Bond Markets

MSF Chula

Bond: What is a bond?

- Bond is a form of loan—a debt security obligating a borrower to pay a lender principal and interest.
- Borrower (issuer) promises contractually to make periodic payments to lender (investor or bondholder) over given number of years
- At maturity, holder receives principal (or face value or par value).
- Periodically before maturity, holder receives interest (coupon) payments determined by coupon rate, original interest rate promised as percentage of par on face of bond.

Bond Markets

LIT

- Bonds typically refer to instruments that have maturities longer than one year. These include Treasury bonds, corporate bonds, mortgages, and the like.
- Types of bonds we will examine include long-term government bonds (T-bonds), municipal bonds, and corporate bonds.

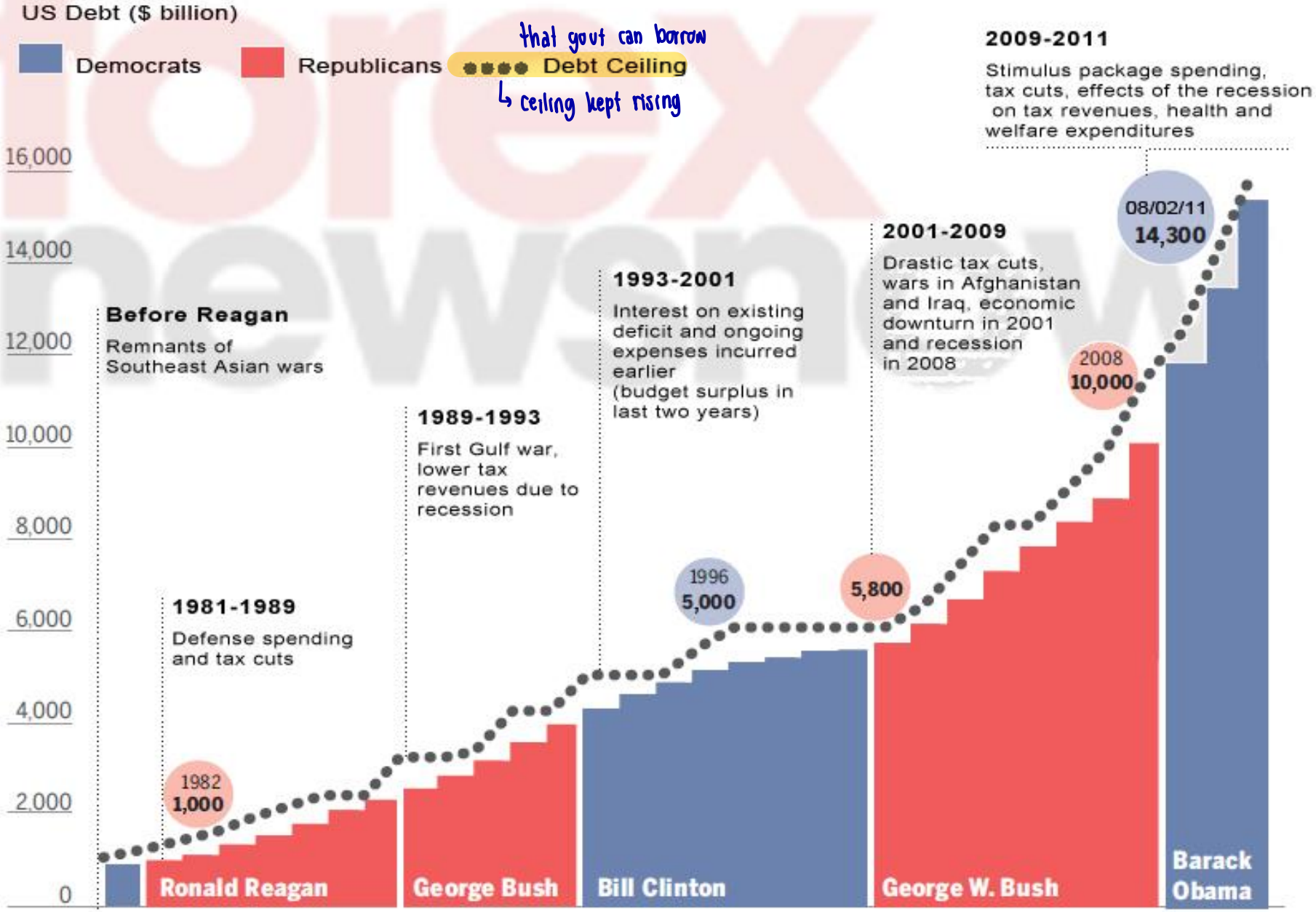
special in US

state-owned bonds

Brief History of Bond Markets

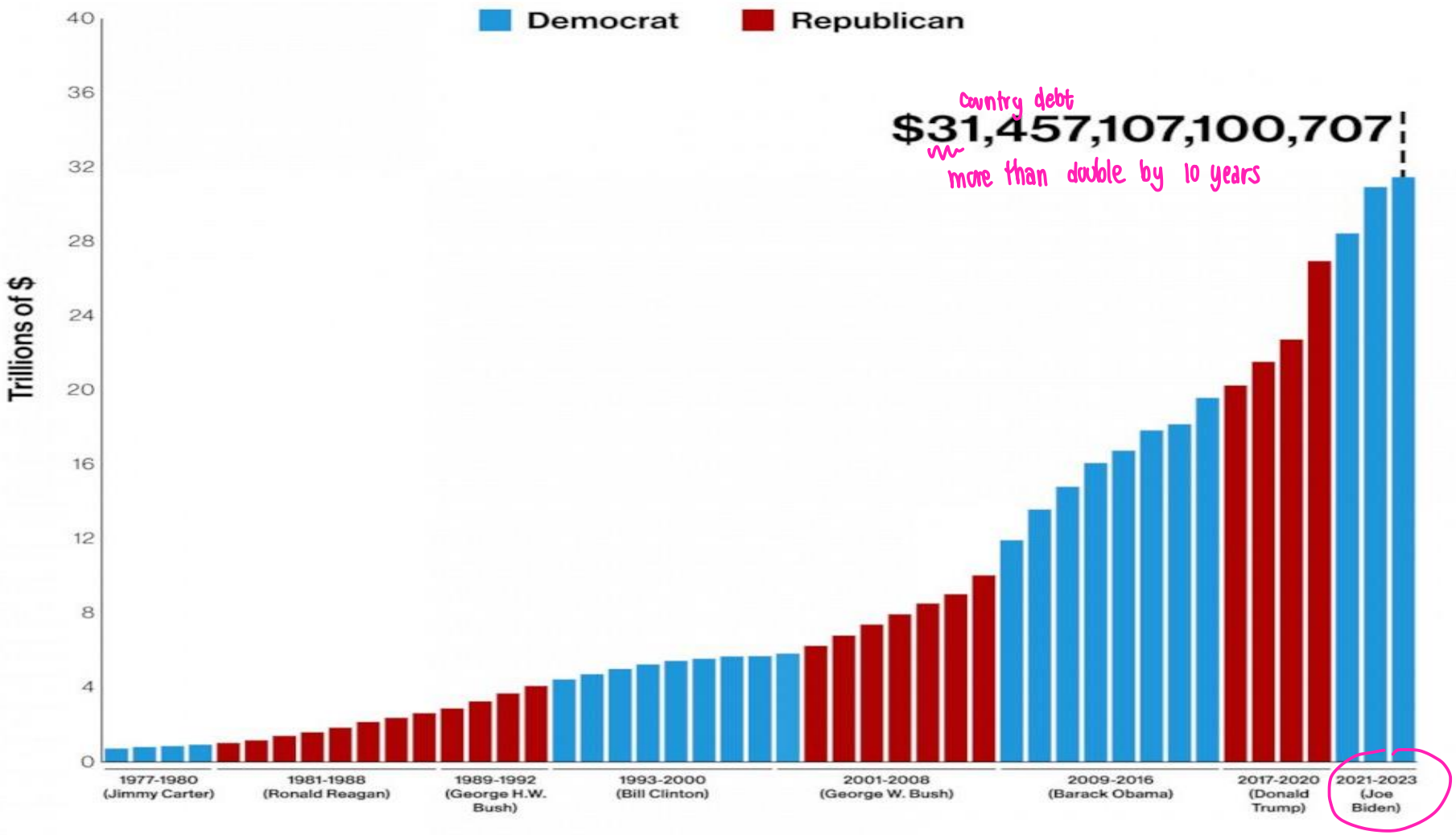
- During the **1100s**, Venice began issuing government bonds to fund its wars
- The first ever government bond was issued by the Bank of England in **1693** to raise money to fund a war against France.
- The first U.S. government bond begins with the Revolutionary War, when the country issued its first bonds to raise money to fight the war.
- The first U.S. Treasury bonds, initially called “Liberty Bonds,” issued to fund WW-I. **In 1917**, the First Liberty Loan Act issued $5 billion worth of bonds at 3.5 percent interest.

How did the US accumulate a $14.3 trillon debt



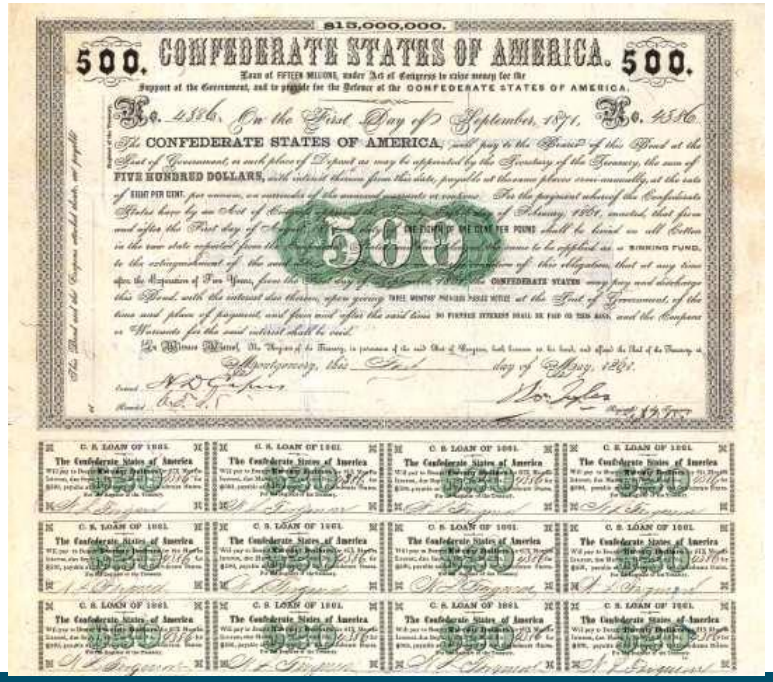
SOURCES: US DEPARTMENT OF TREASURY, BUREAU OF THE PUBLIC DEBT, FEDERAL RESERVE BANK OF NEW YORK, OFFICE OF MANAGEMENT AND BUDGET

National Debt Year by Year



https://abcnews.go.com/Politics/video/us-national-debt-years-99414494

Sample of Bonds



Issuer Information				Identifiers	
Name	US TREASURY N/B			ID Number	91282CEX5
Industry	Treasury (BCLASS)			CUSIP	91282CEX5
Security Information				ISIN	US91282CEX56
Issue Date			06/30/2022	SEDOL 1	BQC7W04
Interest Accrues			06/30/2022	FIGI	BBG018FYV0P8
1st Coupon Date			12/31/2022	**Issuance & Trading**	
Maturity Date			06/30/2024	Issue Price	99.838282
Floater Formula			N.A.	Risk Factor	1.834
Workout Date			06/30/2024	Amount Issued	49513 (MM)
Coupon	3.000	Security Type	USN	Amount Outstanding	49513 (MM)
Cpn Frequency	S/A	Type	FIXED	Minimum Piece	100
Mty/Refund Type	NORMAL	Series		Minimum Increment	100
Calc Type	STREET CONVENTION			SOMA Holdings	7.10
Day Count	ACT/ACT				
Market Sector	US GOVT				
Country/Region	US	Currency	USD		

TENDERS ACCEPTED: $46000MM.

Bond Yields: Risks Rewarded

- Yield rewards investor for at least 3 risks:
  - ① **Credit or default risk**: chance that issuer may be unable or unwilling to pay as agreed.
  - ② **Reinvestment risk**: potential effect of variability of market interest rates on return at which payments can be reinvested when received.
  - ③ **Price risk**: Inverse relationship between bond prices and interest rates.

Bond Types by Issuers

- Government/Treasury Bonds
- Municipal/State Owned Enterprises Bonds
- Corporate Bonds

Government/Treasury Notes and Bonds

T-note | T-bond

- The Treasury issues notes and bonds to finance its operations. They are backed by full faith and credit of the government.
- The following table summarizes the maturity differences among the various Treasury securities.

Type	Maturity
Treasury bill	Less than 1 year
Treasury note	1 to 10 years
Treasury bond	10 to 30 years

Government/Treasury Notes and Bonds

Bloomberg terminal

EXHIBIT 8.2
Selected Quotations on Treasury Bonds, Notes, and STRIPs on August 19, 2015

The U.S. Treasury Notes and Bonds						The U.S. Treasury STRIPs				
Maturity	Coupon	Bid	Asked	Chg	Asked yield	Maturity	Bid	Ask	Chg	Asked Yield
5/15/2016	7.25	105.0625	105.0781	0.0234	0.339	Stripped Coupon Interest				
11/30/2016	0.875	100.4531	100.4688	0.0391	0.507	2016 Aug 15	99.562	99.572	0.006	0.44
9/30/2017	1.875	102.3281	102.3438	0.0781	0.754	2026 Nov 15	76.437	76.522	0.529	2.40
5/15/2020	3.5	109.1563	109.1719	0.3672	1.487	2031 Aug 15	65.717	65.821	0.504	2.63
8/15/2025	6.875	143.2266	143.2422	0.7500	2.062	Treasury Note, Stripped Principal				
2/15/2031	5.375	138.6563	138.7188	0.8672	2.373	2016 Aug 31	99.545	99.556	0.027	0.43
8/15/2045	2.875	101.1328	101.1641	0.9063	2.817	2017 Aug 15	98.708	98.728	0.132	0.65
Treasury Inflation Protected Securities (TIPS)[a]						Treasury Bond, Stripped Principal				
2017 Jul 15	2.625	104.31	105.01	–5	–0.023	2030 May 15	69.712	69.813	0.494	2.45
2019 Jul 15	1.875	106.32	107.02	3	0.065	2045 Feb 15	42.066	42.188	0.530	2.95
2025 Jan 15	0.25	96.22	97	11	0.578					

[a]TIPS Bid and Ask price quotes are in 32nds as a percent of face value. Hence, for the July 15, 2015, TIP, the 104.31 is read as 104 31/32 % of $1,000 = $1,049.6875. The price quotes on Treasury Bonds, Notes, and STRIPs are in decimal form.

Source: Wall Street Journal Online, August 19, 2015.

Government/Treasury Notes and Bonds

Region	2 Year		3 Year		5 Year		7 Year		10 Year		15 Year		30 Year	
1) Americas														
10) United States	4.702	-4.0	4.289	-5.1	3.965	-5.4	3.866	-4.7	3.764	-4.3			3.899	-3.0
11) Canada	4.615	-5.8	4.270	-5.3	3.750	-5.2	3.467	-5.1	3.355	-3.8			3.236	-2.9
12) Brazil (USD)	5.268	-1.7	4.826	-3.7	5.167	-6.3	5.636	-2.6	6.041	-2.6				
13) Argentina (U...					--	--	37.670	+38.2	--	--	--	--	--	--
14) Mexico (USD)	4.695	+2.0	4.541	-2.3	4.718	-2.7	4.907	-4.2	5.345	-3.2			5.827	-2.3
2) EMEA														
20) United Kingd...	5.068	-6.1	4.766	-6.7	4.471	-7.0	4.322	-8.2	4.342	-8.2	4.527	-8.1	4.480	-7.0
21) France	3.263	-9.6	3.012	-11.3	2.835	-11.1	2.760	-10.3	2.907	-9.7	3.155	-8.5	3.303	-7.5
22) Germany	3.018	--	2.722	-10.5	2.466	-10.8	2.402	-10.1	2.385	-8.7	2.494	-8.1	2.429	-6.9
23) Italy	3.677	-12.6	3.592	-13.8	3.621	-14.3	3.763	-14.6	4.007	-13.9	4.236	-12.8	4.436	-11.6
24) Spain	3.356	-9.7	3.250	-11.5	3.119	-13.6	3.147	-13.2	3.384	-11.6	3.696	-10.2	3.829	-9.4
25) Portugal	2.836	-10.2	2.769	-12.4	2.825	-13.5	2.887	-11.7	3.063	-11.4	3.419	-10.6	3.472	-8.3
26) Sweden	3.336	-9.4			2.629	-11.3	2.509	-12.1	2.366	-10.0	2.448	-8.5		
27) Netherlands	3.081	-9.1	2.996	-10.2	2.693	-10.1	2.648	-9.5	2.718	-9.4	2.776	-7.5	2.667	-7.6
28) Switzerland	1.048	-5.4	0.964	-6.7	0.846	-6.8	0.831	-6.2	0.845	-6.0	0.837	-5.2	0.789	-4.5
29) Greece	3.092	-3.3	3.227	-12.2	3.402	-8.4	3.631	-11.2	3.779	-11.5	4.012	-7.3	4.080	-9.7
3) Asia/Pacific														
30) Japan	-0.039	+0.6	-0.042	-0.3	0.117	--	0.312	-0.2	0.472	+0.8	0.882	+1.0	1.403	+3.0
31) Australia	3.938	-2.8	3.875	-2.9	3.840	-2.8	3.920	-1.4	3.973	-1.0	4.182	-0.6	4.272	+1.1
32) New Zealand	5.161	-0.5			4.535	-1.7	4.468	-1.7	4.468	-1.7	4.627	-1.8	4.637	-1.7
33) South Korea	3.624	--	3.559	-1.2	3.571	-0.9			3.616	-1.3			3.613	+1.2
34) China	2.061	-1.2	2.181	-1.1	2.381	-1.3	2.588	-1.2	2.620	-1.2	2.766	-0.3	2.989	-1.0

Government/Treasury Notes and Bonds

Region	RMI	Security	Price	Chg	Yld	Chg	Yld	Low	Range (Avg / Now)	High	3M Chg
1) Americas											
10) United States		T 3 3/8 05/33	96-27+	+ 12	3.760	-4.7		3.336		4.062	+18.4
11) Canada		CAN2 3/4 06/33	95.092	+0.454	3.338	-5.6		2.763		3.568	+28.0
12) Brazil (USD)		BRAZIL6 10/33	99.684	+0.204	6.040	-2.7		6.025		6.306	-13.3
13) Argentina (USD)		ARGENT8.28 33	37.040	-0.002	0.000	-1783.1					
14) Mexico (USD)		MEX3 1/2 02/34	85.263	+0.243	5.344	-3.3		5.145		5.688	-1.3
2) EMEA											
20) United Kingdom		UKT3 1/4 01/33	91.582	+0.643	4.337	-8.7		3.646		4.655	+59.7
21) France		FRTR 3 05/33	100.813	+0.847	2.903	-10.0		2.784		3.203	-11.7
22) Germany		DBR 2.6 08/33	101.927	+0.799	2.382	-9.0		2.186		2.643	-9.0
23) Italy		BTPS 4.35 33	103.229	+1.192	4.003	-14.3		3.938		4.409	-28.7
24) Spain		SPGB 3.55 33	101.454	+1.021	3.381	-11.9		3.267		3.707	-10.7
25) Portugal		PGB1.65 07/32	89.110	+0.892	3.054	-12.3		2.948		3.361	-23.6
26) Sweden		SGB1 3/4 11/33	94.441	+0.895	2.364	-10.2		2.173		2.631	-5.8
27) Netherlands		NETHER2 1/2 33	98.139	+0.817	2.715	-9.6		2.554		3.006	-10.2
28) Switzerland		SWISS 3 1/2 33	124.683	+0.650	0.843	-6.2		.760		1.059	-18.8
29) Greece		GGB4 1/4 06/33	103.850	+0.977	3.776	-11.8		3.501		4.297	-51.9
3) Asia/Pacific											
30) Japan		JGB 0.4 06/33	99.312c	-0.077	0.472	+0.8		.345		.472	+1.0
31) Australia		ACGB 3 11/33	91.816c	+0.082	3.973	-1.0		3.300		4.284	+50.5
32) New Zealand		NZGB 3 1/2 33	92.419c	+0.126	4.468	-1.7		3.989		4.862	+24.2
33) South Korea		KTB3 1/4 06/33	97.317c	+0.116	3.616	-1.3		3.583		3.657	
34) China		CGB2.67 05/33	100.427c	+0.107	2.620	-1.2		2.613		2.830	-20.9

Government/Treasury Notes and Bonds

25) Bond Description | 26) Issuer Description

Pages

11) Bond Info
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19) Fees, Restrict
20) Schedules
21) Coupons

Quick Links

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33) QRD Quote Recap
34) CACS Corp Action
35) CN Sec News
36) HDS Holders

66) Send Bond

Issuer Information

Name	US TREASURY N/B
Industry	Treasury (BCLASS)

10 Y maturity

Security Information

Issue Date	05/15/2023		
Interest Accrues	05/15/2023		
1st Coupon Date	11/15/2023		
Maturity Date	05/15/2033		
Floater Formula	N.A.		
Workout Date	05/15/2033		
Coupon	3.375	Security Type	USN
Cpn Frequency	S/A	Type	FIXED
Mty/Refund Type	NORMAL	Series	
Calc Type	STREET CONVENTION		
Day Count	ACT/ACT		
Market Sector	US GOVT		
Country/Region	US	Currency	USD

Identifiers

ID Number	91282CHC8
CUSIP	91282CHC8
ISIN	US91282CHC82
SEDOL 1	BQYLTK3
FIGI	BBG01GJ2R4D6

Issuance & Trading

Issue Price	96.080353
Risk Factor	8.000
Amount Issued	108525 (M...
Amount Outstanding	108525 (M...
Minimum Piece	100
Minimum Increment	100
SOMA Holdings %	12.46
SOMA Holdings Amt	9535 (MM)

TENDERS ACCEPTED: $35000MM. $32000MM ISS'D AS A REOPENING EFF 06/15/23. $32000MM ISS'D AS A REOPENING EFF 07/17/23.

Government/Treasury Notes and Bonds

2019 before covid

Developed Markets | 91) Export | 92) Settings | World Countries Debt Monitor

Debt USD | CDS CMAN | Ratings Foreign LT | Currency USD | IR ST | GDP Def%

largest country in term of size of debt

Country	Debt (MM)	5 Yr	Time	%Chg	S&P	Moody's	Fitch	Price	Time	%Chg	Rate	Def%
1) United Stat...	15,962,287	15.00	07/16	+1.45	AA+u	--	AAA	1.000			2.30	-4.30
2) Japan	9,814,662	20.72	07/16	+0.31	A+u	--	A	108.27	10:06	+0.01	.07	-2.04
3) France	2,366,095	21.83	07/16	-1.18	AAu	Aa2	AA	1.1217	10:06	+0.06	-.41	-2.50
4) Italy	2,287,085	154.36	07/16	-2.44	BBBu	Baa3	BBB	1.1217	10:06	+0.06	-.41	-2.10
5) United King...	2,015,736	29.24	07/16	-1.25	AAu	Aa2	AA *-	1.2419	10:06	+0.10	.77	-1.50
6) Germany	1,843,802	11.02	07/16	+0.09	AAAu	Aaa	AAA	1.1217	10:06	+0.06	-.41	+1.70
7) Spain	1,176,440	38.12	07/16	-2.22	A-u	Baa1	A-	1.1217	10:06	+0.06	-.41	-2.50
8) Canada	776,024	30.48	07/16	+0.78	AAA	Aaa	AAA	1.3066	10:06	-0.17	1.98	-.15
9) Belgium	425,039	20.13	07/16	-1.25	AAu	Aa3	AA-	1.1217	10:06	+0.06	-.41	-.70
10) Australia	383,447	19.61	07/16	-0.66	AAAu	Aaa	AAA	.7002	10:06	-0.16	1.12	+.39
11) Greece	377,523	238.38	07/16	-1.98	B+	B1	BB-	1.1217	10:06	+0.06	-.41	+1.10
12) Netherlands	346,086	12.93	07/16	-0.27	AAAu	Aaa	AAA	1.1217	10:06	+0.06	-.41	+1.50
13) Austria	277,009	11.76	07/16	+0.30	AA+	Aa1	AA+	1.1217	10:06	+0.06	-.41	+.10
14) Portugal	244,307	38.65	07/16	-1.90	BBBu	Baa3	BBB	1.1217	10:06	+0.06	-.41	-.50
15) Singapore	227,298				AAAu	--	AAA	1.3623	10:06	+0.27	2.00	--
16) Ireland	196,790	27.90	07/16	+0.41	A+	A2	A+	1.1217	10:06	+0.06	-.41	+.00
17) Israel	191,369	64.19	07/16	-0.01	AA-	A1	A+	3.5431	10:06	-0.15	.26	--
18) Hong Kong	178,619	28.89	07/16	-1.67	AA+	Aa2	AA+	7.8141	10:06	-0.04	2.21	+3.43
19) Finland	127,634	12.00	07/16	--	AA+	Aa1	AA+	1.1217	10:06	+0.06	-.41	-.70
20) Norway	101,897	10.97	07/16	-0.05	AAA	Aaa	AAA	8.5843	10:06	+0.11	1.57	+7.21
21) Sweden	98,862	11.93	07/16	-0.13	AAAu	Aaa	AAA	9.3720	10:06	-0.20	-.14	+.90
22) Denmark	98,804	11.57	07/16	+3.58	AAAu	Aaa	AAA	6.6576	10:06	-0.05	-.39	+.50
23) Switzerland	77,407	8.25	07/16	+0.73	AAAu	--	AAA	.9893	10:06	+0.14	-.75	--
24) New Zealand	54,412	21.87	07/16	--	AA	Aaa	AA	.6720	10:06	+0.26	1.55	--

Government/Treasury Notes and Bonds

covid → size of debt ↑

2020

Developed Markets | 91) Export | 92) Settings | World Countries Debt Monitor

Debt USD | CDS CMAN | Ratings Foreign LT | Currency USD | IR ST | GDP Debt

Country	Debt (MM)↓	5 Yr	Time	%Chg	S&P	Moody's	Fitch	Price	Time	%Chg	Rate	Debt%GDP
1) United Stat...	19,971,565	19.05	06/04	+1.01	AA+u	--	AAA	1.000			.33	82.30
2) Japan	10,197,929	21.65	06/04	-2.87	A+u	--	A	109.18	20:11	+0.03	.07	236.40
3) France	2,416,951	27.13	06/04	-9.60	AAu	Aa2u	AA	1.1341	20:11	+0.03	-.38	97.00
4) Italy	2,390,498	171.24	06/04	-10.41	BBBu	Baa3u	BBB-	1.1341	20:11	+0.03	-.38	131.50
5) United King...	2,215,318	29.38	06/04	-1.85	AAu	Aa2u	AA-	1.2607	20:11	+0.08	.24	87.00
6) Germany	1,660,421	17.66	06/04	-4.93	AAAu	Aaau	AAA	1.1341	20:11	+0.03	-.38	64.10
7) Spain	1,266,140	74.79	06/04	-8.63	Au	Baa1	A-	1.1341	20:11	+0.03	-.38	98.40
8) Canada	959,441	24.03	06/04	-3.90	AAA	Aaa	AAA	1.3501	20:11	+0.01	.57	89.70
9) Australia	463,122	23.92	06/04	-3.49	AAAu	Aaa	AAA	.6940	20:11	-0.03	.10	41.60
10) Belgium	462,523	27.62	06/04	-3.33	AAu	Aa3	AA-	1.1341	20:11	+0.03	-.38	103.20
11) Netherlands	381,414	15.67	06/04	-6.45	AAAu	Aaau	AAA	1.1341	20:11	+0.03	-.38	56.70
12) Greece	371,593	165.17	06/04	-12.93	BB-	B1	BB	1.1341	20:11	+0.03	-.38	181.90
13) Austria	306,663	15.64	06/04	-5.67	AA+	Aa1	AA+	1.1341	20:11	+0.03	-.38	78.80
14) Portugal	259,338	69.74	06/04	-8.91	BBBu	Baa3	BBB	1.1341	20:11	+0.03	-.38	125.60
15) Singapore	253,999				AAAu	--	AAA	1.3976	20:11	-0.05	.56	110.90
16) Israel	197,067	71.19	06/04	-1.75	AA-	A1	A+	3.4538	20:11	+0.03	.08	61.00
17) Ireland	195,650	32.41	06/04	-6.30	AA-	A2	A+	1.1341	20:11	+0.03	-.38	68.50
18) Hong Kong	166,551	44.19	06/04	+0.80	AA+	Aa3	AA-	7.7502	20:11	--	1.06	.10
19) Finland	150,374	18.43	06/04	+0.05	AA+	Aa1	AA+	1.1341	20:11	+0.03	-.38	61.40
20) Sweden	107,679	14.27	06/04	+2.77	AAAu	Aaa	AAA	9.1989	20:11	+0.06	.10	40.90
21) Denmark	103,409	13.24	06/04	+5.79	AAAu	Aaau	AAA	6.5735	20:11	-0.04	-.14	36.40
22) Norway	102,082	14.52	06/04	+0.07	AAA	Aaa	AAA	9.3505	20:11	-0.04	.29	36.70
23) Switzerland	90,412	11.38	06/04	+0.49	AAAu	--	AAA	.9554	20:11	-0.02	-.65	42.80
24) New Zealand	66,556	26.69	06/04	-0.11	AA	Aaa	AA	.6466	20:11	+0.03	.26	26.40

