



IDA Methodology

ANBIMA Corporate Bonds Index

December Version – 2023

Versions

Previous version: October-2021

Current version: December-2023

Changes: Inclusion of items 9 and 10, on page 11.

Inclusion of Appendix – Mathematical Formulas, on page 12 and Versions History, on page 13.

On page 14, executive board updated.

No changes in calculation methodology.

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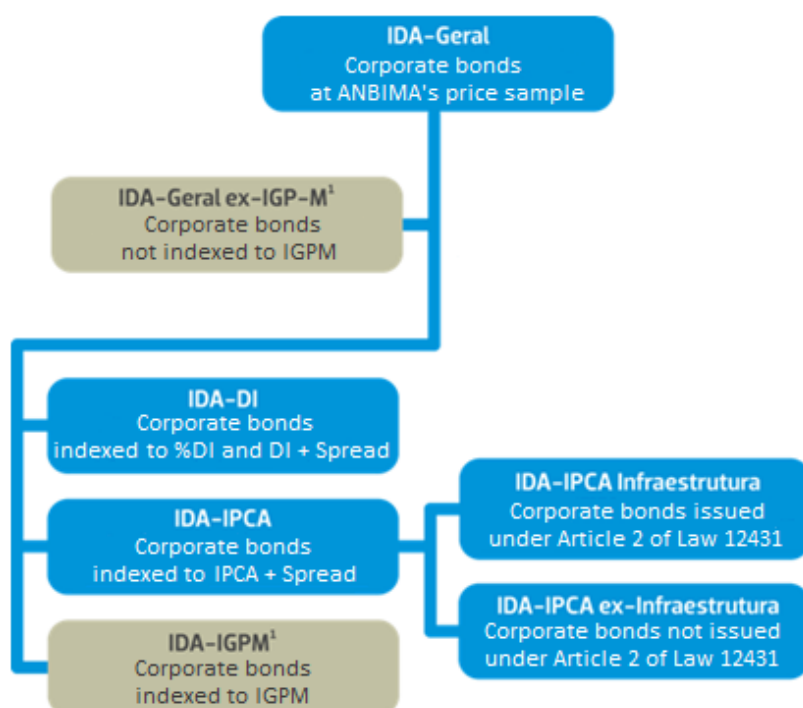
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1. What is IDA (ANBIMA Corporate Bonds Index)?

The IDA (ANBIMA Corporate Bonds Index) is a family of indexes that represent the evolution, at market prices, of a corporate bond portfolio and is recognized as a benchmark for monitoring the segment.

Aiming at fulfilling the demands of the many different types of investors and their respective portfolios, IDA is currently segmented into sub-indexes¹, according to the bond indexers: DI (interbank deposit rate) and IPCA (consumer inflation index).

Due to the representativeness of corporate bonds issued under Article 2 of Law 12431 and their yield and maturity particularities, in relation to the other components of the IDA-IPCA, two sub-indexes of this indicator are available: IDA-IPCA Infraestrutura (IDA-IPCA Infrastructure) and IDA-IPCA ex-Infraestrutura (IDA-IPCA ex-Infrastructure) Therefore, the IDA presents the following composition:



¹ Up to 11/3/2014, the index composed of corporate bonds indexed to the IGP-M (IDA-IGPM) was calculated. Considering the maturity of the last asset belonging to this indicator and the inexistence of eligible bonds to compose this benchmark, with the recommendation of the members of the Benchmarks Subcommittee and endorsement of the Asset Pricing Committee, the interruption of the IDA-IGPM — and consequently of the “IDA-Geral ex-IGPM” — built along the lines of the “IDA-Geral”, excluding assets remunerated according to the IGP-M index.

2. Database

IDA is calculated using indicative prices of corporate bonds present at ANBIMA's pricing sample and their respective market amounts, deposited at B3 Central Securities Depository, available at <https://data.anbima.com.br/debentures>.

The index value equals 1,000 at the base-date of June 1, 2011; its historical data has been backfilled until the beginning of 2009.

3. Theoretical portfolio

In order to preserve the representativeness of the index, the composition of the theoretical portfolios is reviewed monthly, capturing changes at both the sample of corporate bonds priced by ANBIMA and the number of outstanding corporate bonds on the market.

The selection process of its components and the procedures for defining their respective theoretical quantities in the index portfolio are described below:

a. Bond Eligibility Criteria

Among the series of corporate bonds priced by the Association, the only ones eligible are those that have an issued volume² equal to or greater than R\$ 100 million³ and that, on the rebalancing date:

- have a term to maturity longer than one month (i.e., the bond will not come due during the theoretical portfolio's period of validity)⁴;

² For issuances defined by the Pricing Committee as "combo", the aggregated issued volume of all series is considered. The list of assets in such conditions is available at: <https://data.anbima.com.br/debentures?view=precos>

³ This criterion became effective in the Nov. 14 portfolio. The series that entered the index in a previous period are not subject to such condition and will remain in the index until they are redeemed

⁴ Whenever the issuer announces a call option exercise after the next rebalancing date, the repurchase date will be regarded as the redemption date.

- hold a BBB⁵ (investment grade) minimum rating⁶;
- has been meeting cash flow payment obligations²;
- have been part of the corporate bond pricing sample for at least two business days;
- have unitary prices regularly disclosed by ANBIMA.

b. Theoretical amounts

The inventory of bonds in treasury is disregarded in the rating of the index, and the quantities existing on the market referring to t-3 (three business days before the date of rebalancing of the theoretical portfolios) are used. Based on these quantities, the following calculation is performed to obtain the theoretical quantities of each series in the indexes on the rebalancing date:

$$Q_t^j = QM_{t-3}^j \times \left(\frac{I_t}{\sum_{j=1}^k QM_{t-3}^j \times P_t^j} \right)$$

Where: $\left\{ \begin{array}{l} k \\ Q_t^j \\ QM_{t-3}^j \\ I_t \\ P_t^j \end{array} \right.$ is the number of components of the index;
is the theoretical amount in effect of bond j at date t ;
is the outstanding market quantity of bond j at date $t-3$;
is the index number at date t .
is the ex-events price of bond j at date t .

