corporations	565.0	3.0%	A-	155.2	0.7%	AA-
Supranationals	401.3	2.1%	A-	786.1	3.5%	A-
Asset backed securities	2,055.7	10.9%	AAA	389.8	1.7%	New investments are restricted
Repurchase agreements - Federal Reserve of the United States	215.4	1.1%	N/A	300.1	1.3%	N/A
II. Others*	**1,164.2**			**1,341.96**		
III. Total Gross Reserves	**19,999.4**			**24,041.00**		

*Includes gold, contributions to the IMF, contributions to FLAR and international agreements
Source: Banco de la República

- In September, the average duration of the portfolio was reduced from 1.46 to 1.27 to minimize market-risk.

To improve the risk balance, the recomposition of Colombia's foreign reserves has been done gradually to take advantage of maturity and the best opportunities for the sale of securities. Due to the financial crisis, this task has been conducted within the constraints of a low-liquidity market. Banco de la República has followed the trend of most of the world's central banks in aggressively shifting from bank deposits and paper to government debt.[29]

Despite these measures, the country's foreign reserves were affected by two credit events that originated with the extreme conditions on international

29 This is according to *TIC Dat*a, a bulletin published by the U.S. Treasury Department.

markets in 2008: US$2.7 million invested in a Lehman Brothers security (0.01% of the reserve portfolio) and US$20 million in a security that was part of the securities lending program managed by Bank of New York Mellon (0.08% of the reserve portfolio).[30] Prior to default, both securities complied with the minimum credit ratings stipulated in the investment guidelines for foreign reserves. Events of this type are extremely rare, considering the probability of default by issuers with high credit ratings has been very low historically.[31]

Assuming credit risk in a controlled way, the country earns more in the long term, but is not immune from credit losses. In the case of Lehman Brothers, Banco de la República has hired a foreign external law firm to assist with the claim process in the Bankruptcy Court of the Southern District of New York. In the case of the securities lending program with Bank of New York Mellon, it plans to file a lawsuit, with the support of external auditors and lawyers. The results of these initiatives will be made public in due course.

In general terms, the return on foreign reserves in the midst of the international financial crisis has been favorable, as most of the assets in which the country's reserves are invested have appreciated due to increased demand. Colombia earned US$ 1,923 million on its foreign reserves between June 30, 2007 and December 31, 2008, despite the aforementioned credit events. This amounts to an annual return of 5.9%, which is higher than the average annual rate of return during the past ten years (4.9%).

Banco de la República will continue to monitor the financial markets on a regular basis, analyzing possible sources of risk and further measures to safeguard the investment of Colombia's foreign reserves. It also will continue to keep the public opinion informed of any credit events that might affect those investments.

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30 Bank of New York Mellon (BNYM), as the custodian of part of the reserves, lent securities from the investment portfolio, receiving cash as collateral. Using a portion of the cash, BNYM invested US$ 20 million in a security issued by Sigma Finance, which was AAA rated at the time. On the eve of the payment moratorium, S&P gave the investment an A rating. Sigma's assets were liquidated in December 2008 and were not enough to cover the investment made by BNYM. Standard and Poor's estimates the frequency of default on instruments similar to that of Sigma has been 2.26% between 2005 and 2008. That period includes the financial crisis.

31 According to Moody's, only 0.076% of issuers with the same characteristics as Lehman Brothers (grade A bank issuers) defaulted between 1983 and 2007.

GLOSSARY*

Asset backed securities (ABS): It is a security whose value and income payments are derived from and collateralized (or "backed") by a specified pool of underlying assets.

Back office: It is an area that supports the trading of securities in an investment process, including record keeping, confirmation, conciliation, clearance and settlement of transactions, including the operational aspects of the relationship with counterparties.

Balance of payments: a record of all of a country's economic transactions with the rest of the world; includes information on the value of trade in goods and services, as well as transfer payments.

Benchmark: a basket of assets or a theoretical portfolio with predetermined weights based on certain rules. In general, the benchmark is intended as a broad replica of the performance of a financial securities market and serves as an indicator of the performance of other investment portfolios in the same market.

Bond: is a formal contract to repay borrowed money with interest at fixed intervals. The issuer of a bond owes the holders a debt and, depending on the terms of the bond, is obliged to pay interest (the coupon) and/or to repay the principal at a later date, termed maturity.