Government/Treasury Notes and Bonds

after COVID → size remain increasing

2021

Developed Markets | 91) Export | 92) Settings | World Countries Debt Monitor

Debt USD | CDS CMAN | Ratings Foreign LT | Currency USD | IR ST | GDP Debt

Region	Debt (MM)↓	5 Yr	Time	%Chg	S&P	Moody's	Fitch	Price	Time	%Chg	Rate	Debt%GDP
1) United Stat...	21,896,603	9.34	07/28	+0.16	AA+u	--	AAA	1.000			.13	82.30
2) Japan	10,910,009	17.00	07/28	+0.03	A+u	--	A	109.64	10:37	-0.25	.06	236.40
3) United King...	2,818,189	9.21	07/28	+2.16	AAu	Aa3u	AA-	1.3981	10:37	+0.57	.07	87.00
4) France	2,808,877	20.17	07/28	-4.02	AAu	Aa2u	AA	1.1887	10:37	+0.36	-.52	97.00
5) Italy	2,729,443	72.95	07/28	-0.20	BBBu	Baa3u	BBB-	1.1887	10:37	+0.36	-.52	131.50
6) Germany	1,952,757	9.79	07/28	+1.98	AAAu	Aaau	AAA	1.1887	10:37	+0.36	-.52	64.10
7) Spain	1,432,886	29.99	07/28	+0.02	Au	Baa1	A-	1.1887	10:37	+0.36	-.52	98.40
8) Canada	1,199,910	18.33	07/28	+0.55	AAA	Aaa	AA+	1.2465	10:37	-0.50	.44	89.70
9) Australia	611,004	15.48	07/28	+0.55	AAAu	Aaa	AAA	.7395	10:37	+0.26	.02	41.60
10) Belgium	506,682	12.07	07/28	+0.67	AAu	Aa3	AA-	1.1887	10:37	+0.36	-.52	103.20
11) Netherlands	426,678	9.87	07/28	-0.90	AAAu	Aaau	AAA	1.1887	10:37	+0.36	-.52	56.70
12) Greece	412,516	72.56	07/28	-0.04	BB	Ba3	BB	1.1887	10:37	+0.36	-.52	181.90
13) Austria	357,540	9.60	07/28	+1.86	AA+	Aa1	AA+	1.1887	10:37	+0.36	-.52	78.80
14) Singapore	324,932				AAAu	--	AAA	1.3537	10:37	-0.22	.43	110.90
15) Portugal	273,893	28.45	07/28	+0.19	BBBu	Baa3	BBB	1.1887	10:37	+0.36	-.52	125.60
16) Israel	254,711	38.24	07/28	-5.14	AA-	A1	A+	3.2412	10:37	-0.38	.10	61.00
17) Ireland	225,645	15.74	07/28	-3.08	AA-	A2	A+	1.1887	10:37	+0.36	-.52	68.50
18) Hong Kong	188,332	31.00	07/28	-0.05	AA+	Aa3	AA-	7.7730	10:37	-0.10	.15	.10
19) Finland	165,594	9.40	07/28	+0.70	AA+	Aa1	AA+	1.1887	10:37	+0.36	-.52	61.40
20) Sweden	128,818	9.12	07/28	+4.05	AAAu	Aaa	AAA	8.5509	10:37	-0.56	-.10	40.90
21) Denmark	120,939	7.96	07/28	-1.79	AAAu	Aaau	AAA	6.2573	10:37	-0.35	-.21	36.40
22) Norway	108,314	10.25	07/28	+3.17	AAA	Aaa	AAA	8.7481	10:37	-0.66	.31	36.70
23) New Zealand	103,417	15.73	07/28	+0.25	AA+	Aaa	AA	.7005	10:37	+0.80	.47	26.40
24) Switzerland	94,481	5.70	07/28	-0.26	AAAu	--	AAA	.9069	10:37	-0.34	-.75	42.80

Government/Treasury Notes and Bonds

UNIT : trillion

2022

Developed Markets | 91) Export | 92) Settings | World Countries Debt Monitor

Debt USD | CDS CMAN | Ratings Foreign LT | Currency USD | IR ST | GDP Debt

Region	Debt (MM)	5 Yr	Time	%Chg	S&P	Moody's	Fitch	Price	Time	%Chg	Rate	Debt%GDP
1) United Stat...	23,389,203	21.42	07/29	+0.02	AA+u	--	AAAu	1.000			2.79	82.30
2) Japan	9,332,069	24.53	07/29	-4.72	A+u	--	Au	131.70	11:41	-1.18	.07	236.40
3) United Kin...	2,577,616	16.27	07/29	-1.93	AAu	Aa3u	AA-u	1.2271	11:41	+0.82	1.94	87.00
4) France	2,553,155	27.17	07/29	-2.34	AAu	Aa2u	AAu	1.0274	11:41	+0.53	.28	97.00
5) Italy	2,366,772	163.29	07/29	-6.41	BBBu	Baa3u	BBBu	1.0274	11:41	+0.53	.28	131.50
6) Germany	2,200,054	15.32	07/29	-3.07	AAAu	Aaau	AAAu	1.0274	11:41	+0.53	.28	64.10
7) Spain	1,293,626	56.88	07/29	-5.26	Au	Baa1	A-u	1.0274	11:41	+0.53	.28	98.40
8) Canada	1,238,436	28.73	07/29	-2.01	AAA	Aaa	AA+u	1.2830	11:41	+0.27	3.50	89.70
9) Australia	620,394	27.17	07/29	+1.63	AAAu	Aaa	AAAu	.7036	11:41	+0.71	2.15	41.60
10) Belgium	488,978	16.99	07/29	-3.55	AAu	Aa3	AA-u	1.0274	11:41	+0.53	.28	103.20
11) Netherlands	382,484	13.27	07/29	-2.21	AAAu	Aaau	AAAu	1.0274	11:41	+0.53	.28	56.70
12) Singapore	381,676				AAAu	--	AAAu	1.3763	11:41	-0.30	2.48	110.90
13) Greece	358,488	173.90	07/29	-1.64	BB+	Ba3	BB	1.0274	11:41	+0.53	.28	181.90
14) Austria	323,797	14.22	07/29	-2.44	AA+	Aa1	AA+u	1.0274	11:41	+0.53	.28	78.80
15) Israel	245,403	47.21	07/29	+0.64	AA-	A1	A+	3.3683	11:41	-1.19	1.69	61.00
16) Portugal	234,546	55.69	07/29	-6.04	BBBu	Baa2	BBBu	1.0274	11:41	+0.53	.28	125.60
17) Hong Kong	209,880	26.44	07/29	-0.08	AA+	Aa3	AA-	7.8500	11:41	--	2.21	.10
18) Ireland	198,286	18.46	07/29	+1.40	AA-	A1	AA-	1.0274	11:41	+0.53	.28	68.50
19) Finland	150,479	25.56	07/29	+0.77	AA+	Aa1	AA+	1.0274	11:41	+0.53	.28	61.40
20) Norway	107,766	13.82	07/29	-0.72	AAA	Aaa	AAAu	9.6067	11:41	-0.70	2.24	36.70
21) New Zeala...	104,119	28.76	07/29	+0.10	AA+	Aaa	AA	.6346	11:41	+1.17	3.17	26.40
22) Denmark	91,475	13.27	07/29	-0.90	AAAu	Aaau	AAA	7.2464	11:41	-0.49	.49	36.40
23) Sweden	91,228	16.00	07/29	+0.06	AAAu	Aaa	AAAu	10.0893	11:41	-0.65	1.38	40.90
24) Switzerland	86,251	9.04	07/29	+0.06	AAAu	--	AAAu	.9485	11:41	-0.42	-.75	42.80
25) Iceland	21,709	67.68	07/29	+19.00	A	A2	A	135.0000	11:41	-0.48	5.10	40.90

Government/Treasury Notes and Bonds

each country has different economic size

2023

if this is high → too much debt

Developed Markets | 91) Export | 92) Settings | World Countries Debt Monitor

Debt USD | CDS CMAN | Ratings Foreign LT | Currency USD | IR ST | GDP Debt

largest

Region	Debt (MM)↓	5 Yr	Time	%Chg	S&P	Moody's	Fitch	Price	Time	%Chg	Rate	Debt%GDP
1) United States	25,152,380	33.97	07/17	-0.03	AA+u	--	AAAu	1.000			5.57	136.22
2) Japan	9,106,633	15.95	07/17	-0.37	A+u	--	Au	138.31	09:34	-0.29	.07	264.00
3) United Kingd...	2,993,458	27.45	07/17	-1.40	AAu	Aa3u	AA-u	1.3078	09:34	+0.04	5.52	113.09
4) France	2,889,011	24.92	07/17	-4.12	AAu	Aa2u	AA-u	1.1226	09:34	-0.09	3.78	114.99
5) Italy	2,713,945	88.61	07/17	+0.41	BBBu	Baa3u	BBBu	1.1226	09:34	-0.09	3.78	131.95
6) Germany	2,620,113	14.65	07/17	+2.23	AAAu	Aaau	AAAu	1.1226	09:34	-0.09	3.78	59.62
7) Spain	1,524,811	48.80	07/17	+0.39	Au	Baa1	A-u	1.1226	09:34	-0.09	3.78	109.32
8) Canada	1,213,869	27.55	07/17	+1.44	AAA	Aaa	AA+u	1.3240	09:34	+0.30	5.50	91.13
9) Australia	610,903	24.64	07/17	+1.05	AAAu	Aaa	AAAu	.6792	09:34	-0.35	4.29	62.17
10) Belgium	544,996	23.44	07/17	+1.21	AAu	Aa3	AA-u	1.1226	09:34	-0.09	3.78	119.50
11) Netherlands	435,544	12.72	07/17	-5.81	AAAu	Aaau	AAAu	1.1226	09:34	-0.09	3.78	46.26
12) Singapore	413,907				AAAu	--	AAAu	1.3226	09:34	+0.05	4.09	136.83
13) Greece	387,259	76.32	07/17	+1.69	BB+	Ba3	BB+	1.1226	09:34	-0.09	3.78	143.64
14) Austria	366,094	13.42	07/17	-7.45	AA+	Aa1	AA+u	1.1226	09:34	-0.09	3.78	67.92
15) Israel	273,838	52.86	07/17	-0.43	AA-	A1	A+	3.6112	09:34	-0.49	4.79	53.46
16) Portugal	245,854	46.57	07/17	-1.20	BBB+u	Baa2	BBB+u	1.1226	09:34	-0.09	3.78	96.47
17) Hong Kong	228,128	35.35	07/17	-0.38	AA+	Aa3	AA-	7.8112	09:34	-0.04	5.06	10.64
18) Ireland	196,877	24.68	07/17	+0.73	AA	Aa3	AA-	1.1226	09:34	-0.09	3.78	25.19
19) Finland	181,403	18.24	07/17	-10.28	AA+	Aa1	AA+	1.1226	09:34	-0.09	3.78	82.11
20) Switzerland	110,126	17.59	07/17	-3.35	AAAu	--	AAAu	.8592	09:34	-0.15	-.75	31.70
21) New Zealand	109,162	23.80	07/17	-1.94	AA+	Aaa	AA+	.6262	09:34	-1.00	5.64	34.87
22) Norway	103,811	12.53	07/17	-9.00	AAA	Aaa	AAAu	10.1035	09:34	+0.44	4.51	37.00
23) Denmark	99,604	11.49	07/17	-11.58	AAAu	Aaau	AAA	6.6373	09:34	+0.11	3.73	31.54
24) Sweden	87,493	14.51	07/17	-8.34	AAAu	Aaa	AAAu	10.2378	09:34	-0.13	3.80	29.96
25) Iceland	24,081	57.54	07/17	+0.09	A	A2	A	130.6800	09:34	+0.08	8.90	44.21

Government/Treasury Notes and Bonds

No CDS

2023

- From % Debt/GDP : Japan is riskiest
  - ↳ this doesn't tell you anything, it doesn't matter
- we care about "credit rating" better indicator

ranking change

Developed Markets | 91) Export | 92) Settings | World Countries Debt Monitor

Debt USD | CDS CMAN | Ratings Foreign LT | Currency USD | IR ST | GDP Debt

Region	Debt (MM)	CDS 5 Yr	CDS Time	CDS %Chg	S&P	Moody's	Fitch	Price	Time	%Chg	Rate	Debt%GDP
1) Japan	9,106,633	15.95	07/17	-0.37	A+u	--	Au	138.07	09:36	-0.46	.07	264.00
2) Greece	387,259	76.32	07/17	+1.69	BB+	Ba3	BB+	1.1232	09:36	-0.03	3.78	143.64
3) Singapore	413,907				AAAu	--	AAAu	1.3220	09:36	+0.01	4.09	136.83
4) United States	25,152,380	33.97	07/17	-0.03	AA+u	--	AAAu	1.000			5.57	136.22
5) Italy	2,713,945	88.61	07/17	+0.41	BBBu	Baa3u	BBBu	1.1232	09:36	-0.03	3.78	131.95
6) Belgium	544,996	23.44	07/17	+1.21	AAu	Aa3	AA-u	1.1232	09:36	-0.03	3.78	119.50
7) France	2,889,011	24.92	07/17	-4.12	AAu	Aa2u	AA-u	1.1232	09:36	-0.03	3.78	114.99
8) United Kingd...	2,993,458	27.45	07/17	-1.40	AAu	Aa3u	AA-u	1.3081	09:36	+0.06	5.52	113.09
9) Spain	1,524,811	48.80	07/17	+0.39	Au	Baa1	A-u	1.1232	09:36	-0.03	3.78	109.32
10) Portugal	245,854	46.57	07/17	-1.20	BBB+u	Baa2	BBB+u	1.1232	09:36	-0.03	3.78	96.47
11) Canada	1,213,869	27.55	07/17	+1.44	AAA	Aaa	AA+u	1.3233	09:36	+0.25	5.50	91.13
12) Finland	181,403	18.24	07/17	-10.28	AA+	Aa1	AA+	1.1232	09:36	-0.03	3.78	82.11
13) Austria	366,094	13.42	07/17	-7.45	AA+	Aa1	AA+u	1.1232	09:36	-0.03	3.78	67.92
14) Australia	610,903	24.64	07/17	+1.05	AAAu	Aaa	AAAu	.6798	09:36	-0.27	4.29	62.17
15) Germany	2,620,113	14.65	07/17	+2.23	AAAu	Aaau	AAAu	1.1232	09:36	-0.03	3.78	59.62
16) Israel	273,838	52.86	07/17	-0.43	AA-	A1	A+	3.6105	09:36	-0.51	4.79	53.46
17) Netherlands	435,544	12.72	07/17	-5.81	AAAu	Aaau	AAAu	1.1232	09:36	-0.03	3.78	46.26
18) Iceland	24,081	57.54	07/17	+0.09	A	A2	A	130.6100	09:36	+0.03	8.90	44.21
19) Norway	103,811	12.53	07/17	-9.00	AAA	Aaa	AAAu	10.0918	09:36	+0.33	4.51	37.00
20) New Zealand	109,162	23.80	07/17	-1.94	AA+	Aaa	AA+	.6267	09:36	-0.90	5.64	34.87
21) Switzerland	110,126	17.59	07/17	-3.35	AAAu	--	AAAu	.8582	09:36	-0.27	-.75	31.70
22) Denmark	99,604	11.49	07/17	-11.58	AAAu	Aaau	AAA	6.6336	09:36	+0.05	3.73	31.54
23) Sweden	87,493	14.51	07/17	-8.34	AAAu	Aaa	AAAu	10.2286	09:36	-0.22	3.80	29.96
24) Ireland	196,877	24.68	07/17	+0.73	AA	Aa3	AA-	1.1232	09:36	-0.03	3.78	25.19
25) Hong Kong	228,128	35.35	07/17	-0.38	AA+	Aa3	AA-	7.8112	09:36	-0.04	5.06	10.64

Government/Treasury Notes and Bonds

2023

Emerging Markets | 91) Export | 92) Settings | World Countries Debt Monitor

Debt USD | CDS CMAN | Ratings Foreign LT | Currency USD | IR ST | GDP Debt

Region	Debt (MM)	5 Yr↓	Time	%Chg	S&P	Moody's	Fitch	Price	Time	%Chg	Rate	Debt%GDP
1) Asia												
2) India	1,411,398	85.93	07/17	-0.82	BBB-u	--	BBB-u	82.0706	09:44	+0.06	6.74	83.56
3) China	3,696,874	61.50	07/17	+0.05	A+	A1	A+u	7.1795	09:44	+0.08	1.98	104.85
4) Malaysia	268,976	51.51	07/17	-1.07	A-	A3	BBB+	4.5400	08:06	+0.09	3.50	69.97
5) South Korea	981,571	31.28	07/17	-0.64	AA	Aa2	AA-	1262.95	09:44	-0.12	3.75	58.21
6) Taiwan	197,051				AA+u	--	--	30.9960	03:59	-0.18		15.31
7) Eastern Europe												
8) Turkey	210,406	444.86	07/17	-0.83	Bu	B3	B	26.9040	09:44	+2.14		42.26
9) Hungary	143,145	155.26	07/17	-2.96	BBB-	Baa2	BBB	332.44	09:44	-0.06	15.06	61.31
10) Poland	341,568	72.47	07/17	+1.69	A-	A2	A-	3.9620	09:44	+0.21	6.71	54.53
11) Czech Repub...	327,070	34.46	07/17	-0.39	AA-	Aa3	AA-	21.2450	09:44	+0.40	7.11	45.66
12) Russia	269,742	--	--	--	NR	WR	WD	90.6352	08:27	+0.14		21.54
13) Latin America												
14) Argentina	359,042	5820.73	07/17	-3.82	CCC-	Ca	WD	267.4850	09:10	+0.27		65.45
15) Colombia	165,448	222.92	07/17	+0.15	BB+	Baa2	BB+	3983.95	09:44	-1.00	13.57	58.31
16) Brazil	1,253,689	178.49	07/17	+0.81	BB-	Ba2	BB-	4.8143	09:44	+0.12	13.25	96.21
17) Mexico	855,224	99.71	07/17	+0.90	BBB	Baa2	BBB-	16.7424	09:44	+0.09	11.49	57.94
18) Chile	226,058	75.97	07/17	+1.34	A	A2	A-	817.73	09:44	-0.09		38.52
19) Middle-East/Africa												
20) South Africa	251,519	252.82	07/17	+0.12	BB-	Ba2	BB-	17.9174	09:44	-0.66	8.51	84.87
21) U.A.E. - Dubai	9,084	71.25	07/17	-0.43	--	--	--	3.6730	09:44	--	5.38	25.16
22) Saudi Arabia	287,129	54.12	07/17	-1.55	Au	A1	A+	3.7519	09:44	-0.01	5.94	19.90

Government/Treasury Notes and Bonds

2023

Indicator of riskiness
more expensive
for risker debt

credit default swap
purchase CDS from the 3rd party
if that debt default → 3rd party will pay you

Debt/GDP ↑ → Risker
↳ low credit rating
↳ more financial burden

very vary
no standard
might cause debt/GDP become lower

Emerging Markets | 91) Export | 92) Settings | World Countries Debt Monitor

Debt USD | CDS CMAN | Ratings Foreign LT | Currency USD | IR ST | GDP Debt

Region	Debt (MM)	5 Yr↓	Time	%Chg	S&P	Moody's	Fitch	Price	Time	%Chg	Rate	Debt%GDP
1) Pakistan	141,570	4304.78	07/17	-0.15	CCC+	Caa3	CCC	280.6200	09:44	+1.03	22.58	66.11
2) Vietnam	94,986	117.29	07/17	+0.59	BB+	Ba2	BB	23644	07:58	+0.01	2.32	31.30
3) India	1,411,398	85.93	07/17	-0.82	BBB-u	--	BBB-u	82.0607	09:45	+0.05	6.74	83.56
4) Indonesia	497,179	82.15	07/17	+0.60	BBB	Baa2	BBB	14993	09:42	-0.03	6.75	37.30
5) Philippines	256,032	78.30	07/17	+0.44	BBB+	Baa2	BBB	54.395	06:48	+0.02		52.55
6) China	3,696,874	61.50	07/17	+0.05	A+	A1	A+u	7.1795	09:45	+0.08	1.98	104.85
7) Thailand	324,455	51.74	07/17	-0.98	BBB+	Baa1	BBB+u	34.19	09:45	-1.23	2.27	57.27
8) Malaysia	268,976	51.51	07/17	-1.07	A-	A3	BBB+	4.5400	08:06	+0.09	3.50	69.97
9) South Korea	981,571	31.28	07/17	-0.64	AA	Aa2	AA-	1262.87	09:45	-0.13	3.75	58.21
10) Bangladesh	74,686				BB-	--	--	108.3928	09:44	-0.10		--
11) Mongolia	4,080				B	B3	B	3434.86	07:58	+0.02		--
12) Sri Lanka	48,414				SD	Ca	D	322.6052	09:44	+0.28		--
13) Taiwan	197,051				AA+u	--	--	30.9960	03:59	-0.18		15.31

- Do you prefer the country with low-debt or high-debt to GDP?

Government Debt to GDP

TRADING ECONOMICS Calendar News Markets Indicators Countries Fore

Country List Government Debt to GDP High debt to dbp

World Europe America Asia Africa Australia G20

Country	Last	Previous	Reference	Unit
Japan	264	262	Dec/22	%
Venezuela	241	320	Dec/21	%
Sudan	182	264	Dec/21	%
Greece	171	195	Dec/22	%
Singapore	168	160	Dec/22	%
Eritrea	164	175	Dec/22	%
Libya	155	110	Dec/20	%
Lebanon	151	172	Dec/20	%
Italy	145	150	Dec/22	%
United States	129	127	Dec/22	%
Cape Verde	127	157	Dec/22	%
Bhutan	125	132	Dec/22	%
Suriname	124	111	Dec/21	%
Zambia	123	96	Dec/21	%
Bahrain	120	128	Dec/22	%
Cuba	117	50	Dec/21	%
Portugal	114	125	Dec/22	%

TRADING ECONOMICS Calendar News Markets Indicato

Country List Government Debt to GDP

World Europe America Asia Africa Australia G20

Country	Last	Previous	Reference	Unit
Venezuela	350	233	Dec/20	%
Japan	266	238	Dec/20	%
Sudan	259	202	Dec/20	%
Greece	193	206	Dec/21	%
Lebanon	172	174	Dec/20	%
Eritrea	171	182	Dec/21	%
Cape Verde	157	156	Dec/21	%
Libya	155	110	Dec/20	%
Italy	151	155	Dec/21	%
United States	137	128	Dec/21	%
Bhutan	135	131	Dec/21	%
Singapore	131	126	Dec/20	%
Mozambique	130	122	Dec/21	%
Bahrain	128	103	Dec/20	%
Portugal	127	135	Dec/21	%
Canada	118	86.8	Dec/20	%
Spain	118	120	Dec/21	%
France	113	115	Dec/21	%
Suriname	111	86.6	Dec/20	%

http://www.tradingeconomics.com/country-list/government-debt-to-gdp

doesn't tell you anything, depend on ability of govt to invest, repay

Government Debt to GDP

Low debt-to-GDP

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Country List Government Debt to GDP

World | Europe | America | Asia | Africa | Australia | G20

Kazakhstan	24.4	27.4	Dec/22	%
Haiti	23.1	24.2	Dec/22	%
Australia	22.3	28.6	Dec/22	%
Palestine	21.3	23.5	Dec/21	%
Kosovo	20.74	21.53	Dec/22	%
Bulgaria	20.5	20.5	Apr/23	%
Bosnia and Herzegovina	19.6	25	Dec/22	%
Swaziland	19.44	15.76	Dec/22	%
Estonia	18.4	17.6	Dec/22	%
Burundi	17.2	15.7	Dec/21	%
Russia	16	17.6	Dec/22	%
Congo	14.6	16.3	Dec/22	%
Azerbaijan	11.7	18.2	Dec/22	%
Turkmenistan	8	11	Dec/22	%
Afghanistan	7.4	6.1	Dec/20	%
Kuwait	7.1	8.7	Dec/22	%
Cayman Islands	4.5	5.3	Dec/21	%
Brunei	1.9	2.5	Dec/22	%

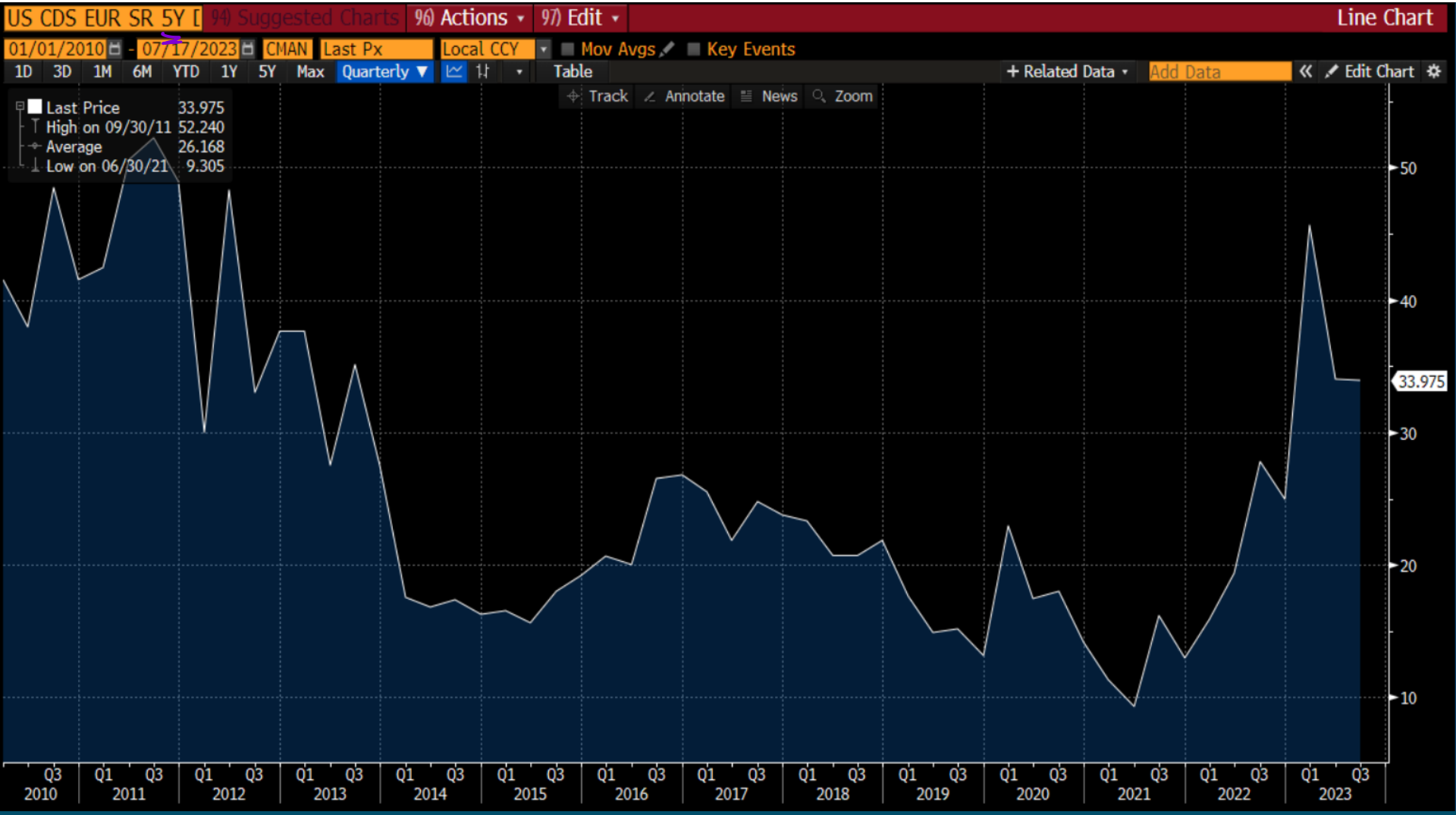
TRADING ECONOMICS | Calendar | News | Markets | Indicat

