

Part III

Chapter 4

Primary market of the Federal Public Debt

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1 Introduction

Every year, significant funds are raised in the domestic and external public bond primary markets to meet government borrowing requirements.¹ To accomplish this, public debt managers search for efficient ways, analyzing the instruments, mechanisms for issuing the bonds, and procedures to communicate with investors. Each improvement helps reduce the government's financing costs² and develop the market.

This chapter examines Brazil's primary bond market, describing the ways bonds are issued in the domestic and international markets and the strategies adopted in each.

Section 2 reviews the National Treasury's actions and the ways they are consistent with international best practices with regard to transparency and predictability. Section 3 describes the instruments and strategies used to issue the bonds. Section 4 examines the characteristics of the buyers and Section 5 presents the ways the National Treasury manages liabilities' operations.

2 Transparency and Predictability

International best practices suggest that public debt operations in the primary market should be transparent and predictable³ so as to maximize competition among investors and achieve the best outcomes for the government.

Transparency and predictability are promoted mainly by well-defined legal and institutional frameworks, timely information on the Treasury's performance (before and after its operations, with regard to meeting targets) and consistent financing policies. All these areas have improved in recent years.⁴

Regarding the legal framework, mandates for issuing Federal public bonds were defined and the task was placed exclusively within the National Treasury.⁵ Next, the bonds' general characteristics were

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¹ In 2009, for example, the Treasury's borrowing requirements, according to its Annual Borrowing Plan, were R\$ 309.2 billion.

² Silva, Dieguez and Carvalho (2003) demonstrate the importance of re-opening fixed rate bonds. They analyzed a sample of 461 auctions of fixed/floating rate bonds, which were re-opened, which, in turn, reduced the government's borrowing cost by 10 basis points.

³ In the international market, the government competes with other countries for investors. Since access to this market is characterized by windows of opportunity, sovereign issuances tend to be concentrated in these periods. However, extreme predictability may not be advised, since it promotes opportunistic behavior by other issuers.

⁴ The National Treasury also adopted measures to increase transparency in the secondary market, as described in Part III, Chapter 6.

⁵ In the past, the Central Bank also issued bonds. The shift, in which the National Treasury became the only institution responsible for

consolidated in 2000 in a specific presidential decree.⁶ With respect to the institutional framework, the area within the National Treasury that manages the public debt was changed extensively, and divided into front, middle and back offices;⁷ this action further delineated the responsibilities of each, including the one tasked with conducting the auctions.

Information about the Treasury's actions is well structured and timely: Documents are regularly published, which include the Annual Borrowing Plan (ABP), the Monthly Auction Calendar and the Administrative Order for each auction.

The ABP establishes clear guidelines and yearly targets for the domestic and external public debt, including general objectives, strategies and instruments to be adopted. This information gives economic agents the information they need to make investment decisions. The Monthly Auction Calendar,⁸ presented on the last working day of the previous month, describes the general characteristics of domestic debt auctions, such as the date and type of auction (issuance, exchange or buyback), and establishes the maximum amount to be issued during the month. Finally, an Administrative Order⁹ is released before each auction, providing information about the objective and dates of the issuance, amount to be offered by bond, and maturity,¹⁰ among others.

Transparency about the Treasury's activities is further achieved through the Monthly Federal Public Debt Report and the Annual Report.¹¹ The last contains details about the public debt of the previous year, comparing the results achieved with the targets set *ex ante* in the ABP.¹² It offers information about public debt accounts to investors and society in general, providing a comprehensive view of measures adopted to define objectives and set targets - which include improving human and technological resources.

The Monthly Federal Public Debt Report presents the balance sheet on a monthly basis; it contains statistical indicators and comments about the previous month's domestic debt auctions and external debt operations.¹³

Finally, consistent financing policies with regard to achieving the ABP's targets or specific conditions defined in the auction calendars also increase the credibility of the information and allow for greater transparency and predictability. Moreover, competitive criteria offer incentives to set efficient prices in the primary market; these, in turn, help develop the secondary market and prevent distortions that could arise due to excessive government intervention.¹⁴

issuing Federal government bonds, established in the Fiscal Responsibility Law (LRF), was an important step towards separating monetary and fiscal policies and increasing transparency of the two institutions in the market. See Part II, Chapter 1, section 2.5.

⁶ Decree no 3,540, of July 2000.

⁷ As explained in Part II, Chapter 1.

⁸ See Annex 1.

⁹ See Annex 2.

¹⁰ Although bond issuances are executed through a Central Bank system called Ofpub, the decision process is managed within the Treasury.

¹¹ On its website, the Treasury also presents the results on external debt operations and domestic auctions in a timely fashion, providing information on the amount of bonds to be auctioned, the amount accepted, the investors involved, the average rates and accepted rates.

¹² Before the Annual Report was created in 2003, some of the information was published in the ABP. However, to provide more detailed statistics, authorities decided to create a separate document.

¹³ Until November 2006, this type of information was published by the National Treasury/Central Bank Joint Report that included, besides details about domestic public debt operations, the open market operations carried out by the Central Bank. As of December 2006, the focus shifted to the Federal Public Debt (domestic and external), published exclusively by the Treasury.

¹⁴ In many less developed markets, governments tend to act as price makers (rather than takers) in the auctions. Although there are several explanations for this (say, fear of collusion in the auctions), it generally hampers the market from being developed, adding costs in the medium and long term.

3 Financing instruments and strategy

3.1 Domestic market

The National Treasury's financing instruments in the domestic market have different characteristics in order to meet the needs of a broad base of investors. The range of instruments adopted (by means of competitive auctions) includes fixed-rate bonds (LTNs and NTN-Fs), inflation-linked bonds (NTN-Bs) and floating-rate bonds (LFTs).

