

ICE BoFA^{ML} INDICES

BOND INDEX GUIDE

OCTOBER 2017

CONTENTS

ICE BofAML index coverage

Intro to ICE BofAML bond indices	4
Global investment grade index family	7
Local currency nominal and inflation-linked government indices	8
Global high yield index family	11
Emerging markets index family	12
Custom indices	18

Methodology

Rules	20
Holidays	23
Pricing	24
Composite rating algorithm	27
Subordination types	29
Sector classification schema	30

Calculation formulas

Total return	34
Converted return unhedged	41
Currency hedged returns	42
Excess return	44
Fair value yield curves	46

Analysis tools

Access to ICE BofAML bond indices	50
Index website on ICE BAML/Mercury	52
IND pages on Bloomberg	96

ICE BoFAML INDEX COVERAGE



ICE BOFAML BOND INDICES

- Four-decade commitment as a leading bond index provider
- Consistently ranked top 3 in major US and European investor polls
- Extensive coverage of the global fixed income markets
- Analysis tools and significant operational support on three proprietary platforms:
 - IND pages on Bloomberg (available to all buy-side subscribers)
 - Institutional website (available to subscribed clients)
 - Public website (unrestricted access)
- Distribution via many third party platforms

SCOPE OF ICE BOFAML BOND INDEX FAMILY COVERAGE

4,800 standard indices tracking more than \$68 trillion in debt

- Sovereign debt markets
 - Local currency:
 - fixed-rate nominal debt of 57 countries
 - inflation-linked debt of 24 countries
 - External fixed-rate nominal debt of 98 countries
- Global/regional investment grade markets
 - Broad market indices: Global, US, Euro, Sterling, Japan, Canada, Australia, China
 - US municipal securities: taxable and tax-exempt
 - Other \$ indices: CMOs, floating rate ABS, preferred
- High yield
 - Fixed rate: USD, EUR, GBP, CAD
 - Floating rate: USD, EUR and GBP
- Emerging markets
 - External Debt: USD and EUR; sovereign and non-sovereign
 - Local Debt: nominal and inflation-linked sovereign; non-sovereign
- Other
 - Par coupon, zero coupon and inflation-linked swaps
 - Bid/Offer deposit rates and spot currency indices

OTHER AVAILABLE ICE BOFAML BOND INDEX FAMILIES

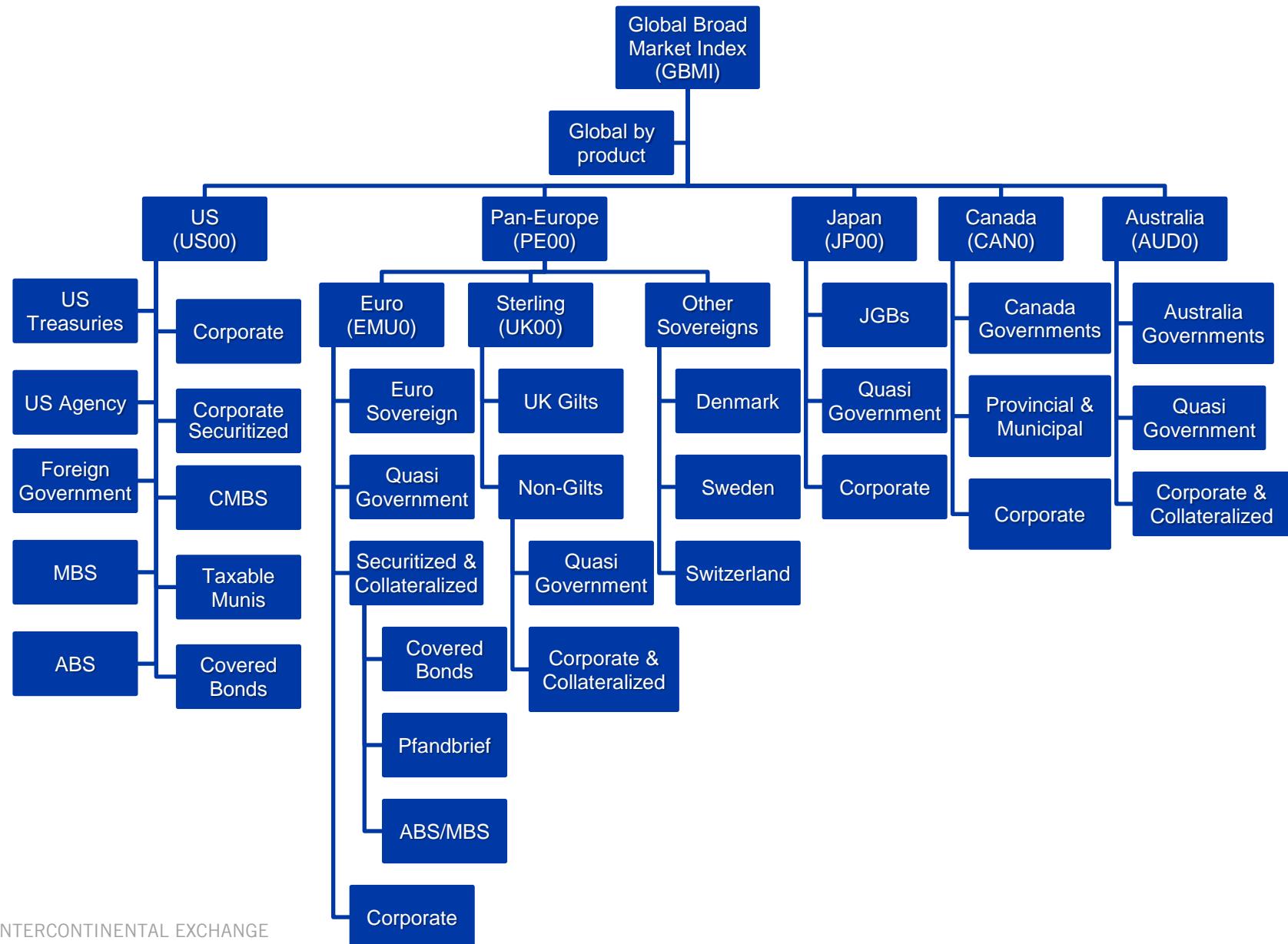
Convertibles

- 16 qualifying currencies: AED, AUD, CAD, CHF, CNY, EUR, GBP, HKD, JPY, KRW, SEK, SGD, THB, TWD, USD, ZAR
- Includes convertible preferreds and mandatories

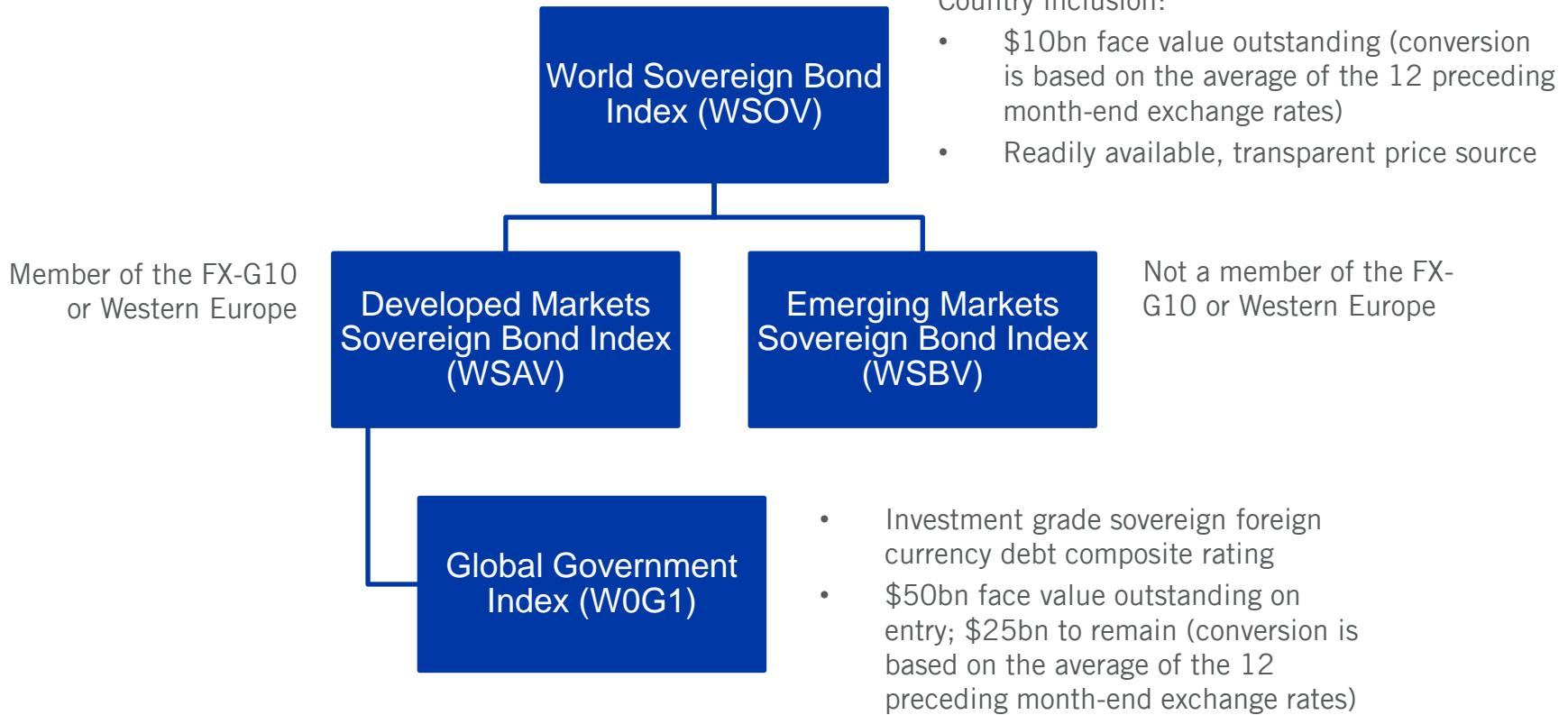
Commodities

- Designed to provide a liquid, consistent, representative and cost-efficient benchmark for measuring commodity market performance.
- Constituent selection and weighting takes account of the liquidity of the constituent futures contracts and the value of the global production of each underlying commodity

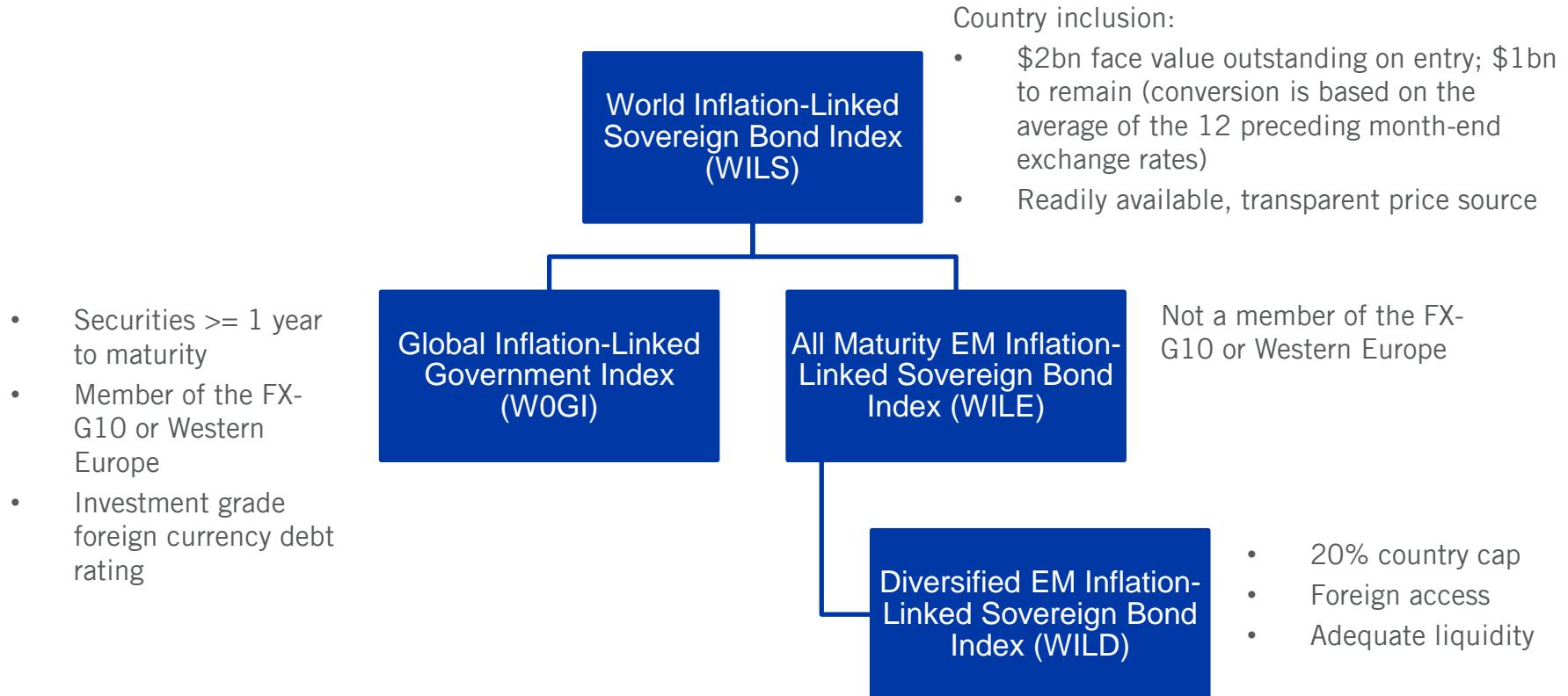
GLOBAL BROAD MARKET INDEX FAMILY



GLOBAL AND REGIONAL NOMINAL GOVERNMENT INDICES



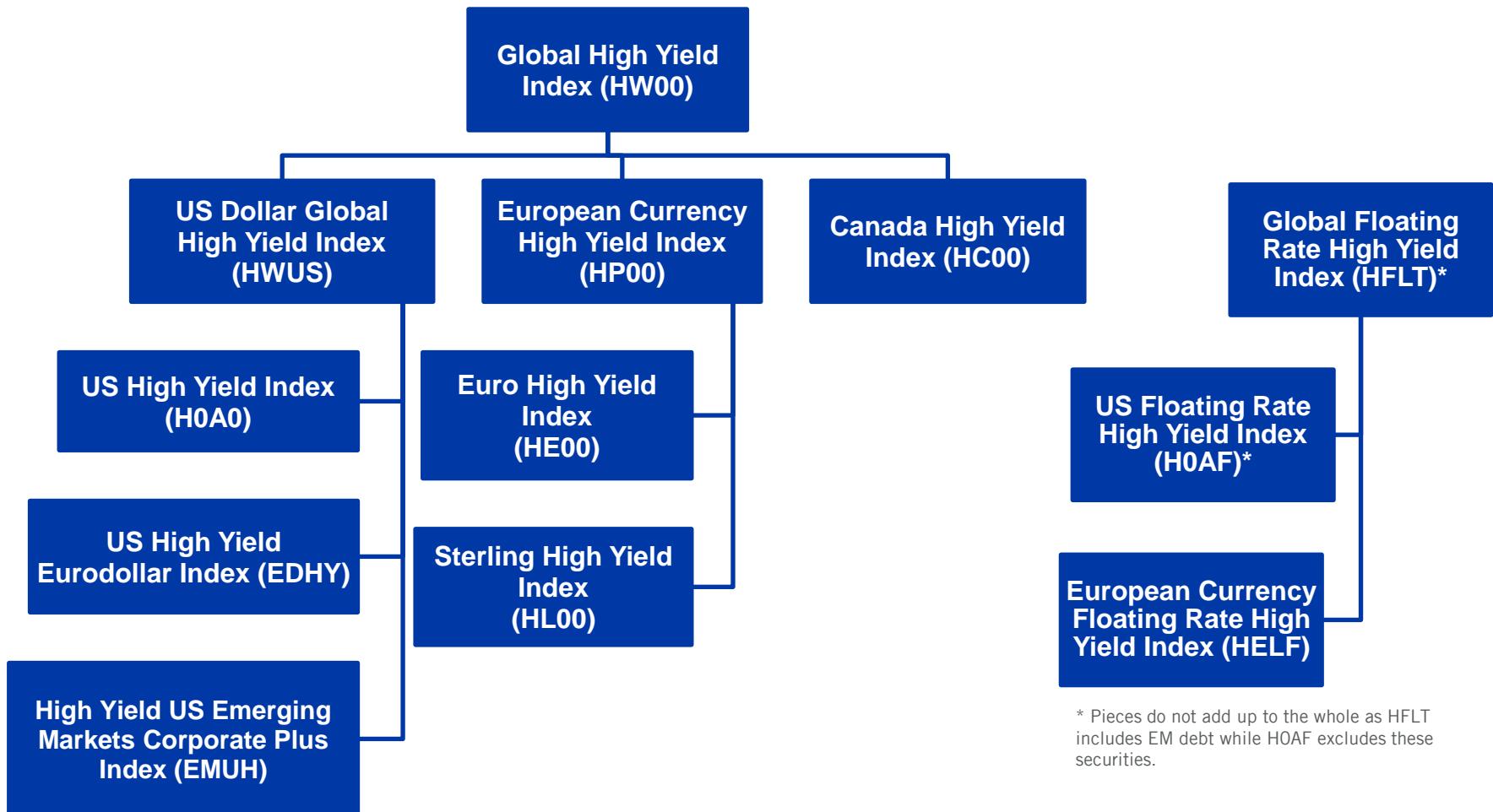
GLOBAL AND REGIONAL INFLATION-LINKED GOVERNMENT INDICES



DEVELOPED MARKETS NOMINAL, INFLATION-LINKED AND BILL COUNTRY INDICES

Country	Nominal		Inflation-linked		Bills
	1mo+	1yr+	1mo+	1yr+	
Australia	GJT0	G0T0	GJTI	G0TI	
Austria	GJH0	G0H0			
Belgium	GJG0	G0G0			G0GB
Canada	GJC0	G0C0	GJCI	G0CI	
Cyprus	GJCY	G0CY			
Denmark	GJM0	G0M0	GJMI	G0MI	
Finland	GJK0	G0K0			G0KB
France	GJF0	G0F0	GJFI	G0FI	G0FB
Germany	GJD0	G0D0	GJDI	G0DI	G0DB
Greece	GJGR	G0GR	GJGI	GGRI	GGRB
Ireland	GJR0	G0R0			G0RB
Italy	GJI0	G0I0	GJII	G0II	G0IB
Japan	GJY0	G0Y0	GJYI	G0YI	G0YB
Luxembourg	GJLU	G0LU			
Netherlands	GJN0	G0N0			G0NB
New Zealand	GJZ0	G0Z0	GJZI	G0ZI	
Norway	GJJ0	G0J0			
Portugal	GJU0	G0U0			G0UB
Slovakia	GJSL	G0SL			GSLB
Slovenia	GJSV	G0SV			
Spain	GJE0	G0E0			G0EB
Sweden	GJW0	G0W0	GJWI	G0WI	
Switzerland	GJS0	G0S0			
United Kingdom	GJL0	G0L0	GJLI	G0LI	
United States	G0QJ	G0Q0	GJQI	G0QI	G0BA

GLOBAL HIGH YIELD INDEX FAMILY



* Pieces do not add up to the whole as HFLT includes EM debt while HOAF excludes these securities.

EMERGING MARKETS INDEX FAMILY

External debt Corporates

Broad: EMCB
Diversified: EMCL

Local Currency Corporates

Broad: LCCB
Diversified: LOCL

Emerging
Markets Indices

External debt Sovereigns

Broad: EMGB
Diversified: EMGD

Local Currency Sovereigns

Nominal Broad: WALE
Nominal Diversified: WALD
IL Broad: WILE
IL Diversified: WILD

EXTERNAL DEBT EM CORPORATE INDICES

Emerging Markets Corporate Plus Index (EMCB):

- Most comprehensive measure of the EM corporate bond market (including quasi-government debt)

US Emerging Markets Liquid Corporate Plus Index (EMCL)

- Tracks most active segment of the market; imposes concentration limits

EMCB	EMCL
<ul style="list-style-type: none">• All countries other than FX G10, Western Europe and US or Western European territories	<ul style="list-style-type: none">• All countries other than FX G10, Western Europe and US or Western European territories
<ul style="list-style-type: none">• Corporate and quasi-government issuers	<ul style="list-style-type: none">• Corporate and quasi-government issuers
<ul style="list-style-type: none">• At least one year to maturity, fixed coupon	<ul style="list-style-type: none">• At least one year to maturity, fixed coupon
<ul style="list-style-type: none">• USD/EUR	<ul style="list-style-type: none">• USD
<ul style="list-style-type: none">• Size: 250mn	<ul style="list-style-type: none">• Size: 500mn IG; 300mn HY
<ul style="list-style-type: none">• No country cap; no issuer cap	<ul style="list-style-type: none">• 10% country cap; 2% issuer cap

LOCAL CURRENCY EM CORPORATE INDICES

- Track the performance of local currency emerging markets non-sovereign debt (corporate + quasi-government)
- Focus solely on securities that settle on Euroclear – the portion of the market that is most readily accessible to offshore investors.
- Four alternatives address primary considerations in index construction: diversification and investability:

ICE BofAML Broad Local Emerging Markets Non-Sovereign Index (ticker LCCB)	ICE BofAML Diversified Broad Local Emerging Markets Non-Sovereign Index (ticker LCCD)	ICE BofAML Local Emerging Markets Non-Sovereign Index (ticker LOCM)	ICE BofAML Diversified Local Emerging Markets Non-Sovereign Index (ticker LOCL)
The broadest measure of the local currency EM non-sovereign debt markets. LCCB constituents are capitalization weighted with no caps on country or issuer exposures. Primarily used for market analysis.	A more liquid, diversified version of LCCB, which is appropriate for performance benchmarking purposes. Bond size filters are 2x the corresponding filters in LCCB. Currency exposures are limited to 10% and individual issuer exposures are limited to 2%. If both caps cannot be met the issuer limit is given priority.	The same as LCCB but excluding Sukuks. LOCM constituents are capitalization weighted with no caps on country or issuer exposures. Primarily used for market analysis. Supported by an extensive series of sub-indices that segment the market by region, currency, rating, and sector.	A more liquid, diversified version of LOCM, which is appropriate for performance benchmarking purposes. Bond size filters are 2x the corresponding filters in LOCM. Currency exposures are limited to 10% and individual issuer exposures are limited to 2%. If both caps cannot be met the issuer limit is given priority.

FLAGSHIP EM EXTERNAL AND LOCAL SOVEREIGN INDICES

External debt	Local currency nominal debt	Local currency inflation-linked debt
Market cap weighted	Market cap weighted	Market cap weighted
<p>Emerging Markets External Debt Sovereign Index (EMGB)</p> <ul style="list-style-type: none"> • External debt • Sovereign only (no agencies or government-owned corporates) • Maturity ≥ 1 year • Non-FX G10 or Western Europe • USD and EUR 	<p>All Maturity Emerging Markets Sovereign Index (WALE)</p> <ul style="list-style-type: none"> • Local currency debt • Sovereign only (no agencies or government-owned corporates) • Maturity ≥ 1 month • Fixed rate, nominal • Country criteria: <ul style="list-style-type: none"> • Non-FX G10 or Western Europe • Must have \$10bn outstanding face of index-qualifying debt • Must have at least one readily available transparent price source 	<p>All Maturity Emerging Markets Inflation-Linked Sovereign Index (WILE)</p> <ul style="list-style-type: none"> • Local currency debt • Sovereign only (no agencies or government-owned corporates) • Maturity ≥ 1 month • Inflation-linked • Country criteria: <ul style="list-style-type: none"> • Non-FX G10 or Western Europe • Must have \$10bn outstanding face of index-qualifying debt • Must have at least one readily available transparent price source
Constrained	Constrained	Constrained
<p>Diversified Emerging Markets Sovereign Bond Index (EMGD)</p> <ul style="list-style-type: none"> • 5% country cap 	<p>Diversified Emerging Markets Sovereign Bond Index (WALD)</p> <ul style="list-style-type: none"> • 10% country cap • Foreign access • Adequate liquidity 	<p>Diversified Emerging Markets Inflation-Linked Sovereign Bond Index (WILD)</p> <ul style="list-style-type: none"> • 20% country cap • Foreign access • Adequate liquidity

EMERGING MARKETS LOCAL SOVEREIGN NOMINAL AND INFLATION-LINKED COUNTRY INDICES

	Nominal		Inflation-linked	
Country	1mo+	1yr+	1mo+	1yr+
Brazil	GJBR	G0BR	GJBI	GBRI
Chile	GJCL	G0CL	GJEI	GCLI
China	GJCN	G0CN		
Colombia	GJCO	C0CO	GCJI	GCOI
Czech Republic	GJCZ	G0CZ		
Egypt	GJEG	G0EG		
Hong Kong	GJHK	G0HK		
Hungary	GJHU	G0HU		
India	GJIN	G0IN		
Indonesia	GJID	G0ID		
Israel	GJIS	G0IS	GJSI	GISI
Malaysia	GJMY	G0MY		
Mexico	GJMX	G0MX	GJXI	GMXI
Morocco	GJMA	G0MA		
Nigeria	GJNG	G0NG		

	Nominal		Inflation-linked	
Country	1 mo+	1yr+	1 mo+	1yr+
Pakistan	GNPK	G0PK		
Peru	GJPE	G0PE		
Philippines	GJPH	G0PH		
Poland	GJPL	G0PL	GJPI	G0PI
Romania	GJRO	G0RO		
Russia	GJRU	G0RU	GRRI	GRUI
Singapore	GJSP	G0SP		
South Africa	GJSA	G0SA	GJAI	GSAI
South Korea	GJSK	G0SK	GJKI	GSKI
Sri Lanka	GJLK	G0LK		
Taiwan	GJTW	G0TW		
Thailand	GJTH	G0TH	GJHI	GTHI
Turkey	GJTR	G0TR	GJRI	GTRI
Uruguay			GJUI	GUYI
Vietnam	GJVN	G0VN		

“STANDARD” SUB-INDICES AVAILABLE FOR MANY OF THE FLAGSHIP BENCHMARKS

Rating:

- High grade: AAA, AA, A, BBB, AAA-A, AAA-AA, A-BBB
- High yield: BB, B, CCC & lower, BB-B
- Cross-over: BBB-BB

Maturity:

- 1-3yr, 3-5yr, 1-5yr, 5-7yr, 7-10yr, 5-10yr, 1-10yr, 10-15yr, 15+yr, 10+yr

Sector:

- High grade: sub-indices for level 2 and 3 sector categories
- High yield: sub-indices for various level 4 groupings

Combinations of the above

Issuer constrained indices

- High grade: 1% issuer cap
- High yield: 2% issuer cap for USD; 3% issuer cap for EUR/GBP
- Emerging markets: 10% country cap; 2% issuer cap

CUSTOMIZATION CAPABILITIES

Basic custom indices:

- Blended and/or filtered
- Example 1: 50% BBB Corp + 50% BB Corp
- Example 2: all high grade USD corporates excluding Energy and Metals/Mining

Complex custom indices:

- Incorporate key elements of policy guidelines
- Requirements can include, but are not limited to:
 - Duration targets
 - Sector/rating/country weights, caps or filters
 - Issuer caps scaled by rating category
 - Other

Custom indices delivered daily over ICE BofAML and third party index platforms with full analytical support

METHODOLOGY

INDEX RULES SPELL OUT ALL PERTINENT DETAILS OF HOW AN INDEX IS COMPILED

Index rules define:

- Criteria for selecting constituent securities
- Methodologies for weighting and rebalancing the constituents
- Methodologies for determining index valuations

Rules are first established when the index is created

Rules may require amendment over the life of the index

For example, all ICE BofAML rules are reviewed annually:

- Proposed rule changes published in April
- Followed by a public commentary period
- Final rule changes published in July
- Effective date for adopted changes is September 30
- Changes can be implemented apart from the standard cycle to address special situations and market events

WHERE TO GET THE INDEX RULES

On Bloomberg (IND<go>):

Enter index ticker and click on Description.