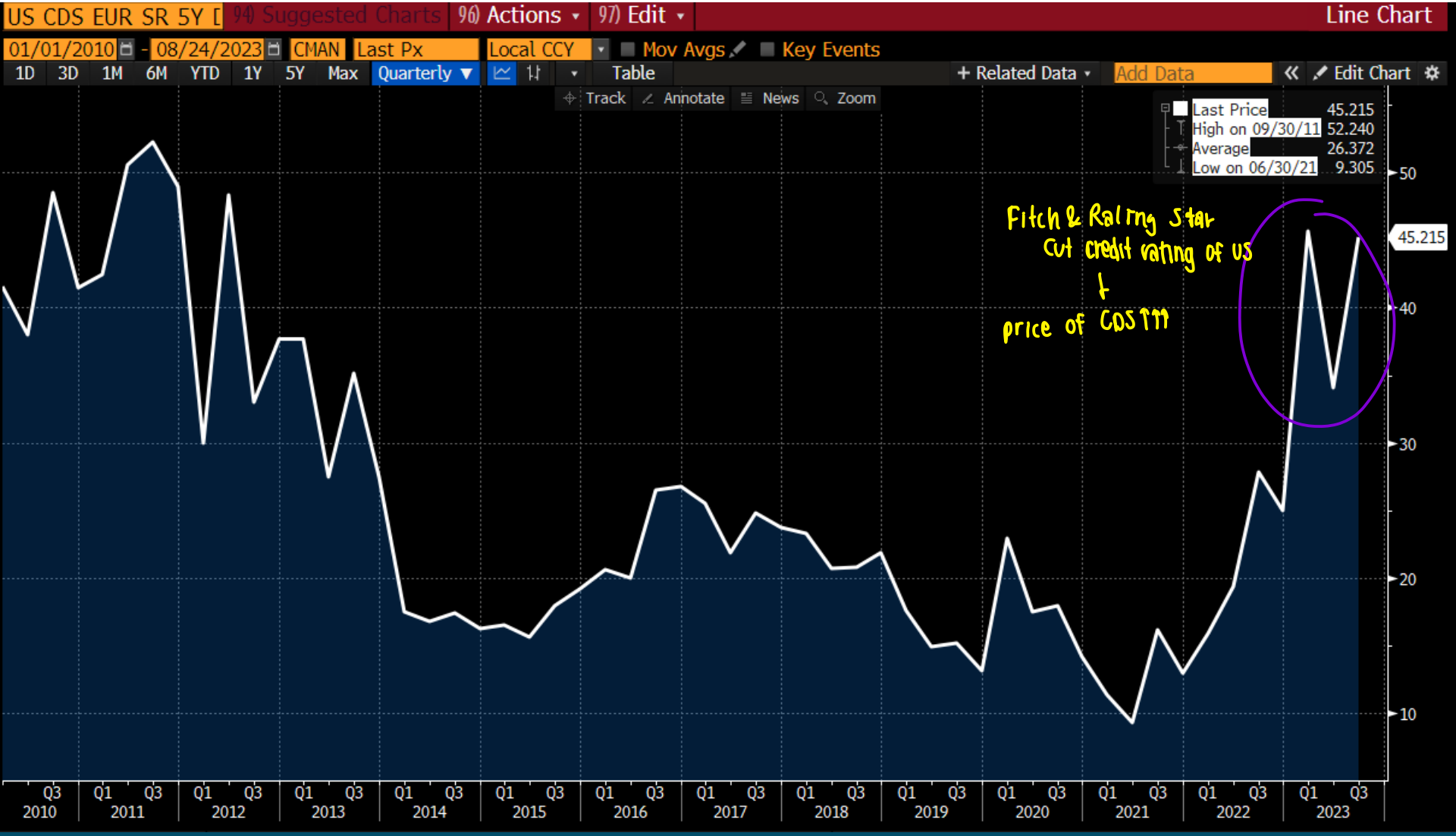
Country List Government Debt to GDP

World | Europe | America | Asia | Africa | Australia | G20

Taiwan	28.2	29.3	Dec/19	%
Kazakhstan	27.4	23.4	Dec/21	%
Australia	24.8	19.2	Dec/20	%
Bosnia and Herzegovina	24.8	25.5	Dec/21	%
Luxembourg	24.4	24.8	Dec/21	%
Kosovo	23.34	22.44	Dec/21	%
Bulgaria	20.9	21.1	Jun/22	%
Cuba	18.4	18.3	Dec/18	%
Azerbaijan	18.2	20.1	Dec/21	%
Botswana	18.2	17.8	Dec/20	%
Russia	18.2	17.7	Dec/21	%
Estonia	18.1	19	Dec/21	%
Palestine	16.4	14.6	Dec/19	%
Burundi	15.9	15.2	Dec/20	%
Swaziland	15.49	12.14	Dec/20	%
Congo	12.7	15.6	Dec/21	%
Kuwait	11.5	11.8	Dec/20	%
Afghanistan	7.8	6.1	Dec/20	%
Cayman Islands	5.3	5.7	Dec/20	%
Brunei	2.3	2.9	Dec/21	%

Price of CDS of US




US CDS EUR SR 5Y [
94) Suggested Charts
96) Actions
97) Edit
Line Chart
01/01/2010 - 08/24/2023
CMAN
Last Px
Local CCY
Mov Avgs
Key Events
1D 3D 1M 6M YTD 1Y 5Y Max Quarterly
Table
+ Related Data
Add Data
Edit Chart
Track
Annotate
News
Zoom
Last Price 45.215
High on 09/30/11 52.240
Average 26.372
Low on 06/30/21 9.305
50
40
30
20
10
45.215
Q3 2010
Q1 Q3 2011
Q1 Q3 2012
Q1 Q3 2013
Q1 Q3 2014
Q1 Q3 2015
Q1 Q3 2016
Q1 Q3 2017
Q1 Q3 2018
Q1 Q3 2019
Q1 Q3 2020
Q1 Q3 2021
Q1 Q3 2022
Q1 Q3 2023
Fitch & Rating Star
cut credit rating of US
↓
price of CDS ↑↑↑

US CDS EUR SR 5Y D14 | Page 1/2 | Description: CDS

94) | 95) Buy | 96) Sell | 97) Settings

21) CDS Description | 22) Ref Entity Description

Pages
1) CDS Info
2) RED Info

Quick Links
31) CINS CDS Search
32) ALLQ Pricing
33) QMGR Quotes
34) CACS Corp Act
35) CDSW CDS Val
36) CN Sec News
37) CRPR Ratings
38) CDSV CDS Curve

66) Send Security

Reference Entity Information

Name	United States of America
Sector	Government
Industry	Sovereigns

Credit Default Swap Contract Information

Country	US	Cpn Freq	Q
Debt Type	Senior	Day Count	ACT/360
Currency	EUR	Tenor	5Y
Maturity Date	06/20/28		
Disc Curve	EU Custom Swap Curve		

Street Convention

Standard Contract	SWES
ISDA Definitions Year	2014
Coupon (bps)	25
Recovery	0.40
Restructuring	Full Restructuring

Outstanding Debt (USD)

Amt Debt O/S	25.474MMMM

Identifiers

Short Name	US/ Corp
Full Name	US CDS EUR SR 5Y ...
BB Number	CT786896
Corp Ticker	ZCTO
RED Code	9A3AAAAB6

Reference Entity Ratings

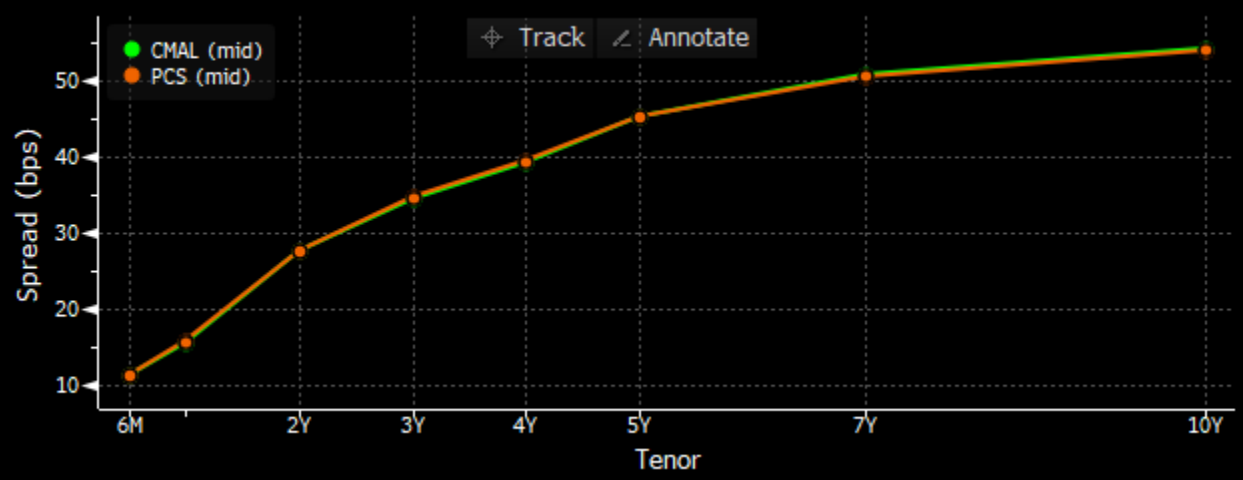
Moody's	Aaa
S&P	AA+u
Fitch	AA+u

11) Pricing Sources — CDS Curve Screen

United States of America - US CDS EUR SR

Security		MSG Quotes			CMAN			My PCS (Pricing Sources)			
Tenor	Name	Bid	Ask	Time	Bid	Ask	Time	Bid	Ask	Time	Source
1) Curve	US CDS EUR SR CRV										
2) 6 Mo	US CDS EUR SR 6M D14				8.69	13.91	11:30:00	8.63	13.84	08/24/23	CMAN
3) 1 Yr	US CDS EUR SR 1Y D14				12.97	18.20	11:30:00	12.99	18.23	08/24/23	CMAN
4) 2 Yr	US CDS EUR SR 2Y D14				24.94	30.00	11:30:00	25.04	30.12	08/24/23	CMAN
5) 3 Yr	US CDS EUR SR 3Y D14				32.01	37.05	11:30:00	32.17	37.25	08/24/23	CMAN
6) 4 Yr	US CDS EUR SR 4Y D14				36.75	41.58	11:30:00	36.95	41.81	08/24/23	CMAN
7) 5 Yr	US CDS EUR SR 5Y D14				42.89	47.84	11:30:00	42.75	47.68	08/24/23	CMAN
8) 7 Yr	US CDS EUR SR 7Y D14				47.57	53.87	11:30:00	47.34	53.61	08/24/23	CMAN
9) 10 Yr	US CDS EUR SR 10Y D14				50.05	58.46	11:30:00	49.87	58.24	08/24/23	CMAN

shorter period
↳ ↓ prob to default



United States of America

Moody's

1) Outlook
2) CC LT Foreign Bank D
3) CC LT Foreign Curr De
4) CC ST Foreign Bank D
5) CC ST Foreign Curr De
6) Long Term Rating
7) LC Curr Issuer Rating
8) FC Curr Issuer Rating
9) Local Currency LT Del

10) Standard & Poor's
11) Outlook
12) Foreign Currency LT D
13) Local Currency LT Del
14) Foreign Currency ST
15) Local Currency ST Debt A-1+u

Fitch

STABLE
ating AA+u
AA+u
Debt AA+u
ebt AA+u
ating F1+u
F1+u
Ceiling AAAu

omposites | CRDT »
Unchanged
Not Subscrib...
IG1
ount 21
Medium

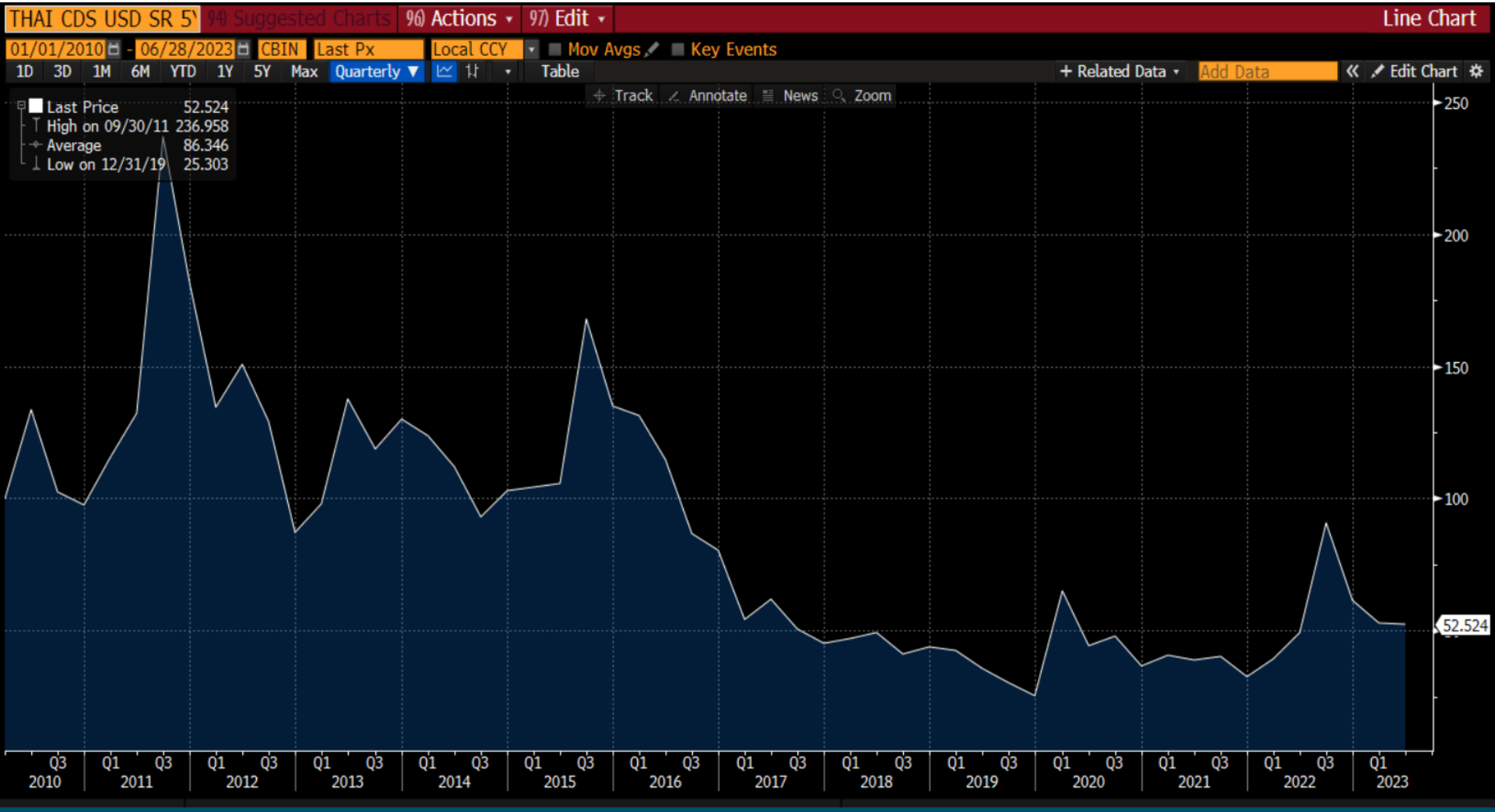
30) Search Coverage Universe | CRSR »
*Premium Field

Fitch LT Issuer Default Rating

Rating	Watch	Effective
AA+u		08/01/2023
AAAu	*-	05/24/2023
AAAu		03/21/2014
AAA	*-	10/15/2013
AAA		08/10/1994

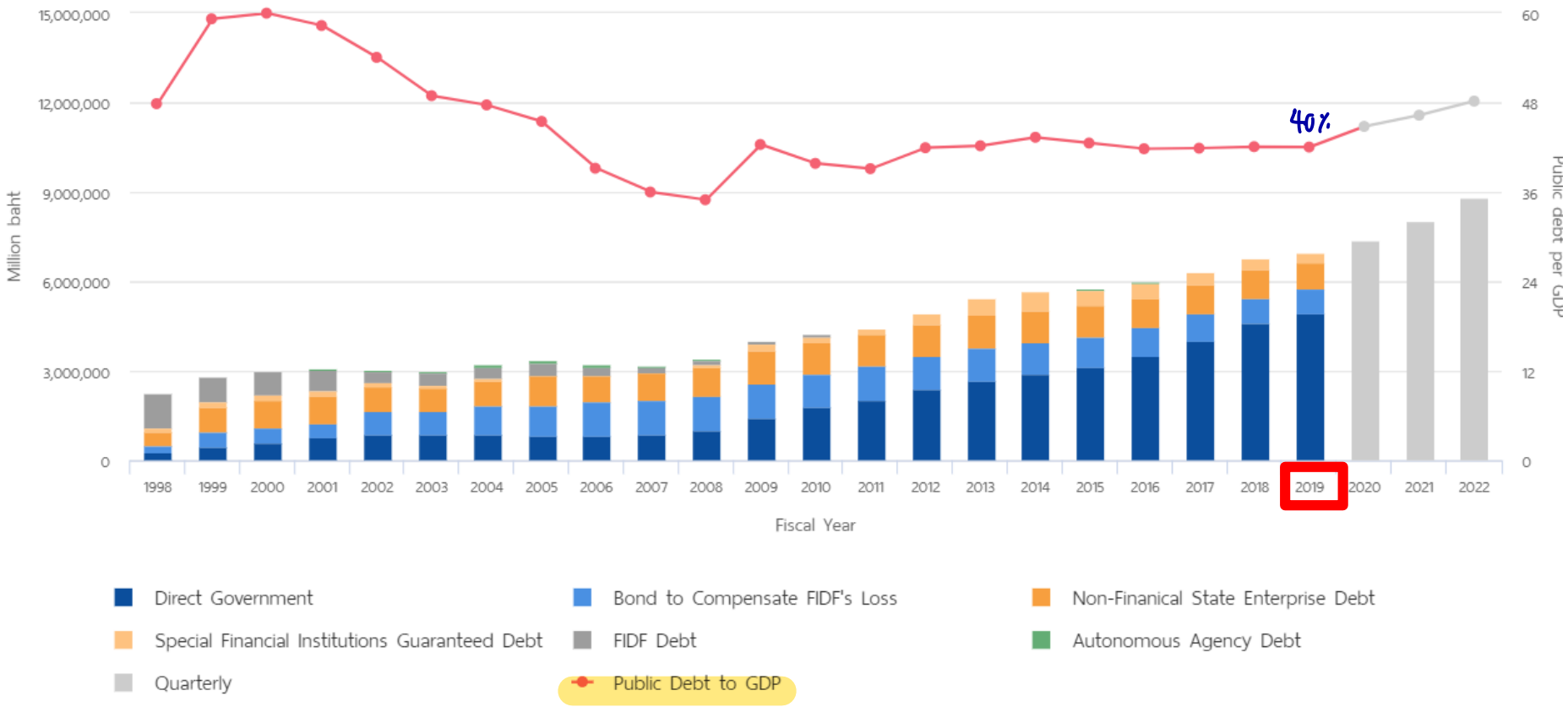
Up / Down / No Change / Initial

Close


THAI CDS USD SR 5Y
94) Suggested Charts
96) Actions
97) Edit
Line Chart
01/01/2010 - 06/28/2023
CBIN
Last Px
Local CCY
Mov Avgs
Key Events
1D 3D 1M 6M YTD 1Y 5Y Max Quarterly
Table
+ Related Data
Add Data
Edit Chart
Track
Annotate
News
Zoom
Last Price 52.524
High on 09/30/11 236.958
Average 86.346
Low on 12/31/19 25.303
250
200
150
100
52.524
Q3 2010
Q1 2011
Q3 2011
Q1 2012
Q3 2012
Q1 2013
Q3 2013
Q1 2014
Q3 2014
Q1 2015
Q3 2015
Q1 2016
Q3 2016
Q1 2017
Q3 2017
Q1 2018
Q3 2018
Q1 2019
Q3 2019
Q1 2020
Q3 2020
Q1 2021
Q3 2021
Q1 2022
Q3 2022
Q1 2023

Public debt FY 1998 to the present.

Less than 60 of GDP



Source: http://www.pdmo.go.th/index.php

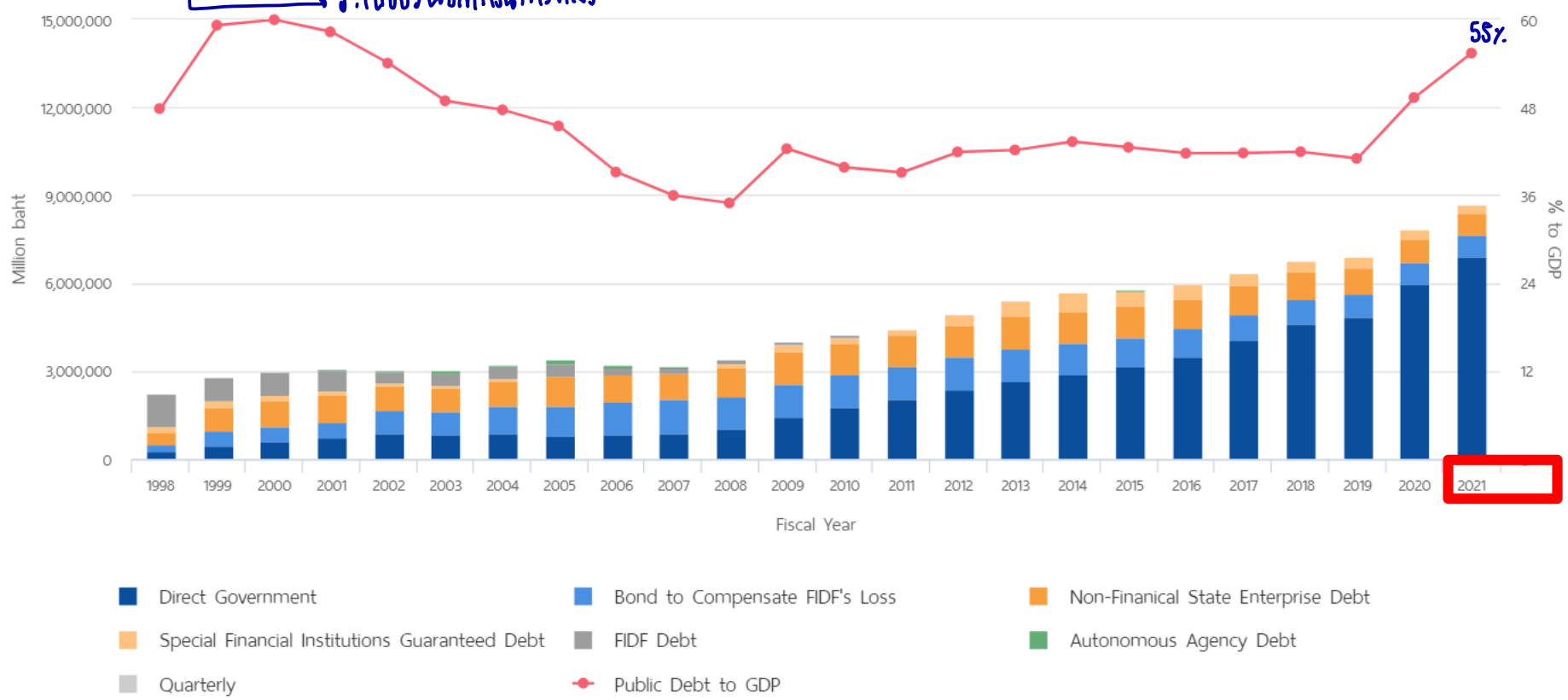
MSF Chula

Public debt FY 1998 to the present.

Less than 60 of GDP govt is unable to borrow more than 60% to GDP

↳ โดน!!!

→ ร:เชื่อมวินัยการเงินการคลัง



Remark : Estimated Public Debt / GDP as Debt Management Plan Third Amendment to the Cabinet's resolution on September 3, 2018

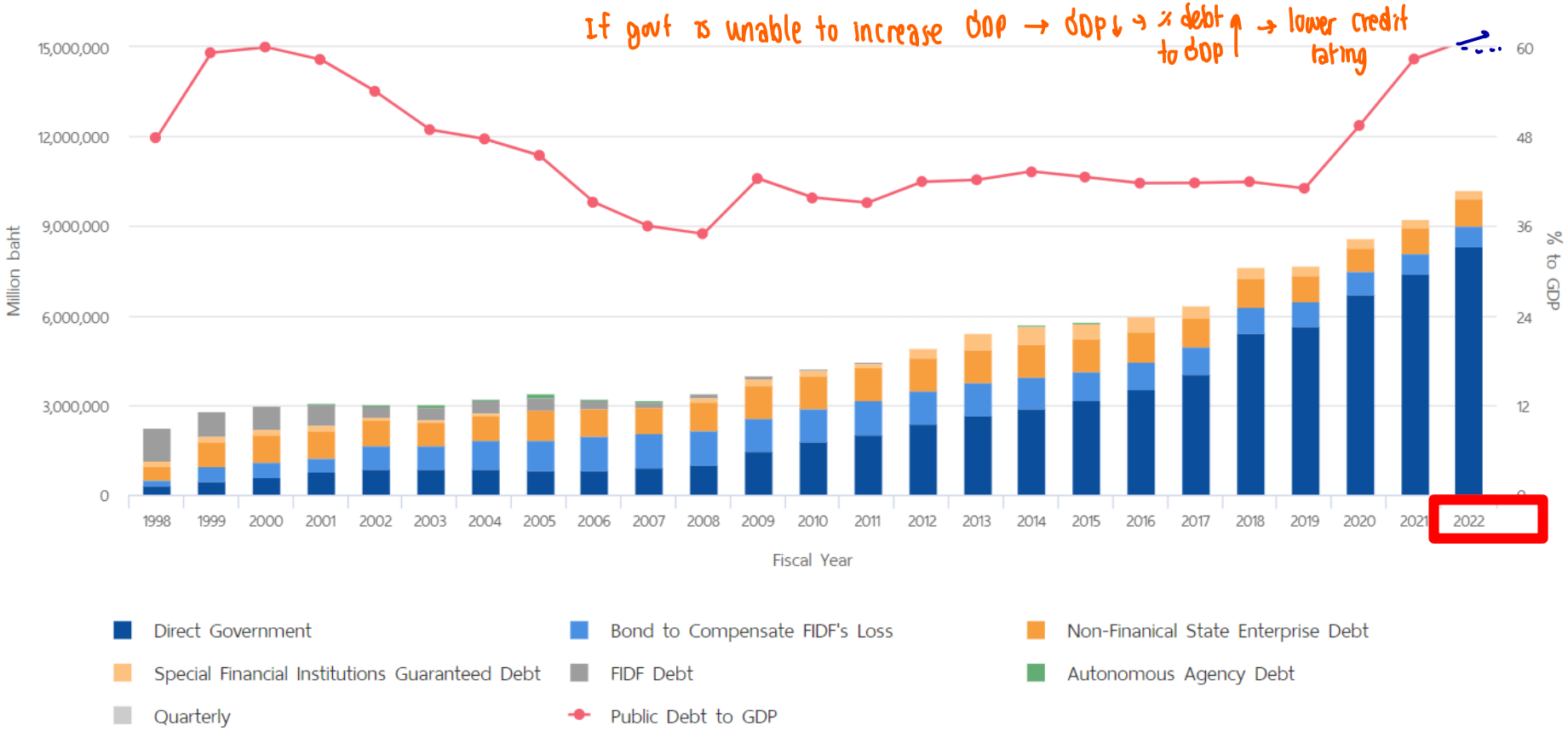
MSF Chula

Public debt FY 1998 to the present.

