

## MEMORANDUM

**TO:** Public File - Notice of Public Rulemaking: Liquidity Coverage Ratio: Liquidity Risk Measurement, Standards, and Monitoring, (RIN 3064-AE04) (“Liquidity Coverage Ratio NPR”)

**FROM:** Sue Dawley, Senior Attorney, Legal Division

**DATE:** May 5, 2014

**SUBJECT:** Meeting with Representatives from Goldman Sachs

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On March 10, 2014, FDIC staff, together with staff of the Board of Governors of the Federal Reserve System and the Office of the Comptroller of the Currency, met with representatives of Goldman Sachs.

The representatives from Goldman Sachs presented their concerns and views with regard to certain provisions of the Liquidity Coverage Ratio NPR, which was issued in the Federal Register of November 29, 2013 (78 FR 71818), including (1) deposit sweeps; (2) inclusion of equities and corporate debt as high-quality liquid assets (HQLA); (3) prime brokerage; (4) operational requirements of HQLA; (5) equivalence of regulatory rulemaking and legal entity implementation; and (6) the cap on cash inflows.

The FDIC representatives at this meeting were:

- Kyle Hadley, Section Chief for Examination Support, Capital Markets/RMS
- Eric Schatten, Policy Analyst, Capital Markets/RMS
- Greg Feder, Counsel, Legal Division
- Sue Dawley, Senior Attorney, Legal Division

Goldman Sachs’ representatives in attendance at this meeting were:

- Manda D’Agata, Managing Director, Corporate Treasury
- Rajashree Datta, Managing Director, Corporate Treasury (by telephone)
- Liz Robinson, Managing Director, Corporate Treasury
- Kyle Russ, Managing Director, Executive Office
- Faryar Shirzad, Managing Director, Executive Office
- Elisha Wiesel, Managing Director, Securities Division
- John Willian, Managing Director, Securities Division
- Edward Wilson, Managing Director, Securities Division (by telephone)

Follow-up materials provided by Goldman Sachs by email on May 5, 2014 are attached.

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# Corporate Bond HQLA Analysis

## Markit iBoxx USD Liquid Investment Grade Index

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FINRA members are obligated to report all transactions in corporate bonds to the Trade Reporting and Compliance Engine (TRACE). Using this data, the flow of bonds in the secondary market can be examined. Every transaction indicates if it was from a client to dealer, dealer to dealer or dealer to client, which gives transparency on the journey of a bond from a client through the dealers and back to a new client

The following pages show a “liquidation curve” across several dates for bonds included in the iBoxx Liquid Investment Grade Index. The liquidation curve was plotted by taking a snapshot of dealer inventory on a given day and measuring how the bonds are sold over a period of time. The remaining inventory for each day of the observation period was plotted to inform a liquidation curve

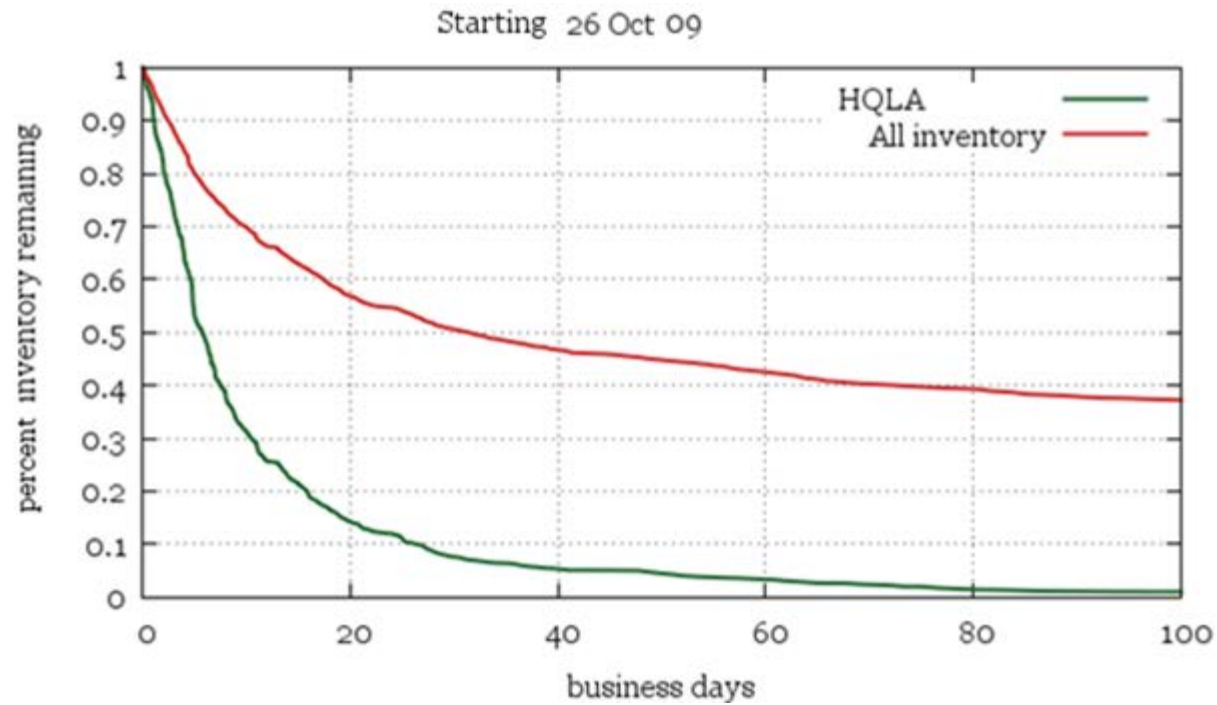
The analysis was repeated across several dates to compare the curve across various portfolios and market conditions