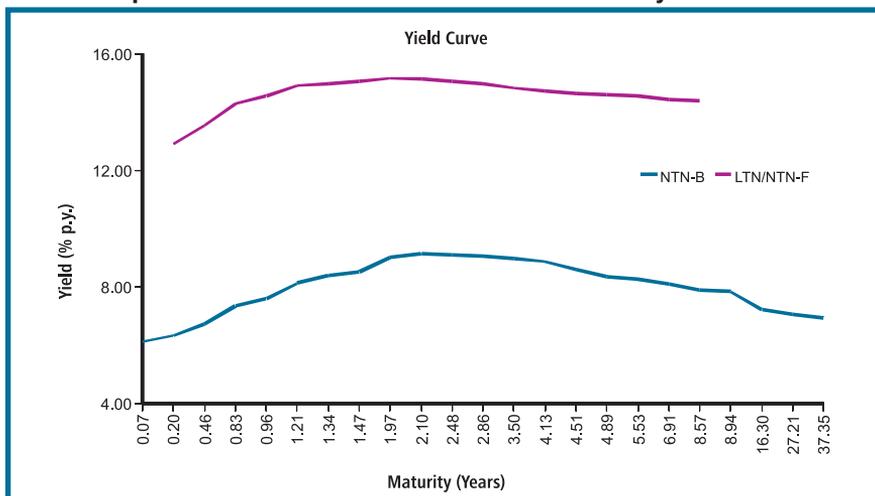
The aim of the fixed-rate bonds is to obtain funds and build an efficient yield curve, with clear and fluid benchmarks. Overall, the LTNs create six, 12 and 24-month benchmarks, while the NTN-Fs have three, five and 10-year points. The curve can also be lengthened through the creation of new fixed-rate benchmarks longer than 10 years.¹⁵

Auctions of fixed-rate instruments are held every Thursday (see the calendar in Annex 1). To stimulate the secondary market, the shorter LTNs (six and 12 months) and longer NTN-Fs (five and 10 years) are offered on alternate weeks.

The strategy adopted for inflation-linked bonds also aims to build an efficient curve by creating well-defined benchmarks. Issuance terms are three, five, 10, 20, 30 and 40 years, and the liquidity of the bonds has increased steadily.¹⁶ NTN-B auctions are held every two weeks on Tuesdays, and the longer-term bonds (20, 30 and 40 years) are offered monthly. As with fixed-rate bonds, the lower frequency of inflation-linked bond offerings aims to stimulate transactions in the secondary market.

Graph 1 presents the yield curves formed by fixed-rate bonds (LTNs and NTN-Fs) and inflation-linked bonds (NTN-Bs), on August 21, 2008.

Graph 1. Fixed-rate and inflation-linked bond yield curves



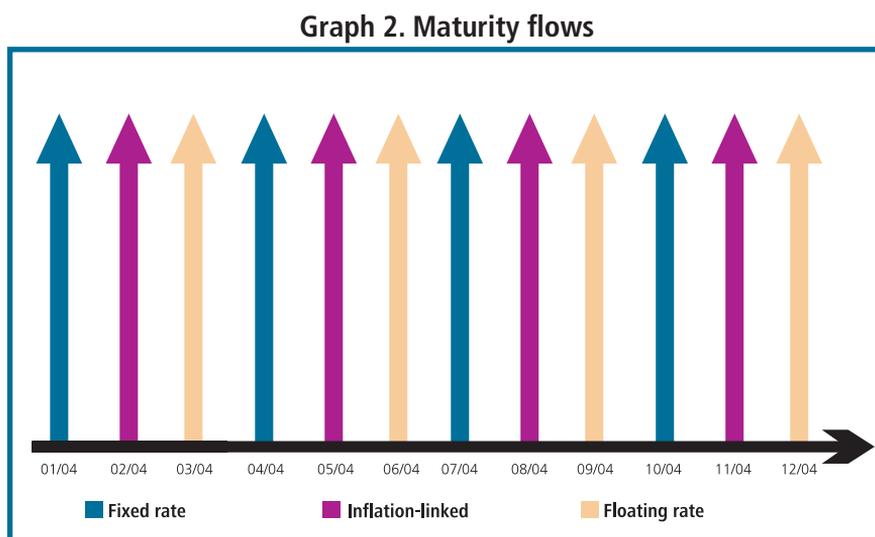
Source: National Treasury

¹⁵ Long-term, fixed-rate instruments are being gradually consolidated, as investor confidence about lengthening the terms of non-inflation-linked instruments in their portfolios increases (see Part III, Chapter 1).

¹⁶ The NTN-B market is relatively new, with the first issuance in 2003. Before then, the main inflation-linked borrowing instrument was the NTN-C, indexed to the General Price Index-Market (IGPM).

The third financing instrument is the floating-rate LFT. Unlike operations in other countries, where these instruments are generally indexed to quarterly or six-month interest rates, the LFT is indexed to the overnight rate. Since the Treasury promotes the LTN, NTN-F and NTN-B markets (rather than the LFT market), no clear policy exists to build an LFT curve. Currently, the terms offered are four and six years, and the volumes issued are relatively low.

An important procedure for building well-defined curves is to standardize the maturity dates of the various financing instruments. Fixed-rate bonds mature on the first day of January, April, July and October, a practice that coincides with the maturity dates of future-interest contracts (DI) negotiated at the Brazilian Mercantile and Futures Exchange (BM&F).¹⁷ For their part, inflation-linked bonds always mature on May 15 (in odd-numbered years) or August 15 (in even-numbered years), while LFTs mature on the 7th day of March, June, September and December. Thus, principal and coupon flows are distributed throughout the year (see Graph 2, below).



Particularly in emerging economies, debt is usually fragmented into a large number of low-value instruments with irregular maturity dates. This reduces demand, liquidity and creates conditions where price formation is difficult. Moreover, the lack of sound interest-rate references with different terms undermines other aspects of the economy, such as financing long-term private investments and executing monetary policy. Thus, the organization of maturities as described above helps resolve these problems.

However, when maturities are concentrated in certain time frames, refinancing the debt requires greater sophistication in order to manage risk: Longer maturities on specific dates need to be monitored, and an active risk management policy must be adopted. The Treasury has accomplished this in three ways. (a) It designated specific months for fixed-rate, inflation-linked and floating-rate bonds, which helps balance the monthly (but not daily) flows of debt principal and interest. (b) It has kept prudent levels of resources in cash, in the event auctions are canceled due to unexpected shocks in debt financing conditions. (c) It has a well-defined policy to manage liabilities (see Section 5).

¹⁷ In general, local investors are more interested in duration (longer maturity), if they can create a hedge against the risk of a rise in interest rates.

3.2 External market

After the foreign debt was renegotiated in 1994, Brazil regained access to the sovereign debt market.¹⁸ At the time, the aim was to obtain external financing so as to roll over the public debt. Actions were designed to respond to demand and to any windows of opportunity, without building a well-defined curve. The first sovereign bonds were short-term - a maximum of five years - in several currencies (yen, Deutsche mark, Portuguese escudo, Dutch florin, Austrian schilling, Italian lira, pound sterling and US dollar).

In the second stage, the aim was to target the dollar, euro and yen markets and a curve was built in each. The rationale for maintaining three curves was to diversify the investor base; this was done to better manage risk and diversify the portfolio, and also because the three have distinct characteristics. While many retail investors (individuals) participate in the European and Japanese markets, the global market in dollars is formed mainly by institutional investors.