Less than 70 of GDP

govt raised the ceiling because of COVID-19

If govt is unable to increase GDP → GDP↓ → % debt to GDP↑ → lower credit rating

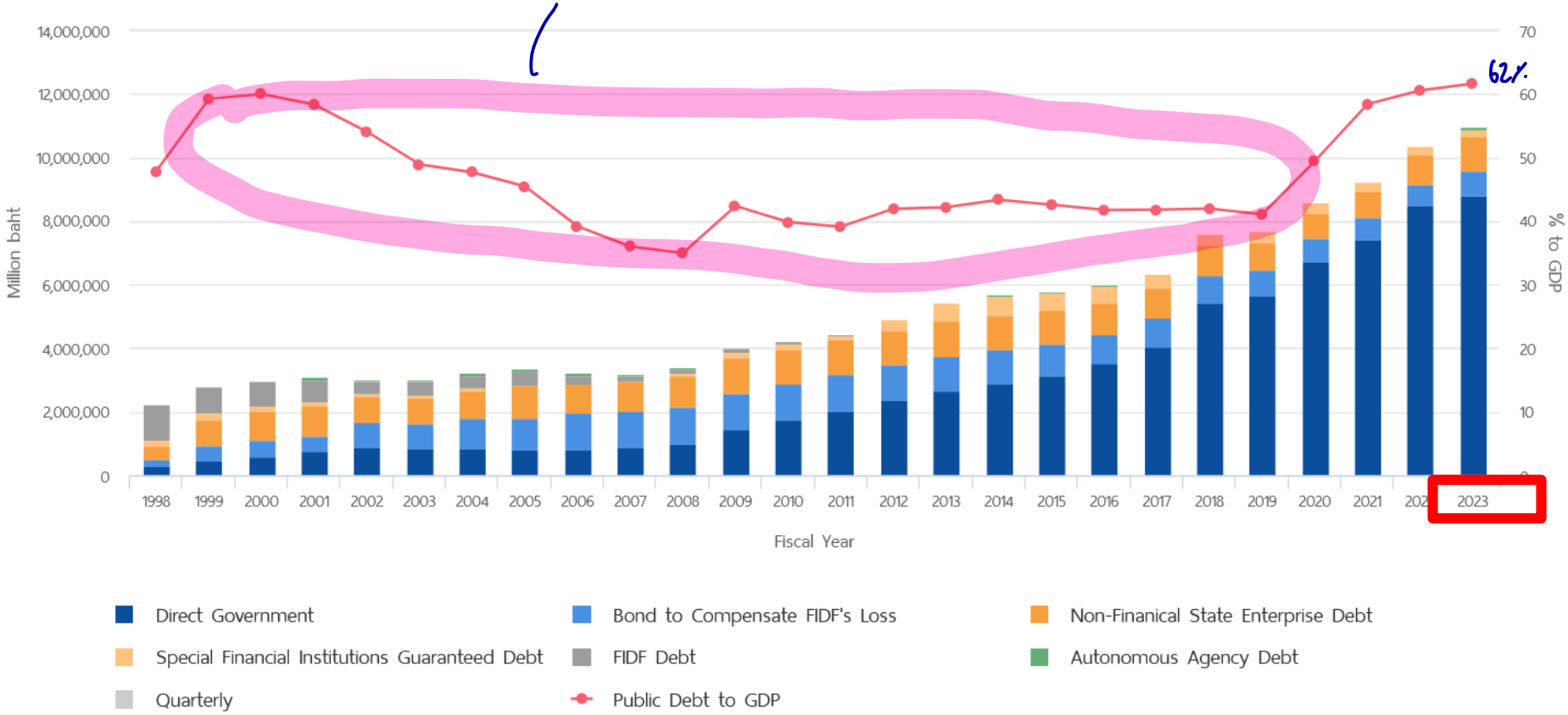


Remark : Estimated Public Debt / GDP as Debt Management Plan Third Amendment to the Cabinet's resolution on September 3, 2018

MSF Chula

Public debt FY 1998 to the present.
Less than 70 of GDP

In the past, we kept low debt to GDP



Remark :

Estimated Public Debt / GDP as Debt Management Plan Third

Amendment to the Cabinet's resolution on September 3, 2018

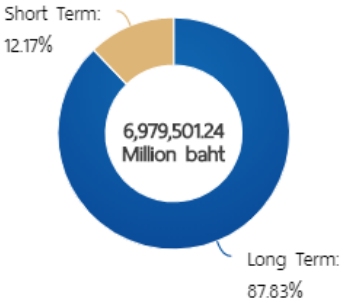
MSF Chula

Public Debt Outstanding

View All

Debt component	Million Baht	Percentage	% per GDP
1. Direct Government Debt	4,930,478.69	70.64	29.68
2. Government Debt to fiscalise FIDF loss	822,737.21	11.79	4.95
3. SOEs Debt	886,870.63	12.71	5.34
4. Financial SOEs Debt (Guaranteed)	330,003.48	4.73	1.99
5. Other Government Agencies Debt	9,411.23	0.13	0.06
6. FIDF Debt	0.00	0.00	0.00
Total	6,979,501.24	100.00	42.02
GDP	16,610,726.83	0.00	0.00

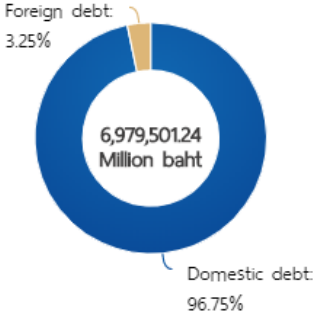
Public debt per GDP **42.02%**



Remaining

Average Time to Maturity

11 Years **2** Months



By Currency

Foreign Currency Debt

3.25% of Public debt

(equal to 226,566.57 MB.)

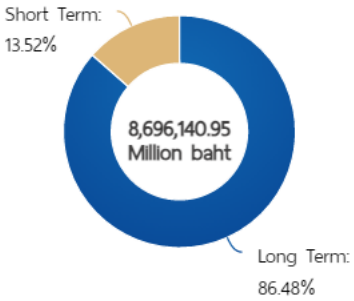
Data as of 31 May 2019

Public Debt Outstanding

View All

Debt component	Million Baht	Percentage	% per GDP
1. Direct Government Debt	6,931,146.79	79.70	44.17
2. Government Debt to fiscalise FIDF loss	711,542.66	8.19	4.53
3. SOEs Debt	760,860.15	8.75	4.85
4. Financial SOEs Debt (Guaranteed)	285,360.17	3.28	1.82
5. Other Government Agencies Debt	7,231.18	0.08	0.05
6. FIDF Debt	0.00	0.00	0.00
Total	8,696,140.95	100.00	55.42
GDP	15,691,888.18	0.00	0.00

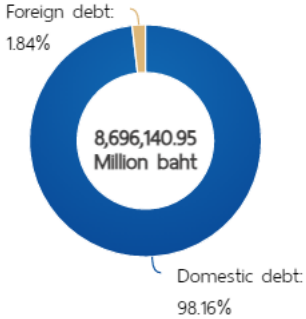
% to GDP **55.42%**



Remaining

Average Time to Maturity

9 Years **5** Months



By Currency

Foreign Currency Debt

1.84% of Public debt

(equal to 159,684.23 MB.)

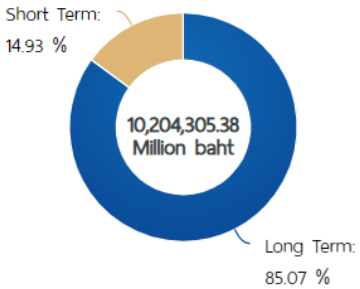
Data as of 31 May 2021

Public Debt Outstanding

View All

Debt component	Million Baht	Percentage	% per GDP
1. Direct Government Debt	8,315,818.26	81.49	49.76
2. Government Debt to fiscalise FIDF loss	685,004.50	6.71	4.10
3. SOEs Debt	946,912.52	9.28	5.67
4. Financial SOEs Debt (Guaranteed)	249,844.96	2.45	1.49
5. Other Government Agencies Debt	6,725.14	0.07	0.04
6. FIDF Debt	0.00	0.00	0.00
Total	10,204,305.38	100.00	61.06
GDP	16,713,064.87	0.00	0.00

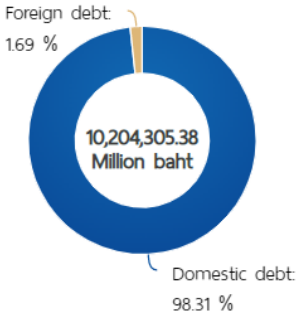
% to GDP **61.06 %**



Remaining

Average Time to Maturity

8 Years **9** Months



By Currency

Foreign Currency Debt

1.69 % of Public debt

(equal to 172,862.58 MB.)

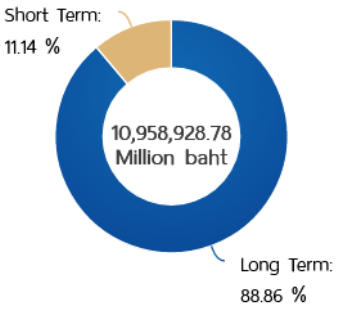
Data as of 30 June 2022

Public Debt Outstanding

View All

Debt component	Million Baht	Percentage	% per GDP
1. Direct Government Debt	8,808,445.24	80.38	49.54
2. Government Debt to fiscalise FIDF loss	790,702.50	7.21	4.45
3. SOEs Debt	1,080,015.29	9.86	6.07
4. Financial SOEs Debt (Guaranteed)	223,509.29	2.04	1.26
5. Other Government Agencies Debt	56,256.46	0.51	0.31
6. FIDF Debt	0.00	0.00	0.00
Total	10,958,928.78	100.00	61.63
GDP	17,780,909.40	0.00	0.00

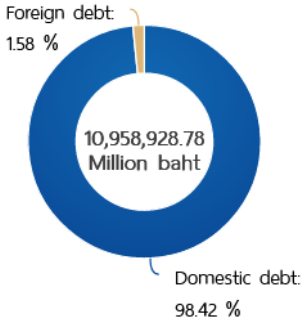
% to GDP **61.63 %**



Remaining

Average Time to Maturity

8 Years 9 Months



By Currency

Foreign Currency Debt

1.58 % of Public debt

(equal to 173,147.46 MB.)

Data as of 31 May 2023

Government/Treasury Notes and Bonds

- No default risk since the Treasury can print money to payoff the debt
- Very low interest rates, often considered the risk-free rate (although inflation risk is still present)
- Fixed-rate, semiannually coupon.
- Denomination is $1,000.
- Sold in *auction*

Primary Markets for Government Bonds

- Sold through auction which are conducted periodically.
- Competitive basis
  - Auction among designated institution investors (primary dealers) to offer amount and interest rate (yield) to the issuer.
    govt allows only
    PD → large financial institutions
  - Participate by large investors and institutions
  - In U.S., 35 percent rules is used to prevent a single bidder to dominate the market.

LIST OF PRIMARY DEALERS

CURRENT LIST, ADDITIONS, REMOVALS & NAME CHANGES

PRIMARY DEALERS | ADDITIONS AND REMOVALS | NAME CHANGES

Primary Dealers

ASL Capital Markets Inc.
Bank of Montreal, Chicago Branch
Bank of Nova Scotia, New York Agency
BNP Paribas Securities Corp.
Barclays Capital Inc.
BofA Securities, Inc.
Cantor Fitzgerald & Co.
Citigroup Global Markets Inc.
Daiwa Capital Markets America Inc.
Deutsche Bank Securities Inc.
Goldman Sachs & Co. LLC
HSBC Securities (USA) Inc.
Jefferies LLC
J.P. Morgan Securities LLC
Mizuho Securities USA LLC
Morgan Stanley & Co. LLC
NatWest Markets Securities Inc.
Nomura Securities International, Inc.
RBC Capital Markets, LLC
Santander US Capital Markets LLC
Societe Generale, New York Branch
TD Securities (USA) LLC
UBS Securities LLC.
Wells Fargo Securities, LLC

Primary Dealers

Primary dealers are trading counterparties of the New York Fed in its implementation of monetary policy. They are also expected to make markets for the New York Fed on behalf of its official accountholders as needed, and to bid on a pro-rata basis in all Treasury auctions at reasonably competitive prices.

https://www.newyorkfed.org/markets/primarydealers

What are your expectations for the most likely levels of the medians of FOMC participants' target federal funds rate projections in the SEP? Please provide your responses out to three decimal places.

	Year-end 2023	Year-end 2024	Year-end 2025	Longer Run
25th Percentile	5.38%	4.25%	3.13%	2.50%
Median	5.38%	4.38%	3.13%	2.50%
75th Percentile	5.38%	4.38%	3.13%	2.50%
# of Respondents	25	25	25	25

ask PD about target FED fund rate in opinion
similar to expected from yield curve → cannot believe in number
but large banks expect lower Fed rate

Provide your estimate of the most likely outcome for output, inflation, and unemployment.
(16 responses)

		2023	2024	2025	Longer Run
Real GDP (Q4/Q4 Growth)	25th Percentile	0.00%	0.70%	1.80%	1.80%
	Median	0.40%	1.00%	1.95%	1.80%
	75th Percentile	0.70%	1.70%	2.13%	2.00%
Core PCE Inflation (Q4/Q4)	25th Percentile	3.50%	2.20%	2.00%	
	Median	3.70%	2.40%	2.15%	
	75th Percentile	3.90%	2.60%	2.23%	
Headline PCE Inflation (Q4/Q4)	25th Percentile	2.90%	2.00%	2.00%	2.00%
	Median	3.10%	2.30%	2.10%	2.00%
	75th Percentile	3.50%	2.40%	2.30%	2.00%
Unemployment Rate (Q4 Average Level)	25th Percentile	3.80%	4.40%	4.35%	4.00%
	Median	4.00%	4.50%	4.55%	4.00%
	75th Percentile	4.20%	5.00%	4.80%	4.20%

bidding - pre-schedule → everyone know it

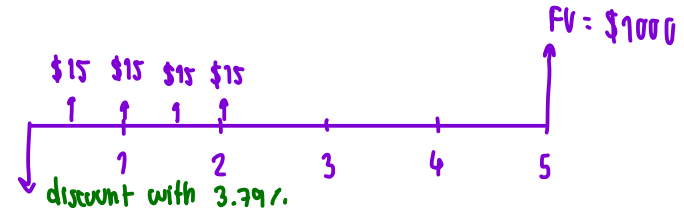
Tentative Auction Schedule of U.S. Treasury Securities					
Security Type			**Announcement Date**	**Auction Date**	**Settlement Date**
4-Week BILL			Tuesday, September 19, 2023	Thursday, September 21, 2023	Tuesday, September 26, 2023
8-Week BILL			Tuesday, September 19, 2023	Thursday, September 21, 2023	Tuesday, September 26, 2023
13-Week BILL			Thursday, September 21, 2023	Monday, September 25, 2023	Thursday, September 28, 2023
26-Week BILL			Thursday, September 21, 2023	Monday, September 25, 2023	Thursday, September 28, 2023
2-Year FRN	**R**		**Thursday, September 21, 2023**	**Wednesday, September 27, 2023**	**Friday, September 29, 2023**
2-Year NOTE			**Thursday, September 21, 2023**	**Tuesday, September 26, 2023**	**Monday, October 02, 2023**
5-Year NOTE			**Thursday, September 21, 2023**	**Wednesday, September 27, 2023**	**Monday, October 02, 2023**
7-Year NOTE			**Thursday, September 21, 2023**	**Thursday, September 28, 2023**	**Monday, October 02, 2023**
17-Week BILL			Tuesday, September 26, 2023	Wednesday, September 27, 2023	Tuesday, October 03, 2023
4-Week BILL			Tuesday, September 26, 2023	Thursday, September 28, 2023	Tuesday, October 03, 2023
8-Week BILL			Tuesday, September 26, 2023	Thursday, September 28, 2023	Tuesday, October 03, 2023
13-Week BILL			Thursday, September 28, 2023	Monday, October 02, 2023	Thursday, October 05, 2023
26-Week BILL			Thursday, September 28, 2023	Monday, October 02, 2023	Thursday, October 05, 2023
52-Week BILL			Thursday, September 28, 2023	Tuesday, October 03, 2023	Thursday, October 05, 2023
17-Week BILL			Tuesday, October 03, 2023	Wednesday, October 04, 2023	Tuesday, October 10, 2023
4-Week BILL			Tuesday, October 03, 2023	Thursday, October 05, 2023	Tuesday, October 10, 2023
8-Week BILL			Tuesday, October 03, 2023	Thursday, October 05, 2023	Tuesday, October 10, 2023
13-Week BILL			Thursday, October 05, 2023	Tuesday, October 10, 2023	Thursday, October 12, 2023
26-Week BILL			Thursday, October 05, 2023	Tuesday, October 10, 2023	Thursday, October 12, 2023
3-Year NOTE			**Thursday, October 05, 2023**	**Tuesday, October 10, 2023**	**Monday, October 16, 2023**
10-Year NOTE	**R**		**Thursday, October 05, 2023**	**Wednesday, October 11, 2023**	**Monday, October 16, 2023**
30-Year BOND	**R**		**Thursday, October 05, 2023**	**Thursday, October 12, 2023**	**Monday, October 16, 2023**
Holiday - Monday, October 09, 2023 - Columbus Day					
17-Week BILL			Tuesday, October 10, 2023	Wednesday, October 11, 2023	Tuesday, October 17, 2023
4-Week BILL			Tuesday, October 10, 2023	Thursday, October 12, 2023	Tuesday, October 17, 2023
8-Week BILL			Tuesday, October 10, 2023	Thursday, October 12, 2023	Tuesday, October 17, 2023
13-Week BILL			Thursday, October 12, 2023	Monday, October 16, 2023	Thursday, October 19, 2023
26-Week BILL			Thursday, October 12, 2023	Monday, October 16, 2023	Thursday, October 19, 2023
20-Year BOND	**R**		**Thursday, October 12, 2023**	**Wednesday, October 18, 2023**	**Tuesday, October 31, 2023**
5-Year TIPS		**T**	**Thursday, October 12, 2023**	**Thursday, October 19, 2023**	**Tuesday, October 31, 2023**
17-Week BILL			Tuesday, October 17, 2023	Wednesday, October 18, 2023	Tuesday, October 24, 2023
4-Week BILL			Tuesday, October 17, 2023	Thursday, October 19, 2023	Tuesday, October 24, 2023
8-Week BILL			Tuesday, October 17, 2023	Thursday, October 19, 2023	Tuesday, October 24, 2023
13-Week BILL			Thursday, October 19, 2023	Monday, October 23, 2023	Thursday, October 26, 2023
26-Week BILL			Thursday, October 19, 2023	Monday, October 23, 2023	Thursday, October 26, 2023

Primary Markets for Government Bonds

- Let's assume that the Treasury accept the competitive orders from various bidders as shown in the table..
- The Treasury auctioned $1.0 billion par value T-bond, matured in 5 years and pay 3% semi-annual interest rate, the following bids price and volume were received

$1000 M

1.5% per period



price = ?

$$= \frac{C}{(1+\frac{i}{2})} + \frac{C}{(1+\frac{i}{2})^2} + \cdots + \frac{F+C}{(1+\frac{i}{2})^{*10}}$$

Primary Markets for Government Bonds

lower yield, higher price

They offer yield instead of price

No.	Bidder	Yield	Amount (million)
1	1st Well Fargo	3.780 lowest yield	190 there're some left
2	3rd UBS	3.795	105
3	2nd HSBC	3.790	100
4	2nd Citi	3.790	190
5	KBank	3.800	100
6	JPM	3.810	200
7	2nd Deutsche	3.790	150
8	X UOB	3.815	130
9	X Barclays	3.818	200
Total			**1,365**

risk-free borrower

Primary Markets for Government Bonds

$$\text{Price} = \frac{15}{\left(1+\frac{3.78\%}{2}\right)} + \frac{15}{\left(1+\frac{3.78\%}{2}\right)^2} + \cdots + \frac{1000+15}{\left(1+\frac{3.78}{2}\right)^{10}} = 981.56$$

Result

Investor

No.	Bidder	Yield	Amount (million)	Allocated Amount	Average Return
1	Well Fargo	3.780	190	190	3.780*190/1000
2	Citi	3.790	190	190	3.790*190/1000
3	Deutsche	3.790	150	150	3.790*150/1000
4	HSBC	3.790	100	100	3.790*100/1000
5	UBS	3.795	105	105	3.795*105/1000
6	KBank	3.800	100	100	3.800*100/1000
7	JPM	3.810	200	165	3.810*165/1000
	Total			**1,000**	**Wt.Yield = 3.793 %**

lower price

highest rate

remaining amount / leftover

& this rate is accepted in bidding → everyone get 3.81% in uniform-price auctions

every banks happy with this (lowest accepted price)

R_f

cost of borrowing of govt

reference as risk-free rate

Primary Markets for Government Bonds

different bidder get different rate as what they offer

Thailand

- Multiple-price auctions (used by BOT): highest bidder receives the first allocation and subsequent highest bidders are filled next
- Uniform-price auctions (used by U.S. Treasury) : the process is the same but all bidders pay the same price based on the highest rate accepted (stop-out rate).

Non-competitive Bidding

Maximum: $10 million per auction. You agree to accept the rate, yield, or discount margin determined at the auction. If you are using your TreasuryDirect account, you must bid non-competitively.

Competitive Bidding

Maximum: 35% of the offering amount. You specify the rate, yield, or discount margin that you will accept. To bid competitively, you must use a bank, broker, or dealer — or your TAAPS account.

Primary Markets for Government Bonds

- Who are eligible for competitive bid?
  - financial institutions appointed by authorities as principal intermediaries in the government securities (aka. primary dealer)
  - support the auction process in the primary market
  - enhance liquidity in the secondary market
  - facilitate transactions in open market operations
  - provide channel to for non-competitive bids on behalf of their customers

https://www.bot.or.th/Thai/DebtSecurities/Transactions/FAQs/Pages/FAQs.aspx#

Primary Markets for Government Bonds

- Non-Competitive Bid
  - Offer to buy specific amount of bonds with the yield equal to the weighted average yield from competitive bid.
  - NCB offers small institutions to invest in Government bonds. (foundations, cooperatives, non-profit organization, etc…)
  - Bidders submit order through PD prior to auction date

in charge of providing info of Thai bond market

ThaiBMA: Auction Results

MSF Chula

Result of Government Bonds Auction

mid of

June 2023 | July 2023 | August 2023

Treasury Bills | Government Bonds | Government Related Entity | State Owned Enterprise Bonds | State Agency Bonds

ref for mkt

R_f (15 yr) : 2.84%

have to charge higer than this for borrower who want to borrow 15 yr debt

all bonds are pre-schedule

Symbol	Issue Name	Term to maturity	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Grand Total Amount (THB mln.)	Auction Result: Yield (%) High	Low	Avg.	BCR	Registered Date	Non-comp. Bid Amount (THB mln.)	Comp. Bid Amount (THB mln.)
ESGLB376A	TLOAN65/5/14.75Y	14.75Y	20,000.00	19-Sep-22	17-Jun-37	05-Jul-23	20,000.00	2.8420	2.8330	2.8398	2.3400	07-Jul-23	150.00	19,850.00
LB273A	Debt Management Government Bond FY. B.E. 2566/25	3.68Y	30,000.00	14-Jul-23	17-Mar-27	12-Jul-23	20,196.00	2.2640	2.2170	2.2497	0.9900	14-Jul-23	0.00	20,196.00
LBA476A	TLOAN65/01/25Y	25.27Y	7,000.00	16-Mar-22	17-Jun-47	12-Jul-23	7,000.00	3.1940	3.1800	3.1874	3.3100	14-Jul-23	50.00	6,950.00
LB293A	Debt Management Government Bond FY. B.E. 2566/26	5.66Y	25,000.00	21-Jul-23	17-Mar-29	19-Jul-23	0.00	0.0000	0.0000	0.0000	0.0000	21-Jul-23	0.00	0.00
LB526A	TLOAN65/2/30.69Y	30.69Y	7,000.00	15-Oct-21	17-Jun-52	19-Jul-23	0.00	0.0000	0.0000	0.0000	0.0000	21-Jul-23	0.00	0.00
			89,000.00				47,196.00							

rates required by institutional investors

last winner — 1st winner

http://www.thaibma.or.th/EN/BondInfo/Auction/Auction.aspx

ThaiBMA: Auction Results

Result of Government Bonds Auction

June 2022 | July 2022 | August 2022

Treasury Bills | Government Bonds | Government Related Entity | State Owned Enterprise Bonds | State Agency Bonds

Symbol	Issue Name	Term	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Grand Total Amount (THB mln.)	Auction Result			BCR	Registered Date	Non-comp. Bid Amount (THB mln.)	Comp. Bid Amount (THB mln.)
								Yield (%)						
								High	Low	Avg.				
LB286A	TLOAN65/12/5.95Y	5.95Y	22,500.00	08-Jul-22	17-Jun-28	06-Jul-22	22,500.00	2.4700	2.4500	2.4659	3.6500	08-Jul-22	0.00	22,500.00
LB526A	TLOAN65/2/30.69Y	30.69Y	5,000.00	15-Oct-21	17-Jun-52	06-Jul-22	5,000.00	4.2500	4.2000	4.2248	4.9400	08-Jul-22	0.00	5,000.00
LB31DA	TLOAN64/6/10.64Y	10.64Y	22,000.00	28-Apr-21	17-Dec-31	12-Jul-22	22,000.00	2.4580	2.4320	2.4512	2.2700	15-Jul-22	200.00	21,800.00
LB249A	TLOAN65/1/2.93Y	2.93Y	25,000.00	15-Oct-21	17-Sep-24	20-Jul-22	25,000.00	1.8880	1.8320	1.8553	1.0700	22-Jul-22	0.00	25,000.00
LBA476A	TLOAN65/01/25Y	25.27Y	10,000.00	16-Mar-22	17-Jun-47	21-Jul-22	10,000.00	0.0000	0.0000	0.0000	0.0000	27-Jul-22	0.00	10,000.00
			84,500.00				84,500.00							

http://www.thaibma.or.th/EN/BondInfo/Auction/Auction.aspx

ThaiBMA: Auction Results

Result of Government Bonds Auction

June 2021 | July 2021 | August 2

Treasury Bills | Government Bonds | Government Related Entity | State Owned Enterprise Bonds | State Agency Bonds

Symbol	Issue Name	Term	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Grand Total Amount (THB mln.)	Auction Result Yield (%) High	Low	Avg.	BCR	Register... Date	Non-comp. Bid Amount (THB mln.)	Comp. Bid Amount (THB mln.)	Greens... Option Amount (THB mln.)	PAO Amount (THB mln.)	Over Allotm... Amount (THB mln.)
ESGLB35DA	TLOAN63/01/15.34Y	15.34Y	12,000.00	19-Aug-20	17-Dec-35	14-Jul-21	12,000.00	2.0570	2.0350	2.0503	3.0300	16-Jul-21	200.00	11,800.00	0.00	0.00	0.00
LB276A	TLOAN64/11/5.92Y	5.92Y	30,000.00	16-Jul-21	17-Jun-27	14-Jul-21	30,000.00	0.9200	0.9100	0.9109	2.4000	16-Jul-21	0.00	30,000.00	0.00	0.00	0.00
LB246A	TLOAN64/1/3.67Y	3.67Y	25,000.00	16-Oct-20	17-Jun-24	21-Jul-21	25,000.00	0.5730	0.5550	0.5645	1.8000	23-Jun-21	0.00	25,000.00	0.00	0.00	0.00
LB496A	TLOAN63/2/29.68Y	29.68Y	5,000.00	18-Oct-19	17-Jun-49	21-Jul-21	6,000.00	2.5200	2.4880	2.4940	3.7900	23-Jun-21	500.00	4,500.00	0.00	0.00	1,000.00
			72,000.00				73,000.00										

http://www.thaibma.or.th/EN/BondInfo/Auction/Auction.aspx

ThaiBMA: Auction Results

Result of Treasury Bills Auction

July 2020 | August 2020 | September 2020

Treasury Bills | Government Bonds | Government Related Entity | State Owned Enterprise Bonds | State Agency Bonds

Symbol	Issue Name	Term	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Auction Result					Registered Date	Non-comp. Bid Amount (THB mln.)	Comp. Bid Amount (THB mln.)
							Grand Total Amount (THB mln.)	Yield (%)			BCR			
								High	Low	Avg.				
TB21203A	TB63/(BD)5/182D	182D	20,000.00	05-Aug-20	03-Feb-21	03-Aug-20	20,000.00	0.5050	0.4970	0.5040	3.3500	05-Aug-20	0.00	20,000....
TB21217A	TB63/(BD)6/182D	182D	20,000.00	19-Aug-20	17-Feb-21	17-Aug-20	20,000.00	0.5030	0.4970	0.5005	3.3100	19-Aug-20	0.00	20,000....
TB21303A	TB63/(RS)1/182D	182D	30,000.00	02-Sep-20	03-Mar-21	31-Aug-20	0.00	0.0000	0.0000	0.0000	0.0000	02-Sep-20	0.00	0.00
			70,000.00				**40,000.00**							

http://www.thaibma.or.th/EN/BondInfo/Auction/Auction.aspx

ThaiBMA: Auction Results

Result of Government Bonds Auction

June 2019 | July 2019 | August 2019

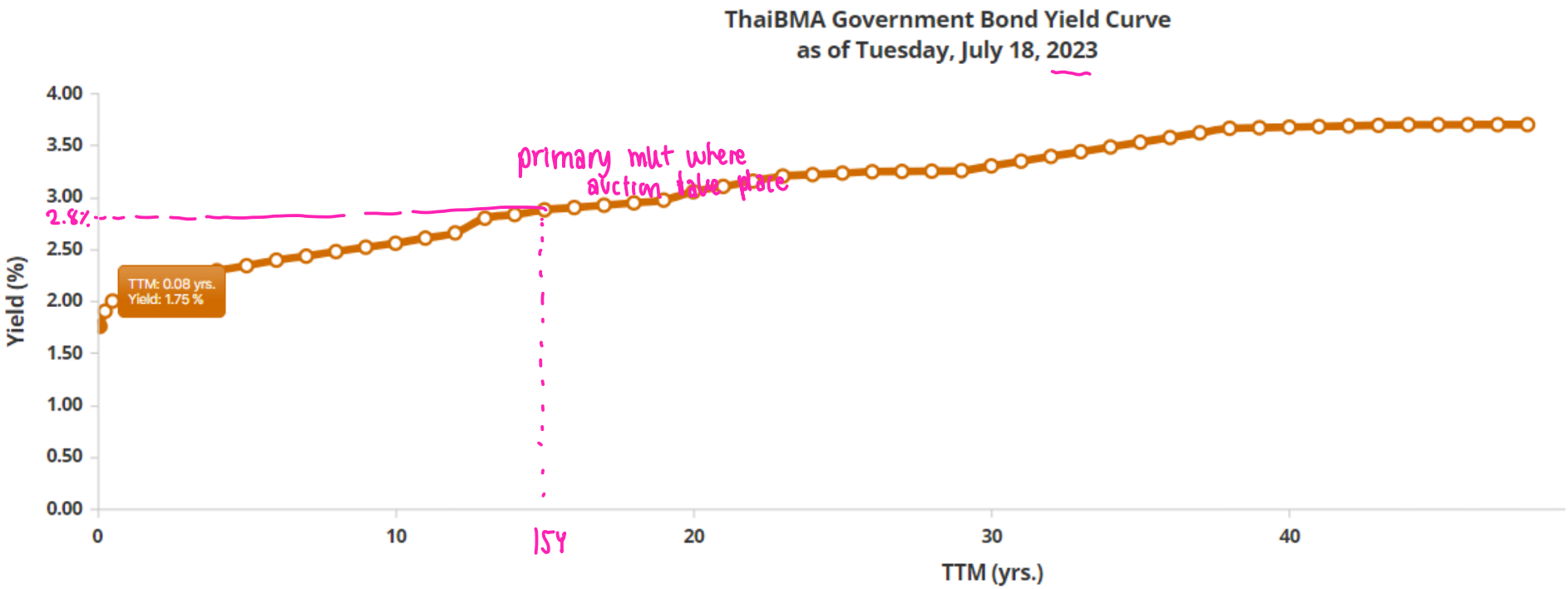
Treasury Bills | Government Bonds | State Owned Enterprise Bonds | State Agency Bonds