For comparison, there are two liquidation curves per chart:

- i) iBoxx Liquid Investment Grade Index bonds, labeled as “HQLA” for illustration purposes only
- ii) total dealer inventory labeled as “All Inventory”

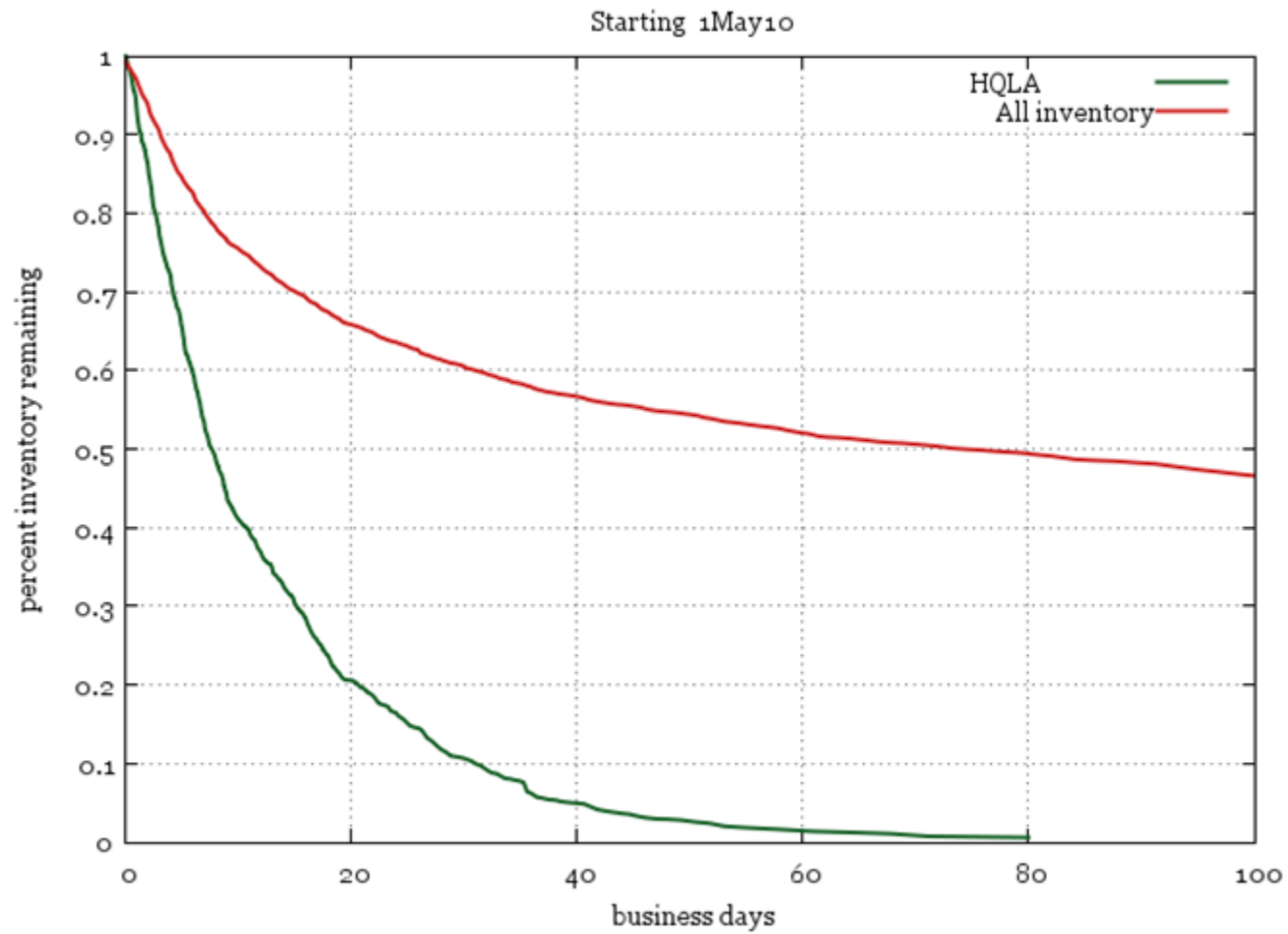
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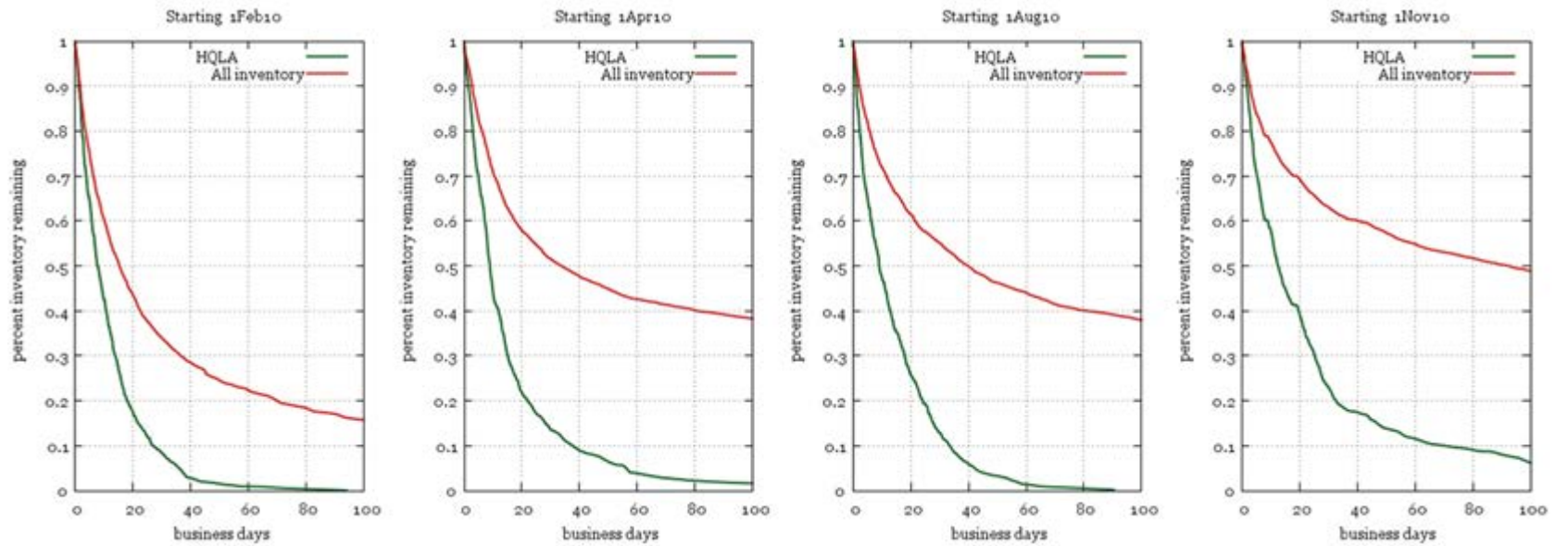
# Corporate Bond HQLA Analysis