Collateral: in lending agreements, collateral is a borrower's pledge of specific property to a lender, to secure repayment of a loan. The collateral serves as protection for a lender against a borrower's risk of default - that is, any borrower failing to pay the principal and interest under the terms of a loan obligation.

Commercial paper: Short term obligations (usually at 270 days or less) issued on capital markets by corporations and banks.

Contract interest rate (coupon rate): it is the interest rate that a bond issuer will pay to a bondholder on the due dates and with a predetermined frequency. It is expressed as a percentage of the face value of the bond.

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* The definitions in this glossary are intended to facilitate and add to an understanding of the concepts described in this publication, but are not all inclusive in a legal sense. Under no circumstance are they to be taken as the definitive technical or legal definition of each term.

Correspondent banks: banks that make or receive payments and provide other banking services for banks outside the country. They include treasury correspondents.

Counterparty risk: risk arising from the possibility of non-compliance with obligations undertaken by counterpart in some financial operation.

Credit event: refers primarily to i) deterioration in the credit quality, and/or ii) default. According to the definitions used by the International Swaps and Derivatives Association (ISDA), any of the following may be regarded as a credit event i) bankruptcy of the reference entity; ii) obligation acceleration (a situation in which the relevant obligation becomes due and payable in advance, as a result of a credit event on the part of the reference entity); iii) default; iv) restructuring (covers events as a result of which the terms, as agreed by the issuer and the holders of the relevant security, have become less favorable to the holders than they otherwise would have been); v) repudiation, or vi) moratorium.

Credit risk rating (credit rating): a rating related to the ability of an issuer of debt securities to fulfill its obligations. It is issued by specialized international agencies (Standard & Poor's, Moody's and Fitch Ratings)

Credit risk: the risk posed by the possibility of credit events such as: i) deterioration in the credit quality of those who issue securities or the securities themselves, and/or ii) default.

Currency hedging: a technique used to reduce the exchange-rate risk on an investment through derivatives instruments.

Current account in the balance of payments: a portion of the balance of payments consisting of the sum of exports minus the sum of imports, plus net foreign factor income and net inward transfers.

Custodians: financial institutions, usually banks, that hold, safeguard and/or keep custody of financial assets belonging to their clients. Occasionally, this custody includes exercise of the rights pertaining to the maturities of the securities in question.

Embedded-option bonds: bonds that allow the issuer or the bondholder to redeem prior to maturity (callable or puttable, respectively).

Excess return: additional return on an investment portfolio compared to the return on a benchmark.

Exchange-rate risk (currency risk): it is a form of risk that arises from the change in price of one currency against another. An investment portfolio could suffer a loss due to fluctuations in the exchange rate.

Expected return: the profit or return an investment is most likely to produce within a specific period of time.

Floating exchange rate: an exchange arrangement that allows the market to determine the rates of national currencies in response to changes in the supply and demand for foreign exchange (foreign currencies). The central bank does not intervene to

control the price. As a result, the amount of pesos required to purchase a unit of foreign currency (e.g. U.S. dollar) can vary during the course of time.

Floating-rate notes: debt instruments that pay coupon rates indexed to a predetermined benchmark rate, which fluctuates constantly. For example, a debt instrument with a floating rate indexed to the DTF will pay coupon rates that will be determined in the future depending on the level of that benchmark rate at the time.

Foreign exchange market: the market where foreign exchange currency is bought and sold.

Front office: it is an area that implements investment decisions.

Gross return: the total return or income on an investment, before subtracting the cost of commissions, taxes and other expenses associated with the financial transaction.

Internal Rate of Return: the interest rate used to discount the current value of all future cash flows from a security (interest and amortization) so the sum of those discounted amounts is equivalent to the market price of the security. The annualized rate of return on an investment in a debt instrument is calculated under the assumption that the investment is held to maturity, that all contract payments are made, and that interest payments (coupons) are reinvested at that same rate of return.

Issuer: is a legal entity that develops, registers and sells securities for the purpose of financing its operations.

Legal risk: the risk that arises due to omissions or inaccuracies in the contracts for investment operations, or by the impossibility of legally enforcing such contracts.