Not a Bloomberg function. The provider has access to your usage of this page.

HOAO [Description](#) [Fact Sheet](#)

The BofA Merrill Lynch US High Yield Index

Inception Date 08/31/1986
Launch Date 05/31/1992

On index website:

Open the “Index Rules” menu and click on the function link

Global Index System

Index Watch

Global Broad Market Index

Global High Yield and Emrg Mkts

[Personalize](#)

Daily Highlights
Get up to date Index spreads and returns by sector in the [Daily Highlights](#)

Projected Index Re-balancing Highlights

Monthly Index Profiles
Get the full picture of bond market performance around the world in the

Index Charts & Data

Index/BondID	
Type	General
or	
Ticker	
Coupon	
Maturity	
Item	TRR Idx Val
Period	Last 3 Mths
Currency	LOC

Quick Chart **Index Lookup**

Index Snapshot

Index Ticker	
Base Curr	LOC
Date(m/d/yyyy)	5/29/2017



REBALANCING OCCURS MONTHLY

Qualifying bonds are selected on the “lock-out” date (three business days prior to the last business day of the month)

- Bonds issued/auctioned on or before the lock-out date and that settle on or before calendar month end are included
- Calls are reflected at the upcoming rebalancing if they are announced on or before the lock-out date
- Increases (taps) to existing securities that are issued or auctioned on or before the rebalancing lock-out date are included
- Repurchases that occur on or before the lock-out date are reflected at the upcoming rebalancing
- Tenders are reflected at the upcoming rebalancing if the results are announced on or before the lock-out date
- Rating changes occurring on or before lock-out are included at the upcoming rebalancing, while those occurring after that date wait until the following rebalancing

Projected changes in Index characteristics and projected constituent lists are published three days before the last business day of the month

The rebalancing occurs on the last calendar day of the month

WHEN MONTH-END FALLS ON A WEEKEND OR GLOBAL HOLIDAY...

HOAO 99 Download		Flexible Returns		
The BofA Merrill Lynch US High Yield Index		Inception Date	08/31/1986	
07/29/2011 - 07/31/2011		Currency	LOC	0 % Hedged
		Periodic Return	Annualized Return	
Total Return Factors				
Price Return (Local)		0.000	0.000	
Income Return (Local)		0.022	4.127	
Total Return (Local)		0.022	4.127	
Total Return Index Values				
Beginning Index Value		837.998		
Ending Index Value		838.184		
Price Return Index Values				
Beginning Index Value		81.205		
Ending Index Value		81.205		
Excess Returns				
Excess Return vs. Govt		0.010	1.794	
Excess Return vs. Swap		0.008	1.522	
Change in OAS (Including Rebalancing Impact)				
Change in Govt OAS		7		
Change in Libor OAS		7		

Last day of the month fell on a Sunday

Price return for 30th and 31st was zero

2 days of accrued interest were earned between 29th and 31st

- Weekdays on which WM Company/Reuters does not publish closing FX rates are treated as ICE BofAML Index global holidays.
- No indices are published on ICE BofAML Index global holidays unless the holiday falls on the last calendar day of the month.
- All indices are published on ICE BofAML Index global business days and the last calendar day of every month.
- If the last calendar day of a month falls on a ICE BofAML Index global holiday, prices are updated in all local markets that are open. All FX rates, as well as prices in all markets that are closed, are rolled from the prior ICE BofAML Index business day and accrued interest is calculated for the new settlement date.
- If the last calendar day of the month falls on a weekend, prices are rolled from the last ICE BofAML Index business day and accrued interest is calculated for the new settlement date. If the preceding Friday is a ICE BofAML Index global holiday, prices in all markets that are open on that date are used to value the indices on the last calendar day of the month.

PRICING SOURCES/TIMING

Primary sources for ICE BofAML index constituent valuations

Market	Primary price source	Timing
US and Canada		
US agency, foreign government, corporate, ABS, CMBS, CMO, taxable municipals, high yield	Interactive Data Corporation (IDC)	3:00pm ET
US Treasury	BofAML traders	3:00pm ET
US mortgages	BofAML traders	3:00pm ET
US preferred	IDC	4:00pm ET
US tax exempt municipals	JJ Kenny	3:00pm ET
Canada sovereign	Statpro	3:00pm ET
C\$ non-sovereign high grade and high yield	Statpro	3:00pm ET
Europe:		
Euro high grade and high yield	IDC	4:15pm London
Sterling high grade and high yield non-Gilt	IDC	4:15pm London
UK Gilts	Tradeweb (mid)	4:15pm London
All other Europe	IDC	4:15pm London
Japan & Australia		
JGBs	JSDA	5:00pm local
Japan credit	JSDA and IDC	5:00pm local
All A\$ indices	IDC	5:00pm Sydney
Other Debt Markets:		
Brazil	Statpro	4:15pm local
Mexico	Statpro	2:30pm local
Nigeria	Statpro	4:00pm local
Israel	Statpro	5:00pm local
Peru and Romania	Statpro	3:00pm local
Chile, Colombia, Egypt	IDC	3:00pm local
Morocco	IDC	4:00pm local
All other local debt markets	IDC	local market close
External (USD and EUR) emerging market sovereign and credit	IDC	USD 3pm ET; EUR 4:15pm London
Swap and FX:		
All nominal and IL swaps	BofAML traders (mid)	USD 3:00pm ET; EUR/GBP 4:00pm London
Deposit rates	IDC	local market close; 11:00am London (ICE)
Spot and forward FX rates	The WM Company (mid)	4:00pm London

Note: all valuations are bid unless otherwise indicated

ACCRUED INTEREST & CASH

- Accrued interest is calculated assuming next-day settlement with the exception of US securitized products (MBS, CMBS, ABS and CMO), which assumes same-day settlement.
- Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing.
- Cash does not earn any reinvestment income while it is held in the index.

DEFAULTS

- Defaulted securities are excluded from the indices
- Securities are considered in default based on their individual legal terms
- A rating of “D” by a major rating agency is not a consideration for default status
- Defaulted securities are removed from the indices at the next rebalancing following the default event...
- ...provided this occurs on or before the rebalancing “lock-out” date, the third business day before the last business day of the month

COMPOSITE RATING ALGORITHM

Simple average of Moody's/S&P/Fitch

Convert each rating to numeric equivalent (AAA = 1; Aa1/AA+ = 2, etc.)

- Calculate simple average and round to nearest integer
- Convert back to alpha composite rating

For example:

- Baa2/BBB/BB+ = $(9 + 9 + 11) / 3 = 9.67 = 10 = \text{BBB3}$
- Baa2/BB+/BB+ = $(9 + 11 + 11) / 3 = 10.33 = 10 = \text{BBB3}$
- Baa3/BBB-/BB = $(10 + 10 + 12) / 3 = 10.67 = 11 = \text{BB1}$

RATING HIERARCHY BY ISSUER TYPES

Issuer group	ICE BofAML composite rating based on
Sovereigns (ie, sovereign debt denominated in the issuer's local currency)	Local currency long term debt sovereign rating
Foreign Sovereigns (ie, sovereign debt denominated in a foreign currency)	Foreign currency long term debt sovereign rating
Quasi-Governments (ie, Agency, Local Authority, Government Sponsored/Guaranteed, Supranational)	<ul style="list-style-type: none"> 1. bond rating 2. senior unsecured debt issuer rating (foreign currency issuer rating is used for bonds denominated in a currency other than the local currency of the issuers country of domicile). Note: issuer rating is used only for unsubordinated debt.
US Agency MBS and CMO	<ul style="list-style-type: none"> 1. Ginnie Mae collateral: US Treasury local currency long term sovereign debt rating 2. Fannie Mae and Freddie Mac collateral: senior unsecured debt issuer rating
ABS and CMBS	Bond rating
Covered bonds	Bond rating
Corporate bonds	Bond rating
US municipal securities	Bond rating
Preferred securities	Bond rating

SUBORDINATION TYPES

Securities in the ICE BofAML index universe receive a designation of relative placement in the capital structure or deal cash flow

Type	Code	Notes
Senior	SENR	
Secured	SECR	Senior secured or collateralized debt
Subordinated	SUB	
Junior Subordinated	JSUB	
Tier 2	T2	Bank capital
Upper Tier 2	UT2	Bank capital
Tier 1	T1	Bank capital
Alternative Tier 1	AT1	Bank capital
Preferred	PFD	
Securitized Senior	SSEN	Structured finance, senior tranche
Securitized Mezzanine	SMEZ	Structured finance, mezzanine tranche
Securitized Subordinated	SSUB	Structured finance, subordinated tranche

PROPRIETARY SECTOR CLASSIFICATIONS

Four-tier sector classification schema

- Level 1 – asset class
 - Sovereign (local currency debt); Quasi-Government (incl. external Sovereign debt); Securitized/Collateralized; Corporate; US Tax Exempt Municipal Securities;
Preferred Securities; Derivatives; Cash
- Level 2 – group
 - Corporate: Financial; Industrial; Utility
- Level 3 – category
 - Industrial: Automotive, Basic Industry; Cap Goods; Consumer Goods; etc.
- Level 4 – sub-category
 - Automotive: Automakers; Auto Loans; Auto Parts & Equipment

The up-to-date sector map is published on the index website and Bloomberg (IND2<Go>, General Methodology -> Sector schema/codes)

CLASSIFYING “QUASI-GOVERNMENT” VS “CORPORATE” DEBT

- Government ownership – in whole or in part – is not a consideration for determining whether an issuer is a “Quasi-Government” or “Corporate”
- To receive a “Quasi-Government” Level 1 asset class designation an issuer must be one of the following:
 - Foreign currency debt issued by a central government (Foreign Sovereign)
 - Debt guaranteed by a central government (Government Guaranteed)
 - Debt issued by a region, province, state, city, etc. (Local Authority)
 - Debt issued by an international government organization (Supranational)
 - Debt issued by a central government agency (Agency)
- An Agency is an entity that meets the following conditions:
 - It is an entity that exclusively serves an explicit public policy purpose, where profitability is not the sole concern, though profit-maximization is not precluded ; and
 - It was created by a specific statute and at the behest of a government, even if subsequent legislation has allowed for its transformation into a stockholder owned company or other private entity.

RELATIVE VALUE AND RISK METRICS CALCULATED FOR EVERY BOND/INDEX

Total return

- Local, converted unhedged and converted hedged
- Attributed to curve, spread and volatility factors
- Can be used to derive Sharpe ratios¹

Excess return

- Both vs risk-matched sovereigns and swaps
- Can be used to derive information ratios²

Yield and risk measures (duration, convexity, etc)

- To maturity, to worst, effective (option-adjusted)
- Conventional, semi-annual

Spreads

- Option-adjusted spread (vs government and swap curves)
- Spread-to-worst (vs maturity-matched point on government curve)

¹ Sharpe ratio: the average of the monthly differences between the index total return and the risk-free return divided by the standard deviation of monthly index returns.

² Information ratio: the average of the monthly differences between the index total return and the total return of a duration matched basket of governments (swaps) divided by the standard deviation of the monthly differences.

CALCULATION FORMULAS

CALCULATING INDEX VALUES

The daily closing Index value is a function of the prior month-end index value and the current month-to-date return

$$IV_n = IV_0 \times (1 + TRR_n)$$

where:

IV_n = closing index value on day n

IV_0 = closing index value on prior month-end

TRR_n = month-to-date index return on day n

The month-to-date return of an index is equal to the sum of the individual constituent returns times their respective beginning of month weights

$$TRR_n = \sum_{i=1}^k B_i TRR_n \times B_i Wgt_0$$

where:

TRR_n = Index month-to-date return on day n

$B_i TRR_n$ = month-to-date total return on day n of bond i

$B_i Wgt_0$ = beginning of month weight of bond i

CALCULATING PERIODIC AND ANNUALIZED RETURNS FROM INDEX VALUES

Periodic returns between any two dates can be derived from the beginning and end of period index values. Since index values represent closing levels, period returns will include market movement on the end of period date but exclude market movement on the beginning of period date. Therefore, to capture returns for the month of June, divide the June 30 Index value by the May 31 Index value.

Annualized returns are derived from period returns

$$TRR = \frac{IV_n}{IV_0} - 1$$

where:

TRR = periodic total return

IV_n = closing index value on the end of period date

IV_0 = closing index value on the beginning of period date

$$AnnTRR_n = (1 + TRR_n)^{365/d} - 1$$

where:

$AnnTRR_n$ = annualized total return for period n

TRR_n = periodic total return for period n

d = number of actual days in period n

BOND TOTAL RETURN IN LOCAL CURRENCY TERMS

Month-to-date total returns are calculated daily for each bond in its currency of denomination (ie, local total return). Cash flows from bond payments that are received during the month are retained in the index as a separate line item until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the Index. With the exception of US mortgage pass-through and US structured products (ABS, CMBS and CMOs), accrued interest is calculated assuming next-day settlement. Accrued interest for US mortgage pass-through and US structured products is calculated assuming same-day settlement.

$$BTRR_n = \frac{(P_n + AI_n) - (P_0 + AI_0) + C \cdot \left(1 + \frac{r}{d \times 100}\right)^t}{P_0 + AI_0}$$

where:

$BTRR_n$ = individual bond month-to-date total return on day n

P_n = current day price

P_0 = prior month-end price

AI_n = current day accrued interest

AI_0 = prior month-end accrued interest

C = coupon payments received during the period stated in percentage terms (including capital payments at current market value)

r = reinvestment rate stated in percentage terms (currently zero)

t = number of days between the receipt of the cash flow and day n

d = day count convention for reinvestment asset

US MBS TOTAL RETURN

$$TRR = \frac{\left((P_n + AI_n) - (P_0 + AI_0) + \left[\frac{C}{12} \times \left(1 + \frac{r}{d \times 100} \right)^t \right] \right)}{P_0 + AI_0} + (1-f) \times \frac{\left[\left(100 \times \left(1 + \frac{r}{d \times 100} \right)^t \right) - (P_n + AI_n) \right]}{P_0 + AI_0}$$

$$f = (1 - SPP) \times (1 - SMM)$$

$$SMM = 1 - \left(1 - \frac{CPR}{100} \right)^{1/12}$$

$$SPP = \left(\frac{\frac{WAC_0}{1200}}{\left(1 + \frac{WAC_0}{1200} \right)^{WAM_0}} - 1 \right)$$

where:

TRR = month to date total return

P_n = current day price (assuming cash settlement)

P_0 = prior month-end price (assuming cash settlement)

AI_n = current day accrued interest (assuming cash settlement)

AI_0 = prior month-end accrued interest (assuming cash settlement)

C = net coupon stated in percentage terms

r = reinvestment rate stated in percentage terms (currently zero)

d = day count for reinvestment asset

t = time to/since cash flow payment date (settlement date minus cash flow payment date)

SPP = schedule principal payment percentage

SMM = single monthly mortality

CPR = most recently reported constant prepayment rate

WAC_0 = weighted average gross coupon rate as of the previous month stated in percentage terms

WAM_0 = remaining maturity (in terms of number of months) as of the previous month

MBS CASH SETTLEMENT PRICE CALCULATION BEFORE ROLL DATE

US mortgage pass-through cash settle prices are derived from the current month regular (forward) settlement price up to the date before the roll date using the following formula:

$$P_c = \left[(P_r + AI_r) \times \left(\frac{1}{\left(1 + \frac{r}{d \times 100} \right)^n} \right) \right] - AI_c$$

where:

P_c = cash settle price

P_r = regular (forward) settle price for current month settlement price

AI_c = cash settle accrued interest

AI_r = regular (forward) settle accrued interest for current month settlement price

r = 1-month Libid rate stated in percentage terms

n = number of days between cash settle date and regular (forward) settle date

d = number of days in the year based on Libor daycount convention (360)

MBS CASH SETTLEMENT PRICE CALCULATION ON AND AFTER ROLL DATE

US mortgage pass-through cash settle prices are derived from the next month regular (forward) settlement price on the roll date through the end of the month using the following formula:

$$P_c = \left[\left(\frac{C}{12} + 100 \times (1 - f_e) \right) \times \left(\frac{1}{\left(1 + \frac{r}{d \times 100} \right)^{n_1}} \right) \right] + \left[(P_r + AI_r) \times f_e \times \left(\frac{1}{\left(1 + \frac{r}{d \times 100} \right)^{n_2}} \right) \right] - AI_c$$

where:

P_c = cash settle price

P_r = regular (forward) settle price for current month settlement price

AI_c = cash settle accrued interest

AI_r = regular (forward) settle accrued interest for current month settlement price

r = 1-month Libid rate stated in percentage terms

n_1 = number of days between cash settle date and the next month cash flow payment date

n_2 = number of days between cash settle date and regular (forward) settle date

C = net coupon stated in percentage terms

f_e = estimated factor based on most recently reported actual CPR

d = number of days in the year based on Libor daycount convention (360)

US ABS, CMBS & CMO TOTAL RETURN

$$TRR = \frac{(P_n + AI_n) - (P_0 + AI_0) + (P_{CF} + I_{CF}) \left(1 + \frac{r}{d \times 100}\right)^t - \frac{(1-f)(P_n + AI_n)}{(P_0 + AI_0)}}{(P_0 + AI_0)}$$

where:

TRR = individual bond month-to-date total return

P_n = current day price (assuming cash settlement)

P_0 = prior month-end price (assuming cash settlement)

AI_n = current day accrued interest (assuming cash settlement)

AI_0 = prior month-end accrued interest (assuming cash settlement)

I_{CF} = interest cash flow received

P_{CF} = principal cash flow received

f = end of period factor divided by the beginning of period factor

r = reinvestment rate (currently zero)

t = number of days between the receipt of the cash flow and day n

d = day count convention for the reinvestment asset

CONVERTING RETURNS INTO ANOTHER BASE CURRENCY UNHEDGED

Unhedged returns are converted into a given base currency as follows

$$CRR = \frac{FX_n}{FX_0} - 1$$

where:

CRR = currency return

FX_n = end-of-period FX rate (stated in terms of the number of units of the base currency per one unit of the currency of denomination of the bond)

FX_0 = beginning-of-period FX rate (stated in terms of the number of units of the base currency per one unit of the currency of denomination of the bond)

$$TRR_{converted} = [(1 + TRR_{local}) \times (1 + CRR)] - 1$$

where:

$TRR_{converted}$ = total return of the bond converted into the base currency unhedged

TRR_{local} = local total return of the bond

CONVERTING RETURNS INTO ANOTHER BASE CURRENCY HEDGED

Currency hedged index returns assume a rolling 1-month forward hedge where forward contracts are purchased in an amount equal to the full market value of the index (including accrued interest) at the beginning of the month. Hedged returns are calculated as follows:

$$CRUTRR = CRR \times (1 + TRR_{local})$$

$$FCR = \frac{FWD_0}{FX_0} - 1$$

$$HR = H_{Pct} \times (FCR - CRR)$$

$$TRR_{hedged} = TRR_{local} + CRUTRR + HR$$

$$HIV_n = HIV_0 \times (1 + TRR_{hedged})$$

where:

CRUTRR = currency return on unhedged local total return

FCR = forward contract return

FWD₀ = beginning-of-period forward rate (stated in terms of the number of units of the base currency per one unit of the currency of denomination of the bond)

HR = hedge return

H_{Pct} = percentage hedged

TRR_{hedged} = total return hedged into the base currency

HIV_n = closing hedged index value on day n

HIV₀ = closing hedged index value on prior month-end

SAMPLE HEDGED RETURN CALCULATION

EG00 Hedged Index Value (30-Nov-05) = 301.565

EG00 Local Total Return December 2005 = 1.061%

EUR/CHF FX Rates

1-mo Forward Rate 30-Nov-05 = 1.547892

Spot Currency Rate 30-Nov-05 = 1.549907

Spot Currency Rate 31-Dec-05 = 1.554588

Currency Return

= (End Spot Rate / Begin Spot Rate) – 1 = $(1.554588 / 1.549907) - 1 = 0.302\%$

Converted Return (Unhedged)

= $[(1 + \text{Local Total Return}) * (1 + \text{Currency Return})] - 1 = [(1 + 1.061\%) * (1 + 0.302\%)] - 1 = 1.366\%$

Currency Return on Unhedged Local Total Return

= Currency Return * (1 + Local Total Return) = $0.302\% \times (1 + 1.061\%) = 0.305\%$

Forward Contract Return

= (Begin 1-mo Forward Rate/Begin Spot Rate) – 1 = $(1.547892 / 1.549907) - 1 = -0.130\%$

Hedge Return

= %hedge * (Forward Contract Return – Currency Return) = $100\% \times (-0.130\% - 0.302\%) = -0.432\%$

Converted Return (Hedged)

= Local Total Return + Currency Return on Unhedged Local Total Return + Hedge Return

= $(1.061\%) + (0.305\%) + (-0.432\%) = 0.934\%$

Hedged Index Value 31-Dec

= Hedged Index Value 30-Nov x (1 + MTD Hedged Return 31-Dec) = $301.565 \times (1 + 0.934\%) = 304.381$

Note: Small differences in the above calculations may result from rounding

EXCESS RETURN METHODOLOGY

- Compares the bond return to a key rate duration (KRD) matched basket of fair value governments (or swaps)
 - Six KRD nodes: 6-month, 2-year, 5-year, 10-year, 20-year and 30-year
 - Cash used to balance the overall duration
- Index excess return is the weighted average of its constituent bond excess returns
- For annualized excess return the annualized total return of the hedge basket is subtracted from the annualized total return of the index/bond

SAMPLE EXCESS RETURN CALCULATION:

Ford Motor Co. 7.45% 7/16/2031

Ford Motor Co. 7.45 07/31 hedge basket - July 31, 2010

KRD node	Fair value par coupon government bond hedge basket								
	cash	6mo	2yr	5yr	10yr	20yr	30yr	weight ¹	wght KRD
Cash	0.000	0.000						-4.089%	0.000
6mo	0.036		0.500					7.159%	0.036
2yr	0.212			1.990				10.663%	0.212
5yr	0.678				4.856			13.962%	0.678
10yr	1.712					8.938		19.156%	1.712
20yr	7.239						14.574	49.672%	7.239
30yr	0.629							18.085	3.476%
	<u>10.506</u>								<u>0.629</u>
									<u>10.506</u>

Hedge basket return - August 2010

	July 31, 2010			August 31, 2010			Hedge Basket Total	
	Par cpn fair value govt	yield	Start value	Term	Par cpn fair value govt	yield	End value ¹	
Term								
Cash		0.100		Cash				
6 month	0.203		100.000	5 month	0.203		100.025	7.159%
2 year	0.508		100.000	1yr 11mo	0.450		100.184	10.663%
5 year	1.625		100.000	4yr 11mo	1.364		101.517	13.962%
10 year	3.049		100.000	9yr 11mo	2.595		104.486	19.156%
20 year	3.806		100.000	19yr 11mo	3.311		107.872	49.672%
30 year	4.013		100.000	29yr 11mo	3.591		108.463	3.476%
Hedge basket total return								5.30%
Ford Motor Co. 7.45 7/16/2031 August total return								1.15%
Ford Motor Co. 7.45 7/16/2031 August excess return								-4.15%

¹ based on par coupon government bond cash flows discounted at the Aug. 31, 2010 spot curve

FAIR VALUE GOVERNMENT/SWAP CURVES DERIVED FROM INDEX CONSTITUENTS

Government and swap yield curves

Nominal Government	Inflation-Linked Government	Swap
Australia	New Zealand	Euro (France-Germany Blend)Real Yield
Belgium	Norway	UK Real Yield
Canada	Poland	US Real Yield
Denmark	Singapore	Euro
Euro	Slovakia	Euro Inflation (HICPXT)
Netherlands	South Africa	Japan
France-Germany Blend	South Korea	New Zealand
France	Spain	Sweden
Germany	Sweden	Switzerland
Hong Kong	Switzerland	UK
India	Taiwan	UK Inflation (RPI)
Italy	UK	US
Japan	US	
Mexico	US Muni AAA GO	

FAIR VALUE YIELD/SPREAD CURVES DERIVED CORPORATE INDEX CONSTITUENTS

Sector	Rating	Method	USD	GBP	EUR	JPY	CAD	AUD
All Corporates	AAA	Equal weight	X	X	X	X	X	X
All Corporates	AA1-AA3	Equal weight	X	X	X	X	X	X
All Corporates	AA1-AA3	Market weight	X					
All Corporates	AA1	Equal weight	X		X	X		
All Corporates	AA2	Equal weight	X		X	X		
All Corporates	AA3	Equal weight	X		X	X		
All Corporates	A1-A3	Equal weight	X	X	X	X	X	X
All Corporates	A1	Equal weight	X	X				
All Corporates	A2	Equal weight	X	X				
All Corporates	A3	Equal weight	X	X				
All Corporates	AAA-A3	3 tier moving average	X					
All Corporates	AAA-A3	Equal weight	X					
All Corporates	AAA-A3	Market weight	X					
All Corporates	BBB1-BBB3	Equal weight	X	X	X	X	X	X
All Corporates	BBB1	Equal weight	X	X				
All Corporates	BBB2	Equal weight	X	X				
All Corporates	BBB3	Equal weight	X	X				
All Corporates	BB1-BB3	Equal weight	X					
All Corporates	BB1	Equal weight	X					
All Corporates	BB2	Equal weight	X					
All Corporates	BB3	Equal weight	X					
All Corporates	B1-B3	Equal weight	X					
All Corporates	CCC1-CCC3	Equal weight	X					
Financial	AAA	Equal weight	X					
Financial	AA1-AA3	Equal weight	X					
Financial	A1-A3	Equal weight	X					
Financial	BBB1-BBB3	Equal weight	X					
Industrial	AAA	Equal weight	X					
Industrial	AA1-AA3	Equal weight	X					
Industrial	A1-A3	Equal weight	X					
Industrial	BBB1-BBB3	Equal weight	X					
Industrial	BB1-BB3	Equal weight	X					
Utility	AAA	Equal weight	X					
Utility	AA1-AA3	Equal weight	X					
Utility	A1-A3	Equal weight	X					
Utility	BBB1-BBB3	Equal weight	X					
Utility	BB1-BB3	Equal weight	X					

CORPORATE CURVES

- Corporate term structures
 - Spot and par coupon yield curves
 - Spread curves
- Derived from high grade and high yield corporate index constituencies
- Segmented by currency, sector (all, financial, industrial and utility) and rating
- Daily history back to 12/31/96

ANALYSIS TOOLS



ICE BOFAML BOND INDICES ARE AVAILABLE VIA PROPRIETARY AND THIRD PARTY SYSTEMS

- ICE BofAML index pages on Bloomberg (IND <GO>)
 - Open to all buy-side Bloomberg subscribers
 - Bond and index level data available to view and download
- ICE BofAML Global Index System (GIS) website (www.markets2.ml.com/GIS/bin/default.asp)
 - Provides advanced analytics and customised data feeds
 - Requires a subscription agreement; contact iceIndexesContracts@theice.com for terms
- ICE BofAML public index website (www.mlindex.ml.com)
 - Unrestricted access
 - Limited view access to index level data
- Third party data vendors: Barra, Bloomberg, Factset, Morningstar, Rimes, RiskMetrics, Thomson Reuters, Wilshire Associates, and others

ICE BOFAML INDEX PAGES ON BLOOMBERG (IND<GO>)

Key functionality:

- View/download current and historical index and constituent data
- Run customized bucket analyses segmenting the index by sector, rating, duration, etc.
- Create blended indices
- Access index rules and methodology
- Access monthly
- index publications

To access:

- Select an index
(e.g., HOA0<Index><Go>)
- Select a function from the menu
(e.g., #4 to see spread, yield, duration, etc.)

