

## Canadian Bankers' Acceptance Rate Calculation Methodology

### Bankers' Acceptance Yield Calculation:

**Formula:**

$$IR_i = \left( \frac{100 - PR_i}{PR_i} \right) * \left( \frac{365}{Term} \right)$$

**Where:**

*IR<sub>i</sub>* = money market yield to maturity, simple interest for Trade *i*

*PR<sub>i</sub>* = clean price for Trade *i*

*Term* = Maturity Date – Settlement Date, number of days

The convention for money market securities is to round yields to two (2) decimal places.

**Data:**

The data used to calculate the Bankers' Acceptance rates are transactional based data delivered daily to IIROC via the Market Trade Reporting System (MTRS 2.0) as required by IIROC Rule 2800C.

### Observable Trade Data Calculation Method for BA 1mth<sub>T+0</sub>:

**Formula:**

$$BA\ 1mth_{T+0} = \left( \sum_i^n NV_i * IR_i \right) / \sum_i^n NV_i$$

**Where:**

*NV<sub>i</sub>* = Notional Value of Trade *i*

*IR<sub>i</sub>* = Interest Rate of Trade *i*

The calculated yield or rate is rounded to five (5) decimal places.

**Criteria for trade inclusion in the calculation:**

BA Trades [filter for BoC\_Category marker = "BA"]

Canadian Currency

Secondary Market Trades [filter for PrimaryMarket marker = "N"]

Buy side (from the counterparty's perspective) [filter for Side marker = "Buy"]

Only Non-Related Party trades are included [filter for RelatedParty marker = "N"]

Minimum Notional: \$1,000,000 [Quantity marker > \$1,000,000]

Maximum Notional: \$10,000,000,000 [Quantity marker < \$10,000,000,000]

Trades with yields must be with the following range: >90% \* Median Rate and <110% \* Median Rate  
 1 month Bucket: Trades with maturity within the range, inclusive of the Start and End Dates.

1 month Date: Execution Date + 1 month, if not a Business Day, then next Business Day

Formula: 1mth Date = WORKDAY(EDATE(Execution Date,1)-1,1,Holidays)

Start of Range: 1 month Date – 5 Business Days

Formula: Start of Range =WORKDAY(1mth Date,-5,Holidays)

End of Range: 1 month Date + 5 Business Days

Formula: Start of Range =WORKDAY(1mth Date,+5,Holidays)

### Calculated rate validity check:

Minimum total notional volume threshold: \$25,000,000

AND

Minimum number of trades used in calculation: 5

If both of the above criteria are not met, an Observable Trade Data Calculation Method is deemed not feasible for the given day, and the waterfall approach will be used to calculate a rate to be published for the BA 1mth<sub>T+0</sub>.

### Observable Trade Data Calculation Method for BA 3mth<sub>T+0</sub>:

#### Formula:

$$BA\ 3mth_{T+0} = \left( \sum_i^n NV_i * IR_i \right) / \sum_i^n NV_i$$

Where:

$NV_i$  = Notional Value of Trade  $i$

$IR_i$  = Interest Rate of Trade  $i$

The calculated yield or rate is rounded to five (5) decimal places.

#### Criteria for trade inclusion in the calculation:

BA Trades [BoC\_Category marker = "BA"]

Canadian Currency

Secondary Market Trades [PrimaryMarket marker = "N"]

Buy side (from the counterparty's perspective) [Filter for Side marker = "Buy"]

Only Non-Related Party trades are included [filter for RelatedParty marker = "N"]

Minimum Notional: \$1,000,000 [Quantity marker > \$1,000,000]

Maximum Notional: \$10,000,000,000 [Quantity marker < \$10,000,000,000]

Trades with yields must be with the following range: >90% \* Median Rate and <110% \* Median Rate

3 month Bucket: Trades with maturity within the range, inclusive of the Start and End Dates  
 3 month Date: Execution Date + 3 months, if not a Business Day, then next Business Day  
 Formula: 3mth Date = WORKDAY(EDATE(Execution Date,3)-1,1,Holidays)

Start of Range: 3 month Date – 10 Business Days  
 Formula: Start of Range =WORKDAY(3mth Date,-10,Holidays)

End of Range: 3 month Date + 10 Business Days  
 Formula: Start of Range =WORKDAY(3mth Date,+10,Holidays)

### **Calculated rate validity check:**

Minimum total notional volume threshold: \$25,000,000

AND

Minimum number of trades used in calculation: 5

If both of the above criteria are not met, an Observable Trade Data Calculation Method is deemed not feasible for the given day, and the waterfall approach will be used to calculate a rate to be published for the BA 3mth<sub>T+0</sub>.

### **BA Rate Calculation Waterfall (Initial Release):**

#### **Waterfall approach for calculating a rate:**

##### **Stage 1: Observable Trade Data Calculation Method**

As detailed above, this is referred to as calculation method #1.

##### **Stage 2: Revert to prior days BA rate**

In any instance where a rate cannot be derived using the Observable Trade Data Calculation Method, then the prior days rate will be republished as the current rate. This is referred to a calculation method #4.

#### **Formula:**

$$BA\ 1mth_{T+0} = BA\ 1mth_{T-1}$$

$$BA\ 3mth_{T+0} = BA\ 3mth_{T-1}$$

## **BA Rate Calculation Waterfall (Future Release; date to be determined):**

**Waterfall approach for calculating a rate:**

### **Stage 1: Observable Trade Data Calculation Method**

As detailed above, this is referred to as calculation method #1.

### **Stage 2: Rate set using other tenor**

In any instance where a rate cannot be derived using Observable Trade Data Calculation Method, then a rate will be calculated by taking the previous days rate and adjusting it for absolute movement in the rate calculated for the other term using the Observable Trade Data Calculation Method. This is referred to as calculation method #2.

**Formula:**

$$BA\ 1mth_{T+0} = BA\ 1mth_{T-1} + (BA\ 3mth_{T+0} - BA\ 3mth_{T-1})$$

$$BA\ 3mth_{T+0} = BA\ 3mth_{T-1} + (BA\ 1mth_{T+0} - BA\ 1mth_{T-1})$$

### **Stage 3: Rate set using movement in BAX futures**

In any instance where a rate cannot be derived using Stage 1 or 2, then a rate will be calculated by taking the previous days rate and adjusting it for absolute movement in the daily closing price of the active Three-Month Canadian Bankers' Acceptance Futures (BAX) contract that trades on the TMX Montreal Exchange. This is referred to as calculation method #3.

**Formula:**

$$BA\ 1mth_{T+0} = BA\ 1mth_{T-1} + ((100 - BAX_{T+0}) - (100 - BAX_{T-1}))$$

Where **BAX** refers to the price of the active Three-Month Canadian Bankers' Acceptance Futures (BAX) contract that trades on the TMX Montreal Exchange.

$$BA\ 3mth_{T+0} = BA\ 3mth_{T-1} + ((100 - BAX_{T+0}) - (100 - BAX_{T-1}))$$

Where **BAX** refers to the price of the active Three-Month Canadian Bankers' Acceptance Futures (BAX) contract that trades on the TMX Montreal Exchange.

### **Stage 4: Revert to prior days BA rate**

In any instance where a rate cannot be derived using Stage 1, 2 or 3, then the prior days rate will be republished as the current rate. This is referred to as calculation method #4.

**Formula:**

$$BA\ 1mth_{T+0} = BA\ 1mth_{T-1}$$

$$BA\ 3mth_{T+0} = BA\ 3mth_{T-1}$$