

Treasury Bills Index Construction Methodology

T-Bills Index is constructed to be a benchmark of the movement and return for investing in all Treasury Bills in the Thai market. It replicates all available T-Bills into one synthetic bond by weighted-averaged by their outstanding units.

Calculation Example

January 02, 2002

Criteria to choose T-Bills into the basket

- 1) Outstanding Unit is not equal to zero on today **and** last working day
- 2) If duration < 1Month (or 28/365 year), use zero yield on the day its duration = 1M (if the day is holiday, use the earlier working day)

ASOF	ISSUE	TTM	zeroyield	par	unit	PV*Unit
02-01-02 0:00	TB02123B	0.057534247	2.155742962*	1000	5000000	4,993,868,209
02-01-02 0:00	TB02130B	0.076712329	2.022811323**	1000	2000000	1,996,929,839
02-01-02 0:00	TB02206A	0.095890411	2.042701219	1000	5000000	4,990,314,308
02-01-02 0:00	TB02213A	0.115068493	2.062511557	1000	5000000	4,988,267,998
02-01-02 0:00	TB02220A	0.134246575	2.082162782	1000	5000000	4,986,186,470
02-01-02 0:00	TB02227A	0.153424658	2.101575337	1000	5000000	4,984,070,822
02-01-02 0:00	TB02306A	0.17260274	2.120669668	1000	5000000	4,981,922,447
02-01-02 0:00	TB02313A	0.191780822	2.139366218	1000	5000000	4,979,743,034
02-01-02 0:00	TB02320A	0.210958904	2.15758543	1000	5000000	4,977,534,566
02-01-02 0:00	TB02327A	0.230136986	2.17524775	1000	5000000	4,975,299,316
02-01-02 0:00	TB02403A	0.249315069	2.19227362	1000	5000000	4,973,039,854
02-01-02 0:00	TB02410A	0.268493151	2.208599885	1000	3000000	2,982,455,293
02-01-02 0:00	TB02424A	0.306849315	2.239179992	1000	3000000	2,979,683,768
02-01-02 0:00	TB02508A	0.34520548	2.267122978	1000	5000000	4,961,455,158
02-01-02 0:00	TB02522A	0.383561644	2.292580176	1000	5000000	4,956,717,554
02-01-02 0:00	TB02529A	0.402739726	2.304423897	1000	5000000	4,954,332,280
02-01-02 0:00	TB02605A	0.421917808	2.315702921	1000	3000000	2,971,162,633
02-01-02 0:00	TB02619A	0.460273973	2.336642544	1000	3000000	2,968,275,249
02-01-02 0:00	TB02703A	0.498630137	2.355550381	1000	5000000	4,942,289,222
						83,543,548,020

* TB02123B: 1M Zero Yield as of 26/12/2001 = 2.155742962 %

** TB02130B: 1M Zero Yield as of 02/01/2002 = 2.022811323 %

TBill-Index = 100

January 03, 2002

Criteria to choose T-Bills into the basket

- 1) Outstanding Unit is not equal to zero on today **and** last working day
- 2) If duration < 1Month (or 28/365 year), use zero yield on the day its duration = 1M (if the day is holiday, use the earlier working day)

ASOF	ISSUE	Duration	zeroyield	par	Unit(t-1)	PV * Unit(t-1)
03-01-02 0:00	TB02123B*	0.054794521	2.155742962	1000	5000000	4,994,160,028
03-01-02 0:00	TB02130B**	0.073972603	2.022811323	1000	2000000	1,997,039,407
03-01-02 0:00	TB02206A	0.093150685	2.025660608	1000	5000000	4,990,668,420
03-01-02 0:00	TB02213A	0.112328767	2.045751411	1000	5000000	4,988,639,038