Symbol	Issue Name	Term	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Auction Result					Registe... Date	Non-comp. Bid Amount (THB mln.)	Comp. Bid Amount (THB mln.)
							Grand Total Amount (THB mln.)	Yield (%)			BCR			
								High	Low	Avg.				
LB326A	TLOAN55/01/20Y	20.42Y	17,000.00	27-Jan-12	25-Jun-32	05-Jun-19	17,000.00	2.5970	2.5900	2.5945	3.2500	07-Jun-19	1,000.00	16,000.00
LB23DA	TLOAN61/12/5.34Y	5.34Y	30,000.00	17-Aug-18	17-Dec-23	19-Jun-19	32,900.00	1.8440	1.8390	1.8420	2.3500	21-Jun-19	500.00	29,500.00
LB676A	TLOAN61/04/49.63Y	49.63Y	8,000.00	10-Nov-17	17-Jun-67	19-Jun-19	8,000.00	3.3050	3.2980	3.2995	5.5400	21-Jun-19	1,600.00	6,400.00
			55,000.00				**57,900.00**							

http://www.thaibma.or.th/EN/BondInfo/Auction/Auction.aspx

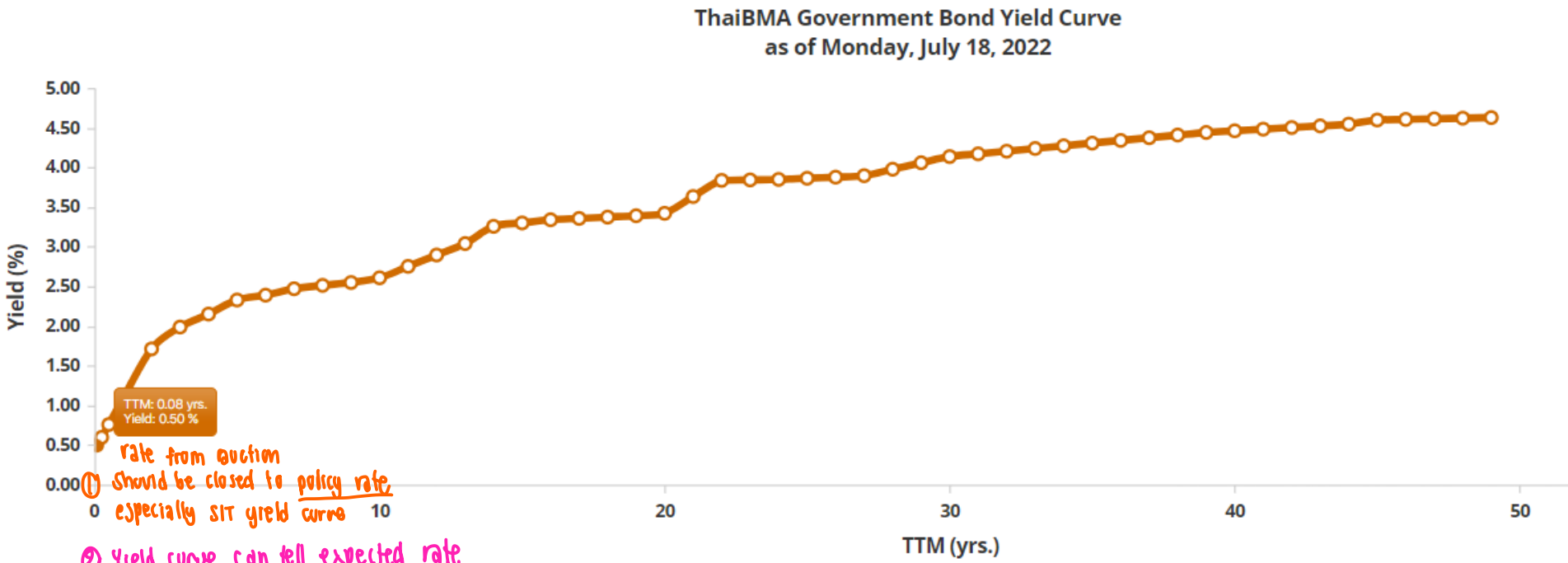
ThaiBMA: Bond Yield

shape of



ThaiBMA: Bond Yield

is not scaling!!!

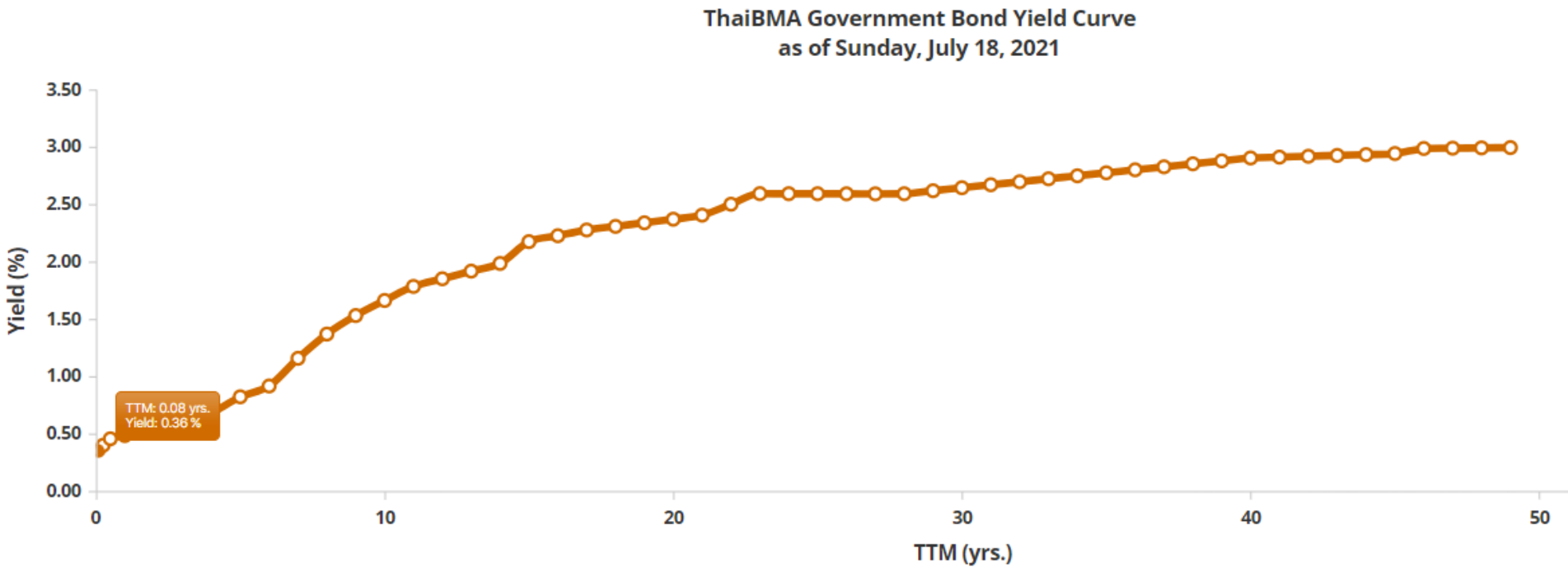


rate from auction

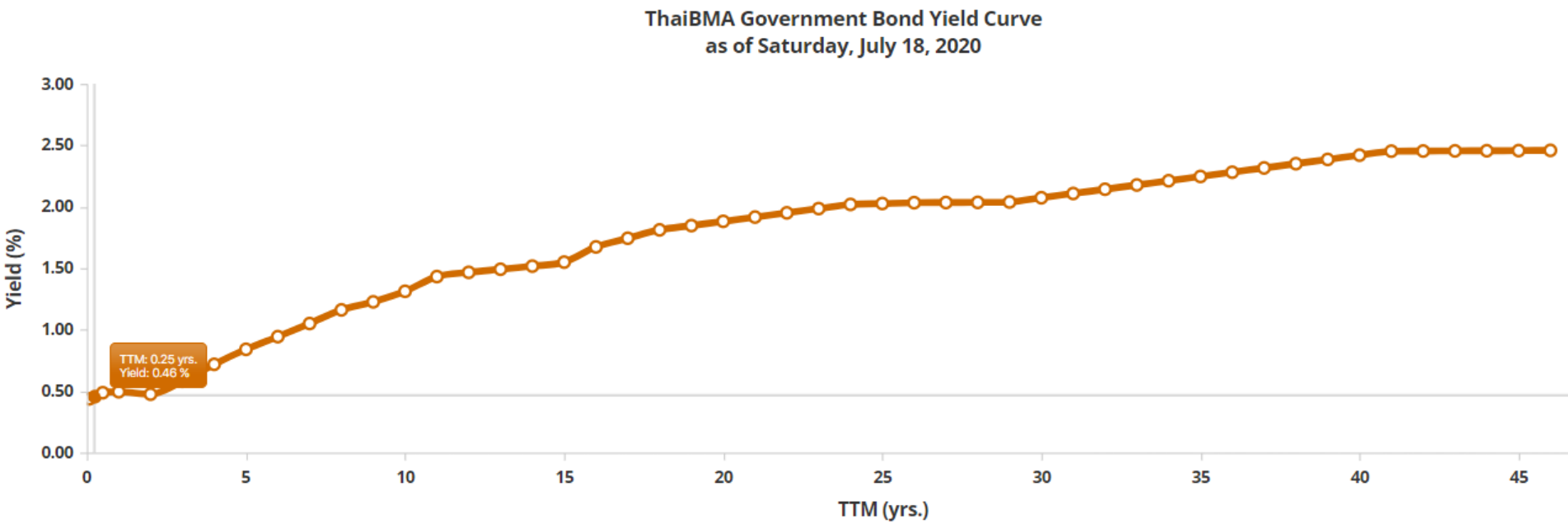
① should be closed to policy rate
especially SIT yield curve

② Yield curve can tell expected rate
↳ but Thai curve is not scaling

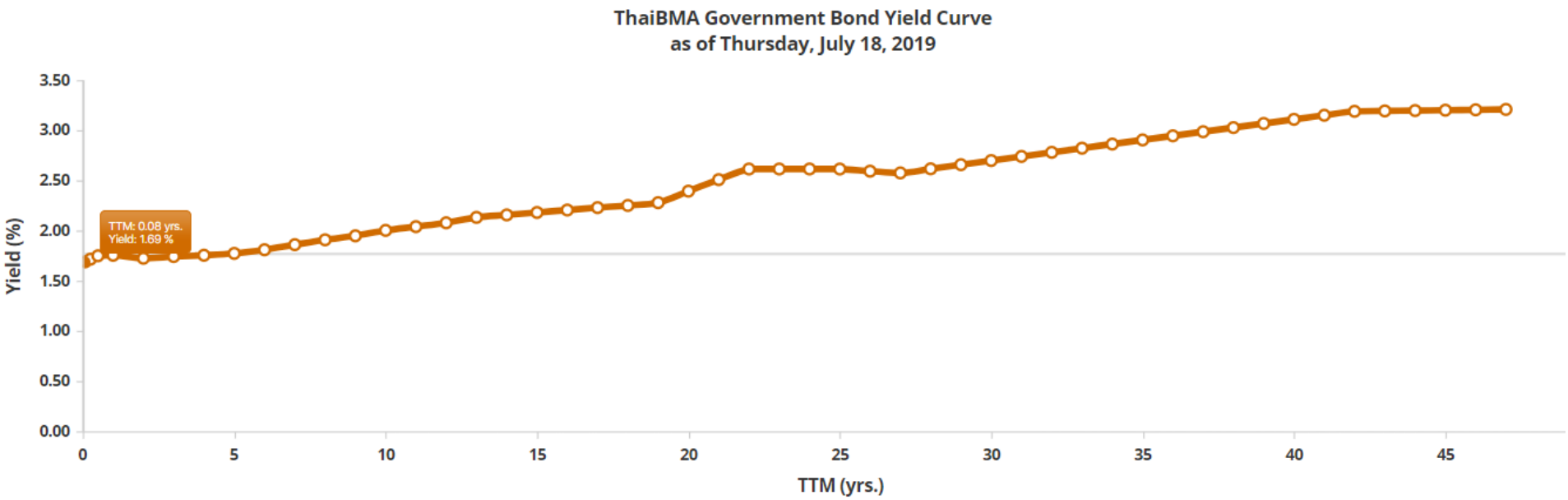
ThaiBMA: Bond Yield



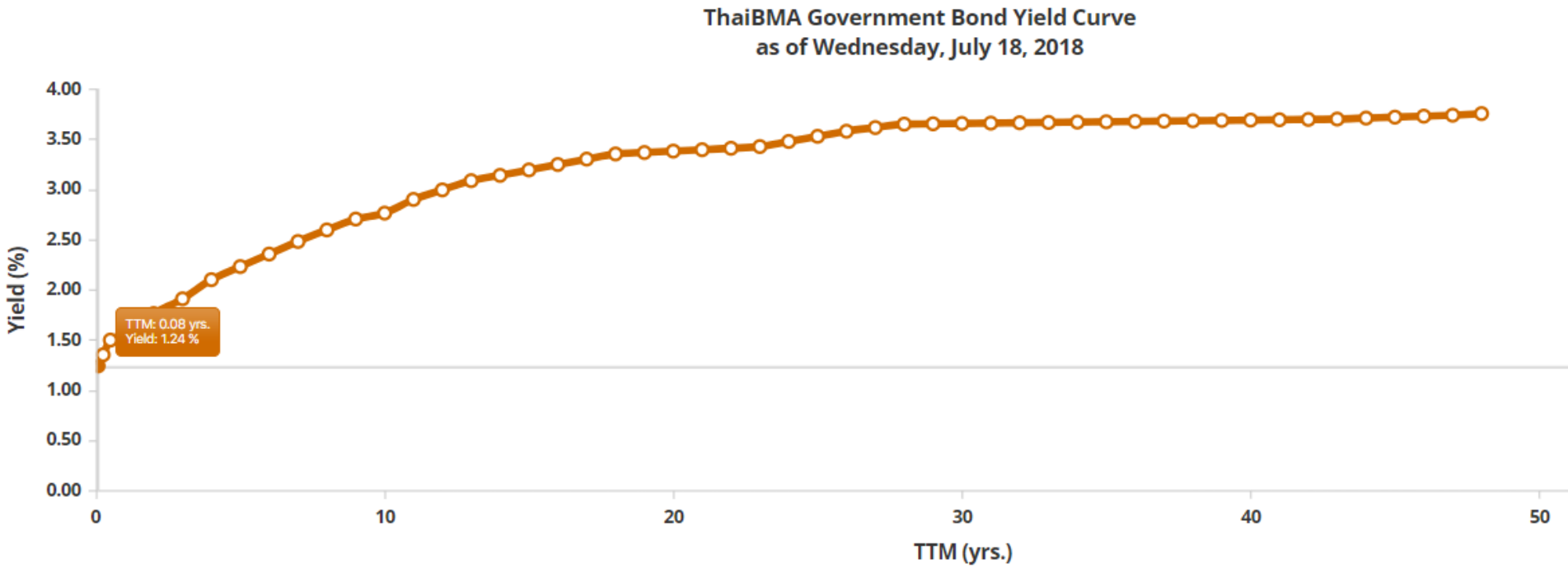
ThaiBMA: Bond Yield



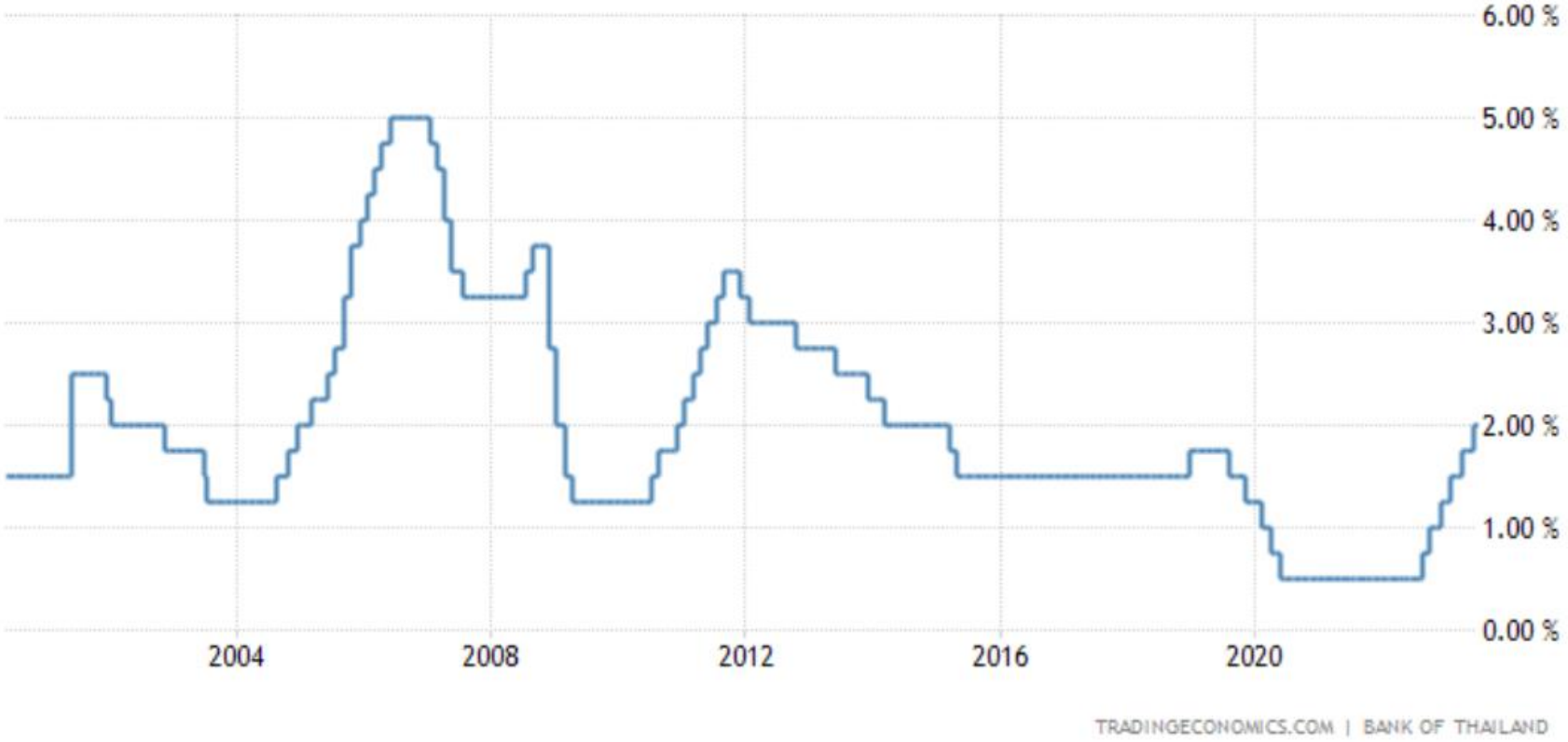
ThaiBMA: Bond Yield

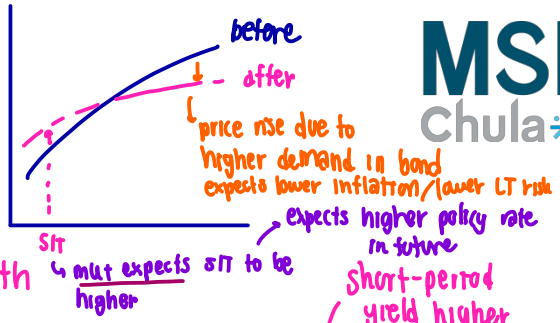


ThaiBMA: Bond Yield



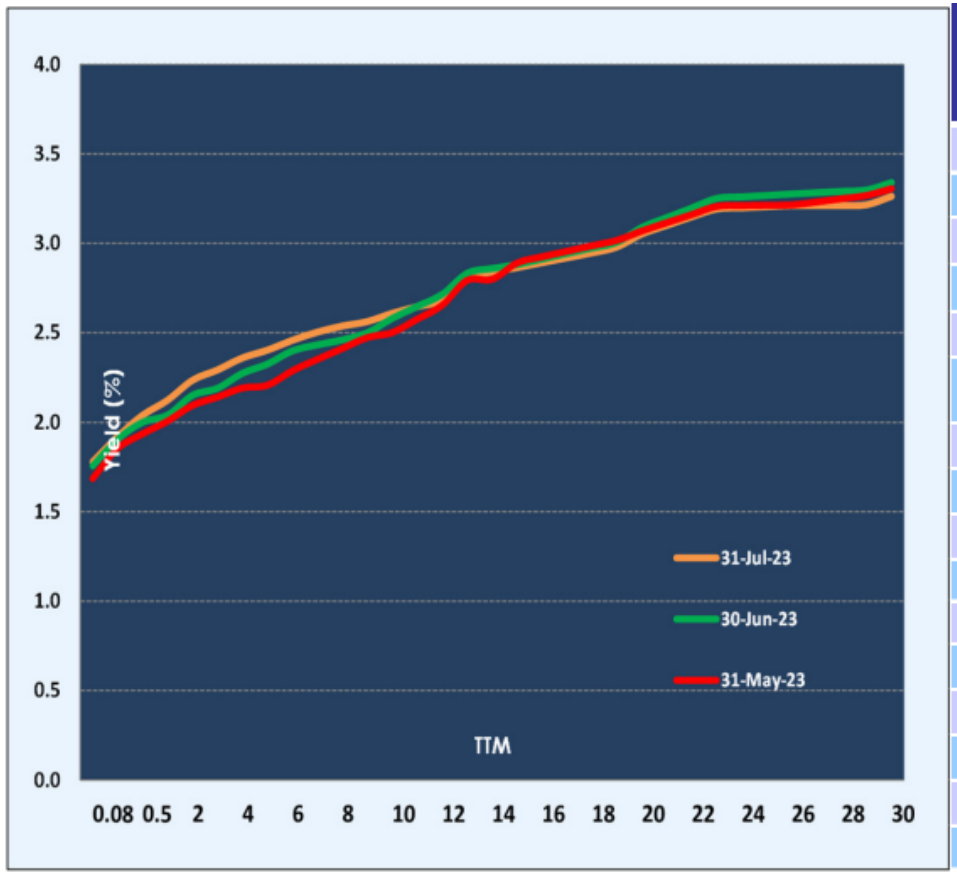
Policy Rate: Thailand





month-by-month

short-period
yield higher

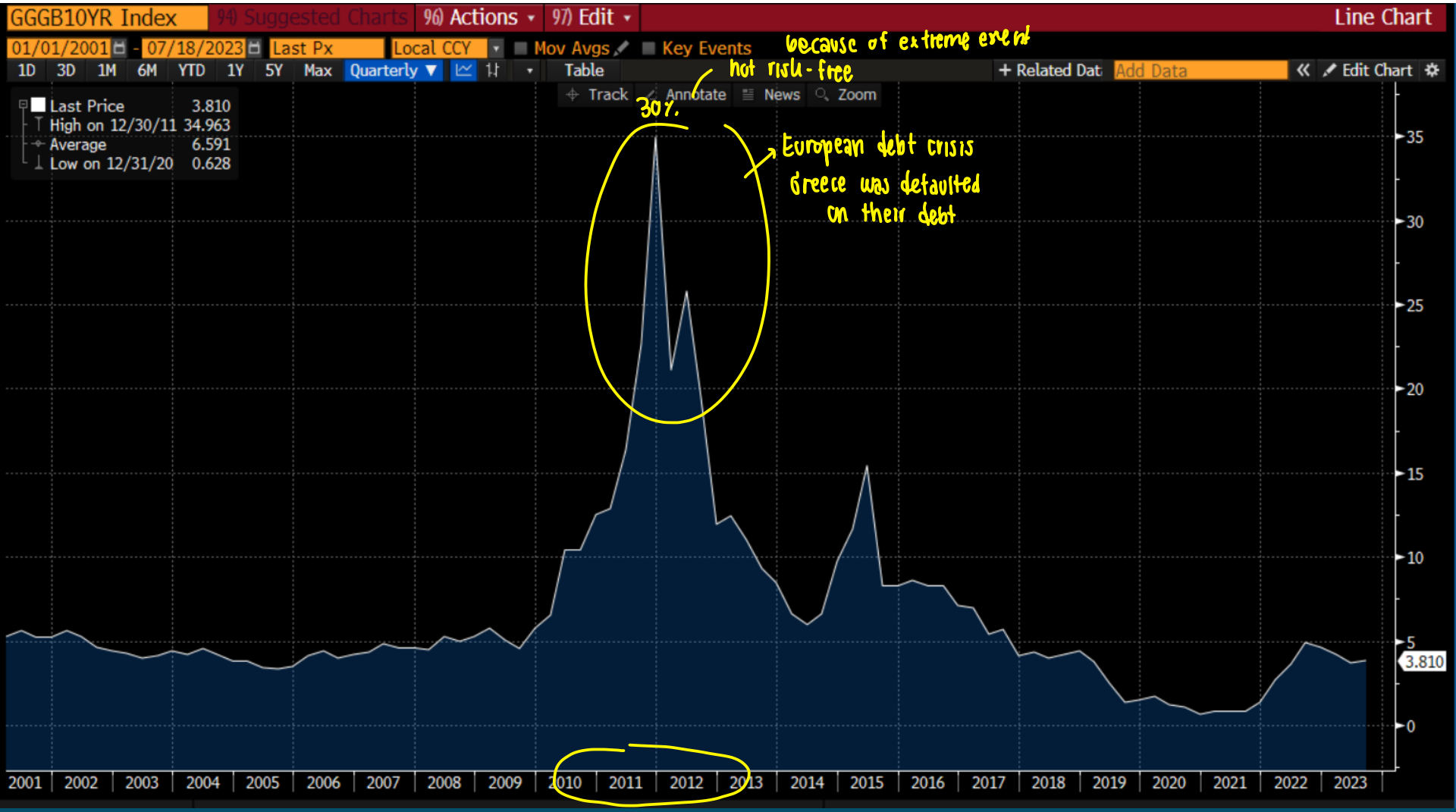


TTM	31Jul23 (%)	30Jun23 (%)	Change (bp)
1 Mth.	1.78	1.76	2
3 Mth.	1.92	1.90	2
6 Mth.	2.04	2.00	4
1 Yr.	2.12	2.04	8
2 Yr.	2.24	2.15	9
3 Yr.	2.29	2.19	10
5 Yr.	2.40	2.32	8
7 Yr.	2.50	2.43	7
10 Yr.	2.61	2.58	3
12 Yr.	2.68	2.71	-3
14 Yr.	2.84	2.86	-2
18 Yr.	2.95	2.97	-3
19 Yr.	2.98	3.01	-3
20 Yr.	3.05	3.09	-4
28 Yr.	3.21	3.29	-8
30 Yr.	3.26	3.34	-8

long yield curve
seem to be lower

Greece Bond Yield

10yr



Argentina Bond Yield

03/24/2021 18:51:44 [BN] Bloomberg News

Argentina Can't Repay IMF $45 Billion, Vice President Says (3)

- **Country doesn't have funds for IMF, Fernandez de Kirchner says**
- **Remarks comes as Economy Minister visits IMF's top authorities**

By Juan Pablo Spinetto and Eric Martin

(Bloomberg) -- Argentina is unable to repay its $45 billion debt with the International Monetary Fund under current negotiating conditions, influential Vice President Cristina Fernandez de Kirchner said Wednesday, diminishing the possibility of an agreement with the country's largest creditor.

"We can't pay because we don't have the money to pay," Fernandez de Kirchner said at an event in Buenos Aires, adding that the terms and conditions are "unacceptable."

Fernandez de Kirchner's comments come after discussions between Economy Minister Martin Guzman and IMF Managing Director Kristalina Georgieva in Washington on Tuesday that what was described by both sides as a "very good meeting."

State Owned Enterprises Bond

part of govt not govt → not risk-free

- Issued by the government agencies or state enterprises such as EGAT, MRTA to finance their operations.
- Risk level is slightly greater than government bonds but safer than corporate bonds.
- Some issues of bond are backed by government.
- Typical they are straight bonds, fix-rate coupon, semi-annually, and denomination is ฿1,000.