Not a Bloomberg function. The provider has access to your usage of this page.		
Enter Index		Description
No index selected		
Index Finder & Rules		Historical Data
1) IND1	Index Finder	12) IND12 Index Charts/Tables
2) IND2	Index Rules & Methodology	13) IND13 Data Download
3) IND3	FX / Forward Rates	
Index Analytics		Rates of Return
4) IND4	Index Characteristics	14) IND14 Return Summary
5) IND5	Profile Analysis	15) IND15 Monthly/Quarterly/Annual Returns
6) IND6	Correlation Matrix	17) IND17 Flexible Returns
		18) IND18 Personal Return Monitor
Constituents		Custom Index Model
10) IND10	Index Member List/Download	19) IND19 Create Custom Index
11) IND11	Index Lookup by Security	
General Information		
23) IND23	Index Publications	

THE GLOBAL INDEX SYSTEM (GIS) WEBSITE

Key functionality:

- View/download current and historical index and constituent data
- Run customized bucket analyses segmenting the index by sector, rating, duration, etc.
- Create blended indices
- Access index rules and methodology
- Access monthly index publications

To access:

- www.baml.com/mercury
 - My Tools → Global Index System

Global Index System

Index Watch

Global Broad Market Index

TRR Idx Val

267.7

265.6

262.6

259.6

256.6

7/19/2016 12/12/2016 5/07/2017

Global High Yield and Emg Mkts

TRR Idx Val

431.4

426.0

416.0

406.0

396.0

7/19/2016 12/12/2016 5/07/2017

Personalize

Daily Highlights
Get up to date index spreads and returns by sector in the [Daily Highlights](#)

Projected Index Re-balancing Highlights

Monthly Index Profiles
Get the full picture of bond market performance around the world in the latest edition of the [Bond Index Monthly](#)

Bond Index Almanac
Latest edition of the [Quarterly Highlights](#)

Statement of Compliance with IOSCO Principles for Financial Benchmarks

Need Help?
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Index Charts & Data

Index/BondID	
Type	General
Ticker	
or	
Coupon	
Maturity	
Item	TRR Idx Val
Period	Last 3 Mths
Currency	LOC
Quick Chart	Index Lookup

Index Snapshot

Index Ticker	
Base Curr	LOC
Date(m/d/yyyy)	7/18/2017
Get Data	X
Index Value	
Total Return %	
1 Mth	3 Mth
6 Mth	12 Mth
MTD	YTD

Avg Characteristics

# Issues	
Full Mkt Val	
Maturity / WAL	
Eff Yield	Spred-Govt
Eff Dur	Spred-Swp
Eff Conv	Quality

INTERCONTINENTAL EXCHANGE

52

INDEX PUBLICATIONS

Index Publications

- Index Rules
- Index Fact Sheets (daily)
- Projected Structure (monthly)
- Risk Return Profiles (monthly)
- Index Almanac (quarterly)
- Growth Trends in the World Bond Markets (annual)

Subscribe for automatic email delivery of publications for key markets

- Global government indices
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- US high grade indices; US municipal securities indices
- European high grade indices

INDEX SUPPORT

If you need any assistance with GIS, or would like to schedule a detailed training session for you or your team, please feel free to contact us. In addition to GIS, index analysts on the help desk are also able to assist with any questions relating to ICE BofAML indices.

Index help desk:

New York: +1 212.497.3008

London: +44 20 7429 7128

Email: iceindexes@theice.com

THE GLOBAL INDEX SYSTEM (GIS) WEBSITE

ICE BofAML Global Index System (GIS) is your direct pipeline to an extensive database of security- and index-level performance statistics. With the available tools on the site you can analyze relative value of individual bonds, sectors and indices, or simply extract the raw data and set up a direct feed to your own systems.

The homepage is divided into three main sections, with the analytical tool navigator on the left-hand side, the central publications/reference section in the middle, and quick reference tools on the right-hand side.

Use the GIS **menu bar** to access the various analytical tools as well as saved charts, monitors and reports.

The central portion of the screen contains **publications & reference** information. The customizable index watch charts are at the top, with links to the index team's regular reports and a statement of IOSCO compliance below.

Quick tools are available for you to grab basic data onscreen and access a factsheet with key index statistics, find an index via the index lookup feature or to quickly view a simple chart on screen.

Menu bar

GIS Home Page
» GIS Home Page
Bond/Index Analysis
Yield Curve Charts & Data Download
Report Scheduler
Asset Allocation
Portfolio Analysis
Rating Migration Databook
Index Rules & Defs
User Defaults

Publications/Reference

Global Index System

Index Watch

Global Broad Market Index

TRR Idx Val

267.7
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Global High Yield and Emg Mkts

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431.4
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Quick Tools

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Type	General
Ticker	
or	
Coupon	
Maturity	
Item	TRR Idx Val
Period	Last 3 Mths
Currency	LOC
Quick Chart	Index Lookup

Index Snapshot

Index Ticker	
Base Curr	LOC
Date(m/d/yyyy)	7/18/2017
Get Data	
Index Value	

Total Return %

1 Mth	3 Mth
6 Mth	12 Mth
MTD	YTD

Avg Characteristics

# Issues	
Full Mkt Val	
Maturity / WAL	
Eff Yield	Sprd-Govt
Eff Dur	Sprd-Swp
Eff Conv	Quality

INTERCONTINENTAL EXCHANGE

55

ACCESSING INDEX REPORTS

All of the latest editions of our index publications are available on the homepage. The publications include rebalancing preview highlights, monthly performance summaries and quarterly in-depth analyses. A statement of IOSCO compliance is also available.



FINDING AN INDEX

Click on the “Index Lookup” button in the Index Charts & Data section of the Home page to find a listing of available indices organized by market segment. Not all indices fall within a single unique segment. If you do not find the index you are looking for, contact the index help desk for assistance.

The diagram illustrates the process of finding an index. On the left, the "Index Charts & Data" section of the home page is shown. It includes fields for "Index/BondID", "Type" (set to "General"), "Ticker", "Coupon", "Maturity", "Item" (set to "TRR Idx Val"), "Period" (set to "Last 3 Mths"), "Currency" (set to "LOC"), and two buttons: "Quick Chart" and "Index Lookup". The "Index Lookup" button is highlighted with an orange box and has an orange arrow pointing to the "Index Lookup" screen on the right. The "Index Lookup" screen shows a hierarchical list of indices under "U.S. Domestic Markets" and "Corporates".

Throughout GIS, anywhere you can enter an index ticker you will see this button that will also bring you to the Index Lookup screen.

Or...contact us!

Data Selection	
Index/BondID	<input type="text"/>

DOWNLOAD INDEX FACT SHEETS WITH JUST A FEW CLICKS

- Index Snapshot – the quickest way to access basic statistics.
 - Enter the index ticker,
 - Select base currency,
 - Enter an as of date
 - Click the “Get Data” button
- Click on the PDF/Excel icons to get more detailed daily fact sheets with allocations and characteristics by:
 - Quality
 - Maturity
 - Duration
 - Currency
 - Sector

Index Snapshot			
Index Ticker		C0A0	
Base Curr		LOC ▾	
Date(m/d/yyyy)		3/21/2017	
Get Data			
C0A0-LOC as of 21-Mar-17			
Index Value		2761.934	
Total Return %			
1 Mth	0.167	3 Mth	1.844
6 Mth	-1.315	12 Mth	4.213
MTD	-0.467	YTD	1.071
Avg Characteristics			
# Issues		7,254	
Full Mkt Val - [loc]		6,046,213	
Maturity / WAL		10.21	
Eff Yield	3.36	Sprd-Govt	122
Eff Dur	6.96	Sprd-Swp	122
Eff Conv	0.95	Quality	A3

Available in pdf or spreadsheet format

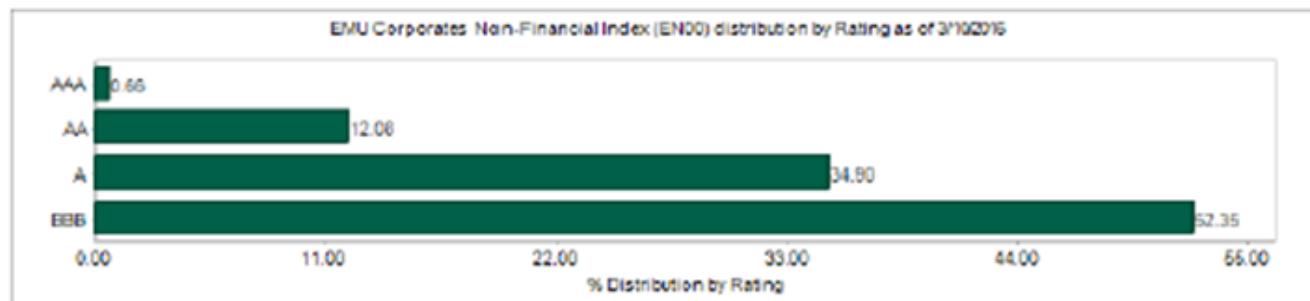
Select an index and click on the icon

Index Snapshot			
Index Ticker		en00	
Base Curr		LOC ▾	
Date(m/d/yyyy)		7/7/2004	
Get Data			

FACT SHEETS SHOW DETAILS BY RATING

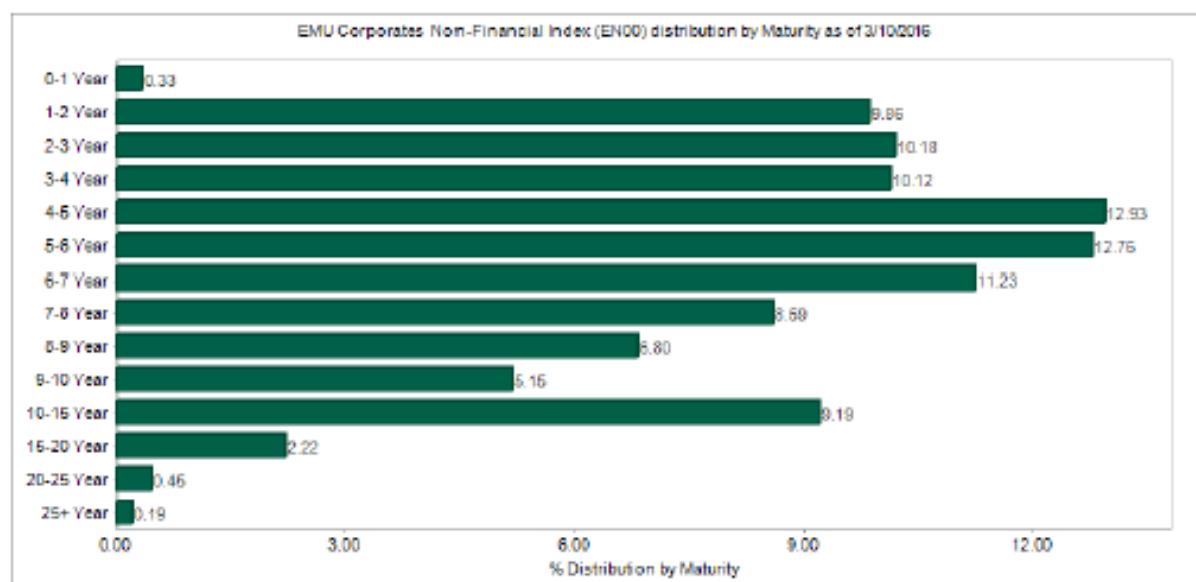
EMU Corporates Non-Financial Index (EN00) - distribution characteristics as of 3/10/2016

Index distribution by Rating	#	FullVal	%Full Val	Eff Dur	Contr EffDur	Eff Yld	OAS	TRR%MTD	ExRtn%MTD
AAA	5	7,882,316	0.06427	7.11	0.05	0.76	68	-1.105	0.388
AA	135	143,352.024	12.08080	6.45	0.78	0.79	83	-0.578	0.567
A	485	414,143.522	34.90138	5.67	1.98	1.00	112	-0.381	0.599
BBB	778	621,232.982	52.35356	5.05	2.64	1.57	173	0.060	0.908
Grand Total	1,403	1,186,610.843	100.00000	5.45	5.45	1.27	140	-0.179	0.755



...BY DURATION, MATURITY, CURRENCY AND SECTOR

Index distribution by Maturity	#	FullVal	%Full Val	Eff Dur	Contr EffDur	Eff Yld	OAS	TRR%MTD	ExRtn%MTD
0-1 Year	3	3,956.592	0.33344	0.74	0.00	0.00	43	N/A	N/A
1-2 Year	140	116,942.225	9.85515	1.45	0.14	0.45	87	-0.040	0.111
2-3 Year	144	120,849.657	10.18444	2.34	0.24	0.77	118	0.069	0.375
3-4 Year	145	120,030.882	10.11544	3.29	0.33	0.79	116	-0.024	0.458
4-5 Year	176	153,411.960	12.92858	4.19	0.54	1.00	130	-0.024	0.654
5-6 Year	173	151,458.958	12.76400	5.03	0.64	1.41	162	0.030	0.885
6-7 Year	155	133,278.807	11.23189	6.01	0.67	1.37	149	-0.184	0.846
7-8 Year	123	101,894.006	8.58698	6.80	0.58	1.48	149	-0.402	0.773
8-9 Year	100	80,691.967	6.80020	7.60	0.52	1.78	168	-0.133	1.175
9-10 Year	81	61,127.891	5.15147	8.50	0.44	1.80	161	-0.370	1.116
10-15 Year	123	109,076.532	9.19227	10.10	0.93	2.07	168	-0.476	1.369
15-20 Year	30	26,287.647	2.21536	13.75	0.30	2.58	178	-1.622	1.231
20-25 Year	6	5,293.569	0.44611	13.93	0.06	3.18	226	-1.871	1.060
25+ Year	4	2,310.150	0.19468	19.70	0.04	3.02	208	-3.404	0.763
Grand Total	1,403	1,186,610.843	100.00000	5.45	5.45	1.27	140	-0.179	0.755



QUICK CHARTS

The Index Charts & Data tool is on the upper right hand side of the home page

- Quickly run a chart of key index statistics.
- Download the underlying data into excel or view the chart as data points by selecting “View Data” button.
- Jump to “Advanced Chart” for further analysis and additional complex charting options.



VIEW SUMMARY INDEX STATISTICS

Index Characteristics is located on the left-hand side of the GIS homepage, under Bond/Index Analysis

- Enter an index ticker and as of date. Use the available dropdown options to customize the data for analysis.
- The date dropdown provides the ability to view the month to date (MTD) change for any date. For month end dates, additional choices for the old and new universes are available.
- View a quick chart via one of the available data elements through the dropdown menu.

Bond/Index Analysis

- Data Download
- Create New Chart
- Create New Monitor
- Saved Charts & Monitors

Index Characteristics

Index Selection

Index	<input type="text"/>	...	Date (m/d/yyyy)	<input type="text" value="5/16/2017"/>	...	View	Print
-------	----------------------	-----	-----------------	--	-----	-------------	--------------

Index Characteristics

Index Selection

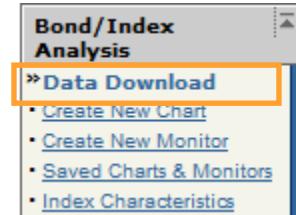
Index	<input type="text" value="COA0"/>	...	Date (m/d/yyyy)	<input type="text" value="3/29/2017"/>	...	View	Print
-------	-----------------------------------	-----	-----------------	--	-----	-------------	--------------

US Corp Master (COA0)

Monthly availability	12/31/1972	Daily availability	10/31/1986		
Capitalization	USD	Pricing/Risk Measures	Semi-Annual		
# of Issues	7254	Basis Of Calculation	Effective		
Amount Outstanding	5,744,086	Yield	3.32		
Market Value	5,994,169	Modified Duration	6.96		
Accrued Interest	59,330	Convexity	0.95		
MTD CashFlow (Reinv)	17,839	Risk	7.50		
Full Value	6,071,338	Term to Workout/WAL	10.16		
Spread					
Option Adjusted Spread	122	Asset Swap	122		
Other Characteristics					
Par Wgt Price	104.35	Par Wgt Coupon	4.10		
Mkt Wgt Quality	A3	Mkt Wgt Coupon	4.19		
Data Element	<input type="text" value="OAS"/>	Period	Last 3 Mths	Download	

DATA DOWNLOAD – OVERVIEW

Click on the “Data Download” link in the Bond/Index Analytics section of the Menu to tap in to our entire historical database of top-level index data. You can also download returns and statistics data for individual constituent securities.



Select a date range and frequency

File Information

Dates (m/d/yyyy)	6/13/2017	9/13/2017	<input type="checkbox"/>	OR	Last 3 Months	<input checked="" type="checkbox"/>	Frequency	Daily
------------------	-----------	-----------	--------------------------	----	---------------	-------------------------------------	-----------	-------

Output Options

Download	Group data by	Index / Bonds
----------	---------------	---------------

Once all selections have been entered, click on download to export the data to Excel

Data Selection

Index/BondID	<input type="text"/> ...	Load List
Type	General	
Or	Ticker	<input type="text"/>
Coupon	<input type="text"/>	
Maturity	<input type="text"/>	

Selected Bonds/Indexes

<input type="button" value="Up"/>	<input type="button" value="Down"/>	<input type="button" value="Del"/>
-----------------------------------	-------------------------------------	------------------------------------

Category

Char & Risk Measure
No. of Issues
Maturity / WAL
Years to Workout / WAL
Rating
Effective Duration
Mod Duration to Worst
Mod. Dur to Worst (s.a.)
Modified Duration

Selected Data Elements

<input type="button" value="Up"/>	<input type="button" value="Down"/>	<input type="button" value="Del"/>
-----------------------------------	-------------------------------------	------------------------------------

Select any combination of indices and/or individual constituent securities

Select from an inventory of well over 100 data fields that are available to download

DATA DOWNLOAD – AVAILABLE OPTIONS

First select a date range and frequency:

Enter specific start and end dates...

...or select a pre-set date range

Select the frequency of the time-series (if weekly specify which day of the week)

File Information			
Dates (m/d/yyyy)	6/13/2017	9/13/2017	<input type="checkbox"/>
		OR	
		Select Dt Range	
		Last 3 Months	
		Last 6 Months	
		Last 1 Year	
		Last 2 Years	
Frequency			
Daily			
Monthly			
Monday			
Tuesday			
Wednesday			
Thursday			
Friday			
Quarterly			
Yearly			

Then select any combination of indices and/or individual constituent securities :

Click on the double right arrow to add the entered index/bond to your selection list...

Enter individual indices or bond IDs...

Data Selection																					
Index/BondID	<input type="text"/>	...	Load List																		
Type	General																				
Or																					
Ticker	DYN																				
Coupon	8																				
Maturity	1/15/2025																				
>>																					
<table border="1"> <thead> <tr> <th colspan="2">Selected Bonds/Index</th> </tr> </thead> <tbody> <tr> <td colspan="2">HW00</td> </tr> <tr> <td colspan="2">HOA0</td> </tr> <tr> <td colspan="2">HE00</td> </tr> <tr> <td colspan="2">HL00</td> </tr> <tr> <td colspan="2">EMGB</td> </tr> <tr> <td colspan="2">EMCB</td> </tr> <tr> <td colspan="2">US004403AF8</td> </tr> <tr> <td colspan="2">US013822AA9</td> </tr> </tbody> </table>				Selected Bonds/Index		HW00		HOA0		HE00		HL00		EMGB		EMCB		US004403AF8		US013822AA9	
Selected Bonds/Index																					
HW00																					
HOA0																					
HE00																					
HL00																					
EMGB																					
EMCB																					
US004403AF8																					
US013822AA9																					
<input type="button" value="Up"/> <input type="button" value="Down"/> <input type="button" value="Del"/>																					

...or a bond ticker/coupon/maturity

Reorder selected bonds/indexes.

If you have a long list of bonds/indexes to download, click on the load list button and copy and paste the identifiers from Excel.

DATA DOWNLOAD – AVAILABLE OPTIONS CONTINUED

Select the data elements you want to download for each bond/index:

Reorder selected data elements

Select a category and highlight the data elements you want to download

Click on the double right arrow to add highlighted items to your selection list

The screenshot shows a user interface for selecting data elements. On the left, there's a table with two columns: 'Category' and 'Data Elements'. In the 'Category' column, a dropdown menu is open, showing 'Spread, Yield, Price' at the top. Below it is a list of data elements: Asset Swap Spread, OAS, Asset Swap 1-day Chg, Asset Swap 1-wk Chg, Asset Swap 1-mo Chg, Asset Swap 3-mo Chg, Asset Swap 6-mo chg, and Asset Swap 12-mo Chg. The 'OAS' item is highlighted with a blue background. An orange box highlights this entire list. A horizontal orange line extends from the right side of this box across the interface. On the right, there's a panel titled 'Selected Data Elements' containing a list of items: Effective Duration, Rating, Total Return % 1-mo | EUR | h, Excess Return % 1-mo, and OAS. The 'OAS' item here is also highlighted with a blue background. To the right of this panel are three buttons: 'Up', 'Down', and 'Del'. An orange box highlights the 'Up' and 'Down' buttons. Another horizontal orange line extends from the right side of this box across the interface. At the bottom of the main table, there's a checkbox labeled 'Initialize Index Value to 100'.

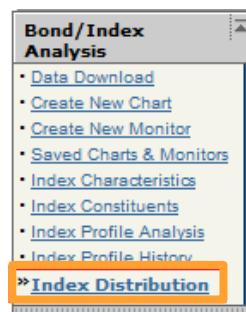
Download the data to Excel:

Select the order in which data is grouped in the file (i.e., by index/bonds or by data element) then click on the Download button to export the file.

The screenshot shows an 'Output Options' section. It includes a 'Download' button, a 'Group data by' dropdown menu, and two radio button options: 'Index / Bonds' (which is selected) and 'Data Elements'. A horizontal line extends from the right side of the 'Data Elements' option across the interface.

VIEW INDEX DISTRIBUTION

Index Distribution is located on the left-hand side of the GIS homepage, under Bond/Index Analysis



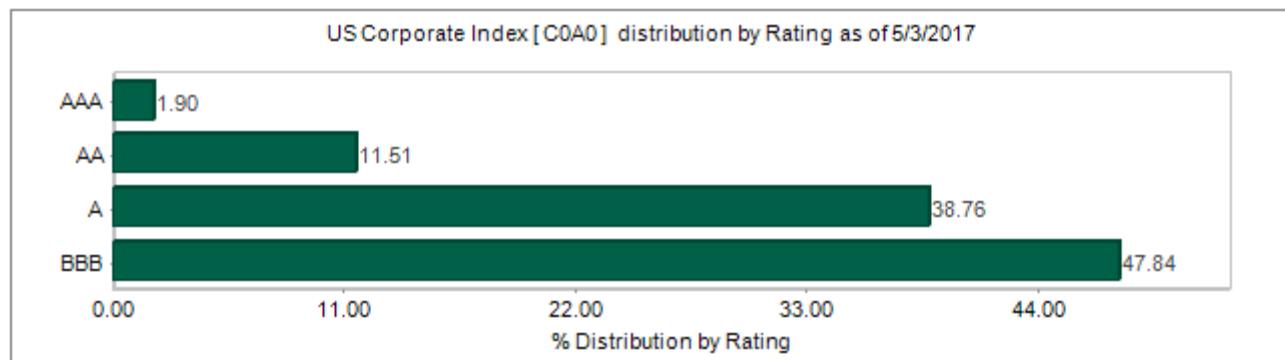
Index Distribution

A screenshot of the 'Index Selection' panel. It includes fields for 'Index' (with a dropdown menu), 'Date(m/d/yyyy)' (set to 5/15/2017), and a 'View' button. There are also icons for PDF and XLS exports.

- Enter the index ticker, or use the index lookup button, enter an as of date and select the view button
- Click on the PDF or XLS icons for a full factsheet.

A screenshot of the 'Index Selection' panel with the 'Rating' dropdown in the 'View' section highlighted by a yellow rectangle.

US Corporate Index [C0A0] distribution as of 5/3/2017										
Rating	# Bonds	FullVal	%Full Val	Eff Dur	Contr EffDur	Eff Yld	OAS	TRR%MTD	ExRtn%MTD	
AAA	104	116,708.091	1.89786	10.01	0.19	2.97	70	0.046	0.161	
AA	676	707,592.627	11.50660	6.46	0.74	2.69	76	-0.035	0.069	
A	2,773	2,383,328.240	38.75676	7.08	2.74	3.02	98	-0.027	0.087	
BBB	3,770	2,941,821.998	47.83877	7.16	3.42	3.63	154	0.034	0.156	
Grand Total	7,323	6,149,450.956	100.00000	7.10	7.10	3.28	122	0.003	0.119	



VIEW INDEX CONSTITUENTS

Index Constituents is located on the left-hand side of the GIS homepage, under Bond/Index Analysis

- View index constituents for a specific date. View constituents on screen download to Excel.
- Customize the layout and add filters by clicking on the hyperlink or by going to the Customization section under User Defaults.

Index Constituents

Index Selection

Index	CI00	Date (m/d/yyyy)	5/16/2017	Select MemberList	Current
Layout	Default Index Layout	Filter	None	View	Download Download All

Index Constituents

Index Selection

Index	CI00	Date (m/d/yyyy)	7/25/2011	Select MemberList	Current
Layout	Default Index Layout	Filter	None	View	Download Download All

CI00 for 7/25/2011 - Issues 1 - 500 of 2844 (1 cash row) Page: 1 of 6 PgUp PgDn Page: 1

	Cusip	ISIN	Description	Ticker	Coupon	MtyDate	Rating	ISO Curr	ISO Ctry	Sector1	Sector2
1	00846UAD	US00846UAD37	AGILENT TECH INC	A	4.450	09/14/2012	BBB2	USD	US	Corporate	Industrials
2	00846UAF	US00846UAF84	AGILENT TECH INC	A	2.500	07/15/2013	BBB2	USD	US	Corporate	Industrials
3	00846UAE	US00846UAE10	AGILENT TECH INC	A	5.500	09/14/2015	BBB2	USD	US	Corporate	Industrials
4	00846UAC	US00846UAC53	AGILENT TECH INC	A	6.500	11/01/2017	BBB2	USD	US	Corporate	Industrials
5	00846UAG	US00846UAG67	AGILENT TECH INC	A	5.000	07/15/2020	BBB2	USD	US	Corporate	Industrials
6	013817AR	US013817AR21	ALCOA INC	AA	6.000	07/15/2013	BBB3	USD	US	Corporate	Industrials
7	013817AL	US013817AL50	ALCOA INC	AA	5.550	02/01/2017	BBB3	USD	US	Corporate	Industrials
8	022249BA	US022249BA36	ALUM CO AMERICA	AA	6.500	06/15/2018	BBB3	USD	US	Corporate	Industrials
9	013817AS	US013817AS04	ALCOA INC	AA	6.750	07/15/2018	BBB3	USD	US	Corporate	Industrials
10	013817AP	US013817AP64	ALCOA INC	AA	5.720	02/23/2019	BBB3	USD	US	Corporate	Industrials
11	013817AU	US013817AU59	ALCOA INC	AA	6.150	08/15/2020	BBB3	USD	US	Corporate	Industrials
12	013817AV	US013817AV33	ALCOA INC	AA	5.400	04/15/2021	BBB3	USD	US	Corporate	Industrials
13	013817AQ	US013817AQ48	ALCOA INC	AA	5.870	02/23/2022	BBB3	USD	US	Corporate	Industrials
14	013817AJ	US013817AJ05	ALCOA INC	AA	5.900	02/01/2027	BBB3	USD	US	Corporate	Industrials
15	022249AU	US022249AU09	ALUM CO AMERICA	AA	6.750	01/15/2028	BBB3	USD	US	Corporate	Industrials
16	013817AK	US013817AK77	ALCOA INC	AA	5.950	02/01/2037	BBB3	USD	US	Corporate	Industrials
17	034863AC	US034863AC43	ANGLO AMERICAN	AALLN	2.150	09/27/2013	BBB1	USD	GB	Corporate	Industrials
18	034863AA	US034863AA88	ANGLO AMERICAN	AALLN	9.375	04/08/2014	BBB1	USD	GB	Corporate	Industrials

VIEW, CUSTOMIZE LAYOUT AND FILTER OPTIONS FOR CONSTITUENT LISTS

- You can customize the layout of your constituent report to add/remove or re-order columns.
- Create a new layout via the layout hyperlink the index constituents section, or via the Create New Layout under the User Defaults tab.
- To modify a layout, access previous saved layouts via the above options. Make the appropriate selects and a “Save & Apply” button will be available.



Create New Layout

Layout Information

Layout	<input type="button" value="Save"/>
--------	-------------------------------------

Data Selection

Category	Selected Items
Data Elements	Char & Risk Measure As of Date Cusip ISIN number Description Ticker Par Wtd Coupon Current Period Coupon Maturity / WAL
	<input type="button" value="Up"/> <input type="button" value="Down"/> <input type="button" value="Delete"/>

Freeze first 3 columns (Max 3)

Create New Filter

Filter Information

Filter	<input type="button" value="Save"/>
--------	-------------------------------------

Filter Selection

Search Category	Search Values
Char & Risk Measure	<input type="button" value="Include All"/> <input type="button" value="Exclude All"/> <input type="button" value="Delete"/>
Cusip Subordination Type ISIN number Ticker Par Wtd Coupon Current Period Coupon Maturity Date Years to Workout / WAL Rating	<input type="text" value="Enter exact string"/> <input type="button" value="Add"/>

Filter Summary

None



- Create a filter to narrow the scope of index constituents that are displayed.
- Access the filter tool via the Index Constituents page under the Bond/Index Analysis tab, or via the User Defaults tab as shown.
- After you have made your inclusion and exclusion choices, save the filter. Return to the Index Constituents analysis page and apply the filter.

CREATE CUSTOMIZED MONITORS

Bond/Index Analysis

- Data Download
- Create New Chart
- »Create New Monitor**
- Saved Charts & Monitors
- Index Characteristics
- Index Constituents
- Index Profile Analysis
- Index Profile History
- Index Distribution
- Custom Index

Create Bond/Index Monitor 1

File Information

File Name Save Favorites

Output Options

View or **Print** or **Download** Show Dates in **Columns**

Data Selection

Format

Monitor 1 : One Index - Multiple Dates - Multiple Data Elements
Monitor 2 : One Date - Multiple Indices - Multiple Data Elements
Monitor 3 : One Data Element - Multiple Indices - Multiple Dates

Download **Print** **Edit this file**

Create a monitor using three templates:

Monitor 1. One index with multiple dates/data elements,

Monitor 2. One date with multiple indices/elements

or

Monitor 3. One data element with multiple indices/dates

5/29/2002	Total Return % MTD LOC	Total Return % YTD LOC	Excess Return % MTD	Excess Return % YTD	OAS	OAS 1-mo Change
CITE-US Corp Technology & Electronics	0.357	1.653	-0.325	-0.766	198	-36
MOT 7.625 11-15-2010	0.237	1.589	-0.752	-1.259	292	14
NT 7.400 06-15-2006	-8.374	-18.994	-9.158	-21.441	1526	478
NT 7.875 06-15-2026	-5.734	-7.822	-6.568	-10.69	842	132
CITC-US Corp Telecommunications	1.224	-9.666	0.564	-12.183	397	-3
FON 6.375 05-01-2009	3.085	-3.441	2.068	-6.254	322	-19
CIBI-US Corp Basic Industry	0.613	3.21	-0.036	0.747	189	0
CIOG-US Corp Capital Goods	1.547	2.075	0.924	-0.397	168	-23
CICC-US Corp Consumer Cyclicals	1.492	5.282	0.924	2.874	140	-13
CICN-US Corp Consumer Non-Cyclicals	0.782	2.914	0.173	0.509	101	-2
CISC-US Corp Services Cyclicals	1.012	4.844	0.302	2.143	190	-6
CAL 6.000 12-15-2005	-0.369	15.342	-1.104	12.999	657	56
DAL 7.900 12-15-2009	0.788	8.253	-0.228	5.422	391	46
CIEN-US Corp Energy	0.248	3.157	-0.334	0.64	185	9

REVIEW, PRINT AND DOWNLOAD SAVED CHARTS & MONITORS

Saved Index Charts & Monitors

Bond/Index Analysis

- Data Download
- Create New Chart
- Create New Monitor
- » **Saved Charts & Monitors**
- Index Characteristics
- Index Constituents
- Index Profile Analysis
- Index Profile History
- Index Distribution
- Custom Index

Delete

[Index Monitors]

Select	File Name	View	Print	Download
<input type="checkbox"/>	[Custom Chart]	[View]	[Print]	[Download]
Index Monitors [Top]				
<input type="checkbox"/>	[Custom Monitor]	[View]	[Print]	[Download]
[Index Charts]				

SLICE AND DICE: INDEX PROFILE ANALYSIS



Index Profile Analysis

New	Edit	Delete	Run	Profile	Trade Date (m/d/yyyy)	Complete Date	View	Print	Download
-----	------	--------	-----	---------	--------------------------	---------------	------	-------	----------

Create custom report templates that segment an index across three attributes. Calculate statistics and returns for each bucket in the matrix.

Index Profile Analysis report customizations are stored under the individual user. Customizations must be built by each user.

BUCKET THE INDEX BY UP TO THREE ATTRIBUTES

General Analysis information:

- Enter an analysis name and select if you want data grouped data grouped by indices or attributes

Index and Bucket selections:

- Select up to 8 indices
- Segment the indices across up to three attributes

Results selections:

- Select the values you want to calculate for each bucket

Click “Save” which prompts you to enter the as of date for the analysis.

Index Profile Analysis

General Analysis Info

Analysis Information

Analysis Name	C0A0 Ratings	Save
Download group by	Index	Auto change trade date
		None

Index & Bucket Selection

Select the Indices

Index	...
C0A0	

Create Bucket by

First Level Characteristics	Rating
Second Level Characteristics	None
Third Level Characteristics	None

First Level Elements

AAA	(AAA)
AA1	(AA1)
AA2	(AA2)
AA3	(AA3)
A1	(A1)
A2	(A2)

Analysis Category Selection

Values to Calculate for each Bucket

Category	Char & Risk Measure
Data Elements	No. of Issues Par Wtd Coupon Current Period Coupon Years to Workout / WAL MBS CPR / Sink % Cash
Currency	

Up
Down
Group
Ungroup

Select a bucket above to rename: AAA Rename

Up
Down
Delete

GROUP ATTRIBUTES ACROSS THE THREE BUCKETS

Create your own groupings of standard categories within an attribute

- E.g. Using ratings as an example, select the elements you would like to group using the ctrl button and press the group button
- The newly created group is automatically placed at the top of the elements
- Rename the new group

Move the elements to their desired location in the report using the “Up” and “Down” buttons.

Create Bucket by

First Level Characteristics
Rating

Second Level Characteristics
None

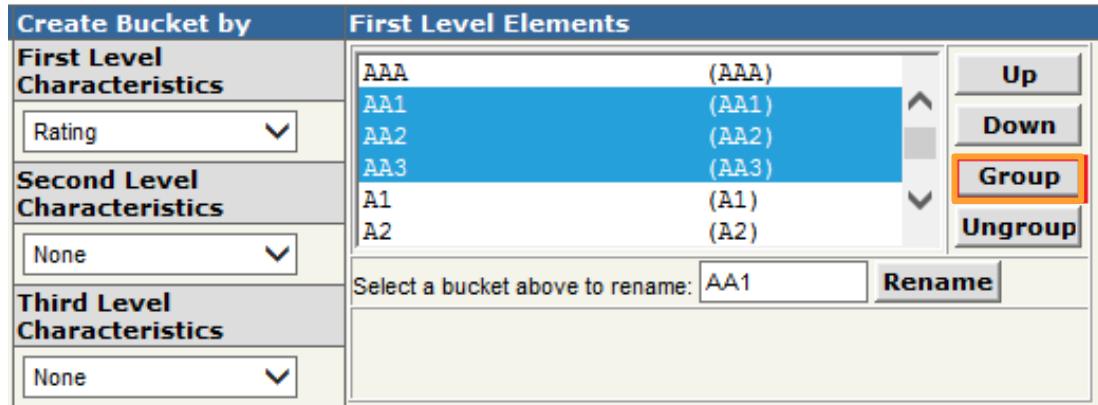
Third Level Characteristics
None

First Level Elements

AAA	(AAA)
AA1	(AA1)
AA2	(AA2)
AA3	(AA3)
A1	(A1)
A2	(A2)

Up
Down
Group (highlighted)
Ungroup

Select a bucket above to rename: AA1 **Rename**



Create Bucket by

First Level Characteristics
Rating

Second Level Characteristics
None

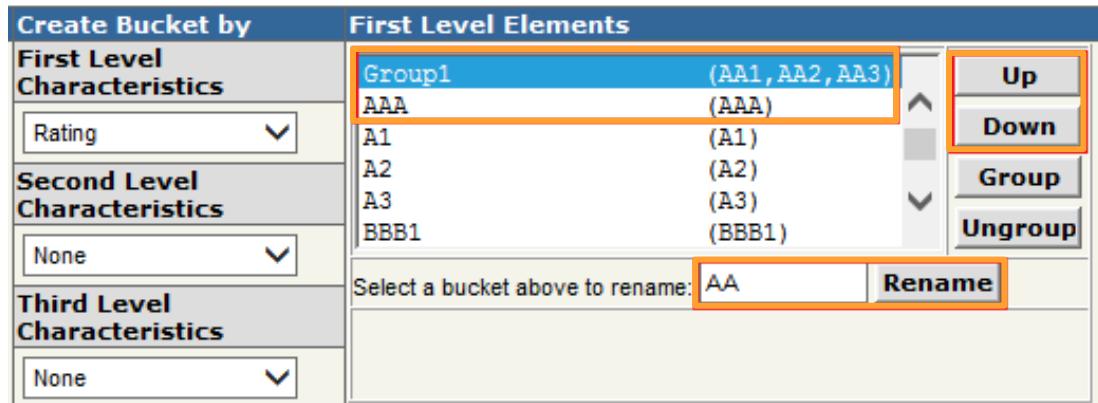
Third Level Characteristics
None

First Level Elements

Group1	(AA1, AA2, AA3)
AAA	(AAA)
A1	(A1)
A2	(A2)
A3	(A3)
BBB1	(BBB1)

Up
Down (highlighted)
Group
Ungroup

Select a bucket above to rename: AA **Rename**



VIEW OR DOWNLOAD RESULTS; CLICK INTO INDIVIDUAL BUCKETS FOR BOND DETAILS

COA0-3/31/2017 Using April Universe (Returns use March Universe)		Full Val USD	Spread Dur	TRR%MTD	ExRtn%MTD
Sub Total A - Services		2243.057	9.482	0.191	0.306
A - Tech - Electronics		41438.573	7.469	-0.268	-0.181
A - Tech - Software/Services		83935.609	7.385	-0.415	-0.328
A - Tech - Tech Hardware & Equipment		27753.405	5.397	-0.096	-0.050
Sub Total A - Technology & Electronics		153127.587	7.047	-0.317	-0.238
A - TCom - Telecom - Wireless		11024.382	7.722	0.197	0.318
A - TCom - Telecom - Wireline Integrated & Services		8736.966	5.753	0.044	0.049
Sub Total A - Telecommunications		19761.348	6.852	0.130	0.199
A - Move - Rail		40952.609	10.405	-0.713	-0.521
A - Move - Transport Infrastructure/Services		1070.479	10.414	0.987	1.161
A - Move - Trucking & Delivery		8380.312	8.109	-0.314	-0.190
Sub Total A - Transportation		50403.399	10.023	-0.610	-0.430
A - Util - Electric-Distr/Trans		26483.712	10.155	-0.494	-0.293
A - Util - Electric-Generation		6929.269	8.670	-0.446	-0.345
A - Util - Electric-Integrated		210384.624	9.931	-0.537	-0.344
A - Util - Non-Electric Utilities		8384.396	9.325	-0.201	-0.031
Sub Total A - Utility		252182.001	9.900	-0.518	-0.328
Total A		2395212.562	6.785	-0.177	-0.102
BBB - Auto - Auto Loans		62079.689	3.437	-0.075	-0.086

ANALYSES CAN BE SET TO UPDATE AUTOMATICALLY

Use the “Auto change” feature to have the analysis automatically updated every day, week or month.

Index Profile Analysis

Analysis Information			
Analysis Name	C0A0 Ratings	Save	
Download group by	Index	Auto change trade date	None

HISTORICAL INDEX PROFILE ANALYSIS

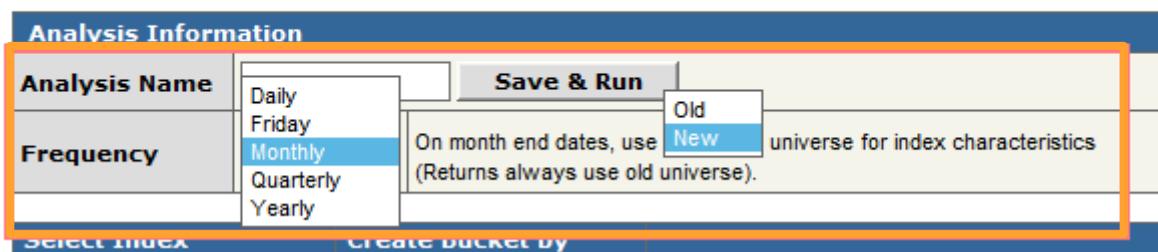
Use the Index Profile History tool in lieu of the Index Profile Analysis Tool if you need to analyze the index's data over a period of time.

All report set up functions are the same for the Index Profile Analysis and Index Profile History except for in the General Set Up Report Options

Here you will choose the frequency you would like the data displayed and you will choose to view the old or new constituent data on month end dates.

When you select Save & Run, it will prompt you to enter the date range for the analysis.

Index Profile History



SET UP AUTOMATED INDEX AND CONSTITUENT DATA FEEDS...



You can set up automated feeds of Index-Level, Bond-Level and Yield Curve data files using the Report Scheduler tool.

Standard File Settings:

- Enter general report information
- Check off the “Send projected files” option if you want to receive rebalancing preview files during the last three days of the month.

Report Inputs:

- Choose up to 50 data elements for your report. For return values you can also select the base currency.

Index-Level Data | Add Index Characteristics and Returns Schedule

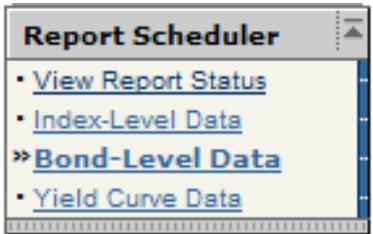
Standard File Settings

Schedule Information	
Sch Name (Max 20 chars)	<input type="text"/> Save
User Name	<input type="text"/> Description
Sch Frequency	Daily <input type="button" value="▼"/> Data Period <input type="button" value="Current Date ▼"/>
Send projected files during lockout period <input type="checkbox"/>	

Report Inputs

Select the Indices	Select the data elements
Index <input type="text"/> ... Add Del Up Down Load List	Category Char & Risk Measure <input type="button" value="▼"/> Available Data Elements No. of Issues Maturity / WAL Years to Workout / WAL Cash Effective Duration Mod. Dur to Worst (s.a.) Modified Duration (s.a.) Mod Duration to Worst Modified Duration >> Up Down Del

SET UP AUTOMATED INDEX AND CONSTITUENT DATA FEEDS...



The screenshot shows the 'Report Scheduler' interface. On the left, a sidebar lists navigation options: 'View Report Status', 'Index-Level Data', 'Bond-Level Data' (which is selected and highlighted in blue), and 'Yield Curve Data'. A large orange arrow points from the 'Bond-Level Data' link in the sidebar to the corresponding section in the main content area.

Bond-Level Data | Add Index Constituents Schedule

Schedule Information

Sch Name (Max 20 chars)	Europe2	Save
User Name	psg,psg	Description
Sch Frequency	Daily	Constituents on Month End

Select the Indices

Index	...
ER00	Add
HE00	Del
UC00	Up
HL00	Down

Select the data elements

Category: Spread, Yield, Price

Available Data Elements

OAS	>>
OAS-PrevMend	
OAS 1-day Change	
OAS 1-wk Change	
OAS 1-mo Change	
OAS 3-mo Change	
OAS 12-mo Change	
OAS MTD Change	
OAS QTD Change	

ISIN number
Description
Ticker
Par Wtd Coupon
Maturity Date
Rating
ISO Currency Code
ISO Country Code
OAS

Up
Down
Del

...AND DIRECT THE FILE TO AN E-MAIL OR FTP ADDRESS.

Report Scheduler	
<ul style="list-style-type: none">▪ View Report Status▪ Index-Level Data» Bond-Level Data▪ Yield Curve Data	

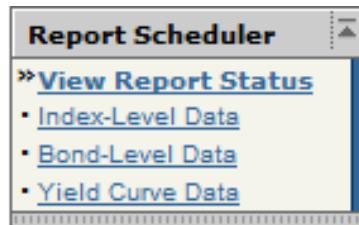


Reports can be delivered via
FTP and/or Email.

Enter additional details to
easily identify the report, such
as a report header, or if sending
via email, an email subject.

Choose the Delivery Mode			
Send FTP	<input type="checkbox"/>	Send Email	<input type="checkbox"/>
User Name	<input type="text"/>		
Password	<input type="password"/>		
Confirm Password	<input type="password"/>		
Server	<input type="text"/>		
File Type	Excel - CSV <input type="button" value="▼"/>		
Send File Name	<input checked="" type="radio"/> Append Date to File Name <input type="radio"/> Don't Append Date to File Name		
Report Format			
Report Header	<input type="text"/>		
Include Column Heading	<input checked="" type="checkbox"/>		
Column Separator	Comma <input type="button" value="▼"/>		
Report Footer	<input type="text"/>		

KEEPING TRACK OF YOUR AUTOMATED REPORTS



Filter
Reports
Options

View Report Status

Select Filter

Index	<input type="text"/> ...	User Name	<input type="text"/> ...	Report Type	Select All
Frequency	Select All	Delivery	Select All	Schedule Name	<input type="text"/>
Active	Select All	Email Address	<input type="text"/>	Refresh	

Report
Names
&
Function
Options

Edit Schedule View Prev Jobs Suspend/Release Run Schedule Delete Schedule Move Schedule Change Priority						
Name	Description	Freq	Report Type	Delivery Type	Last Generated Report (NY Time) As of Dt	Next Run (NY Time) Complete Dt Status
<input type="checkbox"/> ▲ Name						

View Report Status:

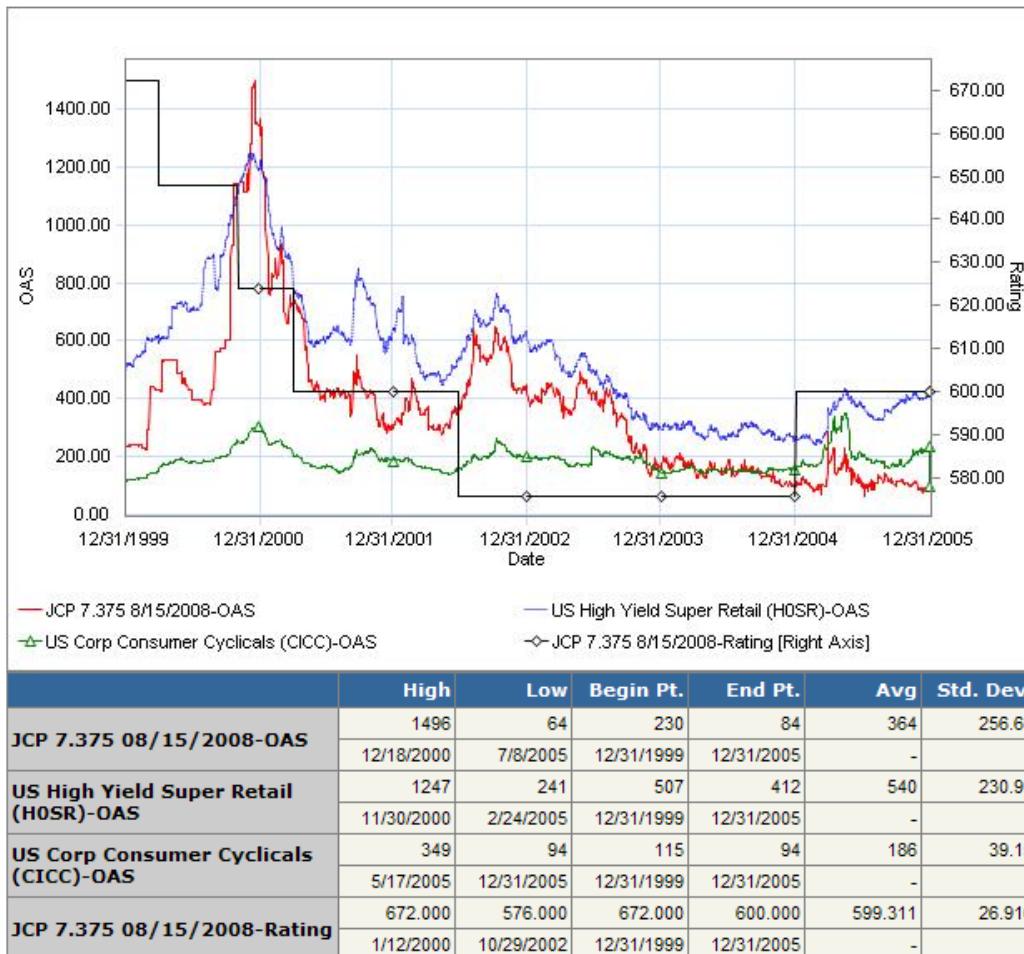
Use the View Report Status screen to monitor progress on your scheduled reports or modify report formats/content.

Report Names & Function Options:

- **Edit Schedule** – use this to edit the contents or delivery instructions for a report
- **View Previous Jobs** – access recent copies of the report.
- **Suspend/Release** – if you suspend a report it will stop processing but the template will not be deleted. Later on you can release a suspended report and it will resume processing on each schedule day..
- **Run Schedule** – you can manually run a report as of a prior date.
- **Delete Schedule** – Permanently delete a scheduled report from your account. NOTE: this will delete the report being sent out to any email or FTP in the delivery setup.

Looking for historical data to backfill your report? Use the Data Download feature to access the historical data.

CREATE CUSTOMIZED CHART TEMPLATES WITH BOND, INDEX, FX AND CURVE DATA



CREATE CUSTOMIZED CHART TEMPLATES WITH BOND, INDEX, FX AND CURVE DATA



The screenshot shows a 'File Information' dialog box. It has fields for 'File Name' (set to 'Custom Chart'), 'Save', 'Delete', and 'Save As'. The 'Save As' button is highlighted with a red box.

Create a New Chart:

- Start in the Index Tab
- Add a ticker and choose a category/data element. Click “Add Item” to move the choice to the chart. Continue adding additional items to the list.
- You can edit chart formats (line color, line style, etc.) for each item on your list.
- Once all of your content has been selected, and your formatting choices have been made, select a date range and click on the View, Print or Download button to see results.

The screenshot shows a detailed configuration window for creating a chart. It includes tabs for 'INDEX', 'YIELD CURVE', 'FX', 'MATH EXP', and 'CHART SETTINGS'. The 'INDEX' tab is active. The 'Index/Cusip/ISIN/BbgID' field is highlighted with a red box. A 'Data Elements' dropdown menu is open, showing a list of asset swap categories: Asset Swap Spread, OAS, Asset Swap 1-day Chg, Asset Swap 1-wk Chg, Asset Swap 1-mo Chg, Asset Swap 3-mo Chg, and Asset Swap 6-mo chg. An 'Initialize Index Value to 100' checkbox is also present. Below this is a toolbar with buttons: 'Add Item' (highlighted with a red box), 'Replace Item', 'Delete Item', 'Block Data Points', and 'Select All'. The main data area shows two rows of selection: V1 (HECO) and V2 (ER00), each associated with the 'OAS' data element. At the bottom, there are 'Output Options' for 'Dates (m/d/yyyy)', 'Frequency' (set to 'Daily'), and 'Include Statistics' (checked). There are also buttons for 'View', 'Print', and 'Download'.

CREATE CUSTOMIZED CHART TEMPLATES WITH BOND, INDEX, FX AND CURVE DATA

Yield Curve Tab

- You can add the yield for a specific point on one of our fair value yield curves to a chart.
- Select the category (government, swap or corporate), market (eg, US, Euro, etc.), maturity point and curve type (eg, par coupon, spot, etc.).
- Edit chart formats (line color, line style, etc.) for each item on your list.
- Once all of your content has been selected, and your formatting choices have been made, select a date range and click on the View, Print or Download button to see results.

The screenshot shows a software interface for creating customized chart templates. At the top, there are tabs: INDEX, YIELD CURVE (highlighted in yellow), FX, MATH EXP, and CHART SETTINGS. Below the tabs, there are two main sections: Category and Market. The Category section shows 'Government (Spline)' selected. The Market section lists 'US' as the primary market, with 'Canada- Index Close', 'Euro', 'France-Germany Blend', 'UK', 'Denmark', and 'Sweden' listed below it. To the right of the Market list are dropdown menus for 'Maturity' (set to '10 yr') and 'Curve' (set to 'ParCpn-Semi'). Below these are buttons for 'Add Item', 'Replace Item', 'Delete Item', 'Block Data Points' (highlighted in green), and 'Select All'. The main data area is a table with columns: Sel, Chart, Reg, Col, Index / Bond Desc, Data Element, Line Color, Line Style, Type, and Y-Axis. Three rows are shown:

- Row 1: Sel checked, Chart checked, Reg checked, Col V1, Index / Bond Desc HECO, Data Element OAS, Line Color green, Line Style solid, Type line, Y-Axis left.
- Row 2: Sel unchecked, Chart checked, Reg checked, Col V2, Index / Bond Desc ER00, Data Element OAS, Line Color blue, Line Style dot, Type line, Y-Axis left.
- Row 3: Sel unchecked, Chart checked, Reg checked, Col V3, Index / Bond Desc Euro(Govt), Data Element Govt ParCpn-Semi 10 yr, Line Color red, Line Style solid, Type line, Y-Axis left.

At the bottom, there is an 'Output Options' section with fields for Dates (m/d/yyyy) set to 1/19/2017 and 4/19/2017, an OR checkbox, a 'Last 3 Months' dropdown, a 'Frequency' dropdown set to 'Daily', an 'Include Statistics' checkbox, and buttons for 'View', 'Print', and 'Download'. A 'Chart Type' dropdown is also present.

CREATE CUSTOMIZED CHART TEMPLATES WITH BOND, INDEX, FX AND CURVE DATA

FX Tab

- Select two currencies and a tenor and click the Add Item button to add it to your chart.
- Edit chart formats (line color, line style, etc.) for each item on your list.
- Once all of your content has been selected, and your formatting choices have been made, select a date range and click on the View, Print or Download button to see results.

INDEX	YIELD CURVE	FX	MATH EXP	CHART SETTINGS						
Currency	USD			WM/Reuters Closing Mid Spot Rates and Forward Rates The WM/Reuters Closing Spot Rates and the WM/Reuters Forward Rates provided by The WM Company plc in conjunction with Reuters. The WM Company plc shall not be liable for any errors in or delays in providing or making available the data contained within this service or for any actions taken in reliance on the same except to the extent that the same is directly caused by its or its employees' negligence.						
Currency	USD									
Tenor	Spot									
Add Item Replace Item Delete Item Block Data Points Select All										
Sel	Chart	Reg	Col	Index /Bond Desc	Data Element	Line Color	Line Style	Type	Y-Axis	
Output Options										
Dates (m/d/yyyy)		1/19/2017	4/19/2017	<input type="checkbox"/>	OR	Last 3 Months	<input checked="" type="checkbox"/>	Frequency	Daily	Include Statistics
View		Print	Download	Chart Type	Time Series					

CREATE CUSTOMIZED CHART TEMPLATES WITH BOND, INDEX, FX AND CURVE DATA

Math Expressions Tab

- Create your own data series from other index, yield curve and/or FX values that you have loaded. For example, calculate the difference between or the ratio of two values, or calculate the moving average of a single value over n days.
- Enter a name for your data series in the Expression Description box.
- Enter the formula for your data series in the Math Expression box using the functions and/or operators provided and by referencing the variable codes for the other data series in your list (eg, in this list V1 is the code for the HE00 OAS).

INDEX		YIELD CURVE		FX		MATH EXP		CHART SETTINGS	
Expression Description		3m moving average Euro Sov 10Yr							
Math Expression		movAvg(V3,3)							
Functions		shift(v1,n) delta(v2,n) perchg(v1,n) movavg(v1,n)							
Other Math Functions		abs(v1) power(v1,n) log(v1) round(v1,n) sqrt(v1) exp(v1)							
Operators		+ - * /							
Sample Expressions		v1+v2+shift(v1,2)+Delta(v2,3)+perchg(v1,2)+movavg(v1,3)+log(v1)							
Add Item		Replace Item		Delete Item		Block Data Points		Select All	
Sel	Chart	Reg	Col	Index / Bond Desc	Data Element	Line Color	Line Style	Type	Y-Axis
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	V1	HEC0	OAS	 ...	Solid <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Line <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Left
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	V2	ER00	OAS	 ...	Dot <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Line <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Left
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	V3	Euro(Govt)	Govt ParCpn-Semi 10 yr	 ...	Solid <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Line <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Left
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	V4	Spread HEC0 Minue ER00 : (V1-V2)		 ...	Solid <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Line <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Left
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	V5	3m moving average Euro Sov 10Yr : movAvg(V3,3)		 ...	Solid <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Line <input style="width: 20px; height: 20px; border: none;" type="button" value="..."/>	Left
<input style="width: 20px; height: 20px; border: none;" type="button" value="<"/> <input style="width: 20px; height: 20px; border: none;" type="button" value=">"/>									

VIEW OR DOWNLOAD GOVERNMENT, SWAP AND CORPORATE YIELD/SPREAD CURVES

Access our entire term structure data series, which includes daily history for an extensive list of Government, Swap and Corporate curves around the world. Par coupon, zero and forward rate curves are available in both conventional and semi-annual terms. The **Full Yield Curves** options is used to look at the entire yield curve on selected dates.

The screenshot shows a sidebar titled 'Yield Curve Charts & Data Download'. Under the 'Full Yield Curves' section, there are four options: 'Individual Mat Points', 'Bulk Download over Date Range', and 'View Saved Charts'. An orange arrow points from the sidebar to the 'Full Yield Curves' section of the main page.

- Select the market (Government, Swap or Corporate), rating sub-category (for corporates only) and currency.
- Select the Curve type: par coupon vs spot; yield vs spread (for corporates only).

Note: use the “Bulk Download over Date Range” feature to export daily yield curve data over a historical date range.

The screenshot shows the 'Full Yield Curves' configuration interface. The 'File Information' section includes fields for 'File Name', 'Save', and 'Favorites'. The 'Output Options' section includes buttons for 'View' or 'Print' or 'Download', and dropdowns for 'Curve Only' (set to 'Curve Only'), 'Plot Data Points' (set to 'Annual'), and 'Chart Settings'. The 'Select Curve To Be Plotted' panel on the left has dropdown menus for 'Market' (Corporate, GBP), 'Date' (5/5/2006, (d/m/yyyy)), and 'Curve' (Spread vs. Mat). An orange box highlights these dropdowns. On the right, a table lists two entries:

Market	Date	Curve
Ref>> GBPCORPAA2EQ (Corp)	5/5/06	Spread vs. M
GBPCORPBBB1EQ (Corp)	5/5/06	Spread vs. M

Set Reference Curve Delete

VIEW OR DOWNLOAD GOVERNMENT, SWAP AND CORPORATE YIELD/SPREAD CURVES AT INDIVIDUAL MATURITY POINTS

Use the Individual Mat Points option in the Yield Curve function to look at specific points on the curve over an extended period of time.

The screenshot shows the 'Yield Curve Charts & Data Download' interface. An orange arrow points from the left sidebar to the 'Individual Mat Points' section of the main content area.

Individual Mat Points | Individual Maturity Points

File Information

File name	US EUR UK 10YR	Save	
Dates (m/d/yyyy)	5/15/2016	5/15/2017	<input type="checkbox"/>
	OR	Last 1 Year	<input checked="" type="checkbox"/>
	Frequency	Monthly	<input type="checkbox"/>

Output Options

View or Print or Download or **Curve & Spread** or **Chart Settings**

Select Curve To Be Plotted

Market	Corporate
	USD
	Corporate
	AAA-A3
	AAA-A3-MKTWGT
	AAA-A3-3T-MOVAVG
	AAA
	AA1-AA3
Maturity	10 yr
Curve	ParCpn-Semi

Ref>>

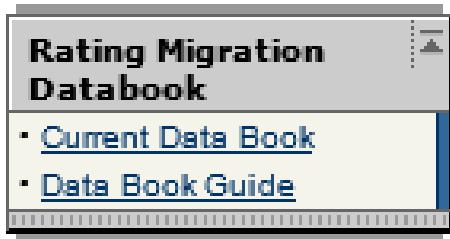
Market	Maturity	Curve
USDCORPAAAEQ (Corp)	10 yr	ParCpn-Semi
EURCORPAAAEQ (Corp)	10 yr	ParCpn-Semi
GBPCORPAAAEQ (Corp)	10 yr	ParCpn-Semi

>>

Set Reference Curve **Delete**

RATING MIGRATION DATABOOK

The Rating Migration Databook is a monthly dataset of changes in the ICE BofAML composite ratings of constituents in the global indices. The Databook tracks upgrades and downgrades, rising stars, fallen angels and defaults, all of which are tallied in terms of number of bonds, number of issuers and face value.



Coverage includes:

- Global high grade and high yield corporates (USD, EUR, GBP, JPY, CAD and AUD)
- US municipal securities
- US preferred securities
- External emerging sovereign and credit markets (USD and EUR)

Trailing history is provided back to the beginning of 1999. All historical face values are shown in USD terms, converted at exchange rates in effect on the as of date of the report.

Trailing 1-, 3- and 12-month statistics are compiled using two aggregation methods. The “fixed universe” is based on a frozen set of bonds that were constituents in the selected index at the beginning of the measurement period. The “dynamic universe” includes all bonds that were index constituents at any time during the measurement period

ASSET ALLOCATION MODEL TAPS INTO BOND INDICES, SWAPS AND EVEN USER-SUPPLIED DATA

Find the “optimal” asset allocation mix for a given level of risk. Pick qualifying “assets” from among our inventory of indices. Set policy guidelines (i.e. constraints) in terms of minimum or maximum allocations to individual assets or groups of assets, and overall duration boundaries. Run the analysis over a defined historical timeframe (using actual historical returns for the selected indices or overlaying your own expected returns) and plot the efficient frontier curve. Download a table of the optimal asset mix at various points on the efficient frontier curve as well as the correlation matrix of returns.

Select assets from our extensive inventory of bond indices...

...or interest rate swaps.

Optimization Parameters & Output Options

Index Selection **Constraints** **Efficient Frontier** **Allocation Results** **Correlation**

Asset Selection

ML Index Or User Series Hedging	<input type="button" value="Load List"/> ... Select One Unhedged	>>	Cash Assets G102-UH G202-UH G302-UH G402-UH G902-UH C0A0-UH G0P0-UH M0A0-UH R0A0-UH CMBS-UH	<input type="button" value="Up"/> <input type="button" value="Down"/> <input type="button" value="Delete"/>
Currency Swap Type Tenor	USD Par Cpn Swap 05 10 15 20 25 30 Load List	>>	Derivative Assets U02P U05P U10P U20P U30P	<input type="button" value="Up"/> <input type="button" value="Down"/> <input type="button" value="Delete"/>

MAXIMIZE ABSOLUTE OR EXCESS RETURNS OVER A SELECTED DATA RANGE

- Select the optimization type: “Total” return (maximize annualized total return while minimizing the standard deviation of total return); “Excess” return (maximize excess return over the benchmark index while minimizing the standard deviation of excess return). The excess return method requires selection of a benchmark index; the total return method does not.
- If you want to compare the efficient frontier to a benchmark index enter the index ticker and whether currency return, if any, is hedged or unhedged.
- Enter your actual portfolio weights if you want to compare your current portfolio allocation to the efficient frontier curve.

Optimization Parameters & Output Options												
Index Selection		Constraints		Efficient Frontier		Allocation Results		Correlation				
Benchmark (Optional)	US00 Unhedged	Currency	USD	Plot equal Risk and equal Return		<input checked="" type="checkbox"/> Benchmark <input checked="" type="checkbox"/> Portfolio						
From Date (2/28/1997)	12/31/1997	To Date (12/4/2008)	12/31/2007	Frequency		Monthly						
Returns to Optimize	<input checked="" type="radio"/> Total <input type="radio"/> Excess	Return Periods to Constraint	None	Lower limit on Returns		(bps)						
Derivative Assets Leverage Ratio		Min		Max								
Portfolio Duration Constraint		Min		Max								
Sel	Active	Constraint Type	Name	Min	Max	G001-UH	GVQ0-UH	G602-UH	G902-UH	G0P0-UH	M0A0-UH	R0A0-UH
User Portfolio (Optional)				5	10	15			5	20	15	

SET CONSTRAINTS ON INDIVIDUAL ASSETS OR ASSET GROUPS

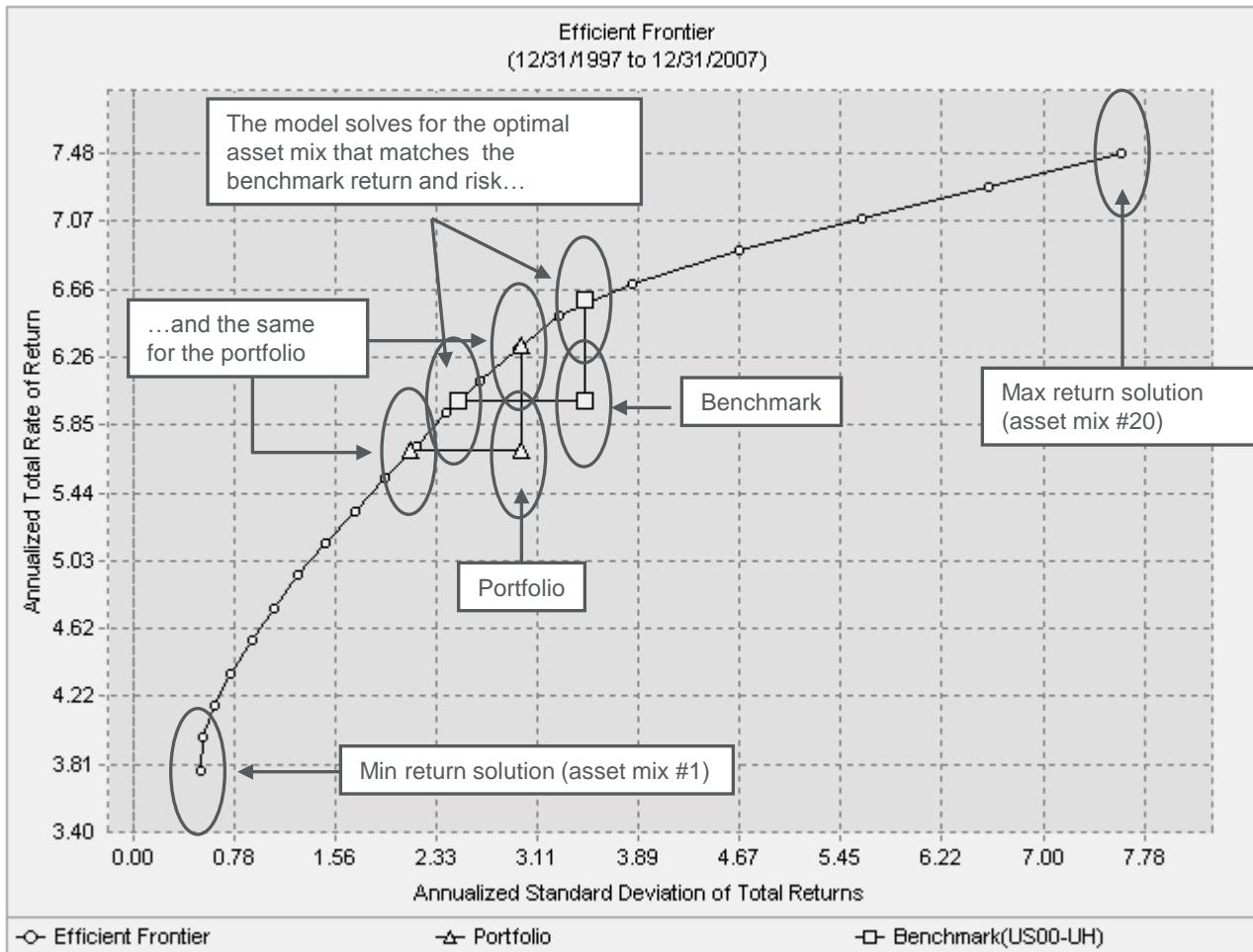
- To limit the allocation to an asset or group of assets, click on the “Add WGT Constraint” button. This will add a new row in the constraint window.
- Check off the asset(s) that you want to constrain...
- ...and set the minimum and/or maximum weight for the group. This example shows a 50% cap placed on the combined mortgage (MOAO) and asset backed (ROAO) allocation.

Sel	Active	Constraint Type	Name	Min	Max	M0A0-UH	R0A0-UH	C0A2-UH	C0A3-UH	C0A4-UH	H0A0-UH	IGOV-UH
User Portfolio (Optional)												
<input type="checkbox"/>	Active	WGT	WgtConstraint3	<input type="text"/>	50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Active	WGT	WgtConstraint4	<input type="text"/>	30	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	Active	WGT	WgtConstraint5	<input type="text"/>	10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				

Add WGT Constraint **Add DUR Constraint**

Select All Index **Deselect All Index** **Delete** **Activate** **Deactivate**

VIEW THE EFFICIENT FRONTIER CURVE...



...AND ASSOCIATED ASSET ALLOCATIONS

Results Data	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Bench =TRR	Bench =Risk	User =TRR	User =Risk	User		
Duration	0.23	0.52	0.77	1.03	1.30	1.56	1.83	2.12	2.41	2.71	2.99	3.27	3.54	3.91	4.45	5.51	6.86	8.14	9.42	10.70	3.37	4.81	2.95	3.94	4.28		
Ann. StdDev	0.52	0.53	0.62	0.75	0.91	1.09	1.27	1.49	1.71	1.94	2.17	2.41	2.66	2.96	3.28	3.84	4.66	5.60	6.59	7.60	2.51	3.47	2.14	2.98	2.98		
Ann. TRR%	3.77	3.97	4.16	4.36	4.55	4.75	4.94	5.14	5.33	5.53	5.72	5.92	6.11	6.31	6.50	6.70	6.89	7.09	7.28	7.48	5.99	6.60	5.70	6.32	5.70		
Percentage Weights (Cash Assets)																											
G001-UH	100.0	89.0	79.0	69.6	60.1	50.6	44.0	37.6	27.7	17.9	9.7	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8	0.0	5.0		
GVQ0-UH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1	13.6	22.1	30.4	38.6	35.4	11.2	0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	29.2	9.2	10.0		
G602-UH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	
G902-UH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.8	38.2	55.8	72.9	90.0	0.0	0.0	1.2	0.0	0.0	0.0		
G0P0-UH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6	28.8	17.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.8	5.0
M0A0-UH	0.0	0.0	1.5	4.6	7.6	10.7	17.4	24.3	26.6	29.0	34.5	40.0	50.0	50.0	50.0	50.0	50.0	34.2	17.1	0.0	44.6	50.0	33.8	50.0	20.0		
R0A0-UH	0.0	8.7	16.4	22.1	27.9	33.6	32.6	25.8	23.4	21.0	15.5	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.4	0.0	16.2	0.0	15.0		
C0A1-UH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.1	26.2	1.8	0.0	0.0	0.0	0.0	38.8	0.0	0.0	0.0	0.0	
C0A2-UH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
C0A3-UH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	
C0A4-UH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.0	
H0A0-UH	0.0	1.8	2.0	2.2	2.3	2.4	2.4	2.6	3.0	3.4	2.4	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	2.6	0.0	5.0		
IGOV-UH	0.0	0.5	1.0	1.6	2.2	2.7	3.6	4.8	5.7	6.6	7.6	8.6	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	9.1	10.0	7.5	10.0	0.0	0.0	

VIEW AND EDIT THE COVARIANCE MATRIX

Asset Allocation | Correlation | Test 1

File Information											
File Name	Test 1	<input type="button" value="Save"/>	<input type="button" value="Delete"/>	<input type="button" value="Save As"/>	<input type="checkbox"/> Favorites						

Optimization Parameters & Output Options											
<input type="button" value="Index Selection"/>		<input type="button" value="Constraints"/>		<input type="button" value="Efficient Frontier"/>		<input type="button" value="Allocation Results"/>		<input type="button" value="Correlation"/>			
<input type="button" value="Reset"/>		<input type="button" value="Download"/> or <input type="button" value="Print"/>									

	EG00-UH	EQ00-UH	ER00-UH	EB00-UH	HE00-UH	IGOV-UH	IP00-UH	IC00-UH	IE00-UH	IPE0-UH	HW00-UH	EL00-UH
EG00-UH	1.0000000	0.9918159	0.9696552	0.9874148	-0.025869	0.3736590	0.3975730	0.2590512	0.3143449	0.4769177	0.0338597	0.9853049
EQ00-UH		1.0000000	0.9743684	0.9930712	-0.025240	0.3511394	0.3753238	0.2367717	0.3029586	0.4685926	0.0161345	0.9960344
ER00-UH			1.0000000	0.9875243	0.1381907	0.3855028	0.4149233	0.2783507	0.3894884	0.5481909	0.0752792	0.9609201
EB00-UH				1.0000000	0.0325404	0.3368318	0.3630039	0.2283788	0.3212803	0.4847406	0.0106218	0.9870732
HE00-UH					1.0000000	0.1275278	0.1591234	0.1390426	0.4591414	0.4233635	0.3482760	-0.063419
IGOV-UH						1.0000000	0.9973161	0.9551855	0.4608730	0.4993070	0.8147100	0.3204899
IP00-UH							1.0000000	0.9405105	0.5227744	0.5613091	0.7899587	0.3428917
IC00-UH								1.0000000	0.3127780	0.3321604	0.8894623	0.2103437
IE00-UH									1.0000000	0.9783636	0.1396586	0.2676911
IPE0-UH										1.0000000	0.1320290	0.4311813
HW00-UH											1.0000000	-0.010133
EL00-UH												1.0000000
Ann. StDev	2.838808	2.493891	2.260839	2.461144	3.674121	10.04365	8.639051	7.718279	5.027534	4.005605	7.693136	2.238077
Ann. TRR%	6.439378	5.833002	6.215506	6.437466	11.56084	9.654053	9.927752	10.23466	12.95827	11.02964	7.735832	5.173433

ICE BOFAML INDICES ON BLOOMBERG: IND<GO>

The IND pages on Bloomberg provide access to the entire index and constituent historical database for the BofA Merrill Lynch bond indices. To get started, type IND<Go>.

If you are not entitled for access to the system, contact the BofA Merrill Lynch Bond Index help desk.

Type IND<Go> to access the main menu of the BofAML index system on Bloomberg. Since no index is selected at this point, only the general system functions are active.

If you enter an index ticker in the <Enter Index> box to the left of the blue menu bar, all functions will become active. You can also get to this same point by typing the index ticker followed by the yellow index key and then the Go key (eg, HOAO<Index><Go>).

Not a Bloomberg function. The provider has access to your usage of this page.

<Enter Index> 98 Description 99 Fact Sheet |

No index selected

Index Finder & Rules		Historical Data
1) IND1	Index Finder	12) IND12 Index Charts/Tables
2) IND2	Index Rules & Methodology	13) IND13 Data Download
3) IND3	FX / Forward Rates	
Index Analytics		Rates of Return
4) IND4	Index Characteristics	14) IND14 Return Summary
5) IND5	Profile Analysis	15) IND15 Monthly/Quarterly/Annual Returns
6) IND6	Correlation Matrix	17) IND17 Flexible Returns
		18) IND18 Personal Return Monitor
Constituents		Custom Index Model
10) IND10	Index Member List/Download	19) IND19 Create Custom Index
11) IND11	Index Lookup by Security	
General Information		
23) IND23 Index Publications		

Not a Bloomberg function. The provider has access to your usage of this page.

