



API Manual **Yield Curve**

The Thai Bond Market Association

October 19, 2023

Revision History

Revision No.	Revision Date	Revised By	Details of Revision
V1.0	30/02/2020	Phantira Suksomnirundon	Initial Document
V1.2	15/05/2020	Phantira Suksomnirundon	The frequency of data for the Credit Spread Curve will be changed to 4 times per month
V1.3	31/07/2023	Phantira Suksomnirundon	Configure the system to filter data for the past 30 days
V1.4	06/01/2024	Phantira Suksomnirundon	Add Par Bond Yield Curve

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Zero-Coupon Yield Curve

POST /api/v1/yield-curve/zero

Description: Zero Coupon Yield Curve.

Frequency: Daily.

Release schedule: When published zero-coupon yield curve on the iBond website.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T04:22:28.867Z",
  "end_period": "2023-11-30T04:22:28.867Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
ttm	number	(6,15)	Time to maturity: Settlement time until expiration (years)	0.076712
yield	number	(6,15)	Yield	1.76268054275908

Reference Bond for Zero Coupon Yield Curve

POST /api/v1/yield-curve/ref-zero

Description: Reference Bond for Zero Coupon Yield Curve.

Frequency: Daily.

Release schedule: When published zero-coupon yield curve on the iBond website.

Remark:

1. The yields are based upon average bids quoted by primary dealers, after a 15% data cut-off from top and bottom when ranked by value.
2. Average bidding yields of 1-month, 3-month, 6-month, and 1-year T-bills are bond equivalent yield converted from average simple yields.
3. The spreads (bp) are differences between bid and offer yields.
4. The cut-off time for daily quotation of T-bills and Government bonds is 16:00.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T04:23:10.523Z",
  "end_period": "2023-11-30T04:23:10.523Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
symbol	string	15	ThaiBMA bond symbol	T-BILL1M
avg_bid_yield	number	(6,6)	Average bidding yield	1.754981

Parameter name	Data type	Length	Description	Example
chg_yield	number	(6,6)	Change of average bidding yield compared with the previous day (6 decimal points)	0.0022
avg_bidoffer_spread	number	(6,6)	Average bid-offer spread	8.0426
maturity_date	datetime	19	Maturity date	
ttm	number	(6,6)	Time to maturity: as of time until expiration (years)	0.076712328767123

Government Bond Yield Curve (Based on TTM)

POST /api/v1/yield-curve/gov-ttm

Description: Government Bond Yield Curve (Based on TTM).

Frequency: Daily.

Release schedule: When published Government Bond Yield Curve (Based on TTM) on the iBond website.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T04:26:19.999Z",
  "end_period": "2023-11-30T04:26:19.999Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
ttm	number	(6,15)	Time to maturity: Settlement time until expiration (years)	0.076712328767123
yield	number	(6,15)	Yield	1.7549808849926

Reference Bond for Government Bond Yield Curve (Based on TTM)

POST /api/v1/yield-curve/ref-gov-ttm

Description: Reference Bond for Government Bond Yield Curve (Based on TTM).

Frequency: Daily.

Release schedule: When published government bond yield curve (Based on TTM) on the iBond website.

Remark:

1. The yields are based upon average bids quoted by primary dealers, after a 15% data cut-off from top and bottom when ranked by value.
2. Average bidding yields of 1-month, 3-month, 6-month, and 1-year T-bills are bond equivalent yield converted from average simple yields.
3. Spreads (bp) are differences in the bid and offer yields.
4. The cut-off time for daily quotation of T-bills and Government bonds is 16:00.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T04:33:52.479Z",
  "end_period": "2023-11-30T04:33:52.479Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
symbol	string	1a 5	ThaiBMA bond symbol	T-BILL1M
avg_bid_yield	number	(6,6)	Average bidding yield	1.754981

Parameter name	Data type	Length	Description	Example
chg_yield	number	(6,6)	Change of average bidding yield compared with the previous day (6 decimal points)	0.0022
avg_bidoffer_spread	number	(6,6)	Average bid-offer spread	8.0426
maturity_date	datetime	19	Maturity date	
ttm	number	(6,6)	Time to maturity: as of time until expiration (years)	0.076712328767123

Government Bond Yield Curve (Based on Duration)

POST /api/v1/yield-curve/gov-duration

Description: Government Bond Yield Curve (Based on duration).

