



# API Manual Yield Curve

The Thai Bond Market Association

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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
<b>start_period</b>	String	Start date	"yyyy-mm-dd"
<b>end_period</b>	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
<b>asof</b>	datetime	19	Data as of yyyy-mm-dd	2023-07-10T00:00:00
<b>duration</b>	number	(6,15)	Modified duration (years)	0.076045
<b>yield</b>	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
tmm_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
<b>ttm</b>	number	(6,15)	Time to maturity: as of time until expiration (years)	0.756164383561644
<b>spread</b>	number	(6,15)	Spread over the interpolated yield (bp)	46.2005516483517
<b>avg_maturity</b>	number	(6,15)	The Average maturity of the corporate bond (6 decimal points)	0.756164
<b>interpolated_yield_ttm</b>	number	(6,15)	Yield of a government bond of the same TTM (%)	2.02164648351648
<b>chg_1day</b>	number	(6,15)	Change of spread from the previous day	-0.0076071428571
<b>chg_7day</b>	number	(6,15)	Change of spread from the previous 7 days	0.0875917582418
<b>chg_30days</b>	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
<b>duration</b>	number	(6,15)	Macaulay duration	0.731065
<b>spread</b>	number	(6,15)	Spread over the interpolated yield (bp)	46.3490499437677
<b>avg_maturity</b>	number	(6,15)	Average maturity of the corporate bond (6 decimal points)	0.756164
<b>interpolated_yield_duration</b>	number	(6,15)	Yield of government bond of the same TTM (%)	2.02016150056232
<b>chg_1day</b>	number	(6,15)	Change of spread from the previous day	-0.0128163542938
<b>chg_7day</b>	number	(6,15)	Change of spread from the previous 7 days	0.0902239737497
<b>chg_30days</b>	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
<b>A_plus_spread</b>	number	(6,15)	Credit spread curve of corporate bonds with a rating of A+	27.1753852
<b>A_spread</b>	number	(6,15)	Credit spread curve of corporate bonds with a rating of A	31.6044321
<b>A_minus_spread</b>	number	(6,15)	Credit spread curve of corporate bonds with a rating of A-	40.8815284
<b>BBB_plus_spread</b>	number	(6,15)	Credit spread curve of corporate bonds with a rating of BBB+	115.7388166
<b>BBB_spread</b>	number	(6,15)	Credit spread curve of corporate bonds with a rating of BBB	199.6057206