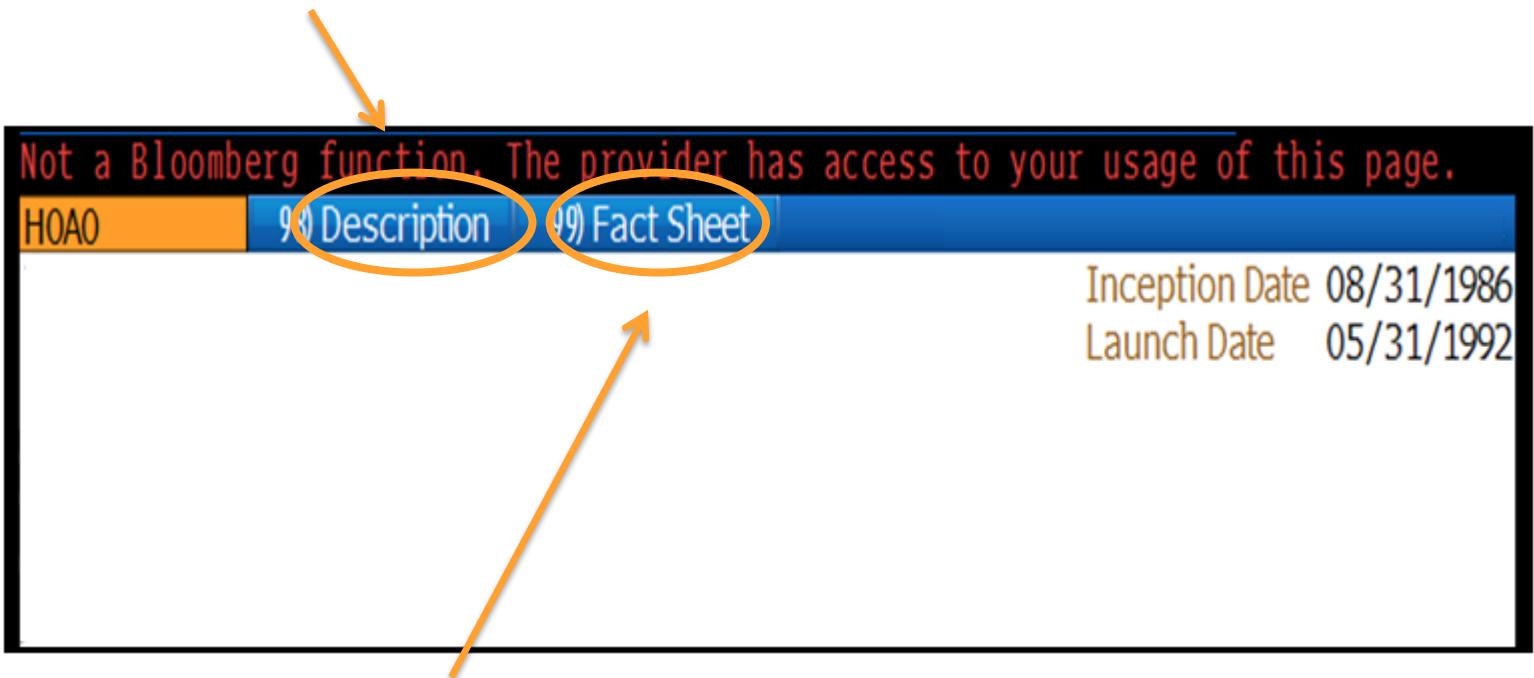
HOAO 98 Description 99 Fact Sheet |

Inception Date 08/31/1986
Launch Date 05/31/1992

QUICK-REFERENCE AT YOUR FINGER TIPS:

Select an index from IND1, or [ticker]<index><go>...

From there you have one-click access to
index rules...



...and tear-sheet style overview reports.

INDEX DESCRIPTION

From the main menu, you can click on the **Description** button on the blue menu bar just to the right of the ticker input box for a description of the index including selection criteria, rebalancing rules and weighing methodology.

The Bank of America Merrill Lynch Global Bond Index Rules

The BofA Merrill Lynch US High Yield Index (H040)

The BofA Merrill Lynch US High Yield Index tracks the performance of US dollar denominated below investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of \$250 million. In addition, qualifying securities must have risk exposure to countries that are members of the FX-G10, Western Europe or territories of the US and Western Europe. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden. Original issue zero coupon bonds, 144a securities (both with and without registration rights), and pay-in-kind securities (including toggle notes) are included in the index. Callable perpetual securities are included provided they are at least one year from the first call date. Fixed-to-floating rate securities are included provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Contingent capital securities ("cocos") are excluded, but capital securities where conversion can be mandated by a regulatory authority, but which have no specified trigger, are included. Other hybrid capital securities, such as those issues that potentially convert into preference shares, those with both cumulative and non-cumulative coupon deferral provisions, and those with alternative coupon satisfaction mechanisms, are also included in the index. Securities issued or marketed primarily to retail investors, equity-linked securities, securities in legal default, hybrid securitized corporates, eurodollar bonds (USD securities not issued in the US domestic market), taxable and tax-exempt US municipal securities and DRD-eligible securities are excluded from the index.

Index constituents are capitalization-weighted based on their current amount outstanding times the market price plus accrued interest. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index. Information concerning constituent bond prices, timing and conventions is provided in the BofA Merrill Lynch Bond Index Guide, which can be accessed on Bloomberg (IND2[go], 4[go]), or by sending a request to mlindex@ml.com. The index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. No changes are made to constituent holdings other than on month end rebalancing dates.

Inception date: August 31, 1986

The above rules take into account all revisions up to and including September 30, 2016

INDEX FACT SHEET

Click on the Fact Sheet button on the blue menu bar for a detailed report showing the number of constituent holdings, full market value (ie, including accrued interest), percentage weight, duration, contribution to duration, yield, spread (OAS), MTD total and excess return of the index segmented by rating, maturity, duration, sector and currency. Fact Sheets are updated daily.

US High Yield Master II Index (H0A0) - distribution characteristics as of 3/10/2016

Index distribution by Rating	#	FullVal	%Full Val	Eff Dur	Contr	EffDur	Eff Yld	OAS	TRR%MTD	ExRtn%MTD
AAA	0	25,913	0.00208	0.00	0.00	0.00	0.32	0	N/A	N/A
BB	962	612,910,655	49.18943	4.70	2.31	5.77	420	2,085	2,898	
B	841	473,535,776	38.00384	4.03	1.53	8.45	693	3,068	3,810	
CCC	440	153,593,515	12.32672	3.38	0.42	17.45	1,606	5,199	5,802	
CC	35	4,318,094	0.34655	1.68	0.01	74.20	7,295	10,368	10,610	
C	28	1,461,303	0.11728	1.91	0.00	79.75	7,911	33,231	33,449	
D	3	175,750	0.01410	0.70	0.00	131.86	13.0-	-8,380	-8,261	
Grand Total	2,309	1,246,021.005	100.00000	4.27	4.27	8.57	704	2,887	3,645	



Index distribution by Maturity	#	FullVal	%Full Val	Eff Dur	Contr	EffDur	Eff Yld	OAS	TRR%MTD	ExRtn%MTD
0-1 Year	2	1,526,195	0.12249	0.91	0.00	6.86	615	N/A	N/A	
1-2 Year	151	71,506,305	5.73877	1.24	0.07	9.70	881	1,753	1,871	
2-3 Year	218	96,933,678	7.77946	2.02	0.16	9.88	887	2,214	2,484	
3-4 Year	267	120,704,747	9.68722	2.61	0.25	10.64	943	2,802	3,227	
4-5 Year	363	188,907,037	15.16082	3.03	0.46	9.50	811	2,674	3,249	
5-6 Year	352	187,058,259	15.01245	3.88	0.58	8.71	717	3,107	3,869	
6-7 Year	315	193,499,784	15.52942	4.67	0.72	8.15	650	3,834	4,746	
7-8 Year	254	159,572,762	12.80659	5.36	0.69	6.94	519	2,540	3,564	
8-9 Year	117	88,273,228	7.08441	6.23	0.44	6.66	482	2,447	3,590	
9-10 Year	87	63,202,337	5.07233	6.59	0.33	6.43	454	2,027	3,211	
10-15 Year	60	17,883,364	1.43524	7.49	0.11	8.81	691	2,961	4,149	
15-20 Year	48	26,109,489	2.09543	9.27	0.19	7.74	563	3,718	4,936	
20-25 Year	47	21,272,994	1.70727	10.00	0.17	8.62	631	6,491	7,622	
25+ Year	28	9,570,826	0.76811	10.91	0.08	8.98	654	6,213	7,373	
Grand Total	2,309	1,246,021.005	100.00000	4.27	4.27	8.57	704	2,887	3,645	

LOOK UP INDICES BY MARKET & SECTOR

IND1<go>

With the Index Finder you can search for indices that meet certain criteria. Use the pull down pick lists to select from standardized groupings for index families (eg, US high grade, Europe high grade, global high yield and emerging markets, etc.), sector, currency, rating, maturity and weighting method (cap-weighted, constrained, etc.).

You can use the filter row to search for partial matches on index tickers or names. In this example we filtered on indices that contain the word “Tier” in the index name. This returns indices that include or exclude Tier 1, Upper Tier 2 and Lower Tier 2 securities.

Index Finder			
Family	Currency	Maturity Band	
Sector	Rating	Weighting Method	
Index	Index Name	Inception Date	Launch Date
1	All	9 Other	05/14/2013
2	Investment Grade	10 BB	03/01/2012
3	Below Investment Grade	11 B	05/25/2012
4	AAA	12 CCC & Lower	
5	AA	13 BB-B	09/02/2008
6	A	14 BBB-BB	12/07/2005
7	BBB	15 No Criteria	
8	AAA-A	16 Other	
1 H4NF	The BofA Merrill Lynch BB-B US Non-Financial High Yield Index	12/1996	07/01/2009
1 H4PC	The BofA Merrill Lynch BB-B European Currency Fixed & Floating Rate High Yield Constrained I	12/2007	09/02/2008
1 H4SC	The BofA Merrill Lynch BB-B Global Non-Financial High Yield European Issuers Excluding Russ	12/1997	06/16/2009
1 M4IHI	The BofA Merrill Lynch BB-B US Non-Financial HY 110 % Convexity Constrained Index	12/1996	06/20/2011

Index Finder			
Family	Currency	Maturity Band	
Sector	Rating	Weighting Method	
Index	Index Name	Inception Date	Launch Date
	TIER		
1 ALT2	The BofA Merrill Lynch Asian Dollar Lower Tier 2 Financial Index	12/2003	02/02/2007
1 AT10	The BofA Merrill Lynch Asian Dollar Tier 1 Financial Index	12/2003	02/02/2007
1 AUT2	The BofA Merrill Lynch Asian Dollar Upper Tier 2 Financial Index	12/2003	02/02/2007
1 B1AX	The BofA Merrill Lynch 1-3 Year US Corporate & Government Excluding Tier 1 & Junior Subordi	12/1996	12/07/2009
1 BVAY	The BofA Merrill Lynch 1-5 Year US Corporate & Government Excluding Tier 1 & Junior Subordi	12/1996	12/07/2009
1 ESXA	The BofA Merrill Lynch 1-10 Year Euro Corporate Excluding BBB & Tier 1, Upper Tier 2 & Junio	12/1996	06/17/2008
1 FRSI	The BofA Merrill Lynch Euro Financial Subordinated & Lower Tier-2 Index	12/1996	

Note: The list will not include custom indices

ACCESS INDEX REFERENCE REPORTS

In the Index Rules & Methodology function, click on the tabs to access:

General Methodology: reports that provide a general overview of BofAML Indices, calculation formulas, sector classification schema, etc.

Launch Publications: introductory reports issued at the time a new index series is launched.

Rule Announcements: reports that highlight proposed or adopted changes in index rules. Enter an index ticker in the input box to the left of the blue menu bar to access the specific rules for that index and/or daily Fact Sheets.

IND2<go>

The screenshot shows a software interface with a blue header bar. On the left is a yellow button labeled '<Enter Index>'. To its right are three blue buttons: '98 Description', '99 Fact Sheet', and 'Index Rules & Methodology'. Below the header is a dark grey navigation bar with three tabs: '1) General Methodology' (highlighted in blue), '2) Launch Publications', and '3) Rule Announcements'. The main content area displays a numbered list of seven items: 4) The BofAML Bond Index Guide, 5) Calculation methodologies, 6) Sector schema/codes, and 7) The BofAML IND Bond Index System User Guide.

The screenshot shows the same software interface as above, but with the '2) Launch Publications' tab highlighted in blue. The main content area displays a numbered list of ten PDF files: 4) Oct-11 Intro Dim Sum Index.pdf, 5) Feb-11 Intro EM Corporate Plus Index.pdf, 6) Mar-08 Intro Local Debt Market Indices.pdf, 7) Dec-07 Intro Hedged Muni Index.pdf, 8) Sep-07 Intro US Pension Indices.pdf, 9) Aug-07 Intro Muni Core Indices.pdf, and 10) Apr-07 Intro Tradeable IL Swap Indices.pdf.

The screenshot shows the same software interface as above, but with the '3) Rule Announcements' tab highlighted in blue. The main content area displays a numbered list of eleven PDF files: 4) Oct-12 Index rule changes.pdf, 5) Jul-12 Proposed rule changes.pdf, 6) Jan-12 Global Diversified IL Index annual country review.pdf, 7) Dec-11 CADG diversification rule change.pdf, 8) Nov-11 Index Rule Change Impact.pdf, 9) Nov-11 Index Rule Changes.pdf, 10) Aug-11 Proposed rule changes.pdf, and 11) Oct-10 Index Rule Changes.pdf.

FX / FORWARD RATES

IND3<go>

The FX/Forward Rates screen shows the spot and forward currency rates used for currency and hedged return calculations. Enter an ISO currency code, or use the pull down pick list, to select a base currency and enter an as of date.

Click on column headers to sort the list. Click on the same header a second time to sort the list in the opposite order. The current sort column (in this example, the currency description) is highlighted in amber.

99 Download										FX / Forward Rates	
ISO Code	Currency	1	AUD	11	EGP	21	MAD	31	RUB	Spot Rate	Forward Rate to End of Month
AUD	AUSTRALIAN DOLLAR	1	AUD	11	EGP	21	MAD	31	RUB	0.973650	0.972667
BRL	BRAZIL REAL	2	BRL	12	EUR	22	MXN	32	SAR	0.491497	0.490402
CAD	CANADIAN DOLLAR	3	CAD	13	GBP	23	MYR	33	SEK	0.973378	0.973062
CHF	SWISS FRANC	4	CHF	14	HKD	24	NGN	34	SGD	1.027908	1.028074
CLP	CHILEAN PESO	5	CLP	15	HUF	25	NOK	35	THB	0.002082	0.002077
CNH	China Offshore Spot	6	CNH	16	IDR	26	NZD	36	TRY	0.162747	0.162567
CNY	CHINA RENMINBI	7	CNY	17	ILS	27	PEN	37	TWD	0.162816	0.162642
COP	COLOMBIAN PESO	8	COP	18	INR	28	PHP	38	USD	0.000543	0.000542
CZK	CZECH KORUNA	9	CZK	19	JPY	29	PLN	39	ZAR	0.049233	0.049236
DKK	DANISH KRONE	10	DKK	20	KRW	30	RON			0.172095	0.172123
EGP	EGYPTIAN POUND									0.143350	0.142477
EUR	EURO									1.282400	1.282505
GBP	BRITISH POUND									1.519200	1.519057
HKD	HONG KONG DOLLAR									0.128818	0.128826
HUF	HUNGARIAN FORINT									0.004410	0.004403
IDR	INDONESIAN RUPIAH									0.000103	0.000102
ILS	ISRAELI SHEKEL									0.272773	0.272659
INR	INDIAN RUPEE									0.018223	0.018175
JPY	JAPANESE YEN									0.009711	0.009712
KRW	SOUTH KOREAN WON									0.000896	0.000895
MAD	MOROCCAN DIRHAM									0.115690	0.115523
MXN	MEXICAN PESO									0.081228	0.081129
MYR	MALAYSIAN RINGGIT									0.330907	0.330547

99 Download										FX / Forward Rates	
ISO Code	Currency	1	AUD	11	EGP	21	MAD	31	RUB	Spot Rate	Forward Rate to End of Month
AUD	AUSTRALIAN DOLLAR									0.977250	0.976541
BRL	BRAZIL REAL									0.490316	0.489339
GBP	BRITISH POUND									1.514150	1.514039
CAD	CANADIAN DOLLAR									0.970921	0.970688
CLP	CHILEAN PESO									0.002062	0.002059
CNH	China Offshore Spot									0.163001	0.162893
CNY	CHINA RENMINBI									0.162983	0.162858
COP	COLOMBIAN PESO									0.000541	0.000541
CZK	CZECH KORUNA									0.049391	0.049393
DKK	DANISH KRONE									0.172721	0.172740

MONITOR INDEX STATS DAILY

[ticker]<go>, 4<go> or IND4 [ticker]<go>

The index characteristics screen shows weighted-average statistics for the index as of the selected date. The screen defaults to the most recent calculation date with the base currency set to the currency of denomination of the selected index (USD for multi-currency indices) and calculations presented in semi-annual terms. The currency selection only affects the total return index value (only unhedged index values are available in this screen) and index valuations (face value, accrued interest, cash and full market value).

ER00		Download		Index Characteristics			
		The BofA Merrill Lynch Euro Corporate Index				Inception Date	12/31/1995
05/13/2013		Currency	EUR	Calculation	Conventional		
				May Market Change		4/30 Rebalancing	
				May Index 5/13/2013	May Index 4/30/2013	MTD Chg 5/13/2013	Apr Index 4/30/2013
						Rebal Chg 4/30/2013	
Returns		Total Return Value		241.174	240.888	0.286	
Valuations (Scale MM)		# of Issues		1,733	1,733	0	1,737
		Face Value		1,399,824	1,399,824	0	1,401,653
		Accrued Interest		28,592	28,281	311	28,413
		Cash		1,822	0	1,822	4,805
		Full Market Value		1,565,577	1,563,720	1,857	1,571,145
		% of		EMU0	18.23	18.15	0.08
Yield		Effective Yield		1.77	1.81	-0.04	1.80
		Yield to Worst		1.73	1.76	-0.03	1.74
		Yield to Maturity		1.77	1.80	-0.03	1.78
Spread (in Semi-Annual Terms)		To Worst (vs Govt)		101	111	-10	110
		OAS (vs Govt)		115	124	-9	124
		Libor OAS		96	106	-10	106
		Asset Swap		100	111	-11	110
Duration		Effective Duration		4.46	4.49	-0.03	4.40
		Spread Duration		4.37	4.41	-0.04	4.32
		Mod Dur to Worst		4.34	4.38	-0.04	4.29
		Mod Dur to Maturity		4.37	4.42	-0.04	4.33
		Mac Dur to Maturity		4.47	4.51	-0.04	4.42

Use the Page Forward/Back keys, or the vertical scroll bar on the right-hand side of the screen, to view additional characteristics.

PROJECTED CHANGES SHOWN TWO BUSINESS DAYS BEFORE MONTH END

When a calendar month-end date is selected, the first three columns show index statistics before (the prior month's holdings) and after (the next month's holdings) the rebalancing, along with the impact of the rebalancing changes. The last two columns show index statistics as of the prior month-end close and the impact on the index from market changes that took place during the month.

ER00			99 Download			Index Characteristics		
The BofA Merrill Lynch Euro Corporate Index						Inception Date	12/31/1995	
03/31/2017	Currency	EUR	Calculation	Conventional			Mar	Market Change
			3/31 Rebalancing				Mar	Market Change
			Apr Index	Mar Index	Rebal Chg		Mar Index	MTD Chg
			3/31/2017	3/31/2017	3/31/2017		2/28/2017	3/31/2017
Returns								
			Total Return Value			273.699	274.615	
Valuations (Scale MM)								
			# of Issues	2,495	2,450	45	2,450	0
			Face Value	1,861,915	1,832,360	29,555	1,832,360	0
			Accrued Interest	21,179	21,181	-2	23,208	-2,028
			Cash	0	5,955	-5,955	0	5,955
			Full Market Value	1,999,179	1,976,123	23,056	1,982,732	-6,609
			% of EMUO	19.44	19.38	0.06	19.35	0.03
Yield								
			Effective Yield	0.93	0.92	0.01	0.82	0.09
			Yield to Worst	0.93	0.91	0.01	0.82	0.09
			Yield to Maturity	0.99	0.98	0.01	0.88	0.10
Spread (in Semi-Annual Terms)								
			To Worst (vs Govt)	117	116	1	122	-6
			OAS (vs Govt)	120	119	1	126	-7
			Liber OAS	65	64	1	63	1
			Asset Swap	68	67	1	66	1
Duration								
			Effective Duration	5.37	5.29	0.08	5.38	-0.09
			Spread Duration	5.44	5.36	0.08	5.48	-0.12

This example shows that the Euro Corporate Index spread tightened 7bp during March 2017, and then increased 1bp due to rebalancing changes that took place on March 31.

PROJECTED CHANGES SHOWN 2 BUSINESS DAYS BEFORE MONTH END

On the last three days of the month, the first two columns of the screen are populated with projected index statistics for the upcoming rebalancing. In this example, on April 25 a 0.12 year duration extension was projected for the Euro High Yield Index April 30 rebalancing. (Note: projected constituents are preliminary estimates of rebalancing changes and are subject to change in the final rebalancing.)

HE00		99 Download		Index Characteristics			
		The BofA Merrill Lynch Euro High Yield Index		Inception Date		12/31/1997	
04/25/2013		Currency EUR		Calculation Semi-Annual			
Projected Rebalancing				Apr Market Change		3/31 Rebalancing	
Proj May Statistics	Projected change			Apr Index 4/25/2013	Apr Index 3/31/2013	MTD Chg 4/25/2013	Mar Index 3/31/2013
Returns				Total Return Value		4.523	
				237.105	232.582		
Valuations (Scale MM)				# of Issues	460	460	453 7
462	2			Face Value	221,169	221,169	216,074 5,095
224,189	3,020			Accrued Interest	5,522	5,352	5,248 103
5,468	60			Cash	845	0	1,670 -1,670
0	-1,152			Full Market Value	233,877	229,416	4,461 225,955 3,461
236,524	2,455			% of HP00	85.70	85.74	-0.05 85.81 -0.06
85.96	0.26						
Yield				Effective Yield	5.31	5.91	5.80 0.11
5.33	0.05			Yield to Worst	4.69	5.20	5.07 0.13
4.72	0.06			Yield to Maturity	5.15	5.54	5.41 0.12
Spread (in Semi-Annual Terms)				To Worst (vs Govt)	410	454	444 10
490	3			OAS (vs Govt)	488	542	533 9
488	3			Libor OAS	465	509	500 9
465	3			Asset Swap	442	483	474 9
444	4						
Duration				Effective Duration	3.04	3.22	3.06 0.16
3.15	0.12			Spread Duration	2.92	3.08	2.93 0.15
3.02	0.12			Mod Dur to Worst	2.91	3.05	2.91 0.14
3.01	0.11			Mod Dur to Maturity	3.54	3.60	3.47 0.13
3.65	0.12			Mac Dur to Maturity	3.62	3.69	3.56 0.14
3.73	0.12						
Convexity				Effective Convexity	-0.07	-0.06	-0.08 0.01
-0.06	0.01			Convexity to Worst	0.14	0.15	0.14 0.01
0.15	0.01			Convexity to Maturity	0.20	0.20	0.19 0.01
0.21	0.01						
Other				Years to Workout	6.75	7.55	7.14 0.41
6.81	0.10			Years to Maturity	4.25	4.33	4.18 0.15
4.37	0.16			Par Wgt Price	102.87	101.31	1.56 101.37 -0.06
103.06	0.20			Par Wgt Coupon	6.85	6.85	0.00 6.85 -0.01
6.84	-0.01			Mkt Wgt Coupon	6.88	6.90	-0.02 6.86 0.04
6.89	0.02			Composite Rating	BB3	BB3	BB3
BB3							

PERFORMANCE HISTORY SCREEN SHOWS TOTAL RETURNS...

[ticker]<go>, 15<go> or IND15 [ticker]<go>

The Monthly/Quarterly/Annual returns screen shows a table of monthly, quarterly and annual returns in the selected base currency. When a base currency other than LOC is selected you have the added option of selecting a hedge percentage (any integer from zero to 100) with zero being unhedged and 100 being fully hedged. The quarterly and annual results for the most recent year only include performance for completed full-month periods. Therefore, during November, the current year 4Q and full-year values are through October 30.

EMCB		99 Download							Monthly/Quarterly/Annual Returns			
		The BofA Merrill Lynch Emerging Markets Corporate Plus Index							Inception Date	12/31/1998		
Currency	LOC	% Hedged	0	Values	Total Return Percentage							
Monthly	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Jan	-0.063	2.470	0.450	1.969	4.026	0.534	-0.004	0.232	0.817	0.887	0.887	0.887
Feb	0.492	2.409	0.525	0.914	-1.293	0.249	1.589	0.763	0.389	1.138	1.138	1.138
Mar	-0.022	0.471	0.971	2.227	3.921	-0.816	0.302	-1.083	-1.515	1.563	1.563	1.563
Apr	1.222	0.923	1.187	1.209	5.246	1.186	0.893	-0.107	1.495	-2.893	2.893	2.893
May		-1.278	0.960	-2.179	6.449	0.493	-0.398	-0.299	1.545	-0.905	3.303	3.303
Jun		1.719	-0.129	2.070	2.565	-0.864	-0.703	-0.501	1.177	0.815	0.815	0.815
Jul		2.642	1.786	2.791	3.911	-0.271	-0.762	1.884	-0.294	1.619	-0.294	-0.294
Aug		1.159	-1.213	1.820	3.089	0.461	0.420	1.852	1.407	2.934	0.000	0.000
Sep		1.273	-4.267	1.183	3.468	-7.342	1.118	0.785	-0.007	0.746	2.202	2.202
Oct		1.335	4.400	0.950	1.092	-19.373	1.077	1.121	-1.060	1.442	0.000	0.000
Nov		0.601	-1.477	-1.353	0.759	3.643	-0.412	1.242	0.862	0.292	0.292	0.292
Dec		0.971	1.077	0.291	0.491	4.834	0.169	0.130	1.015	1.258	1.258	1.258
Quarterly												
Q1	0.406	5.434	1.957	5.192	6.707	-0.038	1.891	-0.097	-0.323	3.630	3.630	3.630
Q2	1.222	1.346	2.027	1.053	14.908	0.806	-0.215	-0.905	4.277	-2.988	7.707	7.707
Q3		5.153	-3.739	5.900	10.836	-7.167	0.770	4.585	1.102	5.381	0.000	0.000
Q4		2.934	3.965	-0.126	2.360	-12.396	0.831	2.510	0.806	3.018	2.202	2.202
Yearly												
Year	1.633	15.656	4.104	12.429	39.108	-18.050	3.306	6.137	5.933	9.140	1.140	1.140

Use the horizontal scroll bar to view the complete history on screen or click on the Download button on the blue menu bar to export result to Excel.

...BUT ALSO EXCESS RETURN AND SPREAD CHANGES

In addition to total return and its basic components (price return, income return, currency return, hedge return, etc.), you can access excess returns versus risk-matched governments or swaps

...or spread changes (OAS vs governments, OAS vs swaps and spread to worst vs governments).