Frequency: Daily.

Release schedule: When published Government Bond Yield Curve (Based on duration) on the iBond website.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T04:34:11.070Z",
  "end_period": "2023-11-30T04:34:11.070Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
duration	number	(6,15)	Modified duration (years)	0.076045
yield	number	(6,15)	yield	1.7549808849926

Reference Bond for Government Bond Yield Curve (Based on Duration)

POST /api/v1/yield-curve/ref-gov-duration

Description: Reference Bond for Government Bond Yield Curve (Based on duration).

Frequency: Daily

Release schedule: When published government bond yield curve (Based on duration) on the iBond website.

Remark:

1. The yields are based upon average bids quoted by primary dealers, after 15% data cut-off from top and bottom when ranked by value.
2. Average bidding yields of 1-month, 3-month, 6-month, and 1-year T-bills are bond equivalent yield converted from average simple yields.
3. The spreads (bp) are differences between bid and offer yields.
4. The cut-off time for daily quotation of T-bills and Government bonds is 16:00.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T04:34:52.205Z",
  "end_period": "2023-11-30T04:34:52.205Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
symbol	string	15	ThaiBMA bond symbol	T-BILL1M
avg_bid_yield	number	(6,6,)	Average bidding yield	1.754981

Parameter name	Data type	Length	Description	Example
chg_yield	number	(6,6)	Change of average bidding yield compared with the previous day (6 decimal points)	0.0022
avg_bidoffer_spread	number	(6,6)	Average bid-offer spread	8.0426
maturity_date	datetime	19	Maturity date	
duration	number	(6,6)	Modified duration (years)	0.076045

Par Bond Yield Curve

POST /api/v1/yield-curve/par-bond

Description: Par Bond Yield Curve

Frequency: Daily

Release schedule: Published corporate bond yield curve on the iBond website.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T07:44:47.635Z",
  "end_period": "2023-11-30T07:44:47.635Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2020-11-02T00:00:00
ttm_code	number	(18,2)	Time to maturity: as of time until expiration	0.5
coupon_rate	number	(18,15)	Coupon rate based on TTM	0.525241843526997

Corporate Bond Yield Curve

POST /api/v1/yield-curve/corp

Description: The Corporate Bond Yield Curve is divided by rating between AAA to BBB.

Frequency: Daily

Release schedule: Published corporate bond yield curve on the iBond website.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T04:39:36.465Z",
  "end_period": "2023-11-30T04:39:36.465Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-07T00:00:00
ttm_code	string	15	Time to maturity: as of time until expiration	1-Month
AAA_yield	number	(6,15)	Corporate bond yield with a rating AAA	1.9800893517519
AA_plus_yield	number	(6,15)	Corporate bond yield with a rating AA+	2.0011241566436
AA_yield	number	(6,15)	Corporate bond yield with a rating AA	2.011024849011
AA_minus_yield	number	(6,15)	Corporate bond yield with a rating AA-	2.0220553586854
A_plus_yield	number	(6,15)	Corporate bond yield with a rating A+	2.0631045266783
A_yield	number	(6,15)	Corporate bond yield with a rating A	2.1069380267766
A_minus_yield	number	(6,15)	Corporate bond yield with a rating A-	2.1987210240444
BBB_plus_yield	number	(6,15)	Corporate bond yield with a rating BBB+	2.9417363699752

Parameter name	Data type	Length	Description	Example
BBB_yield	number	(6,15)	Corporate bond yield with a rating BBB	3.766572275387

Corporate Average Spread (Based on TTM)

POST /api/v1/yield-curve/corp/avg-spread-ttm

Description: Corporate Average Spread (Based on TTM)

Frequency: Daily

Release schedule: Published corporate average spread on theiBond website.