## Markit iBoxx USD Liquid Investment Grade Index



# Corporate Bond HQLA Analysis

## Markit iBoxx USD Liquid Investment Grade Index



**Markit iBoxx USD Liquid  
Investment Grade Index  
Guide**

**March 2013**

## Table of Contents

1

<b>1</b>	<b>Markit iBoxx USD Liquid Investment Grade Index .....</b>	<b>4</b>
1.1	Index Advisory Committee .....	4
1.1.1	Technical Committee .....	4
1.1.2	Oversight Committee .....	4
1.2	Publication of the Markit iBoxx USD Liquid Investment Grade Indices .....	4
<b>2</b>	<b>Selection Criteria for the Markit iBoxx USD Liquid Investment Grade Index .....</b>	<b>5</b>
2.1	Bond Type .....	5
2.1.1	Tender Offers and Calls .....	5
2.2	Credit Rating .....	5
2.3	Time to Maturity .....	6
2.3.1	Expected Remaining Life .....	6
2.4	Amount Outstanding .....	6
2.4.1	Issue Amount Outstanding .....	6
2.4.2	Issuer Amount Outstanding .....	6
2.5	Bond Classification .....	6
2.5.1	Denomination .....	6
2.5.2	Issuer .....	6
2.5.3	Issuer country .....	7
2.5.4	Inclusion and Exclusion of Countries .....	7
2.5.5	Sector Classification .....	7
2.6	Lockout Period and Minimum Run .....	7
2.6.1	Lockout Period .....	7
2.6.2	Minimum Run .....	7
2.7	Annual Index Review .....	7
<b>3</b>	<b>Index Calculation .....</b>	<b>8</b>
3.1	Bond Prices .....	8
3.2	Index Rebalancing .....	8
3.2.1	Rebalancing Procedure .....	8
3.3	Index Weights .....	8
3.4	Index Calculus .....	8
3.5	Treatment of the Special Intra-Month Events .....	8
3.5.1	Unscheduled Full Redemption – Exercised Calls, Puts and Buybacks .....	8
3.5.2	Bonds Trading Flat of Accrued .....	9
3.5.3	Multi-Coupon Bonds .....	9
3.6	Index History .....	9
3.7	Settlement Conventions .....	9
3.8	Calendar .....	9
3.9	Data Publication and Access .....	9
<b>4</b>	<b>Appendix .....</b>	<b>10</b>
4.1	Appendix I: 2009 Changes between 100 Bond IG index and the Unrestricted Index .....	10
4.1.1	Issuer and Issue Amount Outstanding .....	10
4.1.2	Weighting and Capping .....	10
4.1.3	Rebalancing Timeline .....	10
4.1.4	Age .....	10
4.1.5	Bond type .....	10
4.2	Appendix II: Additional Changes to the Index effective from April 30th 2012 .....	11
4.2.1	Bond Type .....	11
4.2.2	First Settlement Date .....	11
4.2.3	Inclusion and Exclusion of Countries .....	11
4.2.4	Issuer Country .....	11
4.2.5	Issuer amount outstanding .....	11
4.3	Markit iBoxx Average Rating Methodology .....	12
4.4	Annotations .....	12
<b>5</b>	<b>Further Information .....</b>	<b>14</b>

## Changes to the Markit iBoxx USD Liquid Investment Grade Index

<b>31 Mar 2013</b>	Markit iBoxx USD Liquid Investment Grade Indices will be based on additional pricing sources as described in the document 'Markit iBoxx Pricing Rules'
<b>31 Aug 2012</b>	Inclusion of 144A Bonds with Registration Rights (2.1. Bond Type) and exclusion of bonds where the issuer is not incorporated in the list of developed countries (2.5.3 Issuer Country)
<b>30 Apr 2012</b>	Extension of the Markit iBoxx USD Liquid Investment Grade Index (Appendix II)
<b>30 Sep 2009</b>	Extension of the Markit iBoxx USD Liquid Investment Grade Index (Appendix I)
<b>31 Oct 2008</b>	Publication of the new market profile for iBoxx USD Liquid Investment Grade Index
<b>29 Feb 2008</b>	Incumbency premium for current index members raised from 6.0 to 8.5
<b>29 Feb 2008</b>	Addition of new rule concerning exchange of bonds from same issuer
<b>01 Jan 2008</b>	Launch of average rating to determine a bond's index rating
<b>01 Nov 2006</b>	Launch of Markit iBoxx USD Liquid Investment Grade Index