As time passed, Brazil's borrowing requirements were reduced and the euro and yen bond markets became less important as funding sources.¹⁹ By 2005, when the Treasury became solely responsible for international market operations, management of the domestic and external public debt was integrated. In this context, the Treasury created a yield curve in the Brazilian Real in the external market to complement the fixed-rate curve in the domestic market. In September 2005, for example, when the longest fixed-rate bond in the domestic market had a maturity of seven years (NTN-F 2012), the Treasury issued the Global BRL 2016 in the external market, the first Real yield curve bond in that market.

The current strategy for managing the external securities' debt involves an approach that consists of (a) reducing the share of foreign exchange-rate public debt; (b) developing the offshore curve in *reais*; and (c) improving the efficiency of the curve in dollars, by repurchasing *off-the-run* bonds²⁰ and reopening *on-the-run* bonds²¹, focusing on those with 10 and 30-year points.

4 Issuance mechanisms and buyer characteristics

World Bank and IMF studies²² suggest that a precondition for developing the primary market is that issuances should be based on market mechanisms, such as competitive auctions and offers managed through syndicates. Auctions are the prevailing method for distributing industrialized and emerging economies' public bonds in domestic markets, while syndicates are more common in the international market:²³ a syndicate is a combination of investment banking firms that bid on new security issues and sell them if the bid is successful. The syndicate disbands when the security offering has been completed.

Brazil follows the same course - auctions in domestic markets and syndicates in the external ones. Also, it frequently assesses the appropriateness of these mechanisms and monitors the various buyers' participation.

¹⁸ See sovereign issuances in the statistical annex.

¹⁹ The curve in yens no longer exists, since all these bonds have matured; the most recent issue in the euro market was in January 2005.

²⁰ Bonds negotiated in the market, no longer available for primary issuance.

²¹ Bonds negotiated in the market, available for primary issuance.

²² Developing the Government Bond Market: A Handbook (World Bank and International Monetary Fund - IMF) and Developing the Domestic Government Debt Market: from Diagnostics to Reform Implementation (World Bank).

²³ Syndicates are gradually being used more in combination with auctions in domestic markets (for example, Belgium and Germany). A common policy launches the initial offer through the syndicate to ensure better distribution and diversification of investors. Later, auctions to reopen the same instrument are held in order to consolidate the instrument as a benchmark.

When issuing techniques are improved through careful analysis, financing costs are significantly reduced and bonds are more efficiently allocated in the primary market.²⁴

4.1 Domestic market

4.1.1 Issuance mechanisms

The main type of issuance in the domestic market is a public offer by means of competitive auctions open to all institutions registered in the clearing and settlement system called SELIC,²⁵ managed by the Central Bank (CB). One of SELIC's functions is to register transactions with government bonds. Institutions registered in the system (banks, brokers and others entities) can participate in the public offers.²⁶

Various models are used internationally in the primary market: Auctions can be open (offering wide access, as in Brazil) or closed (exclusive access to primary dealers, generally less than 15 institutions). The best model depends on the issuer's objectives, the degree to which the investor base is developed and the country's traditions, since when models are changed, those who have (or lose) access to the primary market are apt to resist.

Open auctions stimulate competitiveness in the primary market and reduce the risk of collusion, while closed auctions can favor secondary markets, where dealers may exclusively distribute the bonds they purchased. The Treasury frequently monitors the competitiveness of auctions either by tracking the demand-supply ratio at each auction or the participation of every institution.

Auctions are conducted through an electronic system managed by the Central Bank, and each participant may submit up to five bids. These are organized by decreasing order of price (or increasing order of rate), and the cut-off price is established at the point (i.e., the amount) where demand equals supply.²⁷ Sale auctions, also called traditional auctions, have different characteristics which are based on the instrument offered.²⁸ The auctions of fixed-rate instruments (LTNs and NTN-Fs) are discriminatory²⁹ or multiple-priced, i.e., each participant pays the price it proposed.

Conversely, the Treasury's floating rate instruments (NTN-Bs and LFTs) are offered through a single- or uniform-price auction.³⁰ Also, bonds with different maturities are offered simultaneously and these floating rate instruments do not specify the volume allocated to each, only the total amount. In these auctions, the Treasury receives the buyers' bids and then decides the cut-off price, rate, and amount of each bond to be sold.³¹ This process, which market participants call a *hybrid* auction, gives issuers more flexibility when determining the composition of the basket to be issued.

²⁴ The Treasury relies on a database of auctions that helps analyze each institution's participation.

²⁵ There are 6,330 institutions registered in the SELIC, of which 377 may participate in the Treasury's auctions. The latter are subdivided into: 177 brokers and distributors, 175 banks, 23 finance companies and two real estate financial institutions (this was the distribution in March 2009).

²⁶ Individuals and non-registered institutions may participate through a registered institution.

²⁷ The Administrative Order determines the maximum amount to be offered; however, the issuer may establish the cut-off price (or rate), and even to sell a quantity lower than the maximum.

²⁸ Annex 2 of this chapter offers more details about the classic types of auctions.

²⁹ The discriminatory price auction is a multi-unit auction in which units are sold for different prices.

³⁰ In this model, a single price, which corresponds to the minimum price to be accepted, is applied to all winning bids.

³¹ Rodrigues and Bugarin (2003) analyze the merits of this model, confirming the advantage of the mechanism when there is uncertainty regarding actual demand for public bonds.

The Treasury and Central Bank rely on dealers to help develop the primary and secondary markets.³² Although they do not have exclusive access to traditional auctions, dealers have the right (but not the obligation) to participate in so-called special operations with the Treasury: These include the second-round auction, at which each dealer may buy a certain amount of bonds offered at the average price established in the first-round auction. This type auction is only held if the entire lot (for each maturity) offered in the first stage is sold. The National Treasury Administrative Act for each auction specifies the conditions under which the second round may be held and the Joint Normative Act nº 18 establishes the criteria for defining the maximum quantity that each dealer may buy.³³

Dealer institutions play a crucial role in so-called *firm-bid* auctions: These were held until December 2003 to place longer and (generally) fixed-rate bonds in the market when there was no strong consensus on their interest rates, occurring during periods of crisis. In this process, dealer institutions sent *firm* bids to the Treasury in the first stage to purchase certain bonds. Once the Treasury accepted the preliminary bids, the volume and cut-off price were announced. The bonds were then offered in a second stage through traditional auctions open to all institutions. The results of the two stages determined the auction's results: The first stage was a parameter through which the Treasury could check the demand and the prices that would be offered in the second stage. This type of auction has been very useful to develop new markets or new long-term benchmarks.

