IMA Methodology

ANBIMA Market Index

February Version – 2026

Versions

Previous version: December-2023

Current version: February-2026

**Changes:** On page 15, executive board updated. No changes in calculation methodology.

Contents

1. What is IMA (ANBIMA Market Index)?

The IMA - ANBIMA Market Index is a family of indexes that represent the evolution, at market prices, of the portfolio of government bonds and serve as Benchmarks for the segment.

Aimed at fulfilling the needs of a wide range of investors and their respective portfolios, the IMA is currently segmented into three sub-indexes, according to the type of interest payments: fixed rate, IPCA linked, and floaters (pegged to the Selic rate). Except for the theoretical portfolios of floating-rate bonds (IMA-S), all remaining sub-indexes are further partitioned based on their components' terms to maturity. Additionally, since the STN (Brazilian National Treasury) explicitly manifested its intention of ending issuance of IGP-M linked bonds (NTN-C), and also due to the low liquidity of this segment, it was decided to build an aggregate index, along the lines of the IMA-Geral but excluding the IGP-M linked bonds (NTN-C). This is the "IMA-Geral ex-C" index. The following figure shows the IMA family:
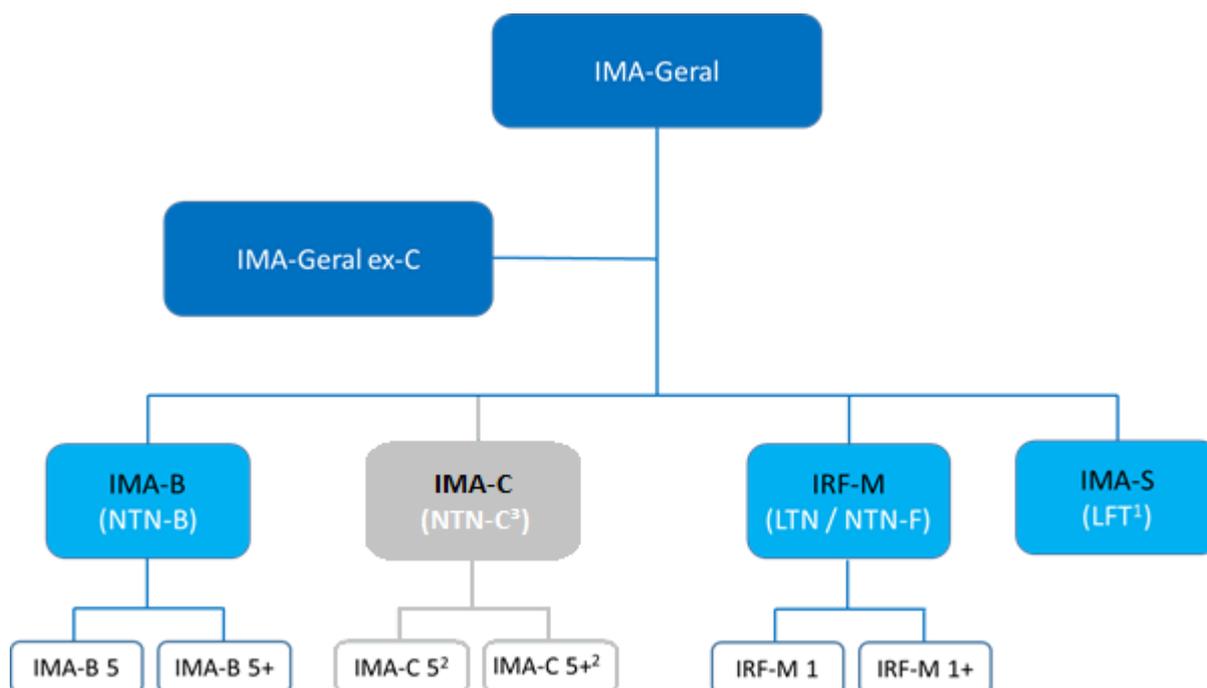
Note 1: Does not include LFT-A and LFT-B bonds. **2:** Up to 3/01/2011, the IMA-C had two sub-indexes: the IMA-C 5, which included NTN-C bonds maturing in less than five years, and the IMA-C 5+, covering NTN-C bonds whose term is greater than or equal to five years. Starting on that date, due to the reduced number of maturities and to STN's explicit intention of no longer issuing IGP-M linked bonds (NTN-C), the Association's Executive Board has approved the cessation of these two sub-indices, as analyzed and suggested by the members of ANBIMA's Benchmarks Subcommittee and Pricing Committee. **3:** With the expiration of NTN-C 04/2021, only one NTN-C remained on the market (01/2031); given this fact, the Association's Benchmark Committee decided to close the index as from 4/05/2021.