State Owned Enterprises Bond

Result of State Owned Enterprise Bonds Auction

June 2023 | July 2023 | August 2023

Treasury Bills | Government Bonds | Government Related Entity | State Owned Enterprise Bonds | State Agency Bonds

higher than govt bond yield

Symbol	Issue Name	Term	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Grand Total Amount (THB mln.)	Auction Result Yield (%) High	Low	Avg.	BCR	Registered Date	Non-comp. Bid Amount (THB mln.)	Comp. Bid Amount (THB mln.)
กรไฟฟ้า MEA286A	The Bonds of Metropolitan Electricity Authority B.E. 2566 No.3 DUE B.E. 2571	5.01Y	2,000.00	29-Jun-23	29-Jun-28	13-Jun-23	2,000.00	2.8800	2.8800	2.8800	0.0000	29-Jun-23	0.00	2,000.00
MEA386A	The Bonds of Metropolitan Electricity Authority B.E. 2566 No.2 DUE B.E. 2581	15.01Y	3,800.00	29-Jun-23	29-Jun-38	13-Jun-23	3,800.00	3.6800	3.6800	3.6800	0.0000	29-Jun-23	0.00	3,800.00
SRT307A	STATE RAILWAY OF THAILAND Bond 2023/6	7.01Y	1,600.00	03-Jul-23	03-Jul-30	22-Jun-23	1,600.00	2.5400	2.5400	2.5400	0.0000	03-Jul-23	0.00	1,600.00
SRT387A	STATE RAILWAY OF THAILAND Bond 2023/7	15.01Y	1,000.00	11-Jul-23	11-Jul-38	29-Jun-23	1,000.00	3.0000	3.0000	3.0000	0.0000	11-Jul-23	0.00	1,000.00
			8,400.00				8,400.00							

State Owned Enterprises Bond

Result of State Owned Enterprise Bonds Auction

July 2022 | August 2022 | September 2022

Treasury Bills | Government Bonds | Government Related Entity | State Owned Enterprise Bonds | State Agency Bonds

Symbol	Issue Name	Term	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Auction Result					Registered Date	Non-comp. Bid Amount (THB mln.) ▲	Comp. Bid Amount (THB mln.)	Gree Op Am (THE
							Grand Total Amount (THB mln.)	Yield (%)			BCR				
								High	Low	Avg.					
SRT348A	SRT65/9/12Y	12.01Y	2,600.00	09-Aug-22	09-Aug-34	21-Jul-22	2,600.00	3.2100	3.2100	3.2100	0.0000	09-Aug-22	0.00	2,600.00	
			2,600.00				2,600.00								

Result of State Owned Enterprise Bonds Auction

June 2021 | July 2021 | August 2021

Treasury Bills | Government Bonds | Government Related Entity | State Owned Enterprise Bonds | State Agency Bonds

Symbol	Issue Name	Term	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Auction Result					Non-comp. Bid Amount (THB mln.)	Comp. Bid Amount (THB mln.)	Greenshoe Option Amount (THB mln.)	PAO Amount (THB mln.)
							Grand Total Amount (THB mln.)	Yield (%)			BCR				
								High	Low	Avg.					
SRT347A	SRT64/8/13Y	13.01Y	3,800.00	19-Jul-21	19-Jul-34	08-Jul-21	3,800.00	2.1970	2.1970	2.1970	0.0000	0.00	3,800.00	0.00	0.00
PEA317A	Bond of Provincial Electricity Authority B.E. 2564 No. 5 DUE B.E. 2574	10.01Y	1,000.00	29-Jul-21	29-Jul-31	13-Jul-21	1,000.00	2.2600	2.2600	2.2600	0.0000	0.00	1,000.00	0.00	0.00
PEA371A	Bond of Provincial Electricity Authority B.E. 2564 No. 6 DUE B.E. 2580	15.52Y	9,000.00	29-Jul-21	29-Jan-37	13-Jul-21	9,000.00	2.8500	2.8500	2.8500	0.0000	0.00	9,000.00	0.00	0.00
			13,800.00				13,800.00								

Result of State Owned Enterprise Bonds Auction

July 2020 | August 2020 | September 2020

Treasury Bills | Government Bonds | Government Related Entity | State Owned Enterprise Bonds | State Agency Bonds

Symbol	Issue Name	Term	Auction Amount (THB mln.)	Issued Date	Maturity Date	Auction Date	Auction Result					Registered Date	Non-comp. Bid Amount (THB mln.)	Comp. Bid Amount (THB mln.)
							Grand Total Amount (THB mln.)	Yield (%)			BCR			
								High	Low	Avg.				
BMTA308A	BMTA63/3/10Y	10.01Y	5,000.00	05-Aug-20	05-Aug-30	16-Jul-20	5,000.00	1.6200	1.6200	1.6200	0.0000	05-Aug-20	0.00	5,000.00
SRT328A	SRT63/8/12Y	12.01Y	6,300.00	10-Aug-20	10-Aug-32	21-Jul-20	6,300.00	1.7300	1.7300	1.7300	0.0000	10-Aug-20	0.00	6,300.00
			11,300.00				11,300.00							

auction
↓
OTC
↳ everything is done privately

Firm Rate :

Issue	Tenor	Size (Bio)	Rate
CB20102B	3 mth	40	**1.41 / 1.415 / 1.426**
CB20402A	6 mth	35	**1.417 / 1.42 / 1.428**
CB20O01A	1 yr	45	**1.418 / 1.423 / 1.435**

From: [redacted]
Sent: Tuesday, [redacted] 01, 2019 9:16 AM
Cc: [redacted]
Subject: [redacted]: Firm [redacted]

UPDATE

Firm Rate :

Issue	Tenor	Size (Bio)	Rate
CB20102B	3 mth	40	**1.426**
CB20402A	6 mth	35	**1.417 / 1.42 / 1.428**
CB20O01A	1 yr	45	**1.420**

From: [redacted]
Sent: Tuesday, [redacted] 01, 2019 8:55 AM
Cc: [redacted]
Subject: Firm Rate

Firm Rate :

Issue	Tenor	Size (Bio)	Rate
CB20102B	3 mth	40	**1.426**
CB20402A	6 mth	35	**1.428**
CB20O01A	1 yr	45	**1.420**

09:14:14 [redacted] พี่[redacted]คะ
09:14:28 [redacted]et CB19N21B firm 1.528/ 1.53
CB20220A firm 1.52/ 1.528
09:14:31 [redacted] [redacted] join CB20220A 594M นะคะ
09:14:50 [redacted]et CB19N21B firm 1.53
CB20220A firm 1.52/ 1.528
09:14:52 [redacted] ไว้เข้า rate สุดท้าย[redacted] เลยนะคะ
09:14:55 [redacted] มี 2 rate
09:15:05 [redacted]et อยากได้สูงหรือต่ำนะ
09:15:13 [redacted] ต่ำค่ะๆ
09:15:46 [redacted]et [redacted] join 6M ช่องต่ำสุดนะคะ size 594 ค่ะ
09:15:57 [redacted] เดี๋วดูให้นะคะ
09:16:01 [redacted] done ka
09:16:06 [redacted] ค่า
09:16:10 [redacted] ขอบคุณมากนะคะ ^^
09:16:16 [redacted] ขอบคุณค่า
09:20:56 [redacted] [redacted] join 6M 1.52 size 594 ค่ะ
09:20:59 [redacted] เข้าที่ 1.52 นะคะ
09:27:40 [redacted] ค่า
09:27:49 [redacted] done เลยค่า
09:28:51 [redacted] ค่าาา
10:10:16 [redacted]

[redacted]	BUY	CB20220A	594	1.5200%	T+2	22-Aug-2019

10:12:05 [redacted] done ka
10:12:47 [redacted] ขอบคุณค่า

Auction Result :

Issue	Tenor	Size (Bio)	Accepted Yield	Avg.Yield	BCR
CB20102B	3 mth	40	**1.370 - 1.450**	**1.41102**	**1.04x**
CB20402A	6 mth	35	**1.380 - 1.420**	**1.40773**	**1.75x**
CB20O01A	1 yr	45	**1.388 - 1.420**	**1.40957**	**1.61x**

firm riskier

Corporate Bonds

- Typical face value of $1,000 and semi-annually interest by default.
- Some bonds have a face value of $5,000 or $10,000 or pay annual coupon.
- Bonds cannot be redeemed, unless a specific clause states this (call option).
- Bond indenture is a contract that states the lender's rights and privileges and borrower obligations.
- Degree of risk varies with each bond, even from the same issuer.
- Required return varies with level of risk.

Corporate Bonds vs Bank Loans

	Corporate Bonds	Bank Loans
Flexibility	Corporate decision and planning	Depend on bank's approval condition
Amount and Repayment Schedule	Flexible in term of amount and frequency	Depend on bank's term and approval
Interest Rate	Depend on credit rating and risk premium	Depend on credit and negotiation
Frequency of Issuance	As many as needed (but not too many)	Depend on bank's term and approval
Collateral	Mostly no	Mostly yes
Information Disclosure	To investor	To bank
Secondary Market	Bond Market	No

Characteristics of Corporate Bonds

add certain collateral
[to back up in case of default
หลักประกัน

liquidate in mkt → return to lender → have right to claim

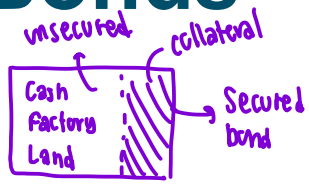
No collateral

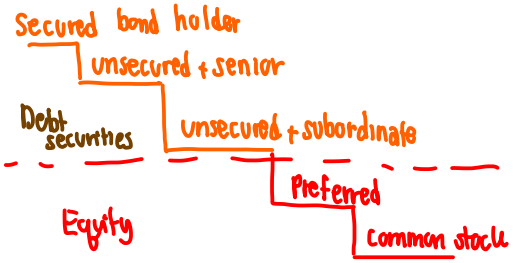
- Secured vs. Unsecured

govt doesn't have this

นั่นหมายถึงสิทธิ → less priority in claim

- Senior vs Subordinated
- Investment vs. Junk Bonds
- Restrictive Covenants
- Call vs. Put Provisions





No.	Rating	Issuer	Business Sector	Actual Size (Million)	Issue Term (Yrs.)	Coupon (%)	Feature	Distribution	Z-SPD (Bp) @ issue date	Z-SPD of the same @ End of Last month	Z-SPD of the same @ End of this month
1	AAA(tha)	UOBCAP	FIN	3,000.00	2.00	Zero 2.80	Unsecured	II	65	48 - 61	51 - 68
2	AAA(tha)	UOBCAP	FIN	2,000.00	3.00	2.99	Unsecured	II	77	56 - 72	59 - 80
3	AA	TBEV	FOOD	2,500.00	3.00	3.10	Unsecured	II/HNW	92	72 - 89	80 - 83
4	AA	TBEV	FOOD	9,000.00	4.00	3.37	Unsecured	II/HNW	110	81 - 99	89 - 93
5	AA	TBEV	FOOD	3,500.00	10.00	3.87	Unsecured	II/HNW	133	-	-
6	AA-(tha)	CIMBT	BANK	200.00	1.00	2.17	Unsecured	II	13	49 - 68	52 - 65
7	AA-(tha)	CIMBT	BANK	200.00	1.00	2.17	Unsecured	II	13	49 - 68	52 - 65
8	AA-(tha)	CIMBT	BANK	200.00	1.00	2.17	Unsecured	II	13	49 - 68	52 - 65
9	A+	TRUE	ICT	6,327.30	2.00	3.35	Unsecured	PO	117	76 - 90	71 - 90
10	A+	TRUE	ICT	7,779.10	3.00	3.60	Unsecured	PO	136	89 - 105	83 - 105
11	A+	TRUE	ICT	7,060.20	5.00	4.10	Unsecured	PO	176	107 - 127	100 - 127
12	A+	TRUE	ICT	3,833.40	10.00	4.50	Unsecured	PO	196	-	-
13	A	AP	PROP	1,500.00	3.00	3.26	Unsecured	II	108	104 - 115	102 - 114
14	A	AP	PROP	2,500.00	4.00	3.57	Unsecured	II/HNW	130	116 - 126	114 - 126
15	A	FPT	PROP	1,400.00	4.00	3.50	Unsecured	II/HNW	126	116 - 126	114 - 126
16	A	TCAP	BANK	1,400.00	2.00	Zero 2.99	Unsecured	II	85	89 - 99	87 - 99
17	A	TCAP	BANK	800.00	4.00	3.52	Unsecured	II	125	116 - 126	114 - 126
18	A-	THANI	FIN	651.10	3.50	3.45	Unsecured	PO	123	112 - 215	112 - 203
19	BBB+	MTC	FIN	1,866.00	2.00	4.20	Unsecured	II	203	99 - 267	99 - 264
20	BBB+	ORI	PROP	2,067.90	3.00	4.40	Unsecured	PO	228	115 - 288	114 - 282

No.	Rating	Issuer	Business Sector	Actual Size (Million)	Issue Term (Yrs.)	Coupon (%)	Feature	Distribution	Z-SPD (Bp) @ issue date	Z-SPD of the same @ End of Last month	Z-SPD of the same @ End of this month
18	A-	THANI	FIN	651.10	3.50	3.45	Unsecured	PO	123	112 - 215	112 - 203
19	BBB+	MTC	FIN	1,866.00	2.00	4.20	Unsecured	II	203	99 - 267	99 - 264
20	BBB+	ORI	PROP	2,067.90	3.00	4.40	Unsecured	PO	228	115 - 288	114 - 282
21	BBB+	ORI	PROP	955.60	4.00	4.60	Unsecured	PO	241	126 - 304	126 - 295
22	BBB+	SC	PROP	1,300.00	3.00	4.31	Unsecured	II/HNW	215	115 - 288	114 - 282
23	BBB+	SC	PROP	700.00	4.00	4.50	Unsecured	II/HNW	226	126 - 304	126 - 295
24	BBB	TFG	FOOD	1,322.80	3.00	4.60	Unsecured	II/HNW	244	206 - 354	196 - 357
25	BBB-	ASW	PROP	353.80	2.30	5.50	Unsecured	II/HNW	346	273 - 430	269 - 464
26	BBB-	ASW	PROP	582.00	3.00	5.95	Unsecured	II/HNW	391	288 - 430	282 - 479
27	BBB-(tha)	BAFS	ENERG	1,000.00	Perpetual	Conditional	Unsecured	II/HNW	-	-	-
28	BBB-	DUSIT	TOURISM	1,500.00	3.00	5.55	Unsecured	II/HNW	345	288 - 430	282 - 479
29	BB(tha)	DAOLS	FIN	100.00	1.00	4.00	Unsecured	II/HNW	201	431 - 522	430 - 495
30	BB-	GRAND	TOURISM	160.50	1.30	6.90	Secured	II/HNW	497	-	-
31	BB-	GRAND	TOURISM	648.50	2.00	7.25	Secured	II/HNW	529	-	-
32	BB-	GRAND	TOURISM	48.90	2.00	7.40	Unsecured	II/HNW	545	-	-
33	Non-rated	ASAHI	CONMAT	500.00	1.00	5.75	Unsecured	PP10	380	-	-
34	Non-rated	CMC	PROP	416.00	2.00	7.30	Secured	II/HNW	534	-	-
35	Non-rated	CWTTH	PROP	352.00	2.00	6.90	Unsecured	II/HNW	494	-	-
36	Non-rated	MQDC	PROP	2,694.50	2.20	6.75	Secured	II/HNW	470	-	-
37	Non-rated	MQDC	PROP	4,663.90	3.00	7.10	Secured	II/HNW	501	-	-
38	Non-rated	NKON	FIN	223.40	2.00	7.00	Secured	II/HNW	504	-	-
39	Non-rated	SGF	FIN	428.40	1.90	6.80	Secured	II/HNW	482	-	-

Primary Markets for Corporate Bonds

firstly issue

no auction, issue bond at par

% Coupon = yield

Issuer | Registered Issue | Financial Information | Issuer News

SANSIRI

The Core businesses are 1. Property development consists of: 1.1 For sale includes landed property - single detached house, detached house, townhouse, and high-rise property - condominium projects 1.2 For rent includes office buildings and leasehold commercial building and 2. Property services : Providing property and asset management, property brokerage services, property sales management, property development consultancy, and property management.

Issuer Name (EN)	SANSIRI PUBLIC COMPANY LIMITED
Abbrevation Name	SIRI
Rating:	BBB+/TRIS
Address :	Siri Campus Building 59 Soi Rim Khlong Phra Khanong Phra Khanong Nuea, Vadhana Ratchathewi Bangkok Thailand 10110
Tel :	+66 2207 7888 Ext. 1052-4
Fax :	
Website :	
Business Sector :	Property Development

Issuer Information

SANSIRI PUBLIC COMPANY LIMITED (SIRI)

Issuer | Registered Issue | Financial Information | Issuer News

1.Short Term Debenture

ThaiBMA Symbol	Issued Date	Maturity Date	Issue Size (THB Mln.)	Outstanding (THB Mln.)	Term	TTM (Yrs.)	Secured Type	Bondholder Rept.	Cross Default Amount (THB Mln.)	Option	Registered Date	TRIS
SIRI23802A II	01-Feb-2023	02-Aug-2023	60.00	60.00	0.50 Yrs	0.03	UNSECURE		-		01-Feb-2023	
SIRI23O20A II	20-Apr-2023	20-Oct-2023	200.00	200.00	0.50 Yrs	0.25	UNSECURE		-		20-Apr-2023	
SIRI23724B II	24-Apr-2023	24-Jul-2023	200.00	200.00	0.25 Yrs	0.01	UNSECURE		-		24-Apr-2023	
SIRI23724A II	25-Apr-2023	24-Jul-2023	100.00	100.00	0.25 Yrs	0.01	UNSECURE		-		25-Apr-2023	
SIRI23O19A II	26-Apr-2023	19-Oct-2023	100.00	100.00	0.48 Yrs	0.25	UNSECURE		-		26-Apr-2023	
SIRI23O25A II	28-Apr-2023	25-Oct-2023	200.00	200.00	0.49 Yrs	0.26	UNSECURE		-		28-Apr-2023	
SIRI23N02A II	10-May-2023	02-Nov-2023	100.00	100.00	0.48 Yrs	0.28	UNSECURE		-		10-May-2023	
SIRI23815A II	16-May-2023	15-Aug-2023	100.00	100.00	0.25 Yrs	0.07	UNSECURE		-		16-May-2023	
SIRI23817A II	19-May-2023	17-Aug-2023	500.00	500.00	0.25 Yrs	0.07	UNSECURE		-		19-May-2023	
SIRI23818A II	19-May-2023	18-Aug-2023	200.00	200.00	0.25 Yrs	0.08	UNSECURE		-		19-May-2023	

1 2 3 10 items per page 1 - 10 of 21 items

2. Long Term Debenture

ThaiBMA Symbol	Issued Date	Maturity Date	Issue Size (THB Mln.)	Outstanding (THB Mln.)	Term	TTM (Yrs.)	Secured Type	Bondholder Rept.	Cross Default Amount (THB Mln.)	Option	Registered Date	TRIS
SIRI23OA II/HNW	27-Feb-2020	27-Oct-2023	4,000.00	4,000.00	3.67 Yrs	0.27	UNSECURE	KTB	200.00		27-Feb-2020	
SIRI20PA PO	26-Jun-2020	26-Jun-2120	3,000.00	3,000.00	100.07 Yrs	97.00	UNSECURE	KTB	-	CALL	26-Jun-2020	BBB-
SIRI245A II/HNW	11-Nov-2020	11-May-2024	1,378.20	1,378.20	3.50 Yrs	0.81	UNSECURE	KTB	200.00		11-Nov-2020	
SIRI24OA PO	18-Feb-2021	18-Oct-2024	3,600.00	3,600.00	3.67 Yrs	1.25	UNSECURE	KTB	200.00		18-Feb-2021	BBB+
SIRI252A PO	27-Aug-2021	27-Feb-2025	6,000.00	6,000.00	3.51 Yrs	1.61	UNSECURE	KTB	500.00		27-Aug-2021	BBB+
SIRI243A PO	21-Sep-2021	21-Mar-2024	500.00	495.60	2.50 Yrs	0.67	UNSECURE	KTB	500.00		21-Sep-2021	BBB+
SIRI24DA PO	02-Dec-2021	02-Dec-2024	800.00	800.00	3.00 Yrs	1.37	UNSECURE	KTB	500.00		02-Dec-2021	BBB+
SIRI26DA PO	02-Dec-2021	02-Dec-2026	200.00	200.00	5.00 Yrs	3.37	UNSECURE	KTB	500.00		02-Dec-2021	BBB+
SIRI24DB PO	03-Dec-2021	03-Dec-2024	500.00	500.00	3.00 Yrs	1.37	UNSECURE	KTB	500.00		03-Dec-2021	BBB+
SIRI247A PO	21-Jan-2022	21-Jul-2024	2,000.00	2,000.00	2.50 Yrs	1.00	UNSECURE	KTB	500.00		21-Jan-2022	BBB+

1 2 3 10 items per page 1 - 10 of 26 items

SIRI24OA : UNSECURED DEBENTURES OF SANSIRI PUBLIC COMPANY LIMITED NO. 1/2021 DUE 2024

Symbol	SIRI24OA PO	**Registration Date**	18 February 2021
Issuer	SANSIRI PUBLIC COMPANY LIMITED	**Name (Thai)**	หุ้นกู้ไม่มีประกันของบริษัท แสนสิริ จำกัด (มหาชน) ครั้งที่ 1/2564 ครบกำหนดไถ่ถอนปี พ.ศ. 2567
ISIN Code (Local)	TH0577034A08	**Put/ Call Option**	-
ISIN Code (Foreign)	no collateral	**Collateral**	-
Bond Type	[Senior][Unsecured]	**Payment Frequency**	Quarterly
Initial Par	THB 1,000.0000	**Calculation Method**	30/360
Current Par	THB 1,000.0000	**Issue Term / TTM**	3.67 Yrs./1.25 Yrs.
Issue Size	THB 3,600.00 mln. par value	**Issue Date**	18 February 2021
Outstanding Size	THB 3,600.00 mln. ↳ They're borrowing at this size	**Maturity Date**	18 October 2024
Distribution	Public Offering	**Prospectus**	
Index Ratio	anyone can buy	**External Review Report (ESG)**	Not Available

Issue Rating

Rating Agency		Issue Rating	Rating Date
Local	TRIS	BBB+	3 May 2023

Issuer Rating

Issuer Name	Rating Agency		Issuer Rating	Rating Date
SIRI	Local	TRIS	BBB+	3 May 2023

Guarantor Rating

Guarantor Name	Rating Agency	Guarantor Rating	Rating Date

Coupon Payment

Reference	Max.	Min.	From	To
Fixed: 4.2% coupon rate			18 Feb 2021	18 Oct 2024

Amortized Schedule

Coupon Date	Principal Amount

Registrar	THE SIAM COMMERCIAL BANK PUBLIC COMPANY LIMITED	**Debenture Holder Representatives**	KRUNG THAI BANK PUBLIC COMPANY LIMITED
Lead Underwriter(s)	ASIA PLUS SECURITIES COMPANY LIMITED BANGKOK BANK PUBLIC COMPANY LIMITED CIMB THAI BANK PUBLIC COMPANY LIMITED KRUNG THAI BANK PUBLIC COMPANY LIMITED THE SIAM COMMERCIAL BANK PUBLIC COMPANY LIMITED KASIKORNBANK PUBLIC COMPANY LIMITED KIATNAKIN PHATRA SECURITIES PUBLIC COMPANY LIMITED KRUNGTHAI XSPRING SECURITIES COMPANY LIMITED	**Financial Advisor(s)**	-

SIRI23OA : UNSECURED DEBENTURES OF SANSIRI PUBLIC COMPANY LIMITED No. 1/2020 Due 2023

Symbol	SIRI23OA II/HNW	**Registration Date**	27 February 2020
Issuer	SANSIRI PUBLIC COMPANY LIMITED	**Name (Thai)**	หุ้นกู้ไม่มีประกันของบริษัท แสนสิริ จำกัด (มหาชน) ครั้งที่ 1/2563 ครบกำหนดไถ่ถอนปี พ.ศ. 2566
ISIN Code (Local)	TH0577033A09	**Put/ Call Option**	-
ISIN Code (Foreign)		**Collateral**	-
Bond Type	[Senior][Unsecured]	**Payment Frequency**	Quarterly
Initial Par	THB 1,000.0000	**Calculation Method**	30/360
Current Par	THB 1,000.0000	**Issue Term / TTM**	3.67 Yrs./0.27 Yrs.
Issue Size	THB 4,000.00 mln.	**Issue Date**	27 February 2020
Outstanding Size	THB 4,000.00 mln.	**Maturity Date**	27 October 2023
Distribution target customers	Private Placement to 13 types of institutional only investors plus high net worth investors can buy	**Prospectus**	
Index Ratio		**External Review Report (ESG)**	Not Available

Issue Rating

Rating Agency	Issue Rating	Rating Date

Issuer Rating

Issuer Name	Rating Agency		Issuer Rating	Rating Date
SIRI	Local	TRIS	BBB+	3 May 2023

Guarantor Rating

Guarantor Name	Rating Agency	Guarantor Rating	Rating Date

Coupon Payment

Reference	Max.	Min.	From	To
Fixed: 3.75%			27 Feb 2020	27 Oct 2023

Amortized Schedule

Coupon Date	Principal Amount

Registrar	THE SIAM COMMERCIAL BANK PUBLIC COMPANY LIMITED	**Debenture Holder Representatives**	KRUNG THAI BANK PUBLIC COMPANY LIMITED
Lead Underwriter(s)	CIMB THAI BANK PUBLIC COMPANY LIMITED KRUNG THAI BANK PUBLIC COMPANY LIMITED THE SIAM COMMERCIAL BANK PUBLIC COMPANY LIMITED KASIKORNBANK PUBLIC COMPANY LIMITED	**Financial Advisor(s)**	-
Remark			

SIRI20PA : SUBORDINATED PERPETUAL DEBENTURES OF SANSIRI PUBLIC COMPANY LIMITED NO.1/2020 PAYABLE UPON DISSOLUTION WITH THE ISSUERS RIGHT TO EARLY REDEMPTION AND UNCONDITIONAL INTEREST DEFERRAL

lowest claim on asset

no maturity until dissolution of company

similar to equity

Symbol	SIRI20PA PO	**Registration Date**	26 June 2020
Issuer	SANSIRI PUBLIC COMPANY LIMITED	**Name (Thai)**	หุ้นกู้ด้อยสิทธิที่มีลักษณะคล้ายทุนไถ่ถอนเมื่อเลิกบริษัทซึ่งผู้ออกหุ้นกู้มีสิทธิไถ่ถอนหุ้นกู้ก่อนกำหนดและมีสิทธิเลื่อนชำระดอกเบี้ยโดยไม่มีเงื่อนไขใดๆของบริษัท แสนสิริ จำกัด (มหาชน) ครั้งที่ 1/2563
ISIN Code (Local)	TH0577030016	**Put/ Call Option**	CALL
ISIN Code (Foreign)		**Collateral**	-
Bond Type	[Hybrid][Unsecured][Perpetual Issue]	**Payment Frequency**	Quarterly
Initial Par	THB 1,000.0000	**Calculation Method**	30/360
Current Par	THB 1,000.0000	**Issue Term / TTM**	100.07 Yrs./97.00 Yrs.
Issue Size	THB 3,000.00 mln.	**Issue Date**	26 June 2020
Outstanding Size	THB 3,000.00 mln.	**Maturity Date**	26 June 2120
Distribution	Public Offering	**Prospectus**	
Index Ratio		**External Review Report (ESG)**	Not Available

coupon is similar to dividend

in reality, they have call option to redeem face value early

they typically redeem it after 5 yr

not because of refinancing directly

but because, according to accounting standard

will consider this type (perpetual bond) as equity for 5 years.