Remark:

1. Each rating group includes all signs. For example, the AA group consists of rating AA+, AA, and AA-.
2. Averaged Spread is a simple average of spreads.
3. Blank means there are no bonds in the criteria.
4. Averaged maturity means the average of average maturities of all bonds in the criteria.
5. Averaged maturity of each bond is calculated from: $\text{sum}(\text{principal} * \text{time}) / \text{sum}(\text{principals})$.
6. Since June 15, 2020, the corporate average spread data will be shown with 10 rating groups (AAA, AA+, AA, AA-, AA, A+, A, A-, BBB, BBB, and BBB-), while the historical data before such date will be displayed with 4 rating groups (AAA, AA, A, and BBB). This change is possible due to the more liquid nature of The Thai bond market.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	“yyyy-mm-dd”
end_period	String	End date	“yyyy-mm-dd”

Example value:

```
{
  "start_period": "2023-11-30T04:41:58.443Z",
  "end_period": "2023-11-30T04:41:58.443Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
rating_group	string	15	Corporate bond rating group	A
avg_spread_3	number	(6,15)	Simple average of corporate spreads TTM \leq 3 years	75.9422761072191
avg_spread_3to5	number	(6,15)	Simple average of corporate spreads TTM 3-5 years	124.56016212476
avg_spread_5	number	(6,15)	Simple average of corporate spreads TTM > 5 years	146.129117908029
sd_3	number	(6,15)	The Standard deviation of corporate bonds TTM \leq 3 years	27.5627298004486
sd_3to5	number	(6,15)	The Standard deviation of corporate bonds TTM 3-5 years	18.3696553859303
sd_5	number	(6,15)	The Standard deviation of corporate bonds TTM > 5 years	21.5708299421656
avg_maturity_3	number	(6,15)	The average maturities of all corporate bonds TTM \leq 3 years	1.43950788785047
avg_maturity_3to5	number	(6,15)	The average maturities of all corporate bonds TTM 3-5 years	3.85150634545455
avg_maturity_5	number	(6,15)	The average maturities of all corporate bonds TTM > 5 years	7.613312859375

Corporate Average Spread (Based on Duration)

POST /api/v1/yield-curve/corp/avg-spread-duration

Description: Corporate Average Spread (Based on Duration).

Frequency: Daily

Release schedule: Published corporate average spread on the iBond website.

Remark:

1. Each rating group includes all signs. For example, the AA group consists of ratings AA+, AA and AA-.
2. Averaged Spread is simple average of spreads.
3. Blank means there is no bonds in the criteria.
4. Averaged maturity means the average of average maturities of all bonds in the criteria.
5. Averaged maturity of each bond is calculated from: $\text{sum}(\text{principal} * \text{time}) / \text{sum}(\text{principals})$.
6. Since June 15, 2020, the corporate average spread data will be shown with 10 rating groups (AAA, AA+, AA, AA-, AA, A+, A, A-, BBB+, BBB, BBB-), while the historical data before such date will be displayed with 4 rating groups (AAA, AA, A, BBB). This change is possible due to the more liquid nature of Thai bond market.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	“yyyy-mm-dd”
end_period	String	End date	“yyyy-mm-dd”

Example value:

```
{
  "start_period": "2023-11-30T04:43:49.147Z",
  "end_period": "2023-11-30T04:43:49.147Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
rating_group	string	15	Corporate bond rating group	A
avg_spread_3	number	(6,15)	The Simple average of corporate spreads TTM \leq 3 years	78.300282512392
avg_spread_3to5	number	(6,15)	The Simple average of corporate spreads TTM 3-5 years	129.411028264911
avg_spread_5	number	(6,15)	The Simple average of corporate spreads TTM > 5 years	149.869774755069
sd_3	number	(6,15)	The Standard deviation of corporate bonds TTM \leq 3 years	28.7058017979491
sd_3to5	number	(6,15)	The Standard deviation of corporate bonds TTM 3-5 years	17.7583945629016
sd_5	number	(6,15)	The Standard deviation of corporate bonds TTM > 5 years	24.055162275193
avg_maturity_3	number	(6,15)	The average maturities of all corporate bonds TTM \leq 3 years	1.52905757522124
avg_maturity_3to5	number	(6,15)	The average maturities of all corporate bonds TTM 3-5 years	4.24136486885246
avg_maturity_5	number	(6,15)	The average maturities of all corporate bonds TTM > 5 years	8.10779717307692

Corporate Average Spread, spread by Issue (Based on TTM)

POST /api/v1/yield-curve/corp/spread-ttm

Description: Corporate Average Spread, spread by Issue (Based on TTM).

Frequency: Daily

Release schedule: When published corporate average spread on iBond website.