2. Theoretical portfolios

In order to preserve the representativeness of the index, the composition of the theoretical portfolios are reviewed monthly, capturing changes to the quantities of outstanding bonds.

a) Bond Eligibility Criteria

Of the government bonds priced by the ANBIMA, only the following are not eligible:

- Bonds that come due in less than one month — i.e., whose maturity would take place during the theoretical portfolio validity period;
- Bonds that were placed only through non-competitive issuances, without public tenders;
- Bonds which had a single public offer placement[1];
- New maturities placed on the market in the last two business days before the theoretical portfolio rebalancing date.

Breaking down by maturity, the IRF-M index is segregated into the IRF-M 1 and the IRF-M 1+. The IMA-B is segmented into the IMA-B 5 and the IMA-B 5+. The following criteria are adopted:

- The "5+" portfolios consist of bonds maturing in five years or more. The "5" portfolios, on the other hand, contain bonds maturing in less than five years and those in the migration process.
- The "1+" portfolio contains bonds maturing in one or more years. In turn, the "1" portfolio contains bonds maturing in less than one year.

Up to November 2016, bonds reaching the term-limit for their participation in the IMA-B 5+ portfolio were fully redeemed and reinvested in the IMA-B 5 portfolio at the theoretical portfolio rebalancing date. Starting in December 2016, the migration of assets takes place in four successive steps.

The migration process of the asset closest to the term-limit starts three months before it becomes ineligible for the IMA-B 5+. From that time forward, on each rebalancing date, 25% of the outstanding quantity of the bonds is migrated to the IMA-B 5 in incremental steps.

IMA-B

Prazo	60 meses	61 meses	62 meses	63 meses	64 meses
IMA-B 5	100%	75%	50%	25%	0%
IMA-B 5+	0%	25%	50%	75%	100%

[1] New maturities placed after May 2010 will be immediately included in the corresponding indexes. However, if no further placement takes place within the following three months, these bonds will be removed from the index until the STN makes a second placement, through a public offer.

b) Total Outstanding Quantities

The relevant outstanding quantities are those registered three business days prior to the theoretical portfolio rebalancing date.

Such quantities are changed only by the STN's definitive buy, sell, or exchange operations. Although non-competitive issuances are not eligible to be part of the IMA theoretical portfolio, such amounts placed in such manner are added to the quantity of outstanding bonds used for calculation. Moreover, amounts of eligible maturities issued through STN's "Tesouro Direto" program are also included the calculation.

c) Theoretical portfolio validity and rebalancing

The theoretical portfolio of each IMA sub-index is held constant throughout its validity period. In the case of IRF-M and IMA-S, the theoretical portfolio validity ranges from the second business day of the month through the first business day of the following month. In turn, the theoretical portfolio cycle for the IMA-B begins on the 16th and ends on the 15th of the subsequent month. Whenever such dates are non-business days, the following business day is considered instead.

Both IMA-Geral and IMA-Geral ex-C are rebalanced whenever any sub-indexes are rebalanced, which implies a shorter portfolio cycle (roughly fifteen days).

In turn, portfolio rebalancing occurs after calculating the index value on the last day of validity of the current theoretical portfolios.

Index	Validity period	Rebalancing
IRF-M	From the second business day of the month to following month first business day.	After Index calculation on first business day of each month
IRF-M 1		
IRF-M 1+		
IMA-S		
IMA-B	From first business day after the 15th, until the following month 15th.	After Index calculation on 15th day (business day) of each month
IMA-B 5		
IMA-B 5+		
IMA Geral ex-C	Adjustment of portfolio weights according to changes in its components (approximately, fortnightly)	
IMA Geral	Adjustment of portfolio weights according to changes in its components (approximately, fortnightly)	

3. Index Calculation

The chain-linking method applied in all sub-indexes of the IMA family is the Laspeyres approach (i.e., the components' prices are weighted by their theoretical quantities of the base-period). Thus, changes in the composition of the theoretical portfolio do not impact the index's profitability.