03-01-02 0:00	TB02220A	0.131506849	2.065692596	1000	5000000	4,986,573,808
03-01-02 0:00	TB02227A	0.150684932	2.085403601	1000	5000000	4,984,473,797
03-01-02 0:00	TB02306A	0.169863014	2.104803863	1000	5000000	4,982,340,376
03-01-02 0:00	TB02313A	0.189041096	2.123812819	1000	5000000	4,980,175,212
03-01-02 0:00	TB02320A	0.208219178	2.142349907	1000	5000000	4,977,980,268
03-01-02 0:00	TB02327A	0.22739726	2.160334563	1000	5000000	4,975,757,809
03-01-02 0:00	TB02403A	0.246575343	2.177686226	1000	5000000	4,973,510,391
03-01-02 0:00	TB02410A	0.265753425	2.194334786	1000	3000000	2,982,744,439
03-01-02 0:00	TB02424A	0.304109589	2.225525042	1000	3000000	2,979,985,595
03-01-02 0:00	TB02508A	0.342465753	2.25403353	1000	5000000	4,961,977,405
03-01-02 0:00	TB02522A	0.380821918	2.280013267	1000	5000000	4,957,257,316
03-01-02 0:00	TB02529A	0.4	2.292102672	1000	5000000	4,954,880,240
03-01-02 0:00	TB02605A	0.419178082	2.303617271	1000	3000000	2,971,496,127
03-01-02 0:00	TB02619A	0.457534247	2.324998557	1000	3000000	2,968,617,638
03-01-02 0:00	TB02703A	0.495890411	2.344310143	1000	5000000	4,942,873,666
						83,551,150,982

* TB02123B: 1M Zero Yield as of 26/12/2001 = 2.155742962 %

** TB02130B: 1M Zero Yield as of 02/01/2002 = 2.022811323 %

$$\text{Return on 1 day holding} = \frac{\sum_{n=1}^N \left[\frac{\text{Par}_n \times \text{Unit}_{t-1}(n)}{(1 + Y_t(T_n))^{(T_n)}} \right]}{\sum_{n=1}^N \left[\frac{\text{Par}_n \times \text{Unit}_{t-1}(n)}{(1 + Y_{t-1}(T_n - 1))^{(T_n - 1)}} \right]} = \frac{83,551,150,982}{83,543,548,020} = 1.00009100596942$$

$$\text{TBill-Index} = \frac{100}{1} * 1.00009100596942 = 100.009100596942$$

January 04, 2002

Criteria to choose T-Bills into the basket

- 3) Outstanding Unit is not equal to zero on today **and** last working day
- 4) If duration < 1Month (or 28/365 year), use zero yield on the day its duration = 1M (if the day is holiday, use the earlier working day)

ASOF	ISSUE	Duration	zeroyield	par	Unit(t-1)	PV*Unit
04-01-02 0:00	TB02123B*	0.0520548	2.155743	1000	5000000	4,994,451,865
04-01-02 0:00	TB02130B**	0.0712329	2.0228113	1000	2000000	1,997,148,980
04-01-02 0:00	TB02206A	0.090411	1.9967576	1000	5000000	4,991,070,481
04-01-02 0:00	TB02213A	0.109589	2.02019	1000	5000000	4,989,052,797
04-01-02 0:00	TB02220A	0.1287671	2.0434511	1000	5000000	4,986,993,101
04-01-02 0:00	TB02227A	0.1479452	2.0664411	1000	5000000	4,984,892,662
04-01-02 0:00	TB02306A	0.1671233	2.0890601	1000	5000000	4,982,753,123
04-01-02 0:00	TB02313A	0.1863014	2.1112082	1000	5000000	4,980,576,495
04-01-02 0:00	TB02320A	0.2054795	2.1327856	1000	5000000	4,978,365,161
04-01-02 0:00	TB02327A	0.2246575	2.1536922	1000	5000000	4,976,121,870
04-01-02 0:00	TB02403A	0.2438356	2.1738284	1000	5000000	4,973,849,739
04-01-02 0:00	TB02410A	0.2630137	2.1931016	1000	3000000	2,982,931,292
04-01-02 0:00	TB02424A	0.3013699	2.2290272	1000	3000000	2,980,134,539
04-01-02 0:00	TB02508A	0.339726	2.2616167	1000	5000000	4,962,155,421
04-01-02 0:00	TB02522A	0.3780822	2.2910616	1000	5000000	4,957,361,054
04-01-02 0:00	TB02529A	0.3972603	2.3046646	1000	5000000	4,954,946,170
04-01-02 0:00	TB02605A	0.4164384	2.3175534	1000	3000000	2,971,512,982
04-01-02 0:00	TB02619A	0.4547945	2.3412835	1000	3000000	2,968,589,719
04-01-02 0:00	TB02703A	0.4931507	2.3624435	1000	5000000	4,942,755,620
					84000000	83,555,663,071