D/Et ↓ after 5 yr will move it to L Dt/E ↑

along with lower rate in mkt

they always redeem in 5 yr

2025 → if it like the case they will redeem

Issue Rating

Rating Agency		Issue Rating	Rating Date
Local	TRIS	BBB-	3 May 2023

Issuer Rating

Issuer Name	Rating Agency		Issuer Rating	Rating Date
SIRI	Local	TRIS	BBB+	3 May 2023

Guarantor Rating

Guarantor Name	Rating Agency	Guarantor Rating	Rating Date

Coupon Payment

Reference	Max.	Min.	From	To
Fixed: 8.5%			26 Jun 2020	25 Jun 2025
GOV_YLD_5Y quoted by ThaiBMA + 8.01%			26 Jun 2025	25 Jun 2045
GOV_YLD_5Y quoted by ThaiBMA + 8.76%			26 Jun 2045	25 Jun 2070
GOV_YLD_5Y quoted by ThaiBMA + 9.76%			26 Jun 2070	26 Jun 2120

Amortized Schedule

Coupon Date	Principal Amount

Registrar	THE SIAM COMMERCIAL BANK PUBLIC COMPANY LIMITED	**Debenture Holder Representatives**	KRUNG THAI BANK PUBLIC COMPANY LIMITED
Lead Underwriter(s)	BANGKOK BANK PUBLIC COMPANY LIMITED CIMB THAI BANK PUBLIC COMPANY LIMITED KRUNG THAI BANK PUBLIC COMPANY LIMITED THE SIAM COMMERCIAL BANK PUBLIC COMPANY	**Financial Advisor(s)**	-

PTTC10DA : PTT Public Company Limited (No. 3/2010 Due 2110)

Symbol	PTTC10DA II/HNW	**Registration Date**	2 December 2010
Issuer	PTT PUBLIC COMPANY LIMITED	**Name (Thai)**	หุ้นกู้ไม่มีประกัน ผู้ถือหุ้นกู้สามารถไถ่ถอนได้ก่อนกำหนดของ บริษัท ปตท. จำกัด (มหาชน) ครั้งที่ 3/2553 ครบกำหนด ไถ่ถอนปี พ.ศ. 2653
ISIN Code (Local)	TH064603UC05	**Put/ Call Option**	PUT up to investor to redeem
ISIN Code (Foreign)	TH064603UC05	**Collateral**	
Bond Type	[Senior][Unsecured]	**Payment Frequency**	Semi-annually issuer take risk not investors
Initial Par	THB 1,000.0000	**Calculation Method**	30/360
Current Par	THB 1,000.0000	**Issue Term / TTM**	100.07 Yrs./87.33 Yrs.
Issue Size	THB 4,000.00 mln.	**Issue Date**	2 December 2010
Outstanding Size	THB 4,000.00 mln.	**Maturity Date**	2 December 2110
Distribution	Institutional Investors or High Net Worth Investors	**Prospectus**	
Index Ratio		**External Review Report (ESG)**	Not Available

Issue Rating

Rating Agency		Issue Rating	Rating Date
Local	FITCH(tha)	AAA(tha)	20 Apr 2023

Issuer Rating

Issuer Name	Rating Agency		Issuer Rating	Rating Date
PTTC	Local	FITCH(tha)	AAA(tha)	20 Apr 2023

Guarantor Rating

Guarantor Name	Rating Agency	Guarantor Rating	Rating Date

Coupon Payment

Reference	Max.	Min.	From	To
Fixed: 5.9%			2 Dec 2010	2 Dec 2110

Amortized Schedule

Coupon Date	Principal Amount

Registrar	THE SIAM COMMERCIAL BANK PUBLIC COMPANY LIMITED	**Debenture Holder Representatives**	KASIKORNBANK PUBLIC COMPANY LIMITED
Underwriter(s)	BANGKOK BANK PUBLIC COMPANY LIMITED THE SIAM COMMERCIAL BANK PUBLIC COMPANY LIMITED KASIKORNBANK PUBLIC COMPANY LIMITED	**Financial Advisor(s)**	-

Debt Rating Descriptions

Standard & Poor's	Moody's	Definition
AAA	Aaa	Best quality and highest rating. Capacity to pay interest and repay principal is extremely strong. Smallest degree of investment risk.
AA	Aa	High quality. Very strong capacity to pay interest and repay principal and differs from AAA/Aaa in a small degree.
A	A	Strong capacity to pay interest and repay principal. Possess many favorable investment attributes and are considered upper-medium-grade obligations. Somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions.

Debt Rating Descriptions

Standard & Poor's	Moody's	Definition
BBB	Baa	Medium-grade obligations. Neither highly protected nor poorly secured. Adequate capacity to pay interest and repay principal. May lack long-term reliability and protective elements to secure interest and principal payments.
BB	Ba	Moderate ability to pay interest and repay principal. Have speculative elements and future cannot be considered well assured. Adverse business, economic, and financial conditions could lead to inability to meet financial obligations.
B	B	Lack characteristics of desirable investment. Assurance of interest and principal payments over long period of time may be small. Adverse conditions likely to impair ability to meet financial obligations.

Debt Rating Descriptions

Standard & Poor's	Moody's	Definition
CCC	Caa	Poor standing. Identifiable vulnerability to default and dependent on favorable business, economic, and financial conditions to meet timely payment of interest and repayment of principal.
CC	Ca	Represent obligations that are speculative to a high degree. Issues often default and have other marked shortcomings.
C	C	Lowest-rated class of bonds. Have extremely poor prospects of attaining any real investment standard. May be used to cover a situation where bankruptcy petition has been filed, but debt service payments are continued.

Bond instrument → 1st default risk → relies on credit rating → from credit rating agency

TRIS RATING
A Strategic Partner of S&P Global

CreditNews

SF

CP ALL PLC

No. 122/2023
5 July 2023

CORPORATES

Company Rating:	A+
Issue Ratings:	
Senior secured	A+
Senior unsecured	A+
Hybrid	A-
Outlook:	Positive

Last Review Date: 24/01/23

Company Rating History:

Date	Rating	Outlook/Alert
08/12/20	A+	Stable
13/03/20	AA-	Alert Negative
10/07/19	AA-	Stable
09/10/17	A+	Stable

RATIONALE

TRIS Rating affirms the company rating on CP All PLC (CPALL) and the ratings on its senior secured debentures and senior unsecured debentures at "A+". At the same time, TRIS Rating affirms the ratings on CPALL's subordinated capital debentures (hybrid debentures) at "A-" and revises the rating outlook to "positive" from "stable".

The outlook revision reflects CPALL's strengthening financial profile supported by a significant decline in its financial leverage ratio and its improving profit margin. We expect CPALL to sustain earnings growth and further deleveraging, despite pressure from uncertain of economic conditions.

The ratings continue to reflect CPALL's strong business profile, underpinned by its nationwide store network and well-established support facilities. CPALL's competitive edge is also strengthened by its subsidiaries, leading positions in the wholesale and grocery retail markets. However, the ratings are held back by intense competition in the retail industry as well as secular changes in consumer behavior toward online shopping.

KEY RATING CONSIDERATIONS

Leading position in retail industry

CPALL's strong business profile is underpinned by its dominant status in the convenience store business under the well-known brand "7-Eleven" and the wholesale business through its subsidiary, CP Axtra PLC (CPAXT), formerly Siam Makro PLC (MAKRO).

Also, the company's position is reinforced through an acquisition of

MINOR INTERNATIONAL PLC

No. 108/2023
15 June 2023

CORPORATES

Company Rating:	A
Issue Ratings:	
Senior unsecured	A
Hybrid	BBB+
Outlook:	Stable

Last Review Date: 12/05/23

Company Rating History:

Date	Rating	Outlook/Alert
07/06/22	A	Stable
10/07/20	A	Negative
27/03/20	A	Alert Negative
24/07/18	A	Stable
11/06/18	A+	Alert Negative
28/04/14	A+	Stable
21/02/07	A	Stable
19/08/04	A-	Stable
23/12/03	A-	-
05/06/03	A-	Alert Developing
30/07/02	A-	-

RATIONALE

TRIS Rating affirms the company rating on Minor International PLC (MINT) and the ratings on MINT's existing senior unsecured debentures at "A". We also affirm the ratings on MINT's subordinated capital debentures (hybrid debentures, MINT22PA and MINT23PA) at "BBB+". The rating outlook is "stable".

The ratings continue to reflect MINT's strong business profile, underpinned by its strong brand portfolio and wide geographic coverage in the hospitality and restaurant businesses. The ratings also factor in MINT's improving financial profile as its operating performance continues its post-pandemic recovery. We believe that MINT will be able to grow earnings and continue deleveraging, despite pressure from global economic headwinds and high inflation.

KEY RATING CONSIDERATIONS

Sustained strong hotel performance

We expect MINT to continue delivering satisfactory hotel performance, driven by both rises in occupancy rate (OR) and average daily rate (ADR). Our base-case scenario forecasts MINT's owned and leased hotel revenue per available room (RevPAR) to grow by around 15% year-on-year (y-o-y) in 2023 and then to grow moderately by a mid-single digit percentage annually in 2024-2025.

The forecast is based on our view that a strong rebound in hotel performance can be sustained in 2023 supported by recovery in business travel and increasing long-haul travel activities. These will drive OR higher with it set to return to pre-pandemic level by 2025. Meanwhile, we expect ADR to continue to rise, but at a slower rate compared with last year.

ThaiBMA: Corporate Bond Yield

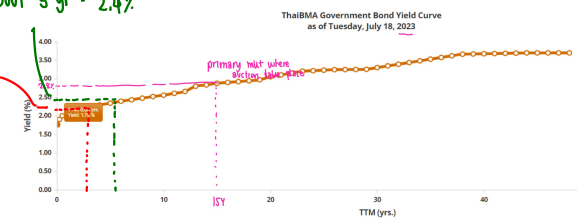
MSF Chula

ตลาดบอน

Corporate Bond Yield Curve (Averaged Spread)

Govt 5 yr = 2.4%

Govt 3 yr = 2.3%



1 bp = 0.01%

bp : basis point

49.6 bp = 0.496%

AAA 3yr = 2.3% + 0.49% = 2.79%

AAA 5yr = 2.4% + 0.71% = 3.11%

17/07/2023

Export to Excel

Corporate Bond Yield Curve (Based on TTM) as of 17 July 2023

in mkt right now

some bond higher / lower than average

currently have in market

Group	Averaged Spread (bp)			Standard Deviation (bp)			Averaged Maturity		
	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.
AAA	49.618562	71.824547	90.471542	19.236869	22.265417	34.766734	1.568874	3.855342	8.937235
AA+	58.749740	81.508224	100.612136	14.319086	13.088584	18.259968	1.638951	4.142465	9.052215
AA	54.912091	82.373382	107.092495	19.410048	15.663335	19.101668	1.492939	3.636670	7.377534
AA-	61.961809	110.648326	138.439170	21.112191	23.432593	16.216255	1.684267	3.975467	7.501369
A+	89.152782	115.460265	144.969158	42.820557	26.462975	18.180463	1.510918	3.942191	8.301883
A	76.248636	124.186021	146.131864	27.736790	17.776882	21.876994	1.472828	3.832328	7.594135
A-	96.434297	144.511652	160.199857	35.873437	32.064774	24.663088	1.655496	4.072577	7.537043
BBB+	197.737492	238.258034	295.187223	54.710084	23.270862	-	1.716836	3.691425	6.567123
BBB	255.899302	237.719128	-	30.535695	9.911484	-	1.750829	3.552055	-
BBB-	312.755746	320.348244	-	49.989195	3.327352	-	1.609661	3.176712	-

gap above government bond

aggregate several yr as group

maturity keep lower and lower

2.55% + Govt 3yr

lower credit rating → high credit spread

no people trade credit rating with lower credit rating (BBB, BBB-) with long maturity

mkt is not willing to take risk

ThaiBMA: Corporate Bond Yield

Corporate Bond Yield Curve (Averaged Spread)

15/07/2022

Export to Excel

Corporate Bond Yield Curve (Based on TTM) as of 15 July 2022

Group	Averaged Spread (bp)			Standard Deviation (bp)			Averaged Maturity		
	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.
AAA	40.812762	74.144799	67.396479	16.589373	20.947943	35.121263	1.454540	3.748336	8.964775
AA+	50.782060	67.199175	78.386692	34.215458	8.621839	7.095157	1.456269	4.130759	9.590215
AA → may have some outliers	100.981049	107.130569	147.890149	90.952505	40.522037	30.466272	1.690411	3.861571	7.108067
AA-	59.921667	98.720210	137.506818	24.436273	22.036030	13.824548	1.467376	3.974375	7.027853
A+	66.928709	102.661045	131.766357	24.244677	19.954161	19.607959	1.617597	4.169982	8.372328
A	87.650039	121.859944	173.532865	48.574645	21.685802	64.361483	1.510281	4.155125	7.788166
A-	91.157520	130.402480	156.407207	29.307350	38.837049	39.599834	1.464355	3.945095	7.560529
BBB+	197.120482	217.131203	281.490974	35.023509	33.050123	39.986772	1.578940	3.849112	6.124657
BBB	304.308097	319.706301	-	71.804866	109.155602	-	1.968264	4.324657	-
BBB-	374.112206	321.985912	-	53.478928	15.577195	-	1.457534	3.508219	-

very high spread junk bond

ThaiBMA: Corporate Bond Yield

Corporate Bond Yield Curve (Averaged Spread)

15/07/2021

Export to Excel

COVID 19, lock down

Corporate Bond Yield Curve (Based on TTM) as of 15 July 2021

Group	Averaged Spread (bp)			Standard Deviation (bp)			Averaged Maturity		
	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.
AAA	25.029523	73.032316	82.425423	14.262993	49.924541	35.062513	1.089726	4.107977	11.418835
AA+	54.751148	52.988015	79.834125	39.800960	18.000393	23.651130	1.830441	4.411643	8.361948
AA	54.785710	84.986108	125.573376	56.382943	18.010099	27.640624	1.727306	4.365296	7.404696
AA-	67.038072	130.600577	156.698216	43.522397	38.614263	36.163887	1.295719	3.940117	7.716040
A+	66.112554	125.549795	165.450833	40.169202	49.794057	30.485510	1.544770	3.867755	8.271091
A	135.850236	178.414622	221.644525	61.134874	52.362826	56.444166	1.625432	4.165858	8.025733
A-	102.444717	164.188652	194.249031	45.192402	45.569404	36.883602	1.612730	4.093394	7.782599
BBB+	249.705655	325.020851	318.107732	31.663663	19.384747	35.500925	1.396118	3.734094	6.471918
BBB	374.761071	-	-	63.165782	-	-	1.304657	-	-
BBB-	380.560639	371.023185	-	52.862074	-	-	1.517465	3.164383	-

very high

ThaiBMA: Corporate Bond Yield

sentiment of market

(Flight to quality) Risk off vs. Risk on (flight to yield)

people move from risky asset to risk-free asset

no risk
don't want to take risk

willing to take risk
don't demand high premium

Corporate Bond Yield Curve (Averaged Spread)

credit spread is high

credit spread is low

15/07/2020

Export to Excel

Corporate Bond Yield Curve (Based on TTM) as of 15 July 2020

Group	Averaged Spread (bp)			Standard Deviation (bp)			Averaged Maturity		
	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.
AAA	107.021999	150.150529	135.981620	27.343450	39.631888	16.019857	1.290151	4.643151	10.086301
AA+	115.017897	141.147210	166.627400	20.606785	12.412512	18.523427	1.655822	3.763698	8.931164
AA	136.968630	173.820037	190.993242	51.071218	16.932962	22.094304	1.335870	3.787048	7.410616
AA-	123.893345	165.998155	190.841636	29.123142	21.702750	23.838824	1.650821	4.267275	8.725684
A+	136.790798	178.798866	196.719464	36.027510	33.552397	25.537718	1.508566	3.965410	7.874733
A	146.672709	181.576459	209.291110	33.257459	27.428336	26.803600	1.344596	3.771428	8.064443
A-	171.559619	213.169069	205.897167	31.771727	46.806768	32.727301	1.431100	3.933351	7.922825
BBB+	273.155105	330.382952	362.715166	44.489780	26.296737	17.050462	1.522456	3.901565	5.313242
BBB	314.816282	396.702683	-	36.154156	-	-	1.451370	3.216438	-
BBB-	345.974485	-	-	25.535895	-	-	1.251598	-	-

very high

Spread ⇒ also known as risk premium

investors require this to take additional risk

Corporate Bonds Yield

Corporate Bond Yield Curve (Averaged Spread)

15/07/2019

Export to Excel

Corporate Bond Yield Curve (Based on TTM) as of 15 July 2019

Group	Averaged Spread (bp)			Standard Deviation (bp)			Averaged Maturity		
	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.
AAA	26.241656	48.643417	81.976484	14.719212	12.613232	15.746068	1.426761	3.415890	6.700586
AA	43.550980	83.999273	112.764294	22.486112	17.807801	23.098232	1.665849	4.156712	8.133654
A	50.863151	89.760382	123.512533	31.265676	25.838301	26.163437	1.528265	3.991026	8.373318
BBB	179.656069	227.217639	287.369562	49.834201	53.437101	33.760008	1.577720	3.678082	5.306849

Corporate Bond Yield Curve (Averaged Spread)

16/07/2018

Export to Excel

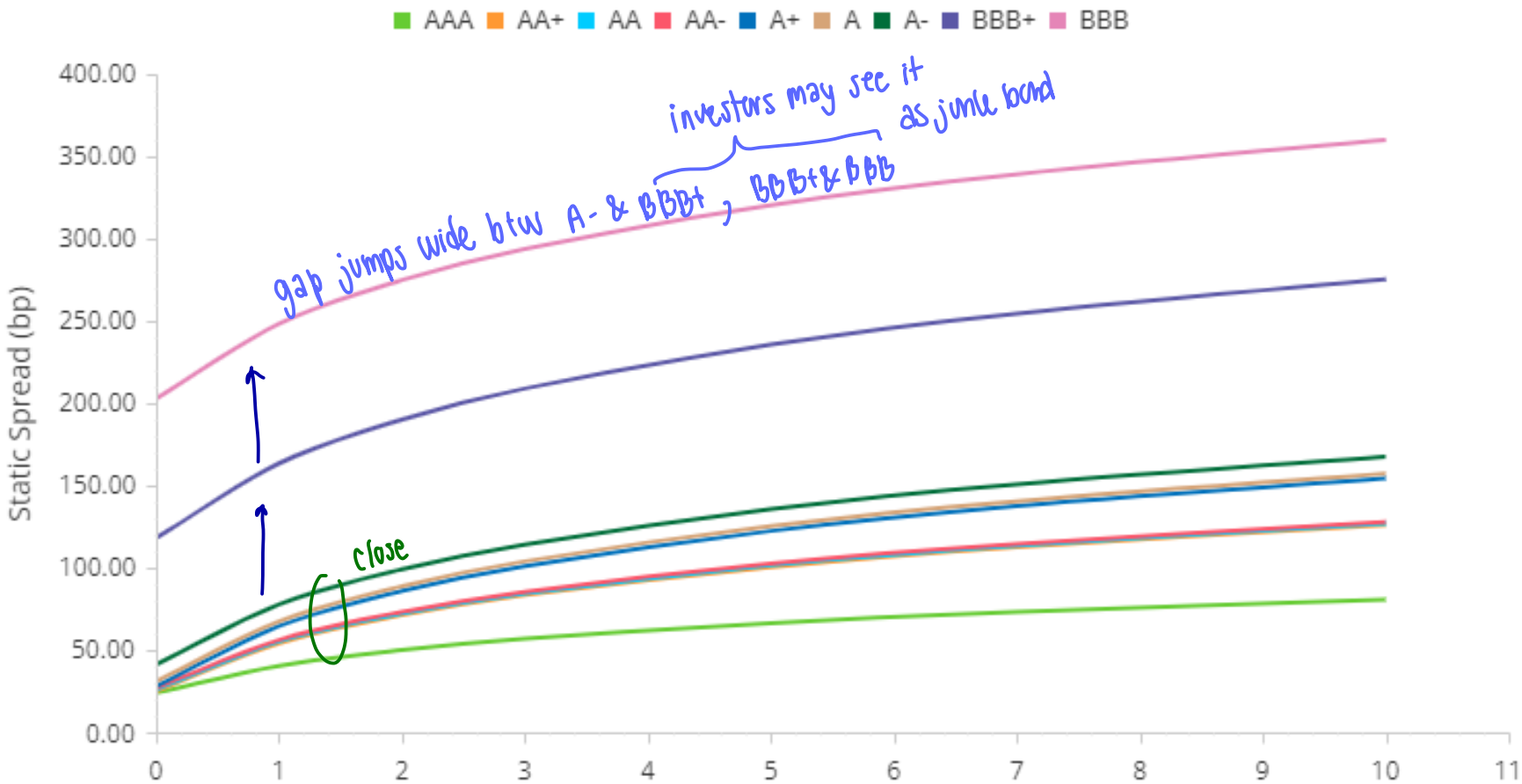
Corporate Bond Yield Curve (Based on TTM) as of 16 July 2018

Group	Averaged Spread (bp)			Standard Deviation (bp)			Averaged Maturity		
	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.	<= 3 Yrs.	3 - 5 Yrs.	> 5 Yrs.
AAA	21.888027	33.238219	65.772319	9.081210	5.498189	15.958946	1.446884	3.845205	7.697847
AA	30.780020	49.696837	72.496451	14.488293	20.965059	12.352183	1.390286	3.684210	7.086575
A	38.009643	61.370520	94.518050	27.585826	19.204963	22.682444	1.527826	3.978580	8.192665
BBB	173.847918	207.215178	-	58.270887	59.722293	-	1.454326	3.907534	-

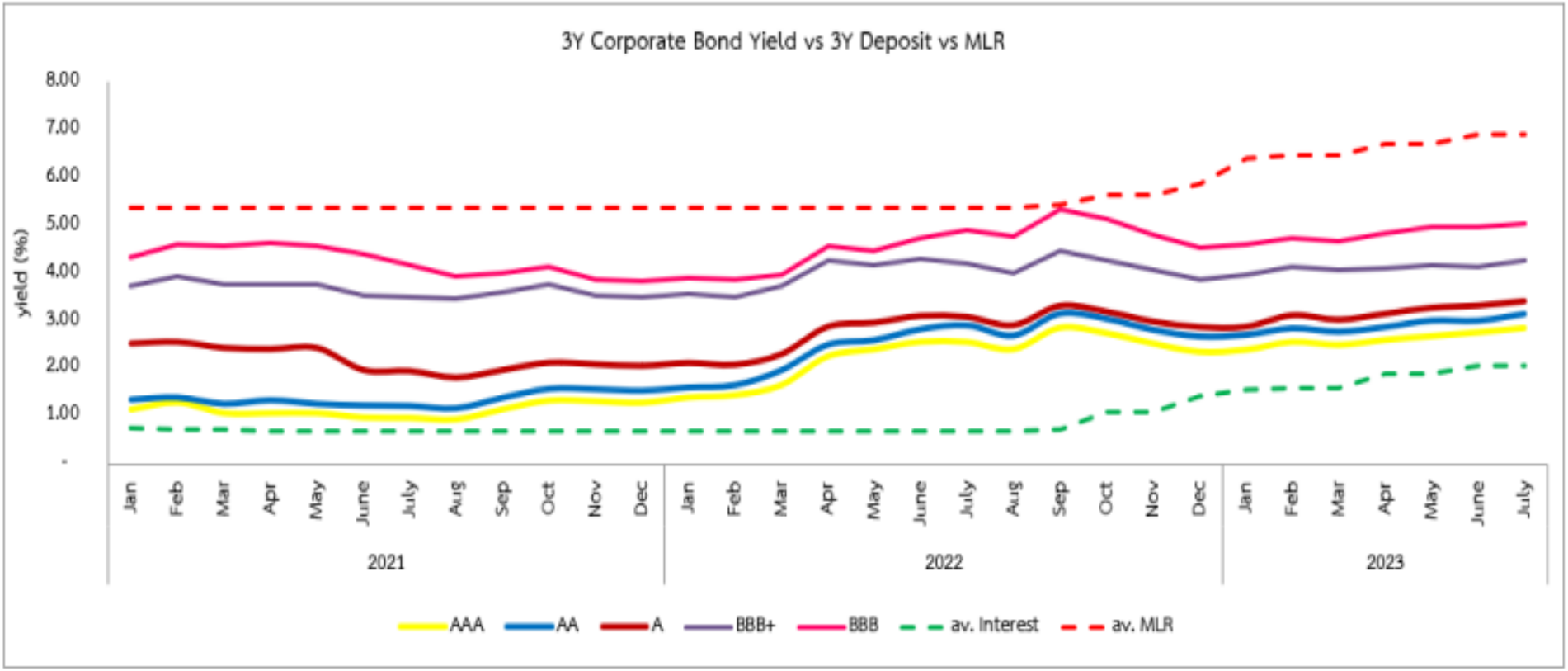
Corporate Bonds Yield

Corporate Bond Yield Curve									
TTM	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB
1-Month	2.04	2.06	2.07	2.08	2.10	2.13	2.21	2.96	3.74
3-Month	2.22	2.27	2.28	2.29	2.32	2.35	2.43	3.19	3.97
6-Month	2.38	2.46	2.47	2.48	2.53	2.56	2.64	3.41	4.20
1-Year	2.53	2.67	2.68	2.69	2.77	2.80	2.88	3.67	4.45
2-Year	2.74	2.96	2.97	2.98	3.09	3.12	3.20	4.02	4.80
3-Year	2.86	3.14	3.15	3.16	3.30	3.33	3.41	4.25	5.03
4-Year	2.98	3.30	3.31	3.32	3.48	3.51	3.59	4.45	5.23
5-Year	3.07	3.42	3.43	3.44	3.62	3.65	3.73	4.60	5.38
6-Year	3.16	3.54	3.55	3.56	3.76	3.79	3.87	4.75	5.53
7-Year	3.25	3.66	3.67	3.68	3.88	3.91	3.99	4.89	5.66
8-Year	3.31	3.74	3.75	3.76	3.98	4.01	4.09	4.99	5.77
9-Year	3.36	3.81	3.82	3.83	4.06	4.09	4.17	5.08	5.86
10-Year	3.43	3.90	3.91	3.92	4.16	4.19	4.27	5.18	5.96

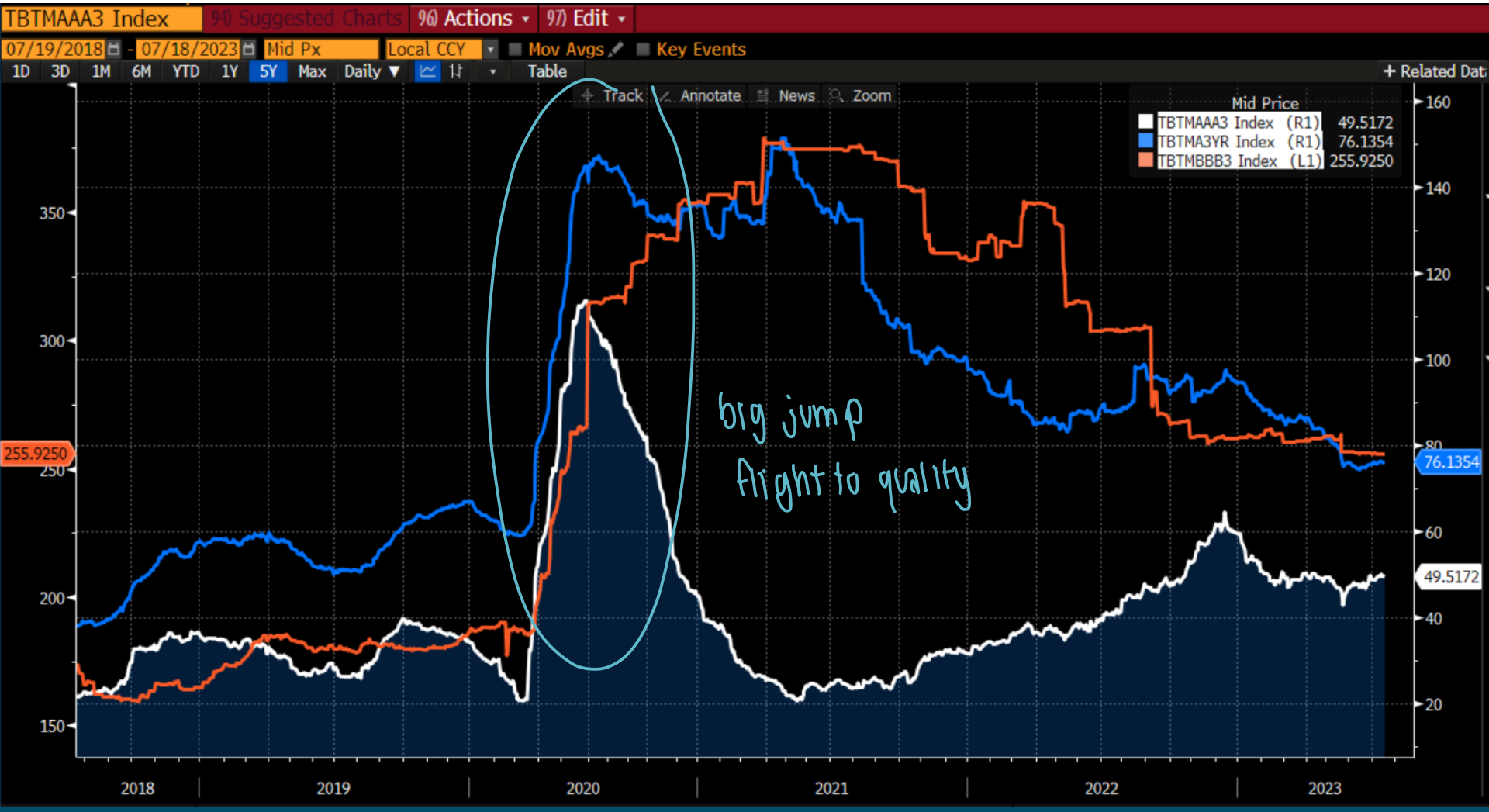
Corporate Bonds Yield upward slope



Corporate Bonds Yield vs Bank Loans



ThaiBMA: Corporate Bond Yield



THAI21NA : DEBENTURES OF THAI AIRWAYS INTERNATIONAL PUBLIC COMPANY LIMITED NO. 2/2019 TRANCHE 2 DUE 2021

Symbol	THAI21NA DP II/HNW	**Registration Date**	13 November 2019
Issuer	THAI AIRWAYS INTERNATIONAL PUBLIC COMPANY LIMITED	**Name (Thai)**	หุ้นกู้บริษัท การบินไทย จำกัด (มหาชน) ครั้งที่ 2/2562 ชุดที่ 2 ครบกำหนดไถ่ถอนปี พ.ศ. 2564
ISIN Code (Local)	TH0245031B04	**Put/ Call Option**	-
ISIN Code (Foreign)		**Collateral**	-
Bond Type	[Senior][Unsecured]	**Payment Frequency**	Semi-annually
Initial Par	THB 1,000.0000	**Calculation Method**	30/360
Current Par	THB 1,000.0000	**Issue Term (Year)**	2.0 Yrs. → short term bond is considered as safer than long term bond
Issue Size	THB 634.00 mln.	**Issue Date**	13 November 2019
Outstanding Size	THB 634.00 mln.	**Maturity Date**	→ 13 November 2021
Distribution	Private Placement to 13 types of institutional investors plus high net worth investors	**Prospectus**	

Issue Rating

Rating Agency		Issue Rating	Rating Date
Local	TRIS	D	27 May 2020

after default occured!