Remark:

1. Bonds are selected according to the following criteria:
 - 1.1 Fixed rate coupon payments.
 - 1.2 Rating included.
2. Avg. Maturity is calculated using the following formula: $\text{sum}(\text{principal} * \text{time}) / \text{sum}(\text{principals})$.
3. Interpolated Yield is the yield of government bonds of the same TTM (or Duration).
4. Spread is the spread over the interpolated yield.
5. Change is the change of spread from the previous n days.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T07:22:29.878Z",
  "end_period": "2023-11-30T07:22:29.878Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
rating	string	15	Bond issue rating	AA+
symbol	string	16	ThaiBMA bond symbol	AWN244A

Parameter name	Data type	Length	Description	Example
ttm	number	(6,15)	Time to maturity: as of time until expiration (years)	0.756164383561644
spread	number	(6,15)	Spread over the interpolated yield (bp)	46.2005516483517
avg_maturity	number	(6,15)	The Average maturity of the corporate bond (6 decimal points)	0.756164
interpolated_yield_ttm	number	(6,15)	Yield of a government bond of the same TTM (%)	2.02164648351648
chg_1day	number	(6,15)	Change of spread from the previous day	-0.0076071428571
chg_7day	number	(6,15)	Change of spread from the previous 7 days	0.0875917582418
chg_30days	number	(6,15)	Change of spread from the previous 30 days	0.0139043956044

Corporate Average Spread, Spread by Issue (Based on Duration)

POST /api/v1/yield-curve/corp/spread-duration

Description: Corporate Average Spread, Spread by Issue (Based on Duration).

Frequency: Daily

Release schedule: When published corporate average spread on iBond website.

Remark:

1. Bonds are selected according to the following criteria:
 - 1.1 Fixed rate coupon payments.
 - 1.2 Rating included.
2. Avg. Maturity is calculated using the following formula: $\text{sum}(\text{principal} * \text{time}) / \text{sum}(\text{principals})$.
3. Interpolated Yield is the yield of a government bond of the same TTM (or Duration).
4. Spread is the spread over the interpolated yield.
5. Change is the change of spread from the previous n days.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T07:37:46.738Z",
  "end_period": "2023-11-30T07:37:46.738Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
rating	string	15	Bond issue rating	AA+
symbol	string	16	ThaiBMA bond symbol	AWN244A

Parameter name	Data type	Length	Description	Example
duration	number	(6,15)	Macaulay duration	0.731065
spread	number	(6,15)	Spread over the interpolated yield (bp)	46.3490499437677
avg_maturity	number	(6,15)	Average maturity of the corporate bond (6 decimal points)	0.756164
interpolated_yield_duration	number	(6,15)	Yield of government bond of the same TTM (%)	2.02016150056232
chg_1day	number	(6,15)	Change of spread from the previous day	-0.0128163542938
chg_7day	number	(6,15)	Change of spread from the previous 7 days	0.0902239737497
chg_30days	number	(6,15)	Change of spread from the previous 30 days	-0.0312757324583

Credit Spread Curve

POST /api/v1/yield-curve/credit-spread

Description: Credit Spread Curve for Corporate Bond TTM between 0 - 10 years is divided by rating between AAA to BBB.

Frequency: Daily

Release schedule: When published corporate average spread on iBond website.

Request body (Method: POST)

Parameter name	Data type	Description	Format
start_period	String	Start date	"yyyy-mm-dd"
end_period	String	End date	"yyyy-mm-dd"

Example value:

```
{
  "start_period": "2023-11-30T07:40:00.112Z",
  "end_period": "2023-11-30T07:40:00.112Z"
}
```

Responses:

Code	Description
200	Success
400	Bad request
401	Unauthorized
500	Internal server error

Details:

Parameter name	Data type	Length	Description	Example
asof	datetime	19	Data as of yyyy-mm-dd	2023-07-07T00:00:00
ttm	string	15	Time to maturity: as of time until expiration	0
AAA_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of AAA	20.6695825
AA_plus_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of AA+	21.6695825
AA_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of AA	22.6695825
AA_minus_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of AA-	23.7837552

Parameter name	Data type	Length	Description	Example
A_plus_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of A+	27.1753852
A_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of A	31.6044321
A_minus_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of A-	40.8815284
BBB_plus_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of BBB+	115.7388166
BBB_spread	number	(6,15)	Credit spread curve of corporate bonds with a rating of BBB	199.6057206