EMCB		Download		Monthly/Quarterly/Annual Returns									
				Inception Date 12/31/1998									
				Values Excess Return % vs Govts									
Monthly		2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Jan		0.797	1.926	0.430	0.475	5.742	-2.166	0.174	0.511	0.342	0.134	1.197	-0.064
Feb		-0.148	2.923	0.627	0.436	-1.104	-0.931	-0.008	0.733	1.197	-0.064	0.610	0.001
Mar		-0.221	1.235	1.114	2.898	2.205	-1.348	0.332	-0.179	-1.238	0.610	0.460	1.001
Apr		0.389	-0.372	0.068	0.209	6.402	2.815	0.462	0.227	-0.178	-0.001	0.453	-0.535
May		-2.712	-0.607	-3.861	7.125	1.651	0.556	-0.389	0.453	-0.535	1.001	0.460	1.001
Jun		2.066	0.086	0.480	2.691	-1.303	-0.607	-0.678	0.612	0.460	1.001	0.711	1.001
Jul		1.688	-0.112	2.114	3.459	-1.013	-2.419	0.673	0.988	0.711	1.001	0.711	1.001
Aug		1.100	-2.772	-0.125	2.212	-0.702	-1.110	0.452	-0.076	0.076	1.001	0.076	1.001

EMCB		Download		Monthly/Quarterly/Annual Returns									
				Inception Date 12/31/1998									
				Values Change in Govt OAS (incl. r)									
Monthly		2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002
Jan		-5	-33	-5	-7	-132	50	1	-7	-4	9	2	1
Feb		3	-61	-6	-5	-15	29	10	-12	-17	8	4	0
Mar		9	-18	-14	-63	-32	40	-3	6	32	-12	6	1
Apr		-7	11	5	-7	-152	-55	-3	-1	7	5	2	1
May		56	19	93	-183	-32	-6	14	-5	20	-11	1	0
Jun		-36	9	-8	-100	32	17	15	-11	-11	-11	-11	1
Jul		-26	11	-40	-96	36	52	-7	-14	-14	-12	-12	0
Aug		-18	83	4	-54	27	32	-5	4	-19	-19	-19	0
Sep		-27	117	-19	-56	232	1	6	-20	-5	1	1	0
Oct		-24	-90	-6	-27	635	2	-9	10	-12	-12	-12	0
Nov		3	45	21	24	29	76	3	-2	-20	-20	-20	0
Dec		-22	2	-35	-49	-79	5	-14	4	-7	-7	-7	0
Quarterly													
Q1		7	-112	-25	-75	-179	119	8	-13	11	5	2	1
Q2		-7	31	33	78	-435	-55	8	28	-9	14	0	0
Q3		-71	211	-55	-206	295	85	-6	-30	-36	-36	-36	0
Q4		-43	-43	-20	-52	585	83	-20	12	-39	-39	-39	0
Yearly													
Year		0	-195	176	-72	-872	944	184	-11	-16	-56	-56	0

CREATE CUSTOM CHARTS...

[ticker]<go>, 12<go> or IND12 [ticker]<go>

When you enter the Chart function with an index selected, it will default to a chart of daily index values for the last year in local currency terms.

You can add a second index with an option to rebase both index values to 100 on the start date of the chart.

Select one of the pre-set date ranges or enter your own start and end dates. Use the tabs above the chart to cycle through:

Data Chart: a chart of the data values for the two selected indices.



...INCLUDING SPREAD AND CORRELATION

Spread: a chart of the differences in the data values of the two selected indices. (Note: this tab is not active when only one index is selected.)



Correlation: the rolling correlation of the data values of the two selected indices using the selected correlation period (in this example, a rolling 24-month correlation period). (Note: this tab is not active when only one index is selected.)



VIEW CUSTOM CHART'S DATA

Data Table: a table of the data values for the selected index. If two indices are selected, the table also shows the differences between the two and the rolling correlations.

The screenshot shows a software interface for financial data analysis. At the top, there's a toolbar with a 'Download' button and a 'Index Charts/Tables' button. Below the toolbar, there are sections for 'Date Range' (set to 05/31/2003 - 04/30/2013) and 'Frequency' (set to Monthly). A table displays data for two indices: EMCB and EMGB. The table includes columns for Start, End, High, Low, Avg, StDev, and Annl StDev. Below the table, there's a section for 'Attribute' with tabs for 'Total Return Percentage' (selected), HTD, 1M, QTD, 1Q, YTD, 1Y, 3Y, 5Y, 10Y, and Max. At the bottom, there are four tabs: '\$1 Data Chart', '\$2 Spread', '\$3 Correlation' (selected), and '\$4 Data Table'. The '\$4 Data Table' tab is active, showing a detailed table with columns for Date, EMCB, EMGB, Difference, and Correlation, containing data for dates from 4/30/2013 down to 12/31/2012.

Date Range		05/31/2003	- 04/30/2013		Frequency		Monthly	Index Charts/Tables		
Index	Currency	Start	End	High	Low	Avg	StDev	Annl	StDev	
EMCB	LOC	0.822	1.222	6.449	-19.373	0.650	2.532	8.770		
EMGB	LOC	0.001	2.814	6.872	-14.234	0.763	2.207	7.646		

Attribute

Total Return Percentage

HTD 1M QTD 1Q YTD 1Y 3Y 5Y 10Y Max

\$1 Data Chart \$2 Spread \$3 Correlation \$4 Data Table

Date	EMCB	EMGB	Difference	Correlation
4/30/2013	1.222	2.814	-1.592	0.865
3/31/2013	-0.022	-0.500	0.478	0.874
2/28/2013	0.492	-0.106	0.597	0.874
1/31/2013	-0.063	-1.166	1.103	0.878
12/31/2012	0.971	0.837	0.134	0.890

DOWNLOAD INDEX TIME-SERIES DATA

Use the Data Download function to export index time-series data to Excel. Add indices to the download list in the <Enter Index> field. If you are downloading return or valuation data, select your base currency. Also indicate which holding file to use on month-end dates: "New" (after the rebalancing) or "Old" (before the rebalancing).

Click on the **Select Fields** button and then select from the available categories to see all available data elements.

Click on a data element to add it to your download list. Click again to remove the item from the list. After you have made your selections, click the **OK** button to return to the download screen.

IND13<go>

The screenshot shows the 'Data Download' interface. In the main panel, the 'Selected Indices' list includes 'GOBC', 'ER00', 'COAO', 'HOAO', 'HECO', 'ENPO', and 'LDMP'. The 'Selected Fields' button is highlighted with a red box. Below, the 'Available Fields' section lists categories like Returns, Spread, and Risk Measures, each with several sub-options. The 'Selected Fields' section on the right lists 13 items, including Total Return Index Value, Excess Return % vs Govts, and Full Market Value. At the bottom are 'OK' and 'Close' buttons.

99 Download Data Download

Date Range One Year Dates 04/30/2012 - 04/30/2013

Frequency Daily Group By Index

Select Fields

Selected Indices Currency Universe

- 1. GOBC LOC New
- 2. ER00 LOC New
- 3. UN00 LOC New
- 4. COAO LOC New
- 5. HOAO LOC New
- 6. HECO LOC New
- 7. ENPO LOC New
- 8. LDMP LOC New
- 9. EMU0
- 10. EB00
- 11. EQ00
- 12. EL00
- 13. EG00
- 14. GOIO
- 15. GOEO
- 16. GOR0
- 17. GOG0
- 18. GODO
- 19. GOFO
- <Enter Index>

Selected Fields

Available Fields

- Returns (11)
 - Total Return Index Value
 - Total Return Percentage
 - Total Return Index Hedged
 - Total Return Percentage Hedged
 - Price Return Index Value
 - Price Return Percentage
 - Price Return Index Hedged
 - Price Return Percentage Hedged
 - Paydown Return %
 - Excess Return % vs Govts
 - Excess Return % vs Swaps
- Spread (4)
 - Govt OAS
 - Libor OAS
 - Spread to Worst vs Govt
 - Asset Swap
- + Risk Measures (11)
 - + Yield (6)
 - + Fundamentals (10)
 - + Mortgage (3)

Download Fields Selector

- 1. Total Return Index Value
- 2. Total Return Percentage
- 3. Excess Return % vs Govts
- 4. Govt OAS
- 5. Libor OAS
- 6. Effective Duration
- 7. Effective Convexity
- 8. Years to Workout
- 9. Yield to Worst (Conventional)
- 10. Yield to Maturity (Conventional)
- 11. Number of Issues
- 12. Face Value
- 13. Full Market Value

OK Close

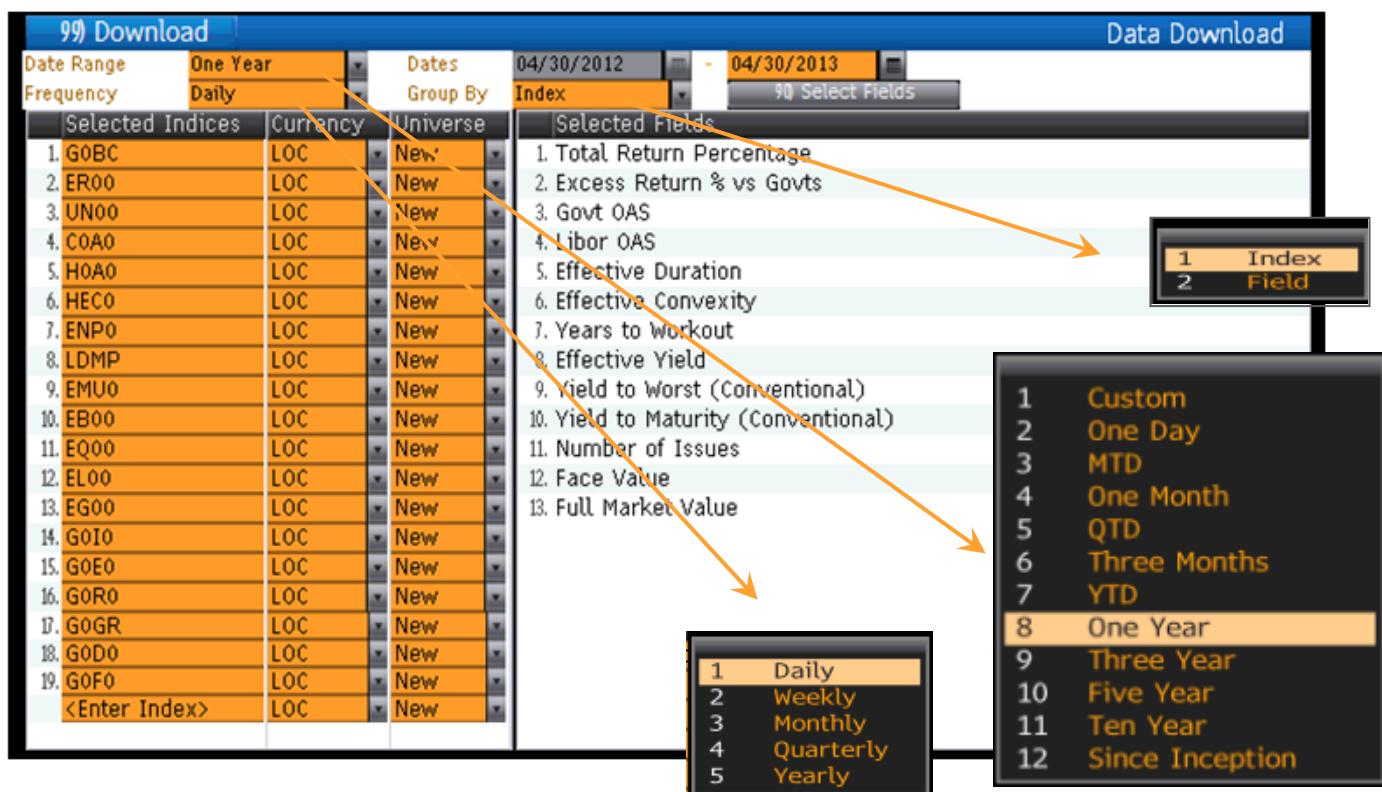
DOWNLOAD INDEX TIME-SERIES DATA

After selecting the indices and data elements you will need to select a date range (use custom to enter any start/end date) and frequency. Finally select the download format:

Group by index: data elements in columns.

Group by field: indices in columns.

Click on the Download button on the blue menu bar to export the data to Excel.



CREATE & DOWNLOAD CORRELATION MATRICES

IND6<go>

Use the <Enter Index> field to add indices to your correlation analysis, indicating the base currency for each. If you select a base currency other than local terms (LOC) you will also need to select hedged or unhedged.

Save Parameters			Download			Correlation Matrix					
Monthly	Date Range	Five Year	04/30/2008	-	04/30/2013	Attribute	Total Return Percentage				
Selected Indices	Currency	Hedged	GOQO	GOP0	GS00	MOAO	R0AO	CMBS	COA0	COA4	HOA0
1 GOQO	LOC	Unhedged	1.0000	0.9243	0.6414	0.7644	-0.0500	-0.1332	0.2986		
2 GOP0	LOC	Unhedged		1.0000	0.7849	0.8319	0.0268	0.0026	0.4867		
3 GS00	LOC	Unhedged			1.0000	0.7082	0.4208	0.3899	0.7906		
4 MOAO	LOC	Unhedged				1.0000	0.2478	-0.0725	0.4629		
5 R0AO	LOC	Unhedged					1.0000	0.5373	0.6402		
6 CMBS	LOC	Unhedged						1.0000	0.4965		
7 COA0	LOC	Unhedged							1.0000		
8 COA4	LOC	Unhedged									
9 HOA0	LOC	Unhedged									
10 IGOV	LOC	Unhedged									
11 GOQ1	LOC	Unhedged									
12 NOG1	USD	Hedged									
13 NOG1	USD	Unhedged									
<Enter Index>			USD	USD	Unhedged						

CREATE & DOWNLOAD CORRELATION MATRICES

Use the parameter pick lists to choose:

Frequency: daily, weekly, monthly quarterly or yearly data points.

Date Range: one month, three months, one year, three year, five year or ten year. Alternatively, select Custom and enter you own date range.

Attribute: total return percentage, price return percentage, or spread vs governments (Govt OAS).

The screenshot shows a software window with several tabs at the top: 'Save Parameters' (selected), 'Download', 'Attribute', and 'Correlation Matrix'. The 'Save Parameters' tab has dropdown menus for 'Frequency' (set to 'Monthly'), 'Date Range' (set to 'Five Year'), and 'Attribute' (set to 'Total Return Percentage'). A modal dialog box is open over the main area, titled 'Save Parameters' with a sub-section 'Date Range'. It lists seven options: 'Custom', 'One Month', 'Three Months', 'One Year', 'Three Year', 'Five Year' (which is highlighted with an orange border), and 'Ten Year'. The background of the main window shows a correlation matrix table with columns and rows labeled by index codes like 'GOPO', 'GS00', 'LOC', etc., and various numerical values.

Click on the **Save Parameters** button on the blue menu bar to save selected indices/parameters.

ACCESS BASIC RETURN ATTRIBUTION

The Return Summary screen shows index results for the past 1-month, 3-month, 6-month, year-to-date and 1-year periods. The screen defaults to local currency terms as of the most recent month-end date. You can select a prior month/year, but the data will always be as of the month-end date for the selected period.

When a base currency other than LOC is selected, three additional rows will appear:

Currency return: the return generated by the change in spot currency rates.

Hedge return: the gain or loss resulting from the forward currency position.

Total return (converted): the index return inclusive of spot and forward currency performance.

[ticker]<go>, 14<go> or IND14 [ticker]<go>

UN00		Download		Return Summary				
		The BofA Merrill Lynch Sterling Non-Gilt Index		Inception Date 12/31/1996				
04/13	Currency DKK	% Hedged	100	1-Month	3-Month	6-Month	YTD	1-Year
Total Return Factors								
Price Return (Local)				2.308	4.236	3.424	2.754	9.845
Income Return (Local)				0.385	1.194	2.435	1.599	5.391
Total Return (Local)				2.693	5.430	5.859	4.353	15.236
Currency return				-0.163	1.049	-5.397	-4.509	-4.111
Hedge Return				0.100	-1.195	5.089	4.364	3.438
Total Return (Converted)				2.630	5.284	5.551	4.208	14.564
Total Return Index Values								
Beginning Index Value				243.520	237.382	236.781	239.833	218.153
Ending Index Value				249.925	249.925	249.925	249.925	249.925
Price Return Index Values								
Beginning Index Value				90.984	89.375	90.192	90.645	85.177
Ending Index Value				93.027	93.027	93.027	93.027	93.027
Excess Returns								
Excess Return vs. Govt				1.803	2.102	4.028	2.851	10.081
Excess Return vs. Swap				1.751	2.543	3.607	2.903	8.036
Change in OAS (Including Rebalancing Impact)								
Change in Govt OAS				-20	-20	-42	-29	-119
Change in Libor OAS				-18	-26	-36	-31	-89

If you select one of the US mortgage indices, an additional row will appear containing the index paydown return.

FIND RETURNS BETWEEN ANY TWO DATES

[ticker]<go>, 17<go> or IND17 [ticker]<go>

The Flexible Returns screen provides the same information as the Summary Returns screen but for any selected date range. Select a start and end date and a base currency. If you select a base currency other than LOC (local terms) you have the added option of selecting a hedge percentage (any integer from zero to 100) with zero being unhedged and 100 being fully hedged.

HE00	Download	Inception Date	Flexible Returns
The BofA Merrill Lynch Euro High Yield Index		12/31/1997	
06/04/2007 - 05/13/2013	Currency	LOC	0 % Hedged
		Periodic Return	Annualized Return
Total Return Factors			
Price Return (Local)		2.825	0.470
Income Return (Local)		59.048	8.118
Total Return (Local)		61.873	8.439
Total Return Index Values			
Beginning Index Value		144.664	
Ending Index Value		234.173	
Price Return Index Values			
Beginning Index Value		66.864	
Ending Index Value		68.754	
Excess Returns			
Excess Return vs. Govt		28.104	3.423
Excess Return vs. Swap		24.613	2.967
Change in OAS (Including Rebalancing Impact)			
Change in Govt OAS		270	
Change in Libor OAS		432	

QUICKLY REFERENCE KEY INDICES...

IND18<go>

You can create an index monitor containing an unlimited number of indices and up to eight return or characteristic fields.

Use the <Enter Index> field to add indices to your list. Use the Edit tool to modify parameters for each column in the report.

98 Save Parameters		99 Download		Personal Return Monitor							
Attributes	Effective Yie	Govt OAS	Chg OAS/Gov	Exc Rtn/Swa	Total Rtn	Total Rtn					
Currency		Start date	End date	Calculation	Periodic	Periodic	Periodic	Periodic	Periodic	Annualized	Annualized
G0Q0	1.03	0	0	0.030	-0.976	-0.188	4.867541	4.981589			
DQG0	1.56	57	-2	0.223	-0.588	0.283	5.048138	5.344313			
COA0	2.77	143	-4	0.338	-0.907	0.829	7.971174	7.830123			
MOA0	2.11	50	14	-0.301	-0.564	-0.120	3.725545	5.194017			
ROA0	1.00	62	-1	0.068	-0.123	0.434	3.097414	4.117776			
CMBS	1.81	126	-5	0.191	-0.147	0.884	8.081669	7.426555			
US00	1.75	54	2	0.043	-0.792	0.143	5.268836	5.677733			
DQTM	4.21	166	-4	0.713	-1.853	1.788	11.974278	13.015083			
MF30	2.31	60	13	-0.260	-0.570	-0.113	3.749342	5.267702			
MG1S	2.27	42	17	-0.466	-0.758	-0.344	4.312532	5.476198			
M15A	1.27	18	10	-0.136	-0.278	0.154	2.979836	4.679415			
M20A	1.51	25	29	-0.700	-0.746	-0.137	3.857889	5.290834			
G0PC	0.81	9	4	-0.058	-0.220	0.165	1.803164	2.581003			
G0PB	0.96	18	-1	0.018	-0.601	-0.018	3.780054	4.633802			
G0P0	0.92	16	1	0.000	-0.510	0.021	3.401668	4.179214			
G502	0.69	0	0	-0.024	-0.520	0.141	3.813250	4.217921			
G902	2.85	0	0	0.320	-3.409	-1.976	10.971589	8.974402			
HOA0	5.43	435	-20	1.200	0.623	5.458	11.527740	10.924826			
<Enter Index>	5.45	438	-18	1.112	0.577	5.250	11.205486	10.095132			

...WITH COMPLETELY CUSTOM MONITORS

In the **Edit** tool pop-up, you can select:

Attribute: the default data element for that column.

Date range: the period that will be used to derive the start date for data elements that involve a period, such as returns and change in spread (this choice is not available for other data elements that involve a single date, such as duration or yield).

Default end date: the end date that will appear on entry into the screen.

Currency: the base currency used for return/valuation conversions.

After you have made all of your choices, click on the Save Parameters button on the blue menu bar to save your settings. Thereafter, type IND18<Go>, or select #18 from the main menu, to view your monitor.

The screenshot shows the 'Personal Return Monitor' interface with a 'Save Parameters' dialog box open. The dialog box contains the following fields:

- Attribute:** Total Return Percent
- Calculation:** Periodic
- Date range:** MTD
- Starting date:** 04/30/2013
- Default end date:** Last Close
- Ending date:** 05/13/2013
- Currency:** LOC
- Hedging:** Unhedged

Below the dialog box, two dropdown menus are shown:

- Attribute:** A list of options including 'Total Return Index Value', 'Price Return Index Value', 'Total Return Percentage' (which is highlighted), 'Price Return Percentage', etc.
- Date range:** A list of options including 'Custom', 'Last Close' (which is highlighted), 'One Day', 'MTD' (which is highlighted), 'One Month', etc.

At the bottom of the dialog box are 'Apply' and 'Close' buttons.

CREATE CUSTOM INDICES ON-THE-FLY...

You can create custom indices that combine two or more standard BofAML bond indices. Go to the Create Custom Index screen, select one of the available custom index tickers (STB0 through STB9) and assign the index a Name. Use the <Enter Index> field to add components to your blended index. You have three weighting options:

IND19<go>

Save Custom Index		Download	Create Custom Index
Custom Index	STB1	Name	
Index		Weight Description	
<Enter Index>		0.0000	
1 Unallocated		100.0000	

Save Custom Index		Download	Create Custom Index
Custom Index	STB1	Name EM Blend - market cap weights	
Index		Weight Description	
<Enter Index>		0.0000	
1 EMCB		0.0000	The BofA Merrill Lynch Emerging Markets Corporate Plus Index
2 EMGB		0.0000	The BofA Merrill Lynch Emerging Markets External Debt Sovereign Index
3 WSBV		0.0000	The BofA Merrill Lynch Emerging Markets Sovereign Bond Index
4 Unallocated		100.0000	

Save Custom Index		Download	Create Custom Index
Custom Index	STB1	Name EM Blend - fixed weights	
Index		Weight Description	
<Enter Index>		0.0000	
1 EMCB		34.0000	The BofA Merrill Lynch Emerging Markets Corporate Plus Index
2 EMGB		33.0000	The BofA Merrill Lynch Emerging Markets External Debt Sovereign Index
3 WSBV		33.0000	The BofA Merrill Lynch Emerging Markets Sovereign Bond Index
4 Unallocated		0.0000	

1. Leave the weight column at zero for all components, in which case the index will be capitalization-weighted.
2. Assign a weight to each of the components with the sum totaling 100. The blended index will rebalance to these fixed weights monthly.
3. Assign weights to some, but not all, of the components. The components that have not been assigned a weight will be capitalization-weighted relative to each other and the combined unit will receive the unassigned weight. (*Note: for this option the sum of the assigned weights must be less than 100.*)

...AND IMMEDIATELY VIEW RESULTS

STB[#]<go>, 15<go> or IND15 STB[#]<go>

After components/weights have been entered, click on the Save Custom Index button on the blue menu bar to store the index parameters. Thereafter, use the custom index ticker (eg, STB1) to monitor it just as you would with any standard BofAML index.

Once you have created a custom index you can immediately view current and historical returns and statistics just as you would for any standard BofAML bond index. The amount of history available for a custom index is equal to that of the most recently introduced component index.

STB1		99 Download		Monthly/Quarterly/Annual Returns					
Currency	USD	% Hedged	50	Values	Total Return	Percentage	Inception Date	12/31/2005	
Monthly	2013	2012	2011	2010	2009	2008	2007	2006	Launch Date
Jan	0.353	2.607	-0.515	0.722	-1.882	1.760	-0.167	1.646	12/31/2005
Feb	0.010	1.216	0.590	0.882	-2.430	0.734	0.954	0.778	12/31/2005
Mar	-0.052	-0.492	1.379	1.653	2.208	-0.186	0.918	-0.676	12/31/2005
Apr	1.898	0.454	1.543	0.929	2.941	0.376	1.036	0.541	12/31/2005
May		-1.684	0.121	-1.639	2.860	-0.425	0.124	-0.804	12/31/2005
Jun		2.020	0.393	0.772	0.204	-1.466	-0.490	-0.981	12/31/2005
Jul		1.803	0.846	2.122	1.845	1.319	0.246	1.416	12/31/2005
Aug		0.324	0.251	0.919	0.770	-0.527	-0.014	1.504	12/31/2005
Sep		1.333	-3.161	2.308	2.201	-2.420	1.922	0.856	12/31/2005
Oct		0.751	2.519	0.445	0.624	-6.067	1.680	1.614	12/31/2005
Nov		0.519	-1.244	-2.159	1.060	1.209	-0.385	1.627	12/31/2005
Dec		0.864	0.814	1.107	-0.103	6.264	0.588	0.370	12/31/2005
Quarterly									
Q1	0.310	3.343	1.451	3.290	-2.153	2.317	1.711	1.744	12/31/2005
Q2	0.757	2.067	0.041	6.101	-1.515	0.665	-1.247	12/31/2005	12/31/2005
Q3	3.494	-2.097	5.440	4.888	-1.654	2.159	3.823	12/31/2005	12/31/2005
Q4	2.149	2.068	-0.635	1.585	1.024	1.884	3.649	12/31/2005	12/31/2005
Yearly									
Year		10.080	3.473	8.262	10.617	0.114	6.569	8.123	12/31/2005

SLICE & DICE INDICES WITH EASE

IND5<go>

Use the Profile function to slice and dice the index across a variety of dimensions. When you first enter the screen you will see a list of all report templates you have previously created.

In the template screen, enter a file name and select a profile type:

One-Dimensional:
bucket up to eight indices across one attribute.

Two-Dimensional:
bucket one index across two attributes.

The image shows two overlapping software interface windows. The top window is titled 'Profile Analysis' and displays a table of five profiles with columns for 'Profile Name', 'As Of Date', 'Last Run Date', and 'Status'. All profiles listed are 'Succeeded'. The bottom window is titled 'Profile Edit/View' and shows configuration options for a new profile. It includes fields for 'Name' (set to '% Mkt Value'), 'Calculate' (set to 'LOC % Hedged 0'), 'Currency' (set to 'LOC'), 'Use Default Buckets' (checked), and 'Debug Mode' (unchecked). Under 'Profile Type', it says 'Bucket Y-Axis By Date' and has a dropdown menu showing 'One-Dimensional' selected (option 1) over 'Two-Dimensional' (option 2). A large grid area below is labeled 'Indices' and 'YrsToMat/WAL'.

SEGMENT INDICES BY ONE ATTRIBUTE...

This example details the steps to create a report showing the average spread by country of risk for several euro indices. The report has been named “Euro By Country” and a One-Dimensional report type was selected. Next, Option-Adjusted Spread (OAS) was selected from the “Calculate” pick list.

The “Bucket Y-Axis By” pick list is used to select the attribute by which the indices will be segmented (Country of Risk). Bucket names are automatically populated for non-numeric attributes such as ticker, rating, country, currency, etc.