## 1 Markit iBoxx USD Liquid Investment Grade Index

The Markit iBoxx USD Liquid Investment Grade Index is designed to reflect the performance of USD denominated investment grade corporate debt. The index rules aim to offer a broad coverage of the USD investment grade liquid bond universe. The indices are an integral part of the global Markit iBoxx index families, which provide the marketplace with accurate and objective indices by which to assess the performance of bond markets and investments. The index is market-value weighted with an issuer cap of 3%.

The Markit iBoxx USD Liquid Investment Grade Index is rebalanced once a month at the month-end (the “rebalancing date”) and consists of investment grade USD denominated bonds issued by corporate issuers from developed countries and rated by at least one of three rating services: Fitch Ratings, Moody’s Investors Service, or Standard & Poor’s Rating Services.

The bonds in the Markit iBoxx USD Liquid Investment Grade Index must meet all the criteria described below as of the close of business four business days prior to the rebalancing date provided that the relevant bond data can be verified, at Markit Indices Limited’s sole discretion, as of such date (“bond selection cut-off date”). The new index composition becomes effective on the first business day of the next month.

The Markit iBoxx USD Liquid Investment Grade index uses multi-source prices as described in the document ‘Markit iBoxx Pricing Rules’. The Markit iBoxx Pricing Rules document can be found on the Markit iBoxx Rules page of [www.markit.com/indices](http://www.markit.com/indices) (Markit iBoxx Indices → Markit iBoxx → Markit iBoxx Rules) in the Methodology Documentation section on the right-hand side.

Additionally, Markit will seek the advice from the following committees:

- Technical Index Committee: consists of representatives from market makers / banks and meets on a monthly basis in order to arbitrate monthly rebalancing and to monitor any market developments.
- Oversight Committee: consists of representatives from mostly the buy side and meets in order to discuss the recommendations of the technical index committee, the wider index rules and any market developments which may warrant rule changes

This document covers the index selection rules and calculation methodology.

### 1.1 Index Advisory Committee

In order to ensure the independency and the objectivity of the Markit iBoxx USD Liquid Investment Grade indices, Markit will seek the advice from two distinct committees. This is in line with the index advisory structure for the main Markit iBoxx index families.

#### 1.1.1 Technical Committee

The Technical Committee is composed of representatives of market makers/banks. The main purpose of this group is to provide assistance in the identification of eligible 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 technical committee meets once a month.

#### 1.1.2 Oversight Committee

The Oversight Committee is comprised of representatives from a broad range of asset managers. The purpose of this committee is to review the recommendations made by the Technical Committee and also to provide consultation on any market developments which may warrant rule changes.

### 1.2 Publication of the Markit iBoxx USD Liquid Investment Grade Indices

All indices are calculated as end-of-day and distributed once daily after 4 p.m. EST. The indices are calculated every day except on common U.S. bank holidays. In addition, the indices are calculated with the previous trading day’s close on the last calendar day of each month if that day is not a trading day. Markit publishes an index calculation calendar which is available in the indices section on [www.markit.com/indices](http://www.markit.com/indices) under Calendar for data subscribers. Index data and bond price information is also available from the main information vendors.

Bond and index analytical values are calculated each trading day using the daily closing prices. Closing index values and key statistics are published at the end of each business day in the indices section on [www.markit.com/indices](http://www.markit.com/indices) for data subscribers.

## 2 Selection Criteria for the Markit iBoxx USD Liquid Investment Grade Index

The following selection criteria are applied to select the constituents for the Markit iBoxx USD Liquid Investment Grade Index:

- Bond Type
- Credit Rating
- Time to Maturity
- Amount Outstanding
- Classification
- Lockout Period
- Minimum Run

### 2.1 Bond Type

Only fixed-rate bonds whose cash flow can be determined in advance are eligible for the indices. The indices are comprised solely of bonds. T-Bills and other money market instruments are not eligible. The Markit iBoxx USD Liquid Investment Grade indices include only USD denominated bonds.

In particular, bonds with the following characteristics are included:

- Fixed coupon bonds
- Step-up bonds with coupon schedules known at issuance (or as functions of the issuer's rating)
- Sinking funds and amortizing bonds
- Medium term notes ("MTNs")
- Rule 144A offerings with a registration right. Only 144A bonds where the Registration S version of the bond is eligible for the Markit iBoxx USD Benchmark Index are eligible.
- Callable bonds
- Puttable bonds

The following instrument bond types are specifically excluded from the indices:

- Preferred shares
- Optionally and mandatory convertible bonds
- Subordinated bank or insurance debt with mandatory contingent conversion features or with any conversion options before the first call date is ineligible for the index
- Bonds with other equity features attached (e.g., options/warrants)
- Private placements. The list of private placements is updated every month and published on [www.markit.com/indices](http://www.markit.com/indices) under *Indices News*. Partial private placements where information on the specific amounts publicly placed and privately placed can be ascertained are included in the indices with the amount publicly placed. If the amount publicly placed is below the cut-off, the bond is not included in the indices. For private placements publicly available information is not always conclusive. The iBoxx Technical Committees reviews potential private placements and these bonds may be added to the list of excluded securities as a consequence
- Perpetual bonds
- Fixed-to-floater bonds
- Floating rate notes
- Pay-in kind bonds (during the pay-in-kind period)
- Zero coupon bonds
- Zero step-ups (GAINS)
- Bonds with differences between accrual and coupon payment periods and monthly-paying bonds.