Issuer Rating

Issuer Name	Rating Agency		Issuer Rating	Rating Date
THAI	Local	TRIS	D	27 May 2020

Guarantor Rating

Guarantor Name	Rating Agency	Guarantor Rating	Rating Date

Coupon Payment

Reference	Max.	Min.	From	To
Fixed: 2.430000%			13 Nov 2019	13 Nov 2021

Amortized Schedule

Coupon Date	Principal Amount

Registrar	BANK OF AYUDHYA PUBLIC COMPANY LIMITED	**Debenture Holder Representatives**	BANK OF AYUDHYA PUBLIC COMPANY LIMITED
Lead Underwriter(s)	BANGKOK BANK PUBLIC COMPANY LIMITED KRUNGTHAI BANK PUBLIC COMPANY LIMITED KASIKORNBANK PUBLIC COMPANY LIMITED	**Financial Advisor(s)**	-

Thai Airways International Public Company Limited (THAI) submitted a request for rehabilitation with the Central Bankruptcy Court on May 26, 2020, therefore THAI's bonds will be published on "Notice pending" page.

THAI224A : DEBENTURES OF THAI AIRWAYS INTERNATIONAL PUBLIC COMPANY LIMITED NO. 1/2015 TRANCHE 3 DUE 2022

Symbol	THAI224A REH II/HNW	**Registration Date**	30 April 2015
Issuer	THAI AIRWAYS INTERNATIONAL PUBLIC COMPANY LIMITED	**Name (Thai)**	หุ้นกู้ บริษัท การบินไทย จำกัด (มหาชน) ครั้งที่ 1/2558 ชุดที่ 3 ครบกำหนดไถ่ถอนปี พ.ศ. 2565
ISIN Code (Local)	TH0245032402	**Put/ Call Option**	-
ISIN Code (Foreign)		**Collateral**	-
Bond Type	[Senior][Unsecured]	**Payment Frequency**	Semi-annually *
Initial Par	THB 1,000.0000	**Calculation Method**	30/360
Current Par	THB 1,000.0000	**Issue Term / TTM**	7.01 Yrs./0.76 Yrs. *
Issue Size	THB 2,000.00 mln.	**Issue Date**	30 April 2015
Outstanding Size	THB 2,000.00 mln.	**Maturity Date**	30 April 2022 *
Distribution	Private Placement to 13 types of institutional investors plus high net worth investors	**Prospectus**	
Index Ratio		**External Review Report (ESG)**	Not Available

Issue Rating

Rating Agency		Issue Rating	Rating Date
Local	TRIS	-	2 Nov 2020

Issuer Rating

Issuer Name	Rating Agency	Issuer Rating	Rating Date

Guarantor Rating

Guarantor Name	Rating Agency	Guarantor Rating	Rating Date

Coupon Payment

Reference	Max.	Min.	From	To
Fixed: 4.62% *			30 Apr 2015	30 Apr 2022

Amortized Schedule

Coupon Date	Principal Amount

Registrar	BANK OF AYUDHYA PUBLIC COMPANY LIMITED	**Debenture Holder Representatives**	-
Lead Underwriter(s)	BANGKOK BANK PUBLIC COMPANY LIMITED	**Financial Advisor(s)**	-

Remark

This debenture is under business rehabilitation plan. The principal and interest payment will be paid according to the business rehabilitation plan that Central Bankruptcy Court approved on June 15, 2021.

TRIS RATING
A Strategic Partner of S&P Global

CreditUpdate เครดิตวาระ

THAI AIRWAYS INTERNATIONAL PLC

No. 36/2020

27 May 2020

CORPORATES

Company Rating: D

Issue Ratings:

Senior unsecured D

Last Review Date: 19/05/20

Company Rating History:

Date	Rating	Outlook/Alert
19/05/20	C	Alert Negative
16/05/20	BBB	Alert Negative
02/04/20	A	Alert Negative
29/10/19	A	Negative
12/01/16	A	Stable
27/12/13	A+	Negative
17/12/10	A+	Stable
23/01/09	A	Stable
25/07/08	A+	Stable
12/07/04	AA-	Stable
11/09/03	AA-	-

in few days! downgrade to BBB

COVID-19 occurred

In the past, Thai Airway is safe

RATIONALE

TRIS Rating downgrades the company rating on Thai Airways International PLC (THAI) and the ratings on THAI's senior unsecured debentures to "D" or "Default". The downgrade follows the Bankruptcy Court's acceptance of THAI's rehabilitation petition on 27 May 2020. As a result, all of THAI's debt obligations have been placed on automatic standstill by law, which means THAI has halted all debt services.

TRIS Rating will reassess the credit ratings on THAI as and when the company has reached an agreement with all stakeholders on the rehabilitation plan.

RELATED CRITERIA

- Rating Methodology – Corporate, 26 July 2019
- Key Financial Ratios and Adjustments, 5 September 2018
- Rating Methodology – Government-Related-Entity, 6 June 2017

Thai Airways International PLC (THAI)

Company Rating:	D
Issue Ratings:	
THAI206A: Bt1,000 million senior unsecured debentures due 2020	D
THAI208A: Bt1,250 million senior unsecured debentures due 2020	D
THAI208B: Bt800 million senior unsecured debentures due 2020	D
THAI209A: Bt1,500 million senior unsecured debentures due 2020	D
THAI20NA: Bt2,035 million senior unsecured debentures due 2020	D
THAI212A: Bt1,000 million senior unsecured debentures due 2021	D
THAI215A: Bt833 million senior unsecured debentures due 2021	D
THAI215B: Bt2,167 million senior unsecured debentures due 2021	D
THAI215C: Bt1,000 million senior unsecured debentures due 2021	D
THAI218A: Bt500 million senior unsecured debentures due 2021	D
THAI21NA: Bt634 million senior unsecured debentures due 2021	D
THAI21DA: Bt1,340 million senior unsecured debentures due 2021	D
THAI21DB: Bt500 million senior unsecured debentures due 2021	D
THAI222A: Bt2,000 million senior unsecured debentures due 2022	D
THAI224A: Bt2,000 million senior unsecured debentures due 2022	D
THAI225A: Bt1,970 million senior unsecured debentures due 2022	D
THAI226A: Bt1,000 million senior unsecured debentures due 2022	D
THAI229A: Bt2,500 million senior unsecured debentures due 2022	D
THAI22OA: Bt1,500 million senior unsecured debentures due 2022	D
THAI232A: Bt1,200 million senior unsecured debentures due 2023	D
THAI232B: Bt2,453 million senior unsecured debentures due 2023	D
THAI238A: Bt1,500 million senior unsecured debentures due 2023	D
THAI238B: Bt500 million senior unsecured debentures due 2023	D
THAI23DA: Bt1,000 million senior unsecured debentures due 2023	D
THAI242A: Bt1,000 million senior unsecured debentures due 2024	D
THAI243A: Bt1,500 million senior unsecured debentures due 2024	D

STARK CORPORATION PUBLIC COMPANY LIMITED (STARK)

Issuer | Registered Issue | Financial Information | Issuer News

1.Short Term Debenture

ThaiBMA Symbol	Issued Date	Maturity Date	Issue Size (THB Mln.)	Outstanding (THB Mln.)	Term	TTM (Yrs.)	Secured Type	Bondholder Rept.	Cross Default Amount (THB Mln.)	Op
No Data Found										

0 | 10 items per page | No items to display

2. Long Term Debenture

short term bond

ThaiBMA Symbol	Issued Date	Maturity Date	Issue Size (THB Mln.)	Outstanding (THB Mln.)	Term	TTM (Yrs.)	Secured Type	Bondholder Rept.	Cross Default Amount (THB Mln.)	O...	Registered Date
STARK239A DP II/HNW	02-Sep-2021	02-Sep-2023	1,291.50	1,291.50	2.00 Yrs	0.15	UNSECURE	KBANK	-		02-Sep-2021
STARK249A DP II/HNW	02-Sep-2021	02-Sep-2024	949.50	949.50	3.00 Yrs	1.15	UNSECURE	KBANK	-		02-Sep-2021
STARK255A DP II/HNW	12-May-2022	12-May-2025	1,322.00	1,322.00	3.00 Yrs	1.84	UNSECURE	KBANK	-		12-May-2022
STARK245A DP II/HNW	12-May-2022	12-May-2024	1,701.10	1,701.10	2.00 Yrs	0.84	UNSECURE	KBANK	-		12-May-2022
STARK242A DP II/HNW	17-Nov-2022	17-Feb-2024	3,934.30	3,934.30	1.25 Yrs	0.61	UNSECURE	ASPS	-		17-Nov-2022

TRIS RATING
A Strategic Partner of S&P Global

CreditAlert เครดิตพินิจ

STARK CORPORATION PLC

No. 9/2023
1 June 2023

CORPORATES

Company Rating: C
CreditAlert: Negative

Last Review Date: 22/04/23

Company Rating History:

Date	Rating	Outlook/Alert
22/04/23	BB-	Alert Negative
05/04/23	BBB+	Alert Negative
23/12/22	BBB+	Stable
30/05/22	BBB+	Alert Negative
26/03/21	BBB+	Stable

delayed annual report r Mar

cut rate

still in investment grade

RATIONALE

TRIS Rating downgrades the company rating on STARK Corporation PLC (STARK) to "C" from "BB-" and maintains CreditAlert with a "negative" implication.

The rating action follows the resolution of STARK's debenture holders meeting held on 31 May 2023. The debenture holders' meeting of two debenture issues, STARK239A and STARK249A, resolved not to waive the event of default in relation to the company's failure to meet the debenture condition on annual submission of the 56-1 Form. The debenture holders also resolved to accelerate the payment of all obligations under the debentures. In our view, the payment acceleration will likely trigger cross-defaults and lead to acceleration of the company's other debt obligations. In this scenario, it is unlikely the company will be able to continue meeting all of its debt obligations.

RELATED CRITERIA

- Corporate Rating Methodology, 15 July 2022
- Key Financial Ratios and Adjustments for Corporate Issuers, 11 January 2022

TRIS RATING
A Strategic Partner of S&P Global

* development of event
credit rating → is lacking indicator! → if you wait for mut to confirm real effect on that bond issuer
↓ it is too late

CreditUpdate เครดิตวาระ

STARK CORPORATION PLC

No. 64/2023
2 June 2023

CORPORATES

Company Rating: 1 day D

Last Review Date: 01/06/23

Company Rating History:

Date	Rating	Outlook/Alert
01/06/23	C	Alert Negative
22/04/23	BB-	Alert Negative
05/04/23	BBB+	Alert Negative
23/12/22	BBB+	Stable
30/05/22	BBB+	Alert Negative
26/03/21	BBB+	Stable

RATIONALE

TRIS Rating downgrades the company rating on STARK Corporation PLC (STARK) to "D". The downgrade follows STARK's interest payment default on its debentures (STARK239A and STARK249A). According to the announcement by the debentures' registrar on 2 June 2023, the company has suspended the debenture interest payments due on 2 June 2023.

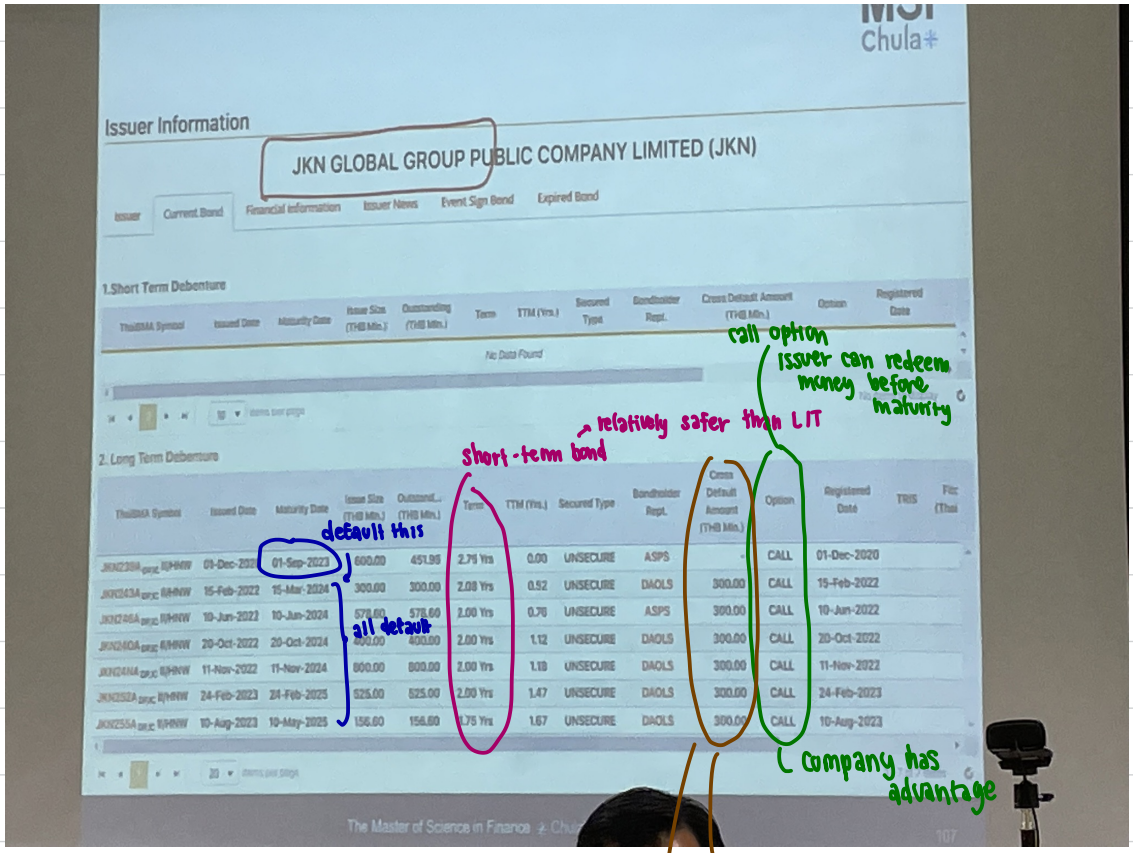
RELATED CRITERIA

- Corporate Rating Methodology, 15 July 2022
- Key Financial Ratios and Adjustments for Corporate Issuers, 11 January 2022

STARK Corporation PLC (STARK)

Company Rating: D

JKN (media company) ; CEO announced that it cannot repay debt



ThaiBMA Symbol	Issued Date	Maturity Date	Issue Size (THB Mln.)	Outstanding (THB Mln.)	Term	TTM (Yrs.)	Secured Type	Bondholder Rept.	Cross Default Amount (THB Mln.)	Option	Registered Date
JKN23BA	01-Dec-2020	01-Sep-2023	600.00	451.95	2.75 Yrs	0.00	UNSECURE	ASPS		CALL	01-Dec-2020
JKN243A	15-Feb-2022	15-Mar-2024	300.00	300.00	2.08 Yrs	0.52	UNSECURE	DAOLS	300.00	CALL	15-Feb-2022
JKN246A	10-Jun-2022	10-Jun-2024	578.60	578.60	2.00 Yrs	0.76	UNSECURE	ASPS	300.00	CALL	10-Jun-2022
JKN24OA	20-Oct-2022	20-Oct-2024	400.00	400.00	2.00 Yrs	1.12	UNSECURE	DAOLS	300.00	CALL	20-Oct-2022
JKN24NA	11-Nov-2022	11-Nov-2024	600.00	600.00	2.00 Yrs	1.18	UNSECURE	DAOLS	300.00	CALL	11-Nov-2022
JKN252A	24-Feb-2023	24-Feb-2025	525.00	525.00	2.00 Yrs	1.47	UNSECURE	DAOLS	300.00	CALL	24-Feb-2023
JKN255A	10-Aug-2023	10-May-2025	156.60	156.60	1.75 Yrs	1.67	UNSECURE	DAOLS	300.00	CALL	10-Aug-2023

default this

all default

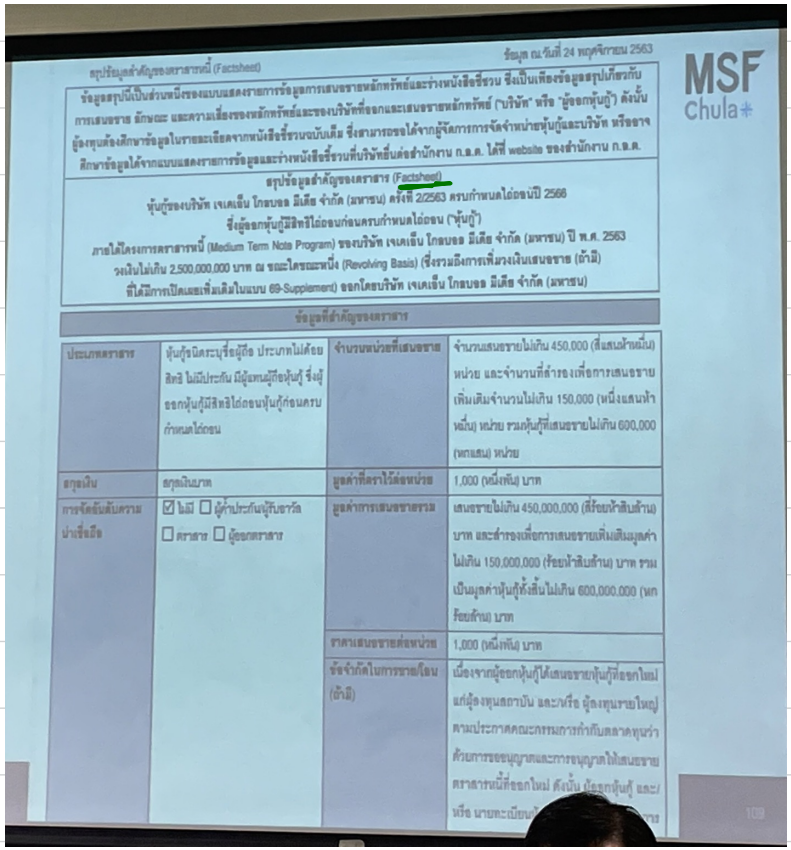
short-term bond

relatively safer than LIT

call option

issuer can redeem money before maturity

company has advantage



Cross default amount

↓

If 1 bond is default

all other bonds are also default

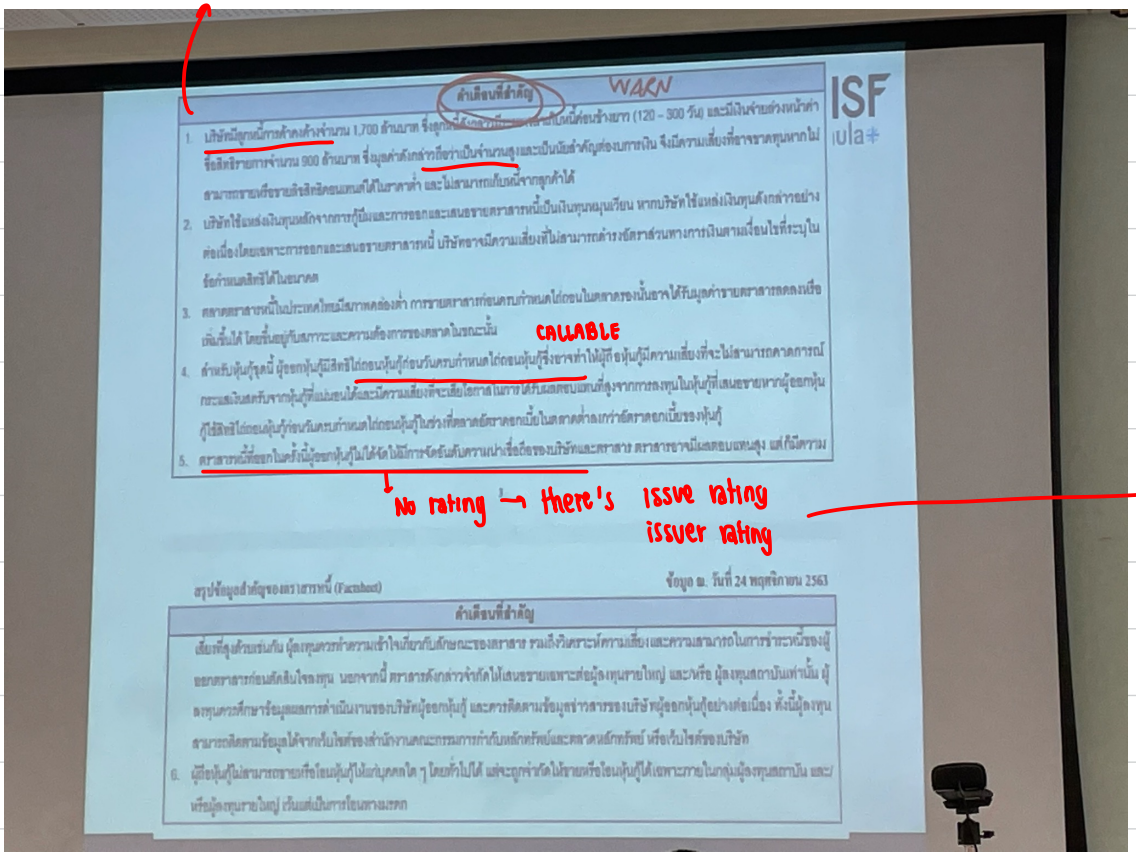
↓

and claim money back now

limit the amount of default = 300 mm not whole debt

issuer has advantage

AR ~50% of total revenue ⇒ very high ?



ISF

คำเตือนที่สำคัญ	WARN

1. บริษัทมีลูกหนี้การค้าคงค้างจำนวน 1,700 ล้านบาท ซึ่งลูกหนี้ดังกล่าวมีระยะเวลาเก็บหนี้ค่อนข้างยาว (120 – 300 วัน) และมีเงินจ่ายล่วงหน้าค่าซื้อสิทธิรายการจำนวน 900 ล้านบาท ซึ่งมูลค่าดังกล่าวถือว่าเป็นจำนวนสูงและเป็นนัยสำคัญต่องบการเงิน จึงมีความเสี่ยงที่อาจขาดทุนหากไม่สามารถขายหรือขายสิทธิสิทธิตอบแทนได้ในราคาต่ำ และไม่สามารถเก็บหนี้จากลูกค้าได้
2. บริษัทใช้แหล่งเงินทุนหลักจากการกู้ยืมและการออกและเสนอขายตราสารหนี้เป็นเงินทุนหมุนเวียน หากบริษัทใช้แหล่งเงินทุนดังกล่าวอย่างต่อเนื่องโดยเฉพาะการออกและเสนอขายตราสารหนี้ บริษัทอาจมีความเสี่ยงที่ไม่สามารถดำรงอัตราส่วนทางการเงินตามเงื่อนไขที่ระบุในข้อกำหนดสิทธิได้ในอนาคต
3. ตลาดตราสารหนี้ในประเทศไทยมีสภาพคล่องต่ำ การขายตราสารก่อนครบกำหนดไถ่ถอนในตลาดรองนั้นอาจได้รับมูลค่าขายตราสารลดลงหรือเพิ่มขึ้นได้ โดยขึ้นอยู่กับสภาวะและความต้องการของตลาดในขณะนั้น
4. สำหรับหุ้นกู้ชุดนี้ ผู้ออกหุ้นกู้มีสิทธิไถ่ถอนหุ้นกู้ก่อนวันครบกำหนดไถ่ถอนหุ้นกู้ซึ่งอาจทำให้ผู้ถือหุ้นกู้มีความเสี่ยงที่จะไม่สามารถคาดการณ์กระแสเงินสดรับจากหุ้นกู้ที่แน่นอนได้และมีความเสี่ยงที่จะเสียโอกาสในการได้รับผลตอบแทนที่สูงจากการลงทุนในหุ้นกู้ที่เสนอขายหากผู้ออกหุ้นกู้ใช้สิทธิไถ่ถอนหุ้นกู้ก่อนวันครบกำหนดไถ่ถอนหุ้นกู้ในช่วงที่ตลาดอัตราดอกเบี้ยในตลาดต่ำกว่าอัตราดอกเบี้ยของหุ้นกู้ CALLABLE
5. ตราสารหนี้ที่ออกในครั้งนี้ผู้ออกหุ้นกู้ไม่ได้จัดให้มีการจัดอันดับความน่าเชื่อถือของบริษัทและตราสาร ตราสารอาจมีผลตอบแทนสูง แต่ก็มีความ

No rating → there's issue rating
issuer rating

สรุปข้อมูลสำคัญของตราสารหนี้ (Factsheet) ข้อมูล ณ. วันที่ 24 พฤศจิกายน 2563

คำเตือนที่สำคัญ

เสี่ยงที่จะเช่นเดียวกัน ผู้ลงทุนควรทำความเข้าใจเกี่ยวกับลักษณะของตราสาร รวมถึงวิเคราะห์ความเสี่ยงและความสามารถในการชำระหนี้ของผู้ออกตราสารก่อนตัดสินใจลงทุน นอกจากนี้ ตราสารดังกล่าวจำกัดให้เสนอขายเฉพาะต่อผู้ลงทุนรายใหญ่ และ/หรือ ผู้ลงทุนสถาบันเท่านั้น ผู้ลงทุนควรศึกษาข้อมูลผลการดำเนินงานของบริษัทผู้ออกหุ้นกู้ และควรติดตามข้อมูลข่าวสารของบริษัทผู้ออกหุ้นกู้อย่างต่อเนื่อง ทั้งนี้ผู้ลงทุนสามารถติดตามข้อมูลได้จากเว็บไซต์ของสำนักงานคณะกรรมการกำกับหลักทรัพย์และตลาดหลักทรัพย์ หรือเว็บไซต์ของบริษัท

6. ผู้ถือหุ้นกู้ไม่สามารถขายหรือโอนหุ้นกู้ให้แก่บุคคลใด ๆ โดยทั่วไปได้ แต่จะถูกจำกัดให้ขายหรือโอนหุ้นกู้ได้เฉพาะภายในกลุ่มผู้ลงทุนสถาบัน และ/หรือผู้ลงทุนรายใหญ่ เว้นแต่เป็นการโอนทางมรดก

→ JUN get BBB as issuer rating
≠
issue rating ⇒ this bond has no rating
↓
rather than issuer rating

SF
la

ลักษณะพิเศษและความเสี่ยงของหุ้นกู้ → Risk of Bond/Issuer

1. ความเสี่ยงจากลักษณะพิเศษที่ผู้ออกหุ้นกู้มีสิทธิในการไถ่ถอนหรือชำระคืนเงินต้นหุ้นกู้ ตามเงื่อนไขดังนี้ (รายละเอียดและภายใต้เงื่อนไขที่กำหนดไว้ในข้อ ข้อ 21 ของข้อกำหนดสิทธิเพิ่มเติม) (เอกสารแบบ 1 แบบของข้อกำหนดสิทธิเพิ่มเติมของแบบแสดงรายการข้อมูลการเสนอขายตราสารหนี้ (แบบ 69-Pricing) และร่างหนังสือชี้ชวน ("ข้อกำหนดสิทธิเพิ่มเติม"))
   - ผู้ออกหุ้นกู้สามารถใช้สิทธิชำระคืนหนี้หุ้นกู้ก่อนครบกำหนด ในวันทำการใดๆ ตั้งแต่ (และรวมถึง) วันครบรอบปีที่ 1 ของหุ้นกู้ (ซึ่งได้แก่วันที่ 1 ธันวาคม 2564) เป็นต้นไป โดยในกรณีที่ผู้ออกหุ้นกู้ประสงค์จะชำระคืนหนี้หุ้นกู้ก่อนครบกำหนด ผู้ออกหุ้นกู้จะต้องชำระคืนหนี้เงินต้นหุ้นกู้และดอกเบี้ยที่ค้างชำระและถึงกำหนดชำระทั้งหมดพร้อมกันให้แก่ผู้ถือหุ้นกู้แต่ละรายตามที่ระบุไว้ในสมุดