IHS Markit™

Building bond indices

iBoxx indices

The purpose of a bond index appears simple; through a single instrument bond indices can offer exposure to a large and diverse market. Yet, what goes on behind the scenes in index construction is far from simplistic! Building an index that connects investors to the bond market by accurately representing an asset class is not an easy process.

Index creators and their users

Bond indices are constructed to suit investors' specific investment criteria.

It's the role of an index provider to create a bond index that is an accurate reflection of an asset class and therefore meets the needs of its users. A manager of an index tracking fund or an active investor using an index for benchmarking purposes will choose an index that best fits their objectives. It is imperative therefore, that an index provider has a deep understanding of its user's demands.

During the early stages of the consultative process an index provider will float an idea with a group of users to establish a clear picture of their requirements.

Feedback is crucial in this initial agile product development phase and the structure will be adjusted based on this input. Having said this, indices are susceptible to small structural changes due to market demand and conditions and an index provider will allow for a degree of flexibility in design and structure to accommodate shifts caused by market fluctuations. Furthermore, some providers go a step further and build custom benchmark indices1 that are tailored specifically to provide a narrower customised exposure.

> "Any well-constructed index will be hinged on a set of recommended principles which are based on best practice and include replicability, investability and transparency."

Dissecting the construction process: pre-launch phase

Bond indices have established rules built into their structure.

An index's constituents (bonds) must meet predetermined criteria to be included. For the purpose of this paper we will focus on USD Liquid Investment Grade index.

For example, a customer may want to adjust the geographic makeup of the iBoxx EU index (which looks at all bonds with an average BBB- or above rating.) Overall, the relationship between an index provider and their users is one of cooperation to meet market demand.

These types of requirements or index selection rules serve to capture a representation of that overall universe. Moreover, a rules based approach allows for a transparent construction process which can be replicated.

The first stage is to define an investment universe, e.g., investment grade. The size of the index is defined by bond types, credit ratings, time to maturity and notional amounts.

For example, only fixed rate bonds whose cash flow can be determined in advance are eligible to be included in the iBoxx USD Liquid Investment Grade index.

Using the same example, a credit quality requirement states that all bonds need to be rated sub- (BBB- or above) from Fitch, S&P and Moody's. A maturity range explains that all bonds must have at least three years remaining until maturity, while the outstanding face value of a bond must be greater than or equal to USD 750m.

Once the index is defined an index provider will classify all of the components. This can include the denomination (USD), issuer (corporate credit), issuer country (developed countries) and sector. This level of detail allows an index provider to create a set of sub-indices.

Drawing on this information an index provider can calculate a historical time series which is an important part of setting up a new index. Known as back testing, this process makes it possible to show an index's historical performance and which bonds were eligible at what time.

This process provides investors with valuable insight to compare and assess the risk-return profile of the index.

The next step is for an index provider to assign index weights to the individual components of the index. The majority of indices weigh constituents according to market capitalisation.

This means that the largest constituent is given the largest weight in the index. In this sense, an index represents an investible opportunity set.

Post launch phase

Once an index is launched an index provider must publish daily calculations, rebalance the index and follow all necessary compliance requirements.

The prices for individual constituents used to calculate an index are often provided by an independent data source. For instance, iBoxx index calculations are based on multi-sourced pricing which, takes into account a variety of data inputs such as transaction data, quotes from market makers and other observable data points. Data integrity is critical to an index and investors need to know that prices are consistent and reliable. Using multi-sourced data can help to ensure accurate pricing resulting in accurate indices. Additionally, an investor should be able to question and challenge the underlying data, as is the case with independent providers.

Index rebalancing ensures that all index constituents continue to meet the determined criteria. The iBoxx USD Liquid Investment Grade indices are rebalanced monthly and at the end of each month the constituents of the index are determined. An updated constituent list is published to maintain investor confidence in an index.

Transparency as a theme

Throughout the index construction process a theme of transparency should shine through.

Index rules aim to offer a broad coverage of the universe represented. The rules governing the construction of an index can be found in index guides and the detail behind index calculation is clearly displayed in methodology documents. This type of documentation is easily accessible, often posted on an index provider's website. This level of transparency allows an investor to understand the makeup of an index.

Best practice in index production

Transparency is one of the main principles outlined by IOSCO to ensure best practice in index creation.

Following the LIBOR scandal of 2012, IOSCO reviewed index governance, benchmark quality, methodology and accountability. If an index provider is IOSCO compliant it signals their commitment to high standards.

Index governance

Although differences in geographical governance procedures exist, index rules and their application are governed by objective committees.

For example, at IHS Markit we have two distinct Index Advisory Committees: technical committee and oversight committee. The technical committee is composed of representatives of market makers or banks. The main purpose of this group is to provide assistance in the identification of eligible index constituents, especially in the instance where the eligibility or the classification of a bond is unclear or contentious.

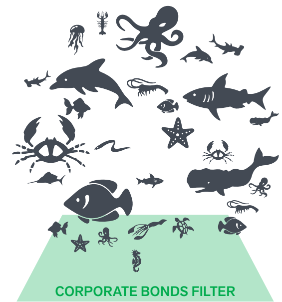
Additionally, the technical committee discusses any market developments which may warrant index rule changes and provide recommendations on changes to the rules or additional indices. The oversight committee is comprised of representatives from asset managers, consultants and industry bodies.

This committee will oversee the technical committee by reviewing their recommendations but also providing consultation on any market developments which may warrant rule changes.

~150,000 – 155,000 bonds

IN THE USD IBOXX BOND UNIVERSE

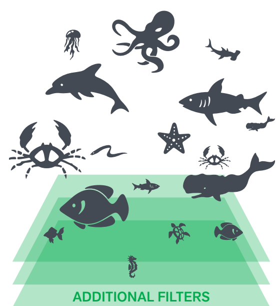
To catch high quality bonds we filter for investment grade rated bonds



~60,000

INVESTMENT GRADE BONDS

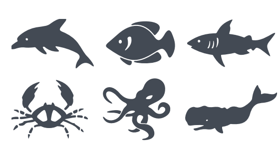
Select the corporate bonds



20,000 - 3,000

INVESTMENT GRADE CORPORATE BONDS

Additional filters include ≥ USD 750m, ≥ 3 years, Emerging markets, Floating rate notes, Convertible bonds



1,800

INVESTMENT GRADE CORPORATE BONDS

Filtering bonds through our index selection process keeps the index representative of the US dollar denominated, liquid investment grade corporate bond universe.

Conclusion

Bond indices cut through today's busy and diverse bond market and bring simplicity and transparency into a historically opaque asset class.

Bond indices are designed to be transparent, replicable and investible. The adoption of a rules based approach for index construction helps these principles to be achieved. While every step of the construction process is documented and provides transparency for investors it also shows that building a bond index is a technical and complex process which calls for deep expertise to create.

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