For private placements publicly available information is not always conclusive. The iBoxx U.S. Technical Committee reviews potential private placements and these bonds may be added to the list of excluded securities as a consequence.

#### 2.1.1 Tender Offers and Calls

Any bond subject to a firm call or tender offer, with the exception of exchange offers, in the month immediately following the rebalancing date will be excluded from the index, provided that Markit is aware of such tender offer or call as of the Bond selection cut-off date.

### 2.2 Credit Rating

All bonds in the Markit iBoxx USD Liquid Investment Grade Index must have a Markit iBoxx Rating of investment grade. Ratings from the following three credit rating agencies are considered for the calculation of the Markit iBoxx Rating:

- Fitch Ratings (Fitch)

- Moody's Investor Service (Moody's)
- Standard & Poor's Rating Services (S&P)

Investment grade is defined as BBB- or above from Fitch or S&P and Baa3 or above from Moody's.

If a bond is rated by more than one of the above agencies, then the Markit iBoxx rating is the average of the provided ratings. The rating is consolidated to the nearest rating grade. Rating notches are not used. For more information on how the average rating is determined, please refer to the Markit iBoxx Rating Rules. The Rules can be found on [www.markit.com/indices](http://www.markit.com/indices) under *Markit Bond Indices – Markit iBoxx → Markit iBoxx Rules* and in the Appendix 4.3.

In case of an ID change or exchange of a Rule 144A/Regulation S offering into a registered bond the ratings from the Rule 144A/Regulation S offering are also used for the registered bond.

## 2.3 Time to Maturity

### 2.3.1 Expected Remaining Life

All bonds must have at the rebalancing day an expected remaining life:

- of at least three years, and
- all new insertions must have an expected remaining life of at least three years and 6 months.

The expected remaining life is expressed in years and calculated as follows:

- For plain vanilla bonds, the expected remaining life of the bond is its time to maturity, calculated as the number of days between the last calendar day of the current month and its maturity.
- For dated and undated callable hybrid capital bonds, the first call date is always assumed to be the expected redemption date. The expected remaining life is calculated as the number of days between the last calendar day of the month and the expected redemption date.
- For soft bullets, the expected remaining life of the bond is its time to the expected maturity and not to its final maturity date.

## 2.4 Amount Outstanding

### 2.4.1 Issue Amount Outstanding

The outstanding face value of a bond must be greater than or equal to USD 750m as of the bond selection cut-off date. Partial buybacks or increases affect the outstanding face value of a prospective bond. Markit considers changes to the outstanding face value of a candidate bond as a result of partial or full buybacks or increases, provided that Markit is aware of such changes as of the bond selection cut-off date.

### 2.4.2 Issuer Amount Outstanding

The outstanding face value of all bonds denominated in USD from the issuer in the broader Markit iBoxx USD Investment Grade Corporate Index (excluding fixed-to-floater and perpetual bonds) must be greater than or equal to USD 2bn as of the bond selection cut-off date.

## 2.5 Bond Classification

All bonds are classified based on the principal activities of the issuer and the main sources of the cash flows used to pay coupons and redemptions. In addition, a bond's specific collateral type or legal provisions are evaluated. Hence, it is possible that bonds issued from different subsidiaries of the same issuer carry different classifications.

The issuer classification is reviewed regularly based on updated information received by Markit, and status changes are included in the indices at the next rebalancing if necessary.

### 2.5.1 Denomination

Bonds must be denominated in USD, publicly registered in the U.S. with the Securities and Exchange Commission, clear and settle through DTC. Eurobonds are excluded.

### 2.5.2 Issuer

The bond must be corporate credit, i.e., debt instruments backed by corporate issuers that are not secured by specific assets. Debt issued by governments, sovereigns, quasi-sovereigns, and government-backed or guaranteed entities is excluded.

For the purposes of selecting candidates for the index, an "issuer" is defined by the Bloomberg ticker (i.e., all bonds sharing a ticker are attributed to the same issuer).

### **2.5.3 Issuer country**

Bonds from countries classified as developed markets based on the “Markit Global Economic Development Classification” are eligible for the index.

As of August 2012 the issuer or, in the case of a finance subsidiary, the issuer’s guarantor, must be domiciled, incorporated and the country of risk must be in Andorra, Australia, Austria, Belgium, Bermuda, Canada, Cayman Islands, Cyprus, Denmark, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, Hong Kong, Iceland, Ireland, Italy, Japan, Jersey, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Norway, Portugal, San Marino, Singapore, Spain, Sweden, Switzerland, U.S. or United Kingdom.

### **2.5.4 Inclusion and Exclusion of Countries**

A new country is added to the index if it is classified as developed market based on the “Markit Global Economic Development Classification”.

A country is no longer eligible for the index if it is classified as emerging market based on the “Markit Global Economic Development Classification”. The “Markit Global Economic Development Classification” is updated once per year. The results are published at the end of July. The inclusion/exclusion of a country becomes effective at the end of October.

### **2.5.5 Sector Classification**

Each bond in the Markit iBoxx USD Liquid Investment Grade Index is assigned to one of the following sectors: Consumer Goods, Consumer Services, Financials, Industrials & Materials, Telecommunication & Technology and Utilities & Energy.