Box 1. Dealer system

Main characteristics

Dealers are institutions accredited by the Treasury and Central Bank to help develop the primary and secondary public bond markets. The selected institutions are classified into two sub-groups. *Primary* dealers handle transactions of public bonds in the primary market, while *specialist* dealers trade in the secondary market. There are a total of 15 dealers, of which four handle transactions only in the primary market, six only in the secondary market, and five operate in both.

To be accredited, institutions must have (a) reference assets of at least 50% of the minimum value established for financial institutions with trade portfolios; (b) a high ethical standard for conducting operations in the financial market; and (c) no restrictions regarding accreditation, determined by the Treasury or Central Bank (CB). Each institution's performance is evaluated every six months, and those that perform badly are replaced. The evaluation is based mainly on repo operations with CB and participation in the Treasury's public debt offerings.

In addition to the auctions, other forms of issuance exist which account for a relatively small share of the total debt. One involves direct bond placements for specific purposes defined in Brazilian law: e.g. debt securitizations, payments to equalize interest rates associated with the Export Funding Program (Proex), and issuances for agrarian reform (TDA). Another is the Treasury Direct program (TD),³⁴ which involves the direct on-line sale of public bonds to retail market (individuals). In the TD, investors can buy a fraction (20%) of a bond,³⁵ making it accessible to a wider base of investors. Its objectives are to: (a) democratize access to investment in Federal bonds, (b) encourage long-term savings and (c) provide information on the management and structure of the Federal Public Debt.

³² The rules and criteria of the dealer system are defined in Joint (National Treasury and CB) Normative Acts nº 16 and nº 18, which establish dealers' rights and duties. The documents are available at <http://www.tesouro.fazenda.gov.br/legislacao/download/divida/.pdf>.

³³ Other references to the dealer system can be found are in Part III, Chapters 1 and 3.

³⁴ See Part III, Chapter 7.

³⁵ If the price of a bond is, say, R\$1,000, an investor may buy 0.2, for R\$200.

4.1.2 Buyer characteristics

To better understand how buyers of public bonds reflect the ABP guidelines (e.g. to gradually substitute floating-rate bonds for fixed-rate or inflation-linked bonds),³⁶ it is important to examine their characteristics and goals.

Floating rate (LFTs). These bonds are mainly carried by banks in their own portfolios, as well as by most of the investment funds, both which prefer to be remunerated by the overnight interest rates. The daily liquidity offered by the investment funds, coupled with the daily announcement of the funds' quotes, is a key reason for the significant presence of LFTs in their portfolios. To cover withdrawals that can occur when prices fall, bank/fund managers maintain a large part of their resources invested in these bonds, thus ensuring high liquidity.

Inflation-linked (NTN-Bs). Investors in these bonds seek more than daily liquidity and want to match their liabilities or investment objectives with the bonds' features. As they generally carry the bonds for longer periods, they are known as *buy-and-hold* investors and mainly include social security investors managing their own portfolios³⁷ and individuals (Treasury Direct).³⁸ Non-resident investors have also participated in this market, contributing to its liquidity and diversifying the investor's base.

Fixed-rate (NTN-Fs and LTNs). Investors in fixed-rate bonds monitor the economic situation more closely, given the greater sensitivity of prices to interest rate variations. These longer-term bonds are generally sought by financial institutions and non-resident investors. Individuals also allocate a considerable share of their public-bond investments to these instruments (through the TD program). However, shorter LTNs are in greater demand when interest rates rise, and, given their short-term and low-risk features, financial institutions use them to maintain liquidity.

4.2 External market

4.2.1 Issuance mechanisms

External market operations are regulated by a November 2004 Senate resolution³⁹ which authorizes the Treasury to execute the bond issues and manage liabilities;⁴⁰ these operations must be cleared by the Office of the Attorney-General of the Ministry of Finance. Operations in the global market must be conducted according to standards set by the Securities and Exchange Commission (SEC), the agency that regulates the securities market in the United States: One SEC requirement is that the issuer must hire a US law firm to represent it, not only at the SEC, but also with those participating in the market. All of Brazil's international market operations must be approved by these lawyers.

Dealer managers (DMs)⁴¹ for external operations, acting as underwriters, help the issuer, distribute the bonds and serve as the intermediary between the issuer and investors. The issuer pays the underwriters an agreed-upon fee for their services in proportion to the volume of the operation.

³⁶ For details on the public debt financing strategy and objectives, see Part II, Chapter 2.

³⁷ The preceding section notes that when the management of social security portfolios is outsourced to an investment fund, the profile of the investment varies, with a significant amount of holdings in floating-rate bonds.

³⁸ Even recent SELIC rate increases did not attract these investors to LFTs.

³⁹ Senate Resolution no 20 of 2004.

⁴⁰ In the past, the legal framework was provided by 1989 Resolution n. 96, which was replaced by Resolution n. 17 of 1992.

⁴¹ In general, Brazil grants the mandate to act as DMs to two institutions in each operation.

Given the dynamic nature of the financial market, the choice of underwriters (DMs) must be based not only on criteria related to the operations' costs but also to the financial institutions' expertise. Qualities should include the DM's distribution capacity, commitment to ensure liquidity to the bond after it is issued (to stimulate negotiations in the secondary market), and its performance record in previous operations.

In recent years, the Treasury accessed the international market frequently,⁴² having established relations with 15 investment banks that maintain weekly contact with its External Operations desk and are potential DMs. Such frequent contact means the Treasury need not request formal proposals (RFPs) for this task. Although RFPs could work well for investment banks with which it has less frequent contact, the Treasury does not follow this process, since it tends to generate rumors about upcoming operations, which, in turn, cause the country's financial conditions to deteriorate.

External issues follow market standards and are conducted by a process of book building (which refers to the consolidation of bids) rather than by auction, as in the domestic market. This process is relatively flexible, especially when compared to traditional auctions.

The external issuance process has three stages. In the first, the issuer and DMs define the execution strategy which identifies priorities in terms of cost and volume of resources to be raised, and defines the strategy to achieve the objective. In general, the Treasury, through the DMs, announces the rate interval (spread or price) and the volume to be issued;⁴³ the point of this exercise is to offer investors the information they need about the issuer's objectives. Once the operation is announced, investors offer bids, which contain the volume and rate (or price) they will pay for the bonds. After the size and quality of the bid is known, the demand curve becomes clearer.

The second stage begins when the issuer determines the bond's rate, which can differ from the one previously announced. DMs then notify investors with this information, who are free to change or cancel their purchase orders. If they agree, investors confirm their orders and the issuer decides on the volume.⁴⁴ Once the rate and volume are set, the bond is launched and the terms are announced to the market.