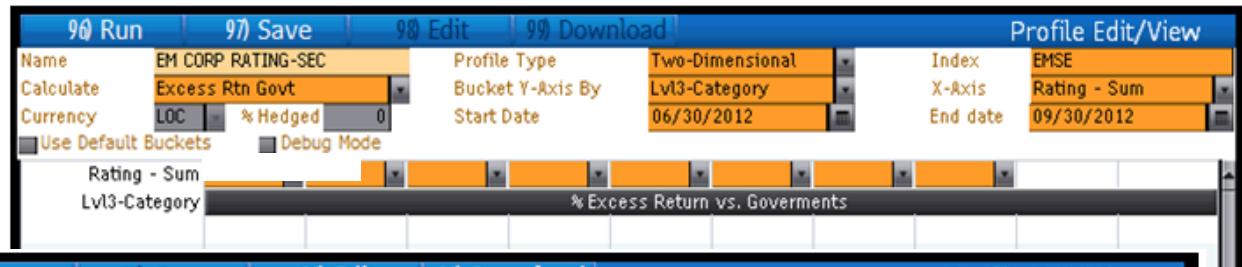
Finally, enter up to eight index tickers in the Index(es) row and click on the Run button.

Indices	EG00	ENP0	EB00	EN00	OAS
DE	-20	102	163	81	
DK		72	147	131	
EE				210	
ES	350	455	412	256	
FI	-5	39	117	89	
FR	23	64	218	120	
GB		68	211	96	
GR				165	
HK				91	
IE	277	273		194	
IL				78	
IN			279		
IT	270	247	394	224	
JP			250	60	
LU	2	137	59	181	
MX				122	
NL	-1	53	98	99	
NO		38	111	64	
NZ		63	97		
PL			240	167	

...OR ACROSS TWO ATTRIBUTES

A Two-Dimensional report template works similar to the One-Dimensional reports. However, you can add a second attribute to create a two-dimensional matrix, but you can only select one index at a time.

If your date range extends beyond one month, a blank result means that the cell was not populated during any month within the range. An “inc” means that the cell was populated for at least one, but not all, of the months within the selected range.



The screenshot shows a software interface for creating and running reports. At the top, there are four buttons: Run, Save, Edit, and Download. Below these are several configuration fields:

- Name:** EM CORP RATING-SEC
- Calculate:** Excess Rtn Govt
- Currency:** LOC
- Profile Type:** Two-Dimensional
- Bucket Y-Axis By:** Lvl3-Category
- Start Date:** 06/30/2012
- Index:** EMSE
- X-Axis:** Rating - Sum
- End date:** 09/30/2012

Below the configuration is a chart area with the title "Rating - Sum" on the X-axis and "Lvl3-Category" on the Y-axis. The chart displays a single data series: "% Excess Return vs. Governments".

At the bottom, there is a table titled "Excess Rtn Govt" with columns for Rating - Sum (including categories >=CCC, >=B, >=BB, >=BBB, >=A, >=AA, >=AAA) and Lvl3-Category (including AUTO, BANK, BASC, CAPG, CCYC, CNYC, ENRG, FINS, HCAR, MEDI, REST, SERV, TCOM, TECH, UTIL). The table also includes a "Total" row.

Lvl3-Category	>=CCC	=B	<BB	>=BB	<BBB	>=BBB	<A	>=A	<AA	>=AA	<AAA	>=AAA	Total	
AUTO														2.977	
BANK	6.312		8.938		5.321		3.905		2.386		1.414			3.660	
BASC			6.863		4.505		4.546		2.639					4.684	
CAPG							5.700		3.337					3.963	
CCYC							4.299		5.407					5.083	
CNYC					7.200		4.712		3.771		2.694			4.472	
ENRG					11.042		5.854		5.143		3.582		3.971	5.445	
FINS							8.646		4.823					5.262	
HCAR										1.741				1.741	
MEDI										6.452				6.452	
REST			4.667		7.664		5.217		4.662					5.919	
SERV					4.030		3.938		6.235		2.373		2.570	2.349	5.092
TCOM			4.513		6.751		9.637		3.208		2.988		inc		4.429
TECH							-0.789		3.591		1.243				1.314
UTIL							6.746		6.102		3.960		3.094	0.308	4.305
Total			4.923		8.526		5.875		4.726		3.042		2.730	2.349	4.667

CONSTITUENT DETAIL POSTED DAILY

[ticker]<go>, 10<go> or IND10 [ticker]<go>

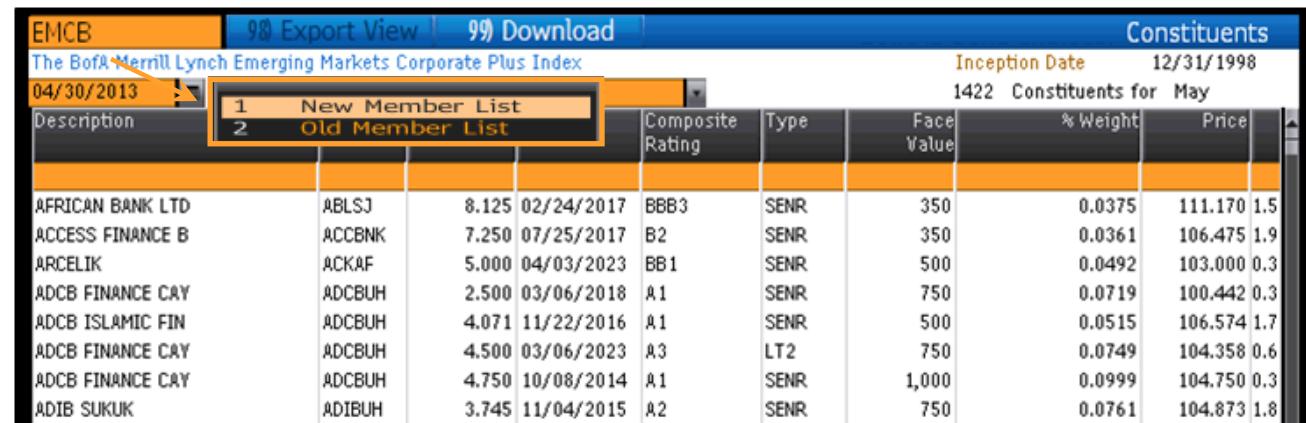
The Constituent screen shows the index holdings as of the most recent date. Click on column headers to sort the list. Click on the same header a second time to sort the list in the opposite order. The current sort column (in this example, ticker) is highlighted in amber.

Use the vertical and horizontal scroll bars to view the entire contents of the file on screen or click on the Download button on the blue menu bar to export the file to Excel.

EMCB		99 Export View		99 Download		Constituents			
						The BofA Merrill Lynch Emerging Markets Corporate Plus Index			
05/13/2013		Current		Group By		None			
Description	Ticker	Coupon	Maturity	Composite Rating	Type	Face Value	% Weight	Price	
AFRICAN BANK LTD	ABLSJ	8.125	02/24/2017	BBB3	SENR	350	0.0370	109.254	1.8
ACCESS FINANCE B	ACCBNK	7.250	07/25/2017	B2	SENR	350	0.0361	105.974	2.1
ARCELIK	ACKAF	5.000	04/03/2023	BB1	SENR	500	0.0497	103.750	0.5
ADCB FINANCE CAY	ADCBUH	2.500	03/06/2018	A1	SENR	750	0.0723	100.731	0.4
ADCB ISLAMIC FIN	ADCBUH	4.071	11/22/2016	A1	SENR	500	0.0519	106.984	1.9
ADCB FINANCE CAY	ADCBUH	4.500	03/06/2023	A3	LT2	750	0.0749	103.976	0.8
ADCB FINANCE CAY	ADCBUH	4.750	10/08/2014	A1	SENR	1,000	0.1002	104.750	0.4
ADIB SUKUK	ADIBUH	3.745	11/04/2015	A2	SENR	750	0.0748	104.615	0.1
ADIB SUKUK	ADIBUH	3.780	11/30/2016	A2	SENR	500	0.0512	105.734	1.7
PT ADARO INDONES	ADROIJ	7.625	10/22/2019	BB1	SENR	800	0.0834	109.000	0.4
WAHA AEROSPACE B	ADWA	3.925	07/28/2020	AA2	SENR	1,125	0.1163	107.375	1.1
ANADOLU EFES	AEFES	3.375	11/01/2022	BBB3	SENR	500	0.0470	98.500	0.1
AEROPUERTOS DOMI	AERDOS	9.250	11/13/2019	BB3	SECR	550	0.0566	108.000	0.0
AEROPUERTOS ARG	AEROAR	10.750	12/01/2020	B3	SECR	273	0.0248	93.250	2.1
MMG TRUST SA (AE	AES	6.750	03/28/2023	BB2	SENR	310	0.0309	103.730	0.8
AES ANDRES/ITABO	AES	9.500	11/12/2020	B2	SECR	284	0.0298	110.000	0.0
AES GENER SA	AESGEN	5.250	08/15/2021	BBB3	SENR	402	0.0422	108.906	1.2
CHIVOR SA ESP	AESGEN	9.750	12/30/2014	BB1	SECR	170	0.0186	111.500	3.6
SISTEMA INTL FD	AFKSRU	6.950	05/17/2019	BB3	SENR	500	0.0539	109.750	3.4
AGILE PROPERTY	AGILE	8.875	04/28/2017	BB2	SENR	650	0.0669	107.625	0.3
AGILE PROPERTY	AGILE	9.375	02/20/2017	BB2	SENR	700	0.0722	114.275	1.4

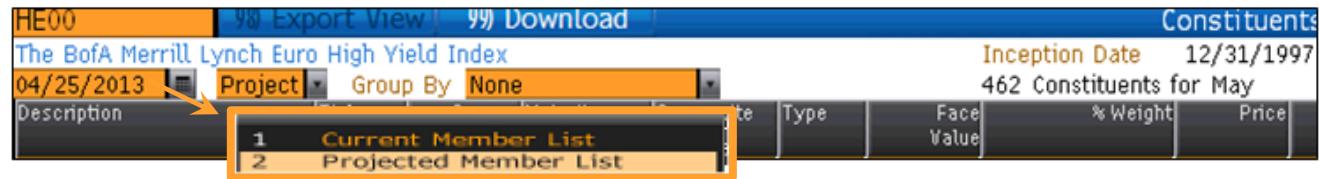
PRE- AND POST-REBALANCING AS WELL AS PROJECTED CONSTITUENT LISTS AVAILABLE

Change the date to view historical holdings files. If you select a month-end date you will have a choice between the “New” (after rebalancing) or “Old” (before rebalancing) constituent files.



The screenshot shows a table titled "EMCB" with the subtitle "The BofA Merrill Lynch Emerging Markets Corporate Plus Index". The table has a header row with columns for "Description", "Composite Rating", "Type", "Face Value", "% Weight", and "Price". A dropdown menu above the table lists "04/30/2013" and two options: "1 New Member List" and "2 Old Member List". The "Inception Date" is listed as 12/31/1998 and "1422 Constituents for May" are shown. The table contains 14 rows of data for various companies like AFRICAN BANK LTD, ACCESS FINANCE B, ARCELIK, etc.

Beginning 3 business days before the last business day of the month you can choose between the Current (ie, actual holdings for the current month) and Projected constituent files (ie, projected holdings for the next month).



The screenshot shows a table titled "HE00" with the subtitle "The BofA Merrill Lynch Euro High Yield Index". The table has a header row with columns for "Description", "Composite Rating", "Type", "Face Value", "% Weight", and "Price". A dropdown menu above the table lists "04/25/2013", "Project", and "Group By None". A dropdown menu below the table lists "1 Current Member List" and "2 Projected Member List". The "Inception Date" is listed as 12/31/1997 and "462 Constituents for May" are shown.

Note: Projected constituents are preliminary indications of the rebalancing changes and are subject to change in the final rebalancing

BOND LISTS CAN BE FILTERED...

Use the filter row to find index constituents that meet one or more criteria. For numeric values use “=, <, >, and +” operators. When filtering on a range, leave a space between the upper and lower boundaries. For non-numeric fields, the filter will find all partial matches. For example, a “BBB” filter on composite rating returns all bonds rated BBB1, BBB2 or BBB3.

The BofA Merrill Lynch Emerging Markets Corporate Plus Index

05/13/2013 | Current | Group By: None | Export View | Download

Inception Date: 12/31/1998
1422 Constituents for May

Description	Ticker	Coupon	Maturity	Composite Rating	Type	Face Value	% Weight	Price
		>=5 <7		BBB				
BANK OF BARODA	BOBIN	5.000	06/24/2016	BBB3	SENR	500	0.0515	107.020 1.1
INDIAN OVERSEAS	IOBIN	5.000	10/19/2016	BBB3	SENR	500	0.0505	105.813 0.3
AKBANK	AKBNK	5.000	10/24/2022	BBB2	SENR	500	0.0510	106.875 0.2
CHINA MERCHANTS	CHINAM	5.000	05/04/2022	BBB2	SENR	500	0.0524	109.993 0.1
ICICI BANK LTD	ICICI	5.000	01/15/2016	BBB3	SENR	500	0.0518	107.227 1.6
MEGA ADVANCE INV	BEIENT	5.000	05/12/2021	BBB1	SENR	600	0.0638	111.689 0.0
BANCO DE BOGOTA	BANBOG	5.000	01/15/2017	BBB2	SENR	600	0.0627	108.000 1.6
CELULOSA ARAUCO	CELARA	5.000	01/21/2021	BBB3	SENR	395	0.0402	105.387 1.5
BBVA BANCO CONT	BCOCPE	5.000	08/26/2022	BBB2	SENR	500	0.0511	106.200 1.0
MUMTALAKAT	MUMTAK	5.000	06/30/2015	BBB2	SENR	750	0.0756	103.992 1.8
CITY OF MOSCOW	MOSCOW	5.064	10/20/2016	BBB2	SENR	407	0.0559	108.270 2.8
GAZPROM	GAZPRU	5.092	11/29/2015	BBB2	SENR	1,000	0.1048	107.750 2.3
IS BANKASI	ISCTR	5.100	02/01/2016	BBB2	SENR	500	0.0512	106.000 1.4
THAI OIL PCL	TOPTB	5.100	06/09/2015	BBB2	SENR	350	0.0363	106.670 2.1
ANGLOGOLD HOLDS	ANGSJ	5.125	08/01/2022	BBB3	SENR	750	0.0727	100.378 1.4
CANARA BANK LTD	CBKIN	5.125	09/09/2016	BBB3	SENR	350	0.0359	106.911 0.9
ODEBRECHT FINANC	ODBR	5.125	06/26/2022	BBB3	SENR	600	0.0628	108.000 1.9
TELEMAR N L	OIBRBZ	5.125	12/15/2017	BBB3	SENR	750	0.1040	110.100 2.1
AXIS BANK	AXSBIN	5.125	09/05/2017	BBB3	SENR	750	0.0774	107.455 0.9
WEB (WEB-LEAS)	WEBBNK	5.125	05/27/2016	BBB2	SENR	400	0.0412	105.867 2.3
ITALIUNIBRANCO S.p.A.	ITALL	5.125	05/12/2012	BBB2	LT1	1,970	0.1842	102.500 0.0

...AND GROUPED

Use the “Group By” pick list toggle to summarize the index by description (ie, issuer name), ticker, rating category, sector, country or currency. While in grouped mode, click on the **Export View** button on the blue menu bar to download the summarized data to Excel.

The screenshot shows the EMCB interface with a context menu open over the 'Group By' dropdown. The menu items are: 1. None, 2. Description, 3. Ticker (which is selected and highlighted in orange), 4. Rating, 5. Level 1 Asset Class, 6. Level 2 Group, 7. Level 3 Subgroup, 8. Level 4 Detail, 9. Issuer Country, and 10. Currency. A red bracket on the left groups the first three items ('None', 'Description', 'Ticker'), and a red arrow points from this bracket to the 'Group By' dropdown in the interface.

EMCB		Export View	Download	Constituents					
		The BofA Merrill Lynch Emerging Markets Corporate Plus Index					Inception Date	12/31/1998	
05/13/2013		Current	Group By	Ticker	Coupon	Maturity	Composite Rating	Type	
Description									
■ ABLSJ					8.125				
■ ACCBNK					7.250				
■ ACKAF					5.000				
■ ADCBUH					3.935				
■ ADIBUH					3.763				
■ ADROIJ					7.625				
■ ADWA					3.925				
■ AEFES					3.375				
■ AERDOS					9.250				

After the list has been grouped, click on the “+” at the beginning of a row to expose all of the constituent bonds for that group. Change the “Group By” toggle back to “None” to remove the grouping feature.

The screenshot shows the EMCB interface with the data grouped by 'Ticker'. The row for 'GAZPROMBANK' is expanded, showing four rows for the same issuer. A red circle highlights the 'GPBRU' row, and a red bracket on the left groups the first two rows ('GAZPROMBANK' and 'GPBRU'). A red arrow points from this bracket to the 'Group By' dropdown in the interface.

EMCB		Export View	Download	Constituents					
		The BofA Merrill Lynch Emerging Markets Corporate Plus Index					Inception Date	12/31/1998	
05/13/2013		Current	Group By	Ticker	Coupon	Maturity	Composite Rating	Type	
Description									
■ GOI					9.167				
■ GPBRU					6.406				
■ GAZPROMBANK				GPBRU	6.500	09/23/2015	BBB3	SENR	948
■ GAZPROMBANK				GPBRU	6.250	12/15/2014	BBB3	SENR	1,000
■ GAZPROMBANK				GPBRU	7.250	05/03/2019	BB1	SUB	500
■ GAZPROMBANK				GPBRU	5.625	05/17/2017	BBB3	SENR	1,000
■ GPKLN					7.500				300
■ GRAIL					7.750				500
■ GRNCH					8.500				700
■ GRTBNL					7.500				500

INDEX LOOKUP BY SECURITY

IND11<go>

Enter a Cusip (or Bloomberg ID) number in the <Cusip> field for a listing of every index of which that bond is a constituent on the selected date and its weight in each. (Note: the list will not include custom indices.)

Click on the “Weight” column header to find the indices in which the bond holds the largest share.

EJ554202		Download		Index Lookup by Security		
05/17/2013						
Selected Security Information						
Bond Ticker	FLEX	Coupon	5.000	Maturity	02/15/2023	
CUSIP	33938EAR	ISIN	US33938EAR80	Description	FLEXTRONICS INTL	
Face Value	500.000	Composite Rating	BB1	Sector Level 4	Electronics	
Price	102.750	Spread	284			
Included in the following indices for the month of 5/2013						
Ticker	Index Name			Weight		
AC04	The BofA Merrill Lynch 7-10 Year Asian Dollar Corporate Index			0.773		
AC05	The BofA Merrill Lynch 1-10 Year Asian Dollar Corporate Index			0.198		
AC06	The BofA Merrill Lynch 5-10 Year Asian Dollar Corporate Index			0.526		
ACCY	The BofA Merrill Lynch Asian Dollar High Yield Corporate Constrained Index			0.808		
ACH1	The BofA Merrill Lynch BB Asian Dollar High Yield Index			1.080		
ACHY	The BofA Merrill Lynch Asian Dollar High Yield Corporate Index			0.713		
ACOR	The BofA Merrill Lynch Asian Dollar Corporate Index			0.184		
AD04	The BofA Merrill Lynch 7-10 Year Asian Dollar Index			0.563		
AD05	The BofA Merrill Lynch 1-10 Year Asian Dollar Index			0.145		
AD06	The BofA Merrill Lynch 5-10 Year Asian Dollar Index			0.365		
ADHY	The BofA Merrill Lynch Asian Dollar High Yield Index			0.446		
ADOL	The BofA Merrill Lynch Asian Dollar Index			0.125		
AN04	The BofA Merrill Lynch 7-10 Year Asian Dollar Non-Financial Index			0.888		
AN05	The BofA Merrill Lynch 1-10 Year Asian Dollar Non-Financial Index			0.273		
AN06	The BofA Merrill Lynch 5-10 Year Asian Dollar Non-Financial Index			0.617		
ANFN	The BofA Merrill Lynch Asian Dollar Non-Financial Index			0.249		
ANHY	The BofA Merrill Lynch Asian Dollar High Yield Non-Financial Index			0.807		
This listing does not include all customized private label indices						

EJ554202		Download		Index Lookup by Security		
05/17/2013						
Selected Security Information						
Bond Ticker	FLEX	Coupon	5.000	Maturity	02/15/2023	
CUSIP	33938EAR	ISIN	US33938EAR80	Description	FLEXTRONICS INTL	
Face Value	500.000	Composite Rating	BB1	Sector Level 4	Electronics	
Price	102.750	Spread	284			
Included in the following indices for the month of 5/2013						
Ticker	Index Name			Weight		
ACH1	The BofA Merrill Lynch BB Asian Dollar High Yield Index			1.080		
AN04	The BofA Merrill Lynch 7-10 Year Asian Dollar Non-Financial Index			0.888		
ACCY	The BofA Merrill Lynch Asian Dollar High Yield Corporate Constrained Index			0.808		
ANHY	The BofA Merrill Lynch Asian Dollar High Yield Non-Financial Index			0.807		
AC04	The BofA Merrill Lynch 7-10 Year Asian Dollar Corporate Index			0.773		
ACHY	The BofA Merrill Lynch Asian Dollar High Yield Corporate Index			0.713		
EMHA	The BofA Merrill Lynch High Yield Asia Emerging Markets Corporate Plus Index			0.667		

ACCESS INDEX REPORTS

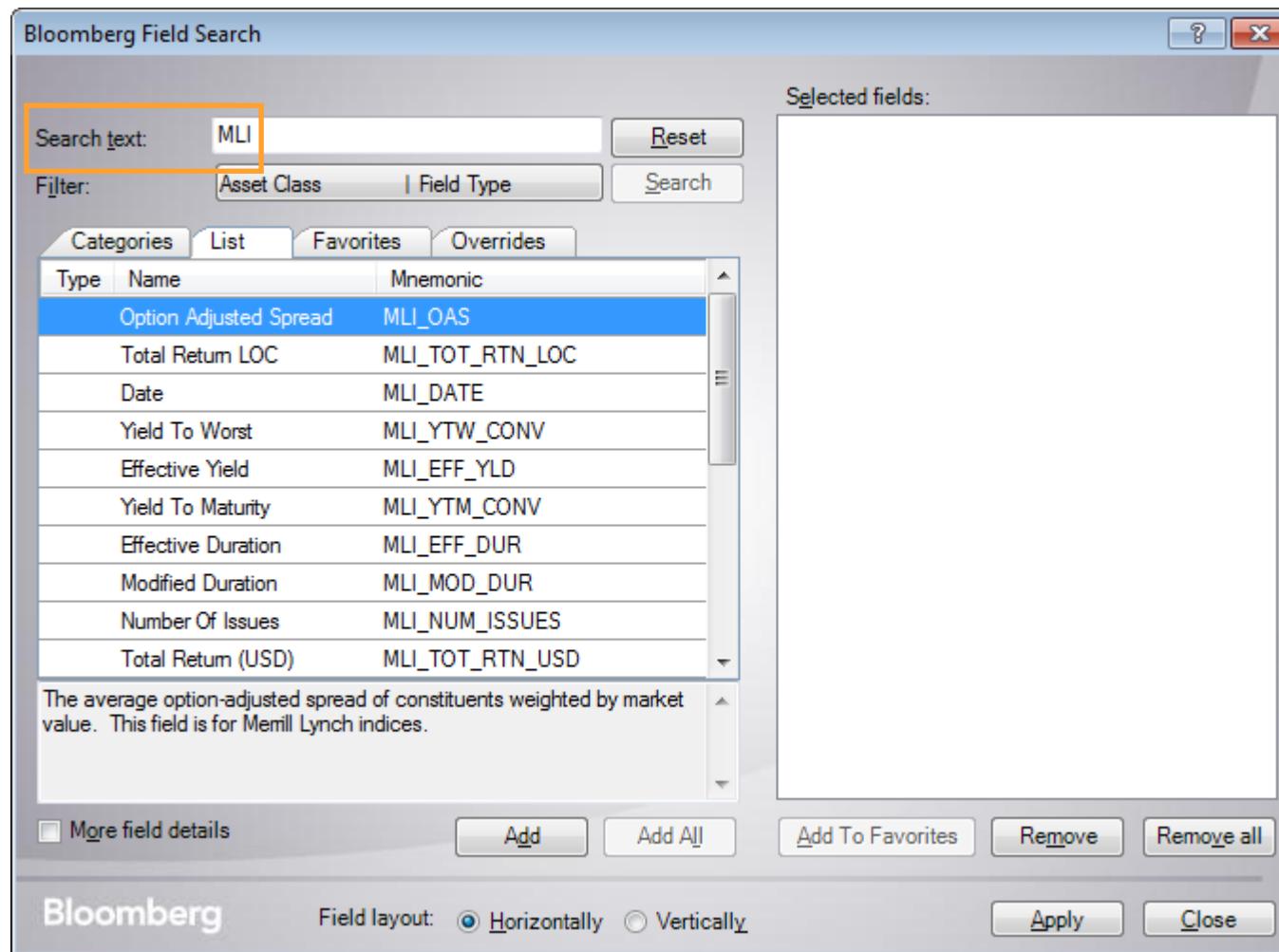
IND23<go>

Use the Index Publications screen to access the library of our regular index publications, such as the monthly index profiles and the projected rebalancing changes reports, the government rich/cheap reports, and the government bond/swap spread reports.

The screenshot shows a search interface with the following details:

- Search bar: 240143 AND BAMC61
- Display & Edit tab is selected.
- Sort: Time Ordered
- Results:
 - 1) Rebalancing Preview: Projected high yield indices
 - 2) Rebalancing Preview: Projected European bond indices
 - 3) Projected Global Government Indices: January rebalancing preview
 - 4) Bond Index Almanac: World Bond Market Growth Trends
 - 5) Rule Change Announcements: Global Diversified IL Index annual country review
 - 6) Bond Index Almanac: Quarterly performance review
 - 7) Bond Indices: Europe high grade profiles
 - 8) Bond Indices: Emerging markets profiles
 - 9) Bond Indices: High yield index profiles
 - 10) Bond Indices: US municipal profiles
 - 11) Bond Indices: U.S. high grade profiles
 - 12) Rebalancing Preview: Projected high yield indices
 - 13) Rebalancing Preview: Projected emerging markets indices
 - 14) Rebalancing Preview: Projected U.S. bond indices
 - 15) Rebalancing Preview: Projected European bond indices
 - 16) Rebalancing Preview: Global Government Index rebalancing changes
 - 17) Commodity Index Methodology: MLCX annual rebalancing changes
 - 18) Commodity Index Methodology: The BofA Merrill Lynch Commodity index eXtra Handb...
 - 19) Bond Indices: Europe high grade profiles
- Right sidebar: Translate to... with a list of BAM reports from 01/27 down to 12/04.

SPECIAL BOFAML FIELD NAMES FOR USE WITH BLOOMBERG API



Source: Bloomberg

IMPORTANT DISCLOSURES

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