## **2.6 Lockout Period and Minimum Run**

### **2.6.1 Lockout Period**

A bond that drops out of the Markit iBoxx USD Liquid Investment Grade Index at the rebalancing day is excluded from re-entering the index for a three-month period.

The rule for the lockout period takes precedence over the other rules for the Markit iBoxx USD Liquid Investment Grade Index selection. A locked out bond will not be selected, even if it qualifies for the index.

### **2.6.2 Minimum Run**

Any bond that enters the Markit iBoxx USD Liquid Investment Grade Index must remain in the index for a minimum of six months provided it is not downgraded to sub-investment grade, defaulted or fully redeemed in that period.

## **2.7 Annual Index Review**

The rules for the index are reviewed once per year during the annual index review process to ensure that the index provides a balanced representation of the USD denominated liquid investment grade corporate debt market. The results of the annual index review will become effective at the end of October.

### 3 Index Calculation

#### 3.1 Bond Prices

Index calculation is based on bid and ask prices. For more details on the price consolidation please refer to the 'Markit iBoxx Pricing Rules' published on [www.markit.com](http://www.markit.com)

#### 3.2 Index Rebalancing

The Markit iBoxx USD Liquid Investment Grade indices are rebalanced monthly on the last business day of the month after the close of business. Changes to amounts outstanding are only taken into account if they are publicly known four business days before the end of the month. Changes in ratings are only taken into account if they are publicly known three business days before the end of the month. New bonds issued are taken into account if they are publicly known to settle until the last calendar day of the month, inclusive, and if their rating has become known at least four business days before the end of the month.

Ten business days before the end of each month, a preliminary membership list is published.

Four trading days before the end of each month ("bond selection cut-off date") the constituents of the index are determined and an updated membership list is published.

Three business days before the end of each month, the rating information for the constituents is updated and the list is adjusted for all rating changes which are known to have taken place three trading days before the end of the month. Bonds which are known to have been upgraded to investment grade after the bond selection cut-off date are not included in the membership, but bonds which are known to have been downgraded to high yielded three trading days before the end of the month do get excluded from the membership

On the last business day of each month, Markit publishes the final membership with closing prices for the bonds, and various bonds analytics based on the index prices of the bonds.

##### 3.2.1 Rebalancing Procedure

In a first step the selection criteria set out in chapter 2 are applied to the universe of the broader Markit iBoxx USD Corporate Investment Grade Index.

- Bond ratings and amount outstanding are used as of the bond selection cut-off date
- Maturity dates remain fixed for the life of the bond
- Only bonds with a first settlement date on or before the rebalancing date are included in the selection process

#### 3.3 Index Weights

Once the eligible bond universe has been defined, the weight for each bond is determined and if necessary capped; applying an issuer cap of 3%. The weights and capping factors are determined on the last business day of each month using the end-of-month market values.

#### 3.4 Index Calculus

The components of the total return are price changes, accrued interest, coupon payments, and reinvestment income on cash flows received during the composition month.

$$TR_t = TR_{t-s} \frac{\sum_{i=1}^n (P_{i,t} + A_{i,t} + XD_{i,t-s} \cdot (CP_{i,t} + G_{i,t})) \cdot N_{i,t-s} + CASH_{t-1} \cdot \left(1 + \frac{Y_{LIBID,t-1}}{360}\right)}{\sum_{i=1}^n (P_{i,t-s} + A_{i,t-s} + XD_{i,t-s} \cdot CP_{i,t-s}) \cdot N_{i,t-s}}$$

For specific index formulae please contact [iBoxx@markit.com](mailto:iBoxx@markit.com).

Calculations are performed daily, using iBoxx bid prices at approximately 4 p.m. Eastern Time for USD.

#### 3.5 Treatment of the Special Intra-Month Events

##### 3.5.1 Unscheduled Full Redemption – Exercised Calls, Puts and Buybacks

If a bond is fully redeemed intra-month, the bond effectively ceases to exist. In all calculations, the redeemed bond is treated as cash based on the last iBoxx price, the call price or repurchase price, as applicable. The redemption factor  $F_{i,t}$ , Redemption  $R_{i,t}$  and the Redemption Price  $RP_{i,t}$  are used to treat these events in the index and analytics calculation. In addition, the clean price of the bond is set to the redemption price, and the interest accrued until the redemption date is treated as an irregular coupon payment

### 3.5.2 Bonds Trading Flat of Accrued

If a bond is identified as trading flat of accrued, the accrued interest of the bonds is set to 0 in the total return index calculation and the bond is excluded from the calculation of all bond and index analytical values

### 3.5.3 Multi-Coupon Bonds

Some bonds have pre-defined coupon changes that lead to a change in the annual coupon over the life of the bond. In all instances, the coupon change must be a fixed amount on top of a fixed coupon, i.e. floating coupon bonds are not eligible for the indices. The two main categories of bonds are step-up bonds and event-driven bonds.

- Step-up bonds: These are bonds with a pre-defined coupon schedule that cannot change during the life of the bond. The coupon schedule is used in all bond calculations.
- Event-driven bonds: These are bonds whose coupon may change upon occurrence (or non-occurrence) of pre-specified events, such as rating changes, e.g. rating-driven bonds, failure to register a bond, e.g. register-driven bonds, or failure to complete a merger, e.g. merger-driven bonds. In the calculation of the indices and the analytics, the coupon schedule as of the calculation date is used. That is to say, any events occurring after the calculation date are ignored in the determination of the applicable coupon schedule.
- Example of an event-driven bond: A bond's rating changes on 31 December 2003 from A- to BBB+, and the coupon steps up from 6% to 6.25% from 01 March 2004 onwards. The coupon dates are 01 October and 01 April each year. The correct coupon schedule for the bond and index calculations is date dependent. The index calculation on 20 December 2003 uses the 6% coupon for the whole life of the bond, while the calculation on 31 January 2004 uses a 6% coupon for the current coupon period to 29 February 2004, and a 6.25% coupon for all later interest payments. The index calculation on 20 March uses a 6% coupon until 29 February, a 6.25 % coupon for the remainder of the current coupon period and a 6.25 % coupon for all future coupon payments. The index calculation after 01 April uses a 6.25% coupon.