Despite the announcement process and the flexibility of the book-building mechanism, the final result should not differ too greatly from the initial terms, so issuers can maintain credibility with investors. Since investor decisions are based on the issuer's original signals, substantial variations could harm investors and, ultimately, the issuers. The initial rate should reflect the issuer's and the DMs' market reading, and a significant disparity between the two implies a poor reading of the market.

The third stage is the allocation of the orders. As opposed to auctions, where bonds are allocated after cut-off rates are determined, in a book building process the issuer and the DMs have the flexibility to allocate orders in ways that achieve the optimal combination between long-term investors and liquidity providers.

4.2.2 Buyer characteristics

The types of investors that participate vary. Dedicated funds generally adopt an emerging market index as a benchmark⁴⁵ whose composition must be reflected in their portfolios. Since these funds hold assets for a

⁴² Forty issues were made from 2003-2008 (see the statistical annex).

⁴³ The indication of rate can be made by means of the end points of the interval or simply announcing a specific point, which will not necessarily be the final rate of the operation.

⁴⁴ Rate and volume are interdependent variables. If the aim of the issuer is to raise a certain volume, rate becomes the dependent variable; if it is to borrow at a certain cost, volume becomes the dependent variable.

⁴⁵ There are several emerging market rates, of which most popular is the EMBI+, created by the JPMorgan bank.

long period, the model is popularly known as *buy and hold* or *real money*. For their part, hedge funds do not need to follow any particular index and try to identify arbitrage opportunities in the market; their behavior is less steady than that of dedicated funds, but they represent an important provider of liquidity.

Other types of long-term investors include pension funds and insurance companies, as well as private banks, which are increasing their participation; these are retail funds that specialize in managing large assets. Commercial and investment banks also participate, not only to generate flows for their customers, but also as end investors. Banks, when operating through their proprietary desks as hedge funds, are generally considered short-term investors. Central banks have also been increasing their investment in other governments' domestic and external securities, although their participation is still limited. Finally, other participants include corporations and retail investors.

Long-term investors help reduce the bonds' volatility in the secondary market, enhancing their performance, while short-term investors contribute to their liquidity. However, since a large share of the latter tends to sell the bonds immediately after they are bought in the auction to profit from the new issue premium, their participation is proportionally smaller.⁴⁶

Table 1 presents characteristics of the book-building of the Global 2037 reopening, which occurred in January 2007. It also lists the demand/supply ratio and average allocation, which indicate the issue's spreading out.

Table 1. Characteristics of the Global 2037 reopening

Type of investor	Order	Allocation
Portfolio manager	40%	54%
Banks	26%	19%
Hedge funds	27%	16%
Insurance companies	3%	5%
Private banking	2%	4%
Pension funds	2%	2%

Region	Order	Allocation
USA	49%	46%
Europe	24%	36%
Latin America	25%	15%
Asia	2%	3%

Demand/supply average allocation	3 \$6.5 million
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The development of the capital market in recent years has broadened the investor base, making it increasingly difficult to distinguish each investor's profile: e.g. a dedicated fund can place part of its portfolio in a more leveraged fund, and the opposite can also occur. Thus, it is important for the issuer to be updated about the constant changes in this base.

In the past few years, the investors willing to add exposure to Brazil in their portfolios has expanded, due mainly to two factors. (a) As the economy strengthened and Brazil's bonds achieved investment grade in April 2008, new investors started to buy them and (b) the Treasury attempted to improve communications with the market, ultimately with a view to expanding the investor base.⁴⁷

Further, to expand the investor base, the way in which issuances were executed changed in 2006. Given the difference in time zones in American, European and Asian markets, Brazil began announcing the issuances

⁴⁶ Investors who sell bonds immediately after they are rated are known as *flippers*.

⁴⁷ See Part II, Chapter 1 for more details on advances in the area of relationship with investors.

at the opening of the New York market, but reserved the right to reopen them later, when the Asian market opened, for a volume of up to 10% of the original issue. This strategy succeeded, as Asian participation in the primary market has grown steadily.

5 Liability management operations

Liability management (LM) operations are important for debt managers' financing strategies. Common in industrialized countries, these operations are increasingly applied in emerging economies as their markets develop and the sophistication and specialization of debt managers evolves. Through these operations, risks associated with debt maturities can be reduced, the process of improving the debt profile is accelerated, distortions in the secondary market are corrected and public bonds become more liquid. Brazil regularly uses these operations, both in the domestic and international markets, to achieve the goals described below.

5.1 Domestic market

LM operations in the domestic market are carried out to reduce short-term refinancing risks, lengthen debt maturities and help develop the secondary market. Operations are executed by means of exchange and buyback auctions announced in the monthly calendar, along with traditional auctions.

There are three different exchange auctions of LTNs, LFTs and NTN-Bs. In the LTN auction, the Treasury accepts the bond with the closest maturity, with a term of two-weeks to three-months, and, after the sale, issues the six and 12-month LTN. Similarly, in the LFT exchange auction, the Treasury accepts the shortest-term bond, between two weeks and three months, and issues bonds of four and six years.⁴⁸ The operations occur in the SELIC, with liquidation in d+2. LTN exchanges occur twice a month, while LFTs are monthly. In both auctions, the Treasury sets the prices of the bonds it is buying back, while those of the issued bonds are determined competitively.

The NTN-B exchange aims to lengthen the public debt and promote liquidity of on-the-run bonds. At the buying end, the Treasury accepts a series of assets, such as LFT, NTN-C, CFT, TDA, NTN-A and securitized debts, other than the NTN-B.⁴⁹ The major restriction it imposes is that the accepted asset must have a lower duration⁵⁰ than the NTN-B issued at the sale. Unlike LTN and LFT exchanges, with the NTN-B, the Treasury establishes the prices of the assets being issued and the holders include the price of the asset being delivered in the bid. Auctions occur twice a month, always one day after the traditional auction, and use market parameters for price references. Liquidation is carried out in d+1, through the Clearing House CETIP.⁵¹

Finally, there are two types of buyback auctions: Short-term LTNs (two weeks to three months) and long-term NTN-Bs (20, 30 and 40 years). The aim of the former is to reduce short-term refinancing risks, while the latter is to promote liquidity in the long part of the curve. Both occur once a month and, unlike the exchange auctions, are restricted to dealers.

⁴⁸ As occurs in sale auctions, in the case of LFTs, the exchange auction is a hybrid with a uniform price. (See Section 4.1.1 for details).

⁴⁹ Since NTN-B coupons are detachable, they and the principal are part of the eligible assets.

⁵⁰ For the concept of duration, see Part II, Chapter 3.

⁵¹ For details on Cetip and other depository and clearing houses, see Part III, Chapter 3.