⁵ Whenever two or more credit risk agencies assign ratings for the same bond series, the lowest notch will be selected; therefore, IDA always considers the most conservative creditworthiness assessment.

⁶ When any rating below BBB occurs throughout the term of the theoretical portfolio, such series will only be excluded from the index in the next rebalancing.

Between rebalancing dates, the theoretical quantities can be changed if any of the situations provided for in item 5 (detailed below) occur.

In the IDA-Geral portfolio, the share of any single issuer, taking into account all of its eligible bonds, is capped at 10%. If, at the theoretical portfolio rebalancing, such limit is breached, then the issuer's quantity of corporate bonds will be reduced until its share is equal to or less than 10%, maintaining proportionality among the involved bond series. This weight reallocation process does not alter the quantities of other corporate bond series, as long as these respect IDA-Geral's credit concentration limit. Finally, once the outstanding quantities are determined for the IDA-Geral, the same will be considered for calculating the sub-indexes.

c. Validity period and Rebalancing of Theoretical Portfolios

The theoretical portfolio of the IDA sub-indexes will have a constant composition throughout each validity period, except when there is any situation that excludes any series between the rebalancing dates, as described in item 5.

The validity of the theoretical portfolios ranges from the second business day of the month to the first business day of the following month. Rebalancing, in turn, occurs after calculating the result of the last day of validity of the theoretical portfolios and calculating the sub-indexes.

4. Index Daily Calculation

The IDA is chained-linked according to the Laspeyres method (weighing the prices of its components by the theoretical quantities of the base period). Thus, changes in the composition of the theoretical portfolio do not impact the index's profitability.

To obtain the result of each of the IDA's sub-indexes, the theoretical amount of bonds (of the base period) is multiplied by their respective prices (on the reference date), thereby generating the number of points of each asset in the index. The sum of the number of points across all index components returns the index number. It is worth noting that not only the payments of events (interest, amortization and premiums) but also any redemptions that occurred on the date are considered when calculating the index value.

The index is calculated on a daily basis using the following formula:

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

Where: $\left\{ \begin{array}{l} k \text{ is the number of components in the index.} \\ I_t \text{ is the index number at date t.} \\ Q_v^j \text{ is the theoretical effective amount of bond j in the} \\ P_t^j \text{ portfolio.} \\ E_t^j \text{ is the ex-event price of bond j at date t.} \end{array} \right.$

Whenever is unfeasible for ANBIMA to determine an indicative rate for any corporate bond participating in the index, the last available interest rate will be used and a new unitary price for the reference date will be calculated. This indicative rate carry over is constrained to a single portfolio cycle; if the absence of indicative rates persists, the bond will be withdrawn from the corresponding indexes.

5. Events that Impact the Composition of the Index Theoretical Portfolio

Although IDA has a monthly portfolio cycle, its theoretical portfolio may still undergo modifications within the validity period.

a) The following situations may result in the exclusion of a component from the portfolio:

- Impossibility of calculating the price of a series due to an unforeseen change in characteristics⁷
- Total repurchase of a series
- Change in a Series' Indexer⁴

On the same date that any of these events is observed, the necessary exclusions will be made. And, for the new composition of the portfolio, adjustments are made to the theoretical quantities of its components. Specifically, the share of the excluded series in the index number on the date prior to the revaluation of the portfolio is proportionally distributed across the remaining components.

b. There are other situations that warrant immediate adjustment of the theoretical quantities of the index's components, without triggering full exclusion:

- Partial repurchase of a series
- Partial extraordinary amortization of a series
- Payments of the series' cash flow events (interest, amortization, premium, and principal)

On the same date one of these events is observed, the decreased share of the involved series in the index number prior to the reevaluation date is reallocated to the other components, in due proportion. The adjusted portfolio remains valid until the next rebalancing date or until the incidence of another portfolio reevaluation event.

⁷ With the possibility of the series' returning in the next rebalancing.

6. Events that Cause Interference in the Index Daily Calculation

The index is not submitted to any kind of recalculation after its disclosure, even if any error in the pricing of corporate bonds or in determining the quantities covered in setting up the theoretical portfolios.

7. Disclosure

a. Previews of Theoretical Portfolios

The list of components and quantities that will be taken into account for each theoretical portfolio, during their respective validity periods, is disclosed two business days in advance of the rebalancing date, during the morning.

b. Theoretical portfolios

Information regarding theoretical portfolios is disclosed monthly, after index calculation on the portfolios' last day of validity (i.e., rebalancing date) and, eventually, whenever there is an event that impacts index composition.

c. Daily results

Index results and summary statistics are disclosed daily, subject to a one-day time lag (T+1), during the morning.

d. Index Composition

The breakdown by credit rating of each index (both market value-weighted and by number of assets) will be disclosed⁸.

⁸ Whenever two or more credit risk agencies assign ratings for the same bond series, the lowest notch will be selected; therefore, IDA always considers the most conservative creditworthiness assessment.

8. Disclaimer / Liability Exemption

Disclosure of the IDA is for informative purposes only; its usage by economic agents is optional. ANBIMA shall be held harmless for eventual damages or losses that might arise to users that 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

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

Where: {
k = is the cash flow numbers
du = is the number of workdays of the flow
PU = is the bond price

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

Where: {
k = Number of bonds
D = Each bond Duration
W = Each bond weight on index

Versions History

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