In order to obtain the result of each IMA sub-index, the theoretical amount of each bond (on the base period) is multiplied by its respective price (on the reference date), thus producing each bond's number of points within the index. The sum of the number of points across all index components returns the index number. It should be noted that both coupon payments and eventual redemptions occurring on the reference date will be taken in account for calculating the index.

The index is calculated by the following formula[2]:

$$I_t = \sum_{j=1}^{k} Q_v^j \times (P_t^j + C_t^j)$$

Where:

k is the index number of components.

I_t is the index number at reference date t.

Q_v^j is the valid theoretical amount of maturity j in the portfolio.

P_t^j is the ex-interest price of maturity j at reference date t.

C_t^j is the value of interest paid for maturity j at reference date

On the rebalancing date, the following procedures are adopted:

1) Using the market quantities of the eligible bonds (Q_m^j), described at item 2.b, an auxiliary index is calculated:

$$I_t^a = \sum_{j=1}^{k} Q_m^j \times P_t^j$$

---

[2] Prior to May 2017, daily returns of the broad indexes were computed through a weighted average of the sub-indexes' daily variations.

2) Then, the new theoretical quantities of each eligible bond (are adjusted (and the values calculated in the index formula $(Q_{nv}^j)^3$) (I_t) described above are replaced:

$$Q^j_{nv} = Q^j_m \times \left(\frac{I_t}{I^a_t}\right)$$

The IMA-Geral and IMA-Geral ex-C are calculated in the same way as the other sub-indexes (formula 1). On first business day, only fixed rate (IGP-M linked) bonds and floating-rate (Selic rate-linked) bonds are adjusted. Adjustment of IPCA linked bonds occurs at the IMA-B rebalancing date.

4. Database

a) Quantities

Through an agreement settled with ANBIMA, the STN is in charge of sending, daily, the market quantities the Association, for all maturities participating in the different portfolios.

In the event of data unavailability, ANBIMA will be responsible for updating market quantities, making use of issuance information (public offers) and redemption information, disclosed in due time by SELIC and STN.

b) Prices

The prices used for valuating the bonds in the theoretical portfolios are calculated daily by ANBIMA, based on surveys with a representative sample of financial institutions active on the secondary market for government bonds. The survey aims at capturing the fair price of each bond, i.e., the value at which a given institution would do business with that specific maturity, regardless of whether or not any trade actually took place during the day.

In order to eliminate spurious prices and outliers, several statistical criteria are applied. A thorough description of the statistical process can be found in the ANBIMA Code of Regulation and Best Practices for Trading Financial Instruments, available for reference at the Association's website.

At the end of this process, for each maturity, an indicative average rate is determined. In cases where it is not possible to calculate such rates for a maturity that is part of the index theoretical

---

[3] Therefore, we have: $\sum_{j=1}^{k} Q^j_{nv} \times (P^j_t + C^j_t) = I_t$ preserving index continuity in spite of the theoretical portfolio rebalancing and maintaining each bond's relative values vis-à-vis the aggregated market portfolio (total value of eligible bonds)

portfolios, the last available rate will be used and a new unitary price for the reference date will be calculated.

5. Events that generate interference in the Index Daily Calculation

Published index numbers will not be recalculated after their release.

Any events concerning data compilation, calculation and disclosure of the indexes will be disseminated throughout ANBIMA's websites.

6. Termination and Interruption Policy

Index cessation or interruption will be evaluated by ANBIMA's Benchmarks Subcommittee and approved by its Pricing Committee.

ANBIMA will disclose index cessation decisions through its communication channels.

7. Disclosure

a) Previews and Monthly Theoretical Portfolio

The listing of components and quantities that will be taken into account for each theoretical portfolio, during the respective validity period, is disclosed two business days in advance to the rebalancing date, in the morning. On the rebalancing date, the weights of each component for the next validity period are disclosed.

b) Daily market quantities

A list containing statistics regarding outstanding government bonds and their changes is disclosed daily, during the morning (one business day lag).

c) Daily results

A list containing statistics regarding government bonds market stocks and their changes is disclosed daily, immediately following the calculation of their components' secondary market prices, which normally takes place after 7 pm.