Table 2 illustrates the contribution of these operations in the management of Brazil's public debt. Through these operations, the process of exchanging floating-rate bonds (LFTs), particularly the NTN-Bs, was accelerated, thus extending the average maturity of the debt in shorter bonds for longer ones, and reducing the refinancing risk in buyback auctions.

Table 2. Liability management operations in the domestic market

R\$ Million	2004	2005	2006	2007	2008
Exchange operations that affect average maturity and profile	4,255	20,174	44,641	9,904	3,625
LFTs accepted in NTN-B auctions	1,385	18,931	43,021	9,904	3,625
LFTs accepted in NTN-C auctions	2,870	1,243	1,619	-	-
Exchange operations that affect only average maturity	23,902	66,806	44,711	70,999	55,006
Exchange of LFTs for LFTs	18,664	56,482	25,813	28,183	28,404
NTN-Bs accepted in NTN-B auctions	720	6,591	14,893	37,570	25,765
NTN-Cs accepted in NTN-B and NTN-C auctions	4,528	3,733	4,005	5,245	836
Total exchange operations*	28,158	86,980	89,352	80,903	58,630
Buyback operations**	19,324	40,674	26,793	23,318	12,515
LTNs	13,578	33,733	19,935	22,563	11,462
LFTs	3,961	3,573	238	-	-
NTN-Bs	675	2,106	6,552	755	1,054
NTN-Cs	1,110	1,262	68	-	-
Total of exchange and buyback operations	47,481	127,654	116,145	104,221	71,145
Percent of outstanding DFPD in market	5.9%	13.0%	10.6%	8.5%	5.8%

* Corresponds only to the total of exchange operations that affect average maturity and profile of the DFPD.

** Carried out to reduce refinancing risks and improve the bond's liquidity in the secondary market.

5.2 External market

As with LM operations in the domestic market, those in the external market have various purposes, such as reducing refinancing risks at certain points of the curve, achieving net present value (NPV) savings, or simply increasing efficiency in the yield curve. There are several types of operations, such as exchanges, pure buybacks and buybacks coupled with new issuances. They can be public or private and less frequent than in the domestic market, given the particular characteristics of access and the competition with other issuers of similar risk grade in the external market.⁵²

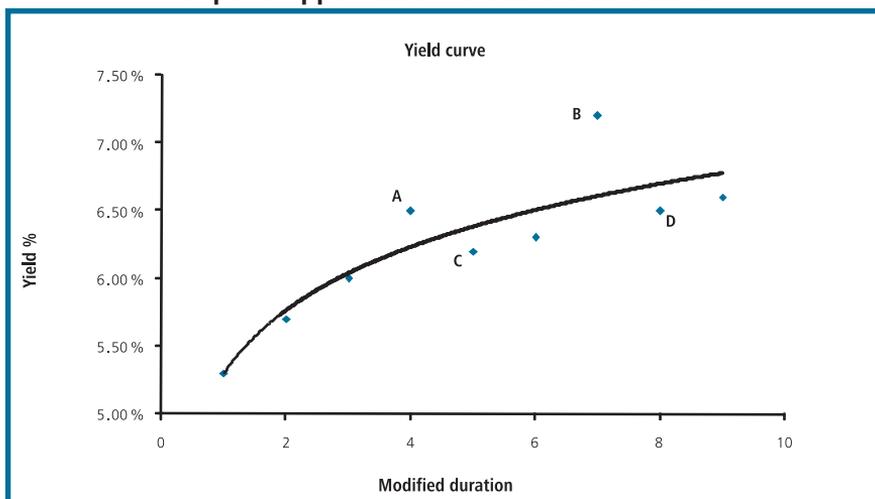
Opportunities for NPV savings occur when the bonds removed from the market have a yield rate above the curve that is considered fair. Graph 3 illustrates a clear opportunity for NPV savings. The issuer can structure an operation in which A and B bonds are bought back and bonds C and D are issued, either by means of direct exchanges or through independent operations. As a result, the issuer obtains financing at a lower cost, thus monetizing net savings at present value.⁵³

Brazil's LM operations in the last two decades can be divided into three groups. The first involved restructuring the external debt, concluded in 1994, within the Brady Plan. For practical purposes, the renegotiation process can be called *first-generation* LM operations, in which the entire external debt was restructured into nine bonds, as presented in Table 3.

⁵² See footnote 3.

⁵³ Generally, durations differ for the bonds involved in each leg of the operation, which may change the issuer's risk structure.

Graph 3. Opportunities for NPV achievement



Source: National Treasury

Bonds issued after 1994 are part of the *sovereign* debt, as opposed to *restructured* debt. As the Brady bonds⁵⁴ had the stigma of being the result of a renegotiation process, their rate was generally above the fair curve, which included only sovereign bonds. Therefore, a situation evolved, as the one described in Graph 3, where the A and B bonds were Brady bonds, while the others were sovereign bonds. Thus, second generation LM operations were carried out in order to exchange bonds derived from the renegotiation process for sovereign bonds. The primary goal was to achieve NPV and the second was to increase the sovereign debt profile, which did not suffer the stigma related to the default that occurred in the 1980s. Through second-generation LM operations, global bonds with maturities in 2011, 2018, 2024, 2027, 2030 and 2040 were issued. Finally, an exercise was carried out in 2005 that resulted in the purchase of all remaining Brady bonds.⁵⁵

Once distortions (caused by bonds derived from the restructuring process) in the curve were eliminated, the focus shifted to reducing refinancing risks — considered high in some years — and increasing the efficiency of the curve *per se*. In this context, third-generation LM operations were conducted, which included (a) a buyback tender offer along several points of the curve, (b) a bond exchange tender offer at the long part of the curve for Global 2037, and (c) the Buyback Program, in which the Treasury performed typical secondary market transactions. Reduced liquidity of points that were considered distorted, along with increased liquidity of the benchmarks, produced a more efficient yield curve.