* TB02123B: 1M Zero Yield as of 26/12/2001 = 2.155742962 %
 ** TB02130B: 1M Zero Yield as of 02/01/2002 = 2.022811323 %

$$\text{Return on 1 day holding} = \frac{\sum_{n=1}^N \left[\frac{\text{Par}_n \times \text{Unit}_{t-1}(n)}{(1 + Y_t(T_n))^{(T_n)}} \right]}{\sum_{n=1}^N \left[\frac{\text{Par}_n \times \text{Unit}_{t-1}(n)}{(1 + Y_{t-1}(T_n - 1))^{(T_n - 1)}} \right]} = \frac{83,555,663,071}{83,551,150,982} = 1.00005400391199$$

$$\text{TBill-Index} = 100.009100596942 * 1.00005400391199 = 100.01450147961$$

January 07, 2002

Criteria to choose T-Bills into the basket

- 5) Outstanding Unit is not equal to zero on today **and** last working day
- 6) If duration < 1Month (or 28/365 year), use zero yield on the day its duration = 1M (if the day is holiday, use the earlier working day)

ASOF	ISSUE	Duration	zeroyield	par	unit	PV*Unit
07-01-02 0:00	TB02123B	0.0438356	2.155743	1000	5000000	4,995,327,477
07-01-02 0:00	TB02130B	0.0630137	2.0228113	1000	2000000	1,997,477,737
07-01-02 0:00	TB02206A	0.0821918	1.9032455	1000	5000000	4,992,257,944
07-01-02 0:00	TB02213A	0.1013699	1.9312209	1000	5000000	4,990,314,332
07-01-02 0:00	TB02220A	0.1205479	1.9590378	1000	5000000	4,988,319,937
07-01-02 0:00	TB02227A	0.139726	1.986573	1000	5000000	4,986,276,129
07-01-02 0:00	TB02306A	0.1589041	2.0137032	1000	5000000	4,984,184,738
07-01-02 0:00	TB02313A	0.1780822	2.0403052	1000	5000000	4,982,048,053
07-01-02 0:00	TB02320A	0.1972603	2.0662557	1000	5000000	4,979,868,818
07-01-02 0:00	TB02327A	0.2164384	2.0914315	1000	5000000	4,977,650,231
07-01-02 0:00	TB02403A	0.2356164	2.1157094	1000	5000000	4,975,395,947
07-01-02 0:00	TB02410A	0.2547945	2.1389666	1000	3000000	2,983,866,036
07-01-02 0:00	TB02424A	0.2931507	2.1822271	1000	3000000	2,981,074,711
07-01-02 0:00	TB02508A	0.3315068	2.2213224	1000	5000000	4,963,716,093
07-01-02 0:00	TB02522A	0.369863	2.2564905	1000	5000000	4,958,904,048
07-01-02 0:00	TB02529A	0.3890411	2.2726762	1000	5000000	4,956,477,179
07-01-02 0:00	TB02605A	0.4082192	2.2879693	1000	3000000	2,972,423,473
07-01-02 0:00	TB02619A	0.4465753	2.3159969	1000	3000000	2,969,482,122
07-01-02 0:00	TB02703A	0.4849315	2.3408111	1000	5000000	4,944,211,018
					84000000	83,579,276,021

* TB02123B: 1M Zero Yield as of 26/12/2001 = 2.155742962 %
 ** TB02130B: 1M Zero Yield as of 02/01/2002 = 2.022811323 %

$$\text{Return on 1 day holding} = \frac{\sum_{n=1}^N \left[\frac{\text{Par}_n \times \text{Unit}_{t-1}(n)}{(1 + Y_t(T_n))^{(T_n)}} \right]}{\sum_{n=1}^N \left[\frac{\text{Par}_n \times \text{Unit}_{t-1}(n)}{(1 + Y_{t-1}(T_n - 1))^{(T_n - 1)}} \right]} = \frac{83,579,276,021}{83,555,663,071} = 1.00028260143126$$

$$\text{TBill-Index} = 100.01450147961 * 1.00028260143126 = 100.042765720874$$