8. Disclaimer / Liability Exemption

Disclosure of the IMA is for information purposes only; its usage by economic agents is optional. ANBIMA shall be held harmless for eventual damages or losses that might arise to users who utilize this index with any purpose and, in this case, the latter assumes entire and exclusive liability.

9. Periodic Review

The composition of the theoretical portfolios is reviewed monthly, capturing on such occasions the changes that occurred in stocks of securities on the market, in order to preserve the representativeness of the indicator. In addition, ANBIMA relies on the Benchmark Subcommittee to carry out extraordinary revisions, in case market movements that directly affect the indices are allowed, or changes in the methodology are suggested. Any changes made to the indices and methodologies are published on ANBIMA's institutional website and announced at least 120 days in advance, as provided for in the methodology.

10. Final Considerations

Unforeseen cases in the methodology will be evaluated by the responsible bodies.

On occasions when changes to preserve the index require immediate action, the procedures to be adopted can be evaluated and approved by restricted groups of members of the responsible bodies. In such cases, the assessment must be made by at least five representatives of the Benchmarks Subcommittee and approved by at least three representatives of the Pricing Committee (preferably including the president and vice president of the forum).

All decisions are disclosed through the Association's communication channels.

Appendix : Mathematical Formulas

$$\text{Bond Duration} = \frac{\sum_{j=1}^{k} du^{j} * PU^{j}}{\sum_{j=1}^{k} PU^{j}}$$

Onde:
- **k** is the cash flow numbers
- **du** is the number of workdays of the flow
- **PU** is the bond price

$$\text{Duration Basket} = \sum_{j=1}^{k} D^{j} * W^{j}$$

Onde:
- **k** is the number of bonds
- **D** is the duration of each bond
- **W** is the weight of each bond in the index

$$\text{Yield} = \sum_{j=1}^{k} TIR^{j} * W^{j}$$

Onde:
- **k** is the number of bonds
- **TIR** is the internal rate of return (indicative rate) of each bond
- **W** is the weight of each bond in the index

Redemption Yield $= \dfrac{\sum_{j=1}^{k} TIR^j * D^j * W^j}{\sum_{j=1}^{k} D^j * W^j}$

Onde:

k is the number of bonds

TIR is the internal rate of return (indicative rate) of each bond

D is the duration of each bond

W is the weight of each bond in the index

Convexity bond $= \dfrac{1}{(1+i)^2} * \left[\sum_{t=1}^{n} \dfrac{\frac{Ft}{(1+i)^t}}{V} * (t^2 + t) \right]$

Onde:

t = flow period per year (252 workdays)

i = TIR

F = nominal flow

V = present value (sum of discounted flows)

Convexity Basket $= \dfrac{PMR_r^j \; x \; Q_{ma}^j \; x \; P_e^j}{\sum_i^n Q_{ma}^j \; x \; P_e^j}$

Onde:

PMR_c = average renegotiation period of basket

PMR_r^j = average renegotiation period of bond j for the rebalanced date

Q_{ma}^j = Market quantity of bond j adjusted according to the maturity date

P_e^j = Price of bond j estimated for the rebalancing date

n = number of index components

$$\text{PMR Bond} = \frac{\sum_{j=1}^{k} F^j * T^j}{\sum_{j=1}^{k} F^j}$$

Onde:

k is the number of bond's payment flow

F are the nominal payment flows

T period in days of k events in the bond´s payment flow

$$\text{PMR Basket} = \sum_{j=1}^{n} \frac{PMR_r^j \ x \ Q_{ma}^j \ x \ P_e^j}{\sum_i^n Q_{ma}^j \ x \ P_e^j}$$

Onde:

PMR_c = average renegotiation period of basket

PMR_r^j = average renegotiation period of bond j for the rebalanced date

Q_{ma}^j = Market quantity of bond j adjusted according to the maturity date

P_e^j = Price of bond j estimated for the rebalancing date

n = number of index components

Associação Brasileira das Entidades
dos Mercados Financeiro e de Capitais

Versions History:

Version: October-2021

Version: December-2023

Version: February-2026

Changes: Only textual and layout changes. No changes in calculation methodology.