Table 3: LM operations in the external market

Generation	Bond issues/operations	Objectives
First	BIB, IDU and the Brazilian Brady Bonds: Discount Bond, Par Bond, Front-Loaded Interest Bond (FLIRB), Front-Loaded Interest Reduction with Capitalization Bond, Eligible Bond (EI)	External debt restructuring
Second	Global 2011, 2018, 2024, 2027, 2030 and 2040 Brady bond call exercise	Achievement of NPV and increased sovereign debt profile. Increased efficiency of the curve
Third	Tender offer, exchange offer, buyback program	

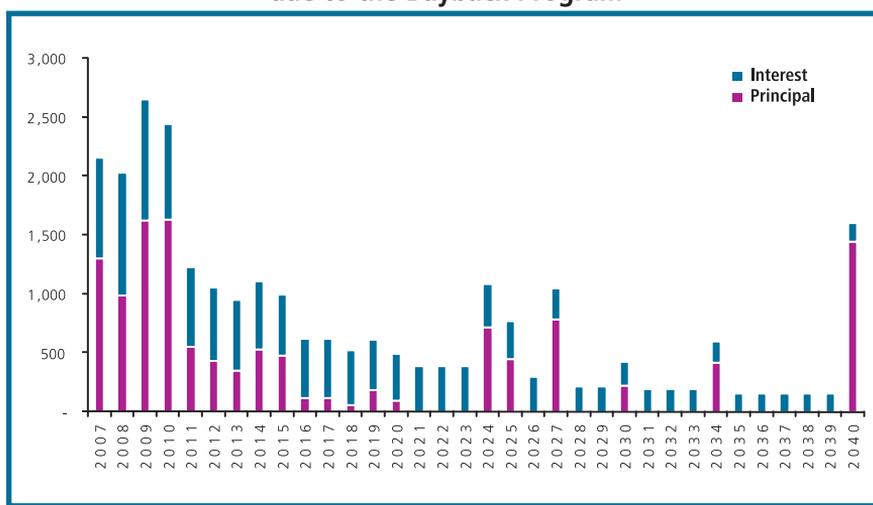
Source: National Treasury

⁵⁴ Of the nine bonds in the restructuring process, two were issued before 1994, when the Brady Plan was launched. However, for the purpose of simplification, all nine are called Brady bonds.

⁵⁵ Brady bonds had a par option, to be exercised by the issuer on any date of the coupon's payment.

The Buyback Program has significantly affected the structure of Brazil's debt. Since 2006, buybacks reached \$15.5 billion in financial value (\$12.5 billion in face value), which removed from the market about 24% of the total stock of global bonds, 6.96% of Bradies, 13.46% of euro bonds, 12.78% of samurai bonds and 6.53% of euro pounds.⁵⁶ As illustrated in Graph 4, the reduced flow of interest to be paid by 2040, due to the Buyback Program, reached \$13.8 billion in current values. Buyback has reduced the volatility of the Federal public debt, thus diminishing refinancing risks.

Graph 4. Reduced flow of Federal Public Debt payments due to the Buyback Program



Source: National Treasury

Table 4 complements the analysis of the effects of third-generation LM operations by including the volume of tender offers and the C-Bond call exercise, and later of other Brady bonds. In all, these operations reached \$21.4 billion in face value.⁵⁷ It should be noted that before the call of the C-Bond, it was exchanged for the A-Bond, which is a global bond (without a buy option, with a similar maturity structure, but displaced in time with respect to that of the C-Bond), and relied on Collective Action Clauses (CACs). The exchange, announced in July 2005 and performed that August, removed \$4.5 billion from the market, equal to about 80% of the stock of the C-Bond. The rest, \$1.1 billion, was entirely redeemed in October, with the exercise of the call option embedded in them.

The main achievements of the exchange were to: (a) reduce principal payments in the short term, thus lengthening the external security debt's maturity and (b) reduce the stock of Brady bonds, whose prices were typically worse (lower) than those of equal average maturity global bonds, which distorted the sovereign yield curve. Further, the cost of the exchange program was low, since the exchange did not demand disbursement from the Treasury.

⁵⁶ All the percentages were calculated at the end of December 2005.

⁵⁷ Besides the liability operations, the Government anticipated paying contractual debts of \$22.1 billion to the FMI and Paris Club, reducing public debt exposure to currency exchange variations even more significantly.

Table 4. LM operations in the external market: third generation (in \$ billion)

Operations	Face value*
External security debt	21.4
Call of the C-Bond (October 2005)	1.1
Call of the Brady Bonds (April 2006)	6.5
Tender offer (June 2006)	1.3
Buyback Program**	12.5
2006	6.0
2007	5.4
2008	1.2

* It captures the impact of the operations on the outstanding debt.

** The program began in January 2006.

Source: National Treasury

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Annex 1. A sample calendar of domestic bond auctions

The following is the Treasury's schedule of auctions for domestic Federal Public Debt in March 2008:

Table 5. Schedule of auctions (March 2008)

Auction	Liquidation	Type	Bond*	Maturity
March 3	March 5	Exchange auction	LTN	10/1/2008; 4/1/2009**
			LFT	3/7/2012; 3/7/2014***
March 6	March 7	Traditional auction	LTN	4/1/2009; 7/1/2010
			NTN-F	1/1/2012; 1/1/2014
March 11	March 12	Traditional auction	NTN-B	5/15/2011; 5/15/2013; 5/15/2017; 8/15/2024; 5/15/2035; 5/15/2045
March 12	March 13	Exchange auction	NTN-B	5/15/2011; 5/15/2013; 5/15/2017; 8/15/2024; 5/15/2035; 5/15/2045
		Buyback	NTN-B	8/15/2024; 5/15/2035; 5/15/2045
	March 14	Buyback	LTN	4/1/2008
March 13	March 14	Traditional auction	LTN	10/1/2008; 7/1/2010
			NTN-F	1/1/2012; 1/1/2017
March 18	March 20	Exchange auction	LTN	10/1/2008; 4/1/2009 ¹
March 19	March 20	Traditional auction	LTN	4/1/2009; 7/1/2010
			LFT	3/7/2012; 3/7/2014
			NTN-F	1/1/2012; 1/1/2014
March 25	March 26	Traditional auction	NTN-B	5/15/2011; 5/15/2013; 5/15/2017
March 26	March 27	Exchange auction	NTN-B	5/15/2011; 5/15/2013; 5/15/2017
March 27	March 28	Traditional auction	LTN	10/1/2008; 7/1/2010
			NTN-F	1/1/2012; 1/1/2017

* Letras Financeiras do Tesouro (LFT); Letras do Tesouro Nacional (LTN); Notas do Tesouro Nacional – Série B (NTN-B); Notas do Tesouro Nacional – Série F (NTN-F)

** LTNs sold by financial institutions, maturing on April 1, 2008.

*** LFTs sold by financial institutions, maturing on June 30, 2008.

In the month referenced, Treasury bonds totaling R\$31,9 billion will mature, representing R\$31,4 linked to the SELIC rate, among others.

The total offer of public bonds at traditional auctions, with liquidation in the month referred, will be limited to R\$38 billion.

The values referring to buybacks may be added to the total volume of the public bonds mentioned previously.

NTN-B interest coupons can be bought back, if investors are interested.

This calendar may be modified, based on market conditions.

Brasilia, February 29, 2008.