## 3.6 Index History

The basis of the Markit iBoxx USD Liquid Investment Grade Total Return Index is the closing value 148.11 of the GS \$ InvestTop Total Return Index as of October 31<sup>st</sup> 2006. Launch date of the Markit iBoxx USD Liquid Investment Grade indices is November 1<sup>st</sup> 2006. Base date of the GS \$ InvestTop Index is December 31, 1998 with a value of 100.

## 3.7 Settlement Conventions

All Markit iBoxx indices use the  $t + 0$  settlement convention.

## 3.8 Calendar

Markit publishes an index calculation calendar which is available in the indices section on [www.markit.com/indices](http://www.markit.com/indices) under *Calendar* for data subscribers. This calendar provides an overview of the index calculation times of the Markit iBoxx bond index families in a given year.

## 3.9 Data Publication and Access

The indices are published on ftp:\\indexco.com, [www.markit.com](http://www.markit.com), Bloomberg, Reuters. Below is a summary of the IDs for each publication channel:

Index Name	ISIN	SEDOL	Bloomberg	RIC
iBoxx USD Liquid Investment Grade Total Return Index	GB00B4K4X773		IBOXIG	

## 4 Appendix

### 4.1 Appendix I: 2009 Changes between 100 Bond IG index and the Unrestricted Index

On September 30<sup>th</sup> 2009 Markit made significant changes to the original set of index rules to broaden the set of instruments qualifying for the index. Below is a summary of the rule changes between the Markit iBoxx USD Liquid Investment Grade Index before 30 September 2009 and after 30 September 2009.

#### 4.1.1 Issuer and Issue Amount Outstanding

##### Before 30 September 2009

The outstanding face value of a bond must be greater than or equal to **USD 500m** as of the Bond Selection Cut-off Date.

##### After 30 September 2009

The issuer needs to have at least USD 3bn outstanding face value of bonds as of the Bond Cut-off Date in the broader Markit iBoxx USD IG Corporate index excluding fixed-to-floater, callable, puttable and perpetual bonds

The outstanding face value of a bond must be greater than or equal to **USD 750m** as of the Bond Cut-off Date.

#### 4.1.2 Weighting and Capping

##### Before 30 September 2009

The Markit iBoxx USD Liquid IG Index attributes the same price-weight to each bond (assuming equal quantity of each bond).

##### After 30 September 2009

The Markit iBoxx USD Liquid IG Index is market-value weighted.

An issuer cap is calculated on the last business day of each month using the end-of-month closing prices for each bond. The capping factor for each issuer is **3%**.

#### 4.1.3 Rebalancing Timeline

##### Before 30 September 2009

The Bond Selection Cut-off Date will be **three** business day before the re-balancing date, which is two business days prior to the last business day of the month.

Bond ratings and amounts outstanding are used as of **three** business days before the rebalancing date, which is two business days prior to the last business day of the month.

Only bonds with a first settlement date on or **before the re-balancing date** are included in the selection process

##### After 30 September 2009

The Bond Selection Cut-off Date will be **four** business day before the re-balancing date, which is three business days prior to the last business day of the month.

Bond ratings and amounts outstanding are used as of **four** business days before the rebalancing date, which is three business days prior to the last business day of the month.

Only bonds with a first settlement date on or **before four business days** before the re-balancing date are included in the selection process

#### 4.1.4 Age

##### Before 30 September 2009

Bonds must be less than 5 years old as of rebalancing date.

##### After 30 September 2009

The age restriction is not applied.

#### 4.1.5 Bond type

##### Before 30 September 2009

Yankee bonds are not eligible.

##### After 30 September 2009

Yankee bonds are eligible for the index.

## 4.2 Appendix II: Additional Changes to the Index effective from April 30th 2012

On April 30<sup>th</sup> 2012 Markit started to apply the rules described in chapter 2 above. Below is a summary of the main rule changes of the Markit iBoxx USD Liquid Investment Grade Index before April 30<sup>th</sup> 2012 and after April 30<sup>th</sup> 2012.

### 4.2.1 Bond Type

#### Before April 30th, 2012

Fixed coupon bonds, step-up bonds with coupon schedules known at issuance (or as functions of the issuer's rating), medium-term notes ("MTNs"), sinking funds and make-whole callables are eligible are candidates for inclusion.

The following instruments are excluded from the index: preferred shares, convertibles, bonds with other equity features attached (e.g., options/warrants), perpetual bonds, floating rate notes, puttables and callables are not eligible.

#### After April 30th, 2012

Fixed coupon bonds, step-up bonds with coupon schedules known at issuance (or as functions of the issuer's rating), bonds with sinking funds, medium term note ("MTNs"), **callable** and **puttable** bonds are candidates for inclusion.

The following instruments are excluded from the index: preferred shares, convertible bonds, bonds with other equity features attached (e.g., options/warrants), perpetual bonds, fixed-to-floater, floating rate notes, pay-in kind bonds (during the pay-in-kind period), zero coupon bonds, zero step-ups (GAINS).