Liquidity risk: the risk that an asset cannot be converted quickly into cash and at a minimum cost.

M1: a measure of a country's money supply that includes currency in circulation, deposits in current or checking accounts, and traveler's checks.

M2: a measure of a country's money supply that includes of M1, savings and time deposits (including certificates of deposit) with commercial banks, finance corporations, commercial finance companies and higher-order savings and loans cooperatives.

M3: a measure of a country's money supply that includes M2, fiduciary deposits in commercial banks and other sight deposits. It also is equivalent to the currency in circulation, plus financial system liabilities subject to reserve requirements.

Market risk (or interest rate risk): risk of losses of the investment portfolio arising from changes in interest rates in the economy.

Mark-to-market: an accounting practice that consists of recording the price or value of an asset or portfolio on a daily basis, at market prices.

Middle office: it is an area in a portfolio management operation that monitors all investments on a daily basis, in addition to measuring and controlling exposure to financial risk.

Modified duration: a measure for exposure to interest rate risk, since it measures a fixed yield instrument (bond) price sensitivity to changes in interest rates, that is, how much the instrument price changes in response to a 1% change in interest rate. This is applied analogically to a fixed income portfolio.

Money market: the market where highly liquid, short-term financial instruments (at less than 397 days) are bought and sold.

Money supply: the total stock of currency available in an economy. The principal measures of money supply are M1, M2 and M3.

Mortgage-backed security (MBS): financial instrument with a value and income payments derived from and guaranteed (or "backed") by a basket or pool of underlying mortgages.

Net return: the total return or income on an investment, after subtracting the cost of commissions, taxes and other expenses associated with the financial transaction.

Operational risk: the risk of a loss on the investment portfolio due to deficient internal processes, personnel errors or systems or equipment failures.

Overnight: transactions and obligations that mature within one working day.

Primary market: the market where newly issued securities are offered for sale.

Repo market: the market where repurchase agreements (repos) are traded.

Repurchase agreement (repo): a financial contract in which one party sells a security to another party, with a commitment to repurchase the same security at a fixed price on a predetermined future date.

Reputational risk: the risk of damage or detriment to an organization owing to loss of its credibility or reputation.

Reset date: in the case of securities with a floating rate, it is the point in time when the coupon rate is set for the next interest payment date, pursuant to the level of the benchmark interest rate to which the coupon rate is indexed.

Reverse repo: a financial agreement in which one party buys a security from another party, at a specific price, with an agreement to resell the same security to the seller at a fixed price at a predetermined date in the future. A reverse repo is the opposite of a repo operation.

Risk premium: added return an investor demands in compensation for holding a risky asset compared to a safe asset.
Risk: the possibility of incurring losses when investing in financial assets.

Risk-adjusted return: a measure of the income or return on an investment in relation to the amount of risk it assumed.

Secondary market: the market where financial instruments are bought and sold subsequent to original issuance on the primary market. The secondary market provides liquidity to previously issued securities.

Sovereign entities: generally refers to States (countries or nations) that enjoy sovereignty; in other words, States that hold and exercise supreme, independent authority to manage their internal relations autonomously and to determine their dealings with other States.

Special drawing rights (SDRs): it is a foreign exchange reserve asset created by the IMF in 1969 to complement reserve assets held by member countries. SDRs are assigned to each country by the International Monetary Fund, proportional to its quota with the IMF. SDR also is the unit of account of the IMF. Its value is determined according to the average value of a basket of internationally accepted currencies.

Supranational entities: bodies that are beyond the scope of governments and national institutions, and act independent of them. The term usually refers to multilateral organizations such as the World Bank, the Inter-American Development Bank (IDB), the Latin American Reserve Fund (FLAR, in Spanish) and the Andean Development Corporation (CAF, in Spanish).

Tax haven: a country with laws that grant tax advantages and privileges to investors, generally used by companies to secure tax exemptions.

U.S. Treasury bills: short-term debt securities (at less than a year) issued on capital markets by the United States Treasury.

Value at risk (*VaR):* method used to measure and control market risk, which consists of estimating the largest likely loss on an investment portfolio during a holding period, given a certain confidence level (usually a probability of 95%).

Volatility: a measure of risk of any asset. It reflects the price change of financial assets in a given period of time.