Annex 2. Administrative Order⁵⁸

MINISTRY OF FINANCE
NATIONAL TREASURY SECRETARIAT
ADMINISTRATIVE ORDER No 162, March 27, 2008

THE DEPUTY SECRETARY OF THE NATIONAL TREASURY, in the use of the attributions vested in him by Administrative Order MF no 183, of July 31, 2003, and Administrative Order STN no 143, of March 12, 2004, and whereas the general conditions of offer of public bonds set forth in Administrative Order STN no 410, of August 4, 2003, decides to:

Article 1. Publicize the specific conditions to be observed in the public tender offers of Letras do Tesouro Nacional (LTN), whose characteristics are defined in Decree no 3.859, of July 4, 2001:

- I – The date proposals will be received, as well as the auction: 27/03/2008;
- II – The time proposals will be received: 2:00 to 13:00;
- III – Auction results announced: On the date of the auction, as of 14:30, by the Brazilian Central Bank;
- IV - Date of issuance: 28/03/2008;
- V - Date of financial liquidation: 28/03/2008;
- VI - Criterion for selecting proposals: Best price for the National Treasury;
- VII - Electronic system to be used: The Electronic Formal Tender Offer (OFPUB), exclusively, in compliance with the Regulation of the Special Liquidation and Custody System (SELIC);
- VIII - Maximum amount of proposals per institution: 5 (five) for each bond offered;
- IX - Characteristic of the issuance:

Bond	Term (days)	Quantity (in thousand)	Nominal value (in R\$)	Date of Maturity	Buyer
LTN	187	1,000	1,000.000000	10/1/2008	Public
LTN	825	2,000	1,000.000000	7/1/2010	Public

Article 2. In the formulation of the proposals, the unit price with six decimal points should be used, and the sum of each proposal should contemplate multiples of 50 bonds.

Article 3. The institutions accredited to operate with the DEMAB/BCB and the CODIP/STN, pursuant to Joint Decision no 14, of March 20, 2003, may carry out a special operation defined by Article 1, Number I, of Joint Normative Act n. 15, of January 14, 2008, which shall consist of the acquisition of LTNs with the characteristics presented below, for the average price established in the tender offer referred to in Article 1 of this Administrative Order:

⁵⁸ Free translation of the original in Portuguese.

I - Date of the special operation: 27/03/2008;

II – Time for receiving proposals: 15:00 to 15:30;

III – Announcement of the total quantity sold: on the date of the auction, as of 16:00, by the Brazilian Central Bank;

IV - Date of the financial liquidation: 28/03/2008;

V - Characteristics of the issuance:

Bond	Term (days)	Quantity (in thousand)	Nominal value (in R\$)	Date of Maturity
LTN	187	150	1,000.000000	10/1/2008
LTN	825	300	1,000.000000	7/1/2010

Sole paragraph. The special operation referred to in this article shall only be carried out if the total volume offered to the public, pursuant to Article 1 of this Administrative Order, is sold.

Article 4. The quantity of bonds to be offered in the special operation referred to in Article 3 shall be allocated in compliance with provisions set forth in Article 4 of said Normative Act:

I - 50% to institutions defined as primary dealers

II - 50% to institutions defined as specialist dealers.

Sole paragraph. Of the bonds allocated to each group, the maximum quantity that may be acquired by each institution shall observe the criteria established in Article 4, paragraph 1, of said Normative Act, and shall be informed to the institution through the OFPUB System.

Article 5. This Administrative Order shall enter into force on the date of its publication.

PAULO FONTOURA VALLE

Annex 3. Modalities of auctions of public bonds

There are two main models for public bond auctions:⁵⁹ (a) discriminatory auctions or multiple price auctions; and (b) uniform price or single price auctions.⁶⁰

In the discriminatory auction, bids are classified in decreasing order of prices, and several units are sold at the highest prices until the quantity offered has been purchased. In the uniform auction, the highest bids are accepted at a uniform price that corresponds to the price presented for the highest rejected bid or last accepted bid.

In addition to these models, purchase auctions can be discriminatory or uniform. In the external market, the former are usually known as *reverse Dutch*, and the latter as *modified reverse Dutch*.

Reverse Dutch auctions are designed for buyers who want to purchase a number of items and there is more than one seller. Buyers can specify the maximum price and the exact number of assets wanted. Sellers, in turn, bid at or below that maximum price for the number of assets they want to sell. At the end of the auction, the lowest bidder wins, and the buyer gets the assets for the best price.

In modified reverse Dutch auctions, buyers make their bids to the issuers, which may vary in volume and price. All buyers will get the auctioned asset at a single price that corresponds to the lowest price (which means the greatest yield).

The literature on auctions also provides another type of classification based on the bidders' assessments of the items for sale, distinguishing between *private value* and *common value* auctions. In the former, each bidder's assessment of the items is subjective and independent from those of other bidders. In the latter, all bidders apply the same objective value. If the bidders acquire an asset with a view to resale, rather than personal consumption, the common value is adopted.

The classification of auctions as described before (private value and common value) is important for determining the optimum auction model. Public bond auctions are generally seen as common value auctions, because the value for each bidder is commonly shared and the resale price will be the value quoted in the public bonds secondary market, which is not known at the time of the auction. However, some studies find that the existence of private components in the bidders' assessments (for example, investors' obligatory requirements or those relating to minimum participation of primary dealers), lead to different strategies

⁵⁹ These models are typically treated as similar to the first price and second price models in single object auctions, respectively. This analogy ends up influencing the debate on the optimum mechanism of public bond issues. Discriminatory auctions are similar to first-price auctions, since buyers pay their own price. Uniform-price auctions are similar to second-price auctions, since buyers pay a price equal to the first losing bid. This bid, in turn, may have been presented by the winners, since each participant in multiple-commodity auctions generally presents more than one bid.

However, the similarity noted between second-price and uniform-price auctions is not accurate, since participants in uniform-price auctions apply strategically different tactics from those in second-price auctions. Conceptually, these are Vickrey auctions that, in fact, are analogous to second-price auctions, where a participant that wins a certain quantity of the commodity pays the highest losing bid of another participant, excluding its own bid. In practice, the Vickrey auction is not used, since it is very complex. For more details, see Krishna (2002).

⁶⁰ Also known by market operators as a Dutch auction, and in the external market, as a modified Dutch auction.

when several types of investors are considered. In this sense, there is disagreement about whether public bonds are of common value for all bidders.

In the common value auction, there is the risk of the winner's curse: ie. Bidders have the same value for the item in question, but only learn of the true value once the auction is over. Thus, each participant estimates the item's value and the winner generally is the one that estimated a higher value than the other bidders. However, if a buyer wins the auction by placing the highest bid, this may attach a higher value than the resale price of the bond, which can generate losses in the post-auction market.