

Market Consultation: RAFI™ Bonds Indices

On January 25th, 2023 Research Affiliates published a market consultation regarding changes to the RAFI Bonds Index Series. Following the close of the market consultation, Research Affiliates would like to announce the following changes to the RAFI Bonds Index Series, which will affect the following indices:

1. RAFI Bonds US Investment Grade 1-10 Index
2. RAFI Bonds US High Yield 1-10 Index
3. RAFI Bonds US High Yield 1-10 CAD Hedged Index

Changes to the Index Guideline Effective 3/31/2023

Section 3.2.3

From: “If a qualifying issue in either maturity cell is more than **20%** larger than the held issue in that same cell, the larger issue will replace the held issue at month-end provided that the issue being removed has been in the Index for a minimum of a 12-month holding period. The new issue will receive the same weight as the issue it replaced.”

To: “If a qualifying issue in either maturity cell is more than **100%** larger than the held issue in that same cell, the larger issue will replace the held issue at month-end provided that the issue being removed has been in the Index for a minimum of a 12-month holding period. The new issue will receive the same weight as the issue it replaced.”

Section 3.2.6

From: “If an issue moves between maturity cells (as its tenor decreases) during a month, resulting in two issues within a cell, the longer call-protected tenor is retained at month-end unless the alternative issue is more than **20%** larger subject to the requirements related to bonds trading flat of accrued, liquidity, rating, and call protection. This rule supersedes the minimum 12-month holding period.”

To: “If an issue moves between maturity cells (as its tenor decreases) during a month, resulting in two issues within a cell, the longer call-protected tenor is retained at month-end unless the alternative issue is more than **100%** larger subject to the requirements related to bonds trading

flat of accrued, liquidity, rating, and call protection. This rule supersedes the minimum 12-month holding period.”

Changes to the Index Guideline Effective 2/28/2023

Section 3.3.3

From: “The RAFI Bonds indices are calculated in Total Return format with coupon and other cash payments being reinvested **on a daily basis**. The Total Return Index calculation is performed according to the standard rules:”

$$Index_t = Index_{t-1} \times [1 + \sum_{i=1}^a (TotalReturn_{i,t} \times Weight_{i,t-1})]$$

where:

$$TotalReturn_{i,t} = \frac{(Price_{i,t} + AI_{i,t} + Cash_{i,t} + CPAdj_{i,t}) \times SinkingFactor_{i,t}}{(Price_{i,t-1} + AI_{i,t-1} + CPAdj_{i,t-1}) \times SinkingFactor_{i,t-1}} \times \frac{IR_{i,t}}{IR_{i,t-1}} \\ \times \frac{FX_{i,t}}{FX_{i,t-1}} - 1$$

$$Weight_{i,t-1} = \frac{(Price_{i,t-1} + AI_{i,t-1}) \times SinkingFactor_{i,t-1} \times Amt_{i,SD} \times CF_{i,SD} \times FX_{i,t-1} \times IR_{i,t-1}}{\sum_{i=1}^a (Price_{i,t-1} + AI_{i,t-1}) \times SinkingFactor_{i,t-1} \times Amt_{i,SD} \times CF_{i,SD} \times FX_{i,t-1} \times IR_{i,t-1}}$$

To: “The RAFI Bonds indices are calculated in Total Return format with coupon and other cash payments being reinvested **on a monthly basis**. The Total Return Index calculation is performed according to the standard rules:”

$$Index_t = Index_n \times \frac{MarketValue_t + Cash_t}{BaseValue_n}$$

where:

$$BaseValue_n = \sum_{i=1}^a (Price_{i,n} + AI_{i,n} + CAP_{i,n} + CPAdj_{i,n}) \times SinkingFactor_{i,n} \times Amt_{i,SD} \\ \times CF_{i,SD} \times FX_{i,n} \times IR_{i,n}$$



$$MarketValue_t = \sum_{i=1}^a (Price_{i,t} + AI_{i,t} + CAP_{i,t} + CPAdj_{i,t}) \times SinkingFactor_{i,t} \times Amt_{i,SD} \\ \times CF_{i,SD} \times FX_{i,t} \times IR_{i,t}$$

$$Cash_t = CashCoupon_t + CashSink_t + CashCA_t$$

$$CashCoupon_t = \sum_{i=1}^a CashCoupon_{i,t-1} \\ + \sum_{i=1}^a Coupon_{i,t} \times SinkingFactor_{i,t-1} \times Amt_{i,SD} \times CF_{i,SD} \times FX_{i,t} \times IR_{i,t}$$

$$CashSink_t = \sum_{i=1}^a CashSink_{i,t-1} + \sum_{i=1}^a SinkPayment_{i,t} \times Amt_{i,SD} \times CF_{i,SD} \times FX_{i,t} \times IR_{i,t}$$

$$CashCA_t = \sum_{i=1}^a CashCA_{i,t-1} \\ + \sum_{i=1}^a (RedemptionPrice_{i,t} + AI_{i,t} + CAP_{i,t} \\ + CPAdj_{i,t}) \times SinkingFactor_{i,t-1} \times Amt_{i,SD} \times CF_{i,SD} \times FX_{i,t} \times IR_{i,t}$$