### 4.2.2 First Settlement Date

#### Before April 30th, 2012

New issues must have a first settlement date on or before the **Bond selection cut-off date** to be included in the index for the next period.

#### After April 30th, 2012

New issues must have a first settlement date on or before **the Rebalancing Date** to be included in the index for the next period.

### 4.2.3 Inclusion and Exclusion of Countries

#### Before April 30th, 2012

NA

#### After April 30th, 2012

A new country is added to the index if it is classified as developed market based on the "Markit Global Economic Development Classification".

A country is no longer eligible for the index if it is classified as emerging market based on the "Markit Global Economic Development Classification". The "Markit Global Economic Development Classification" is updated once per year.

The results are published at the end of July.

The inclusion/exclusion of a country becomes effective at the end of October.

### 4.2.4 Issuer Country

#### Before April 30th, 2012

The issuer or, in the case of a finance subsidiary, the issuer's guarantor, must be domiciled in the US, Bermuda, Cayman Islands, Canada, Japan or Western Europe.

#### After April 30th, 2012

Bonds from countries classified as **developed markets** based on the "Markit Global Economic Development Classification" are eligible for the index.

As of March 2012 the issuer or, in the case of a finance subsidiary, the issuer's guarantor, must be domiciled and the **country of risk** must be in Andorra, **Australia**, Austria, Belgium, Bermuda, Canada, Cayman Islands, Cyprus, Denmark, Faeroe Islands, Finland, France, Germany, Gibraltar, Greece, **Hong Kong**, Iceland, Ireland, Italy, Japan, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, **New Zealand**, Norway, Portugal, San Marino, **Singapore**, Spain, Sweden, Switzerland, U.S., United Kingdom.

### 4.2.5 Issuer amount outstanding

#### Before April 30th, 2012

#### After April 30th, 2012



The outstanding face value of all USD denominated bonds in the broader Markit iBoxx USD IG Corporate Index (including yankees and Eurobonds and **excluding fixed-to-floater, callable, putable and perpetual bonds**) from the issuer must be greater than or equal to **USD 3bn** as of the Bond Selection Cut-off Date.

The outstanding face value of all bonds denominated in USD from the issuer in the broader Markit iBoxx USD Investment Grade Corporate Index (**excluding fixed-to-floater and perpetual bonds**) must be greater than or equal to **USD 2bn** as of the bond selection cut-off date.

### 4.3 Markit iBoxx Average Rating Methodology

All bonds in the Index must have a Markit iBoxx Rating. Ratings from the following three credit rating agencies are considered for the calculation of the Markit iBoxx Rating:

- Fitch Ratings (Fitch)
- Moody's Investor Service (Moody's)
- Standard & Poor's Rating Services (S&P)

The average rating of Fitch Ratings, Moody's Investors Service and Standard & Poor's Rating Services determines the index rating.

The rating is consolidated to the nearest rating grade. Rating notches are not used.

Each rating is assigned a number as follows:

Fitch	Moody's	Standard & Poor's	Score	iBoxx
AAA	Aaa	AAA	1	AAA
AA+	Aa1	AA+	2	AA
AA	Aa2	AA	3	AA
AA-	Aa3	AA-	4	AA
A+	A1	A+	5	A
A	A2	A	6	A
A-	A3	A-	7	A
BBB+	Baa1	BBB+	8	BBB
BBB	Baa2	BBB	9	BBB
BBB-	Baa3	BBB-	10	BBB
BB+	Ba1	BB+	11	BB
BB	Ba2	BB	12	BB
BB-	Ba3	BB-	13	BB
B+	B1	B+	14	B
B	B2	B	15	B
B-	B3	B-	16	B
CCC+	Caa1	CCC+	17	CCC
CCC	Caa2	CCC	18	CCC
CCC-	Caa3	CCC-	19	CCC
CC	Ca	CC	20	CC
C	C	C	21	C
D/RD		D	22	D

Where more than one rating is available, scores will be added and the sum divided by the number of ratings. A non-integer result will be rounded to the nearest integer. E.g. 4.33 is rounded down to 4, while 4.5 is rounded to 5. The resulting number is converted to the iBoxx index rating (iBoxx only publishes rating grades without notches) as shown in the table above.

### 4.4 Annotations

$A_{i,t}$	Accrued interest of bond $i$ at calculation day $t$
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$A_{i,t-s}$	Accrued interest of bond i on the previous rebalancing day t-s
$CASH_{t-1}$	Cash at the previous business day
$CP_{i,t}$	Value of the next coupon payment of bond i during an ex-dividend period. Outside the ex-dividend period, this value is 0
$CP_{i,t-s}$	Value of the next coupon payment of bond i (at the previous rebalancing day) during an ex-dividend period. Outside the ex-dividend period this value is 0
$G_{i,t}$	Value of any coupon payment received from bond i at time t. If none the value is 0
$P_{i,t}$	Amount outstanding of bond i at the previous rebalancing day t-s
$P_{i,t}$	Clean price of bond i at time t
$P_{i,t-s}$	Closing price of bond i on the last business day on or before the previous rebalancing day
$TR_t$	Total return index level at time t
$TR_{t-s}$	Closing total return index level on the previous rebalancing day
$XD_{i,t-s}$	The value is 0, if the bond enters the index at the ex-dividend period. The value is 1, if (a) coupon payments are not ex-dividend, (b) has not entered the index during an ex-dividend period, or (c) entered the index during a previous ex-dividend period
$Y_{LIBID,t-1}$	Overnight interest rate for cash

## 5 Further Information

- For contractual or content issues please refer to

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