<i>a</i>	Number of bonds in the Index
<i>AI_{i,t}</i>	Interest accrued of bond <i>i</i> on Business Day <i>t</i>
<i>Amt_{i,t}</i>	Amount Outstanding of bond <i>i</i> on Business Day <i>t</i>
<i>BaseValue_n</i>	Base Market Value of the Index as of Rebalance Day <i>n</i>
<i>CAP_{i,t}</i>	Capitalization Rate of bond <i>i</i> on Business Day <i>t</i> (only relevant for Capitalizing Bonds, otherwise the default value is zero)
<i>CF_{i,SD}</i>	Capping factor of bond <i>i</i> on Selection Day : Fixed on the immediately preceding Selection Day and defined as a parameter used to scale the weight of the bond
<i>CPAdj_{i,t}</i>	Variable Coupon Adjustment Factor of bond <i>i</i> on Business Day <i>t</i> : If the bond is included in the Index during the Ex-Dividend Period, the factor is zero; if the bond is a constituent of the Index during the Ex-Dividend Period, the Variable Coupon Adjustment Factor equals to the coupon value that will be paid on the next coupon date (only relevant for bonds with Ex-Dividend Period, otherwise default value is zero)
<i>CashCA_t</i>	Aggregated cash consisting of all repayments resulting from Corporate Actions effective up to and including Business Day <i>t</i>

<i>CashCoupon_t</i>	Aggregated cash consisting of all coupon payments made by the Index Components up to and including Business Day <i>t</i>
<i>CashSink_t</i>	Aggregated cash consisting of all early repayments of all Sinkable Bonds up to and including Business Day <i>t</i>
<i>Cash_t</i>	Aggregated cash consisting of all payments made by the Index Components up to and including Business Day <i>t</i> . In relation to Price Return Indices the term <i>Cash</i> includes cash derived from payments resulting from Corporate Actions and early repayments of Sinkable Bonds, while Total Return Indices reflect coupon payments in addition to that. On the immediately following Rebalance Day, <i>Cash</i> is reinvested into the Index and the value is set to zero
<i>Cash_{i,t}</i>	Cash consisting of all payments made by bond <i>i</i> on Business Day <i>t</i> . On the immediately following Business Day, <i>Cash</i> is reinvested into the Index and the value is set to zero
<i>Coupon_{i,t}</i>	Coupon value of bond <i>i</i> on Business Day <i>t</i>
<i>FX_{i,t}</i>	Exchange rate of bond <i>i</i> currency against the Index Currency on Business Day <i>t</i>
<i>IR_{i,t}</i>	Inflation ratio of bond <i>i</i> on Business Day <i>t</i> (only relevant for Inflation-Linked Bonds, otherwise the default value is one)
<i>Index_t</i>	Index Level on Business Day <i>t</i>
<i>MarketValue_t</i>	Market Value of Index on Business Day <i>t</i>
<i>n</i>	Last Rebalance Day
<i>PriceReturn_{i,t}</i>	Price Return of bond <i>i</i> on Business Day <i>t</i>
<i>Price_{i,t}</i>	Clean Price of bond <i>i</i> on Business Day <i>t</i>
<i>RedemptionPrice_{i,t}</i>	Price at which bond <i>i</i> is redeemed as a result of a Corporate Action effective on Business Day <i>t</i>
<i>SD</i>	Last Selection Day
<i>SinkPayment_t</i>	Value of the early repayment of Sinkable Bond <i>i</i> on Business Day <i>t</i> . The Sink Payment is calculated as: $Sink\ Payment_{i,t} = (SinkingFactor_{i,t-1} - SinkingFactor_{i,t}) \cdot Price_{i,t}$
<i>SinkingFactor_{i,t}</i>	Sinking Fund Factor of bond <i>i</i> on Business Day <i>t</i> (only relevant for Sinkable Bonds, otherwise default value is one)
<i>t</i>	Business Day which is between two regular Rebalance Days
<i>TotalReturn_{i,t}</i>	Total Return of bond <i>i</i> on Business Day <i>t</i>
<i>Weight_{i,t}</i>	Weight of bond <i>i</i> on Business Day <i>t</i>

Please send any questions regarding the changes to RAIndex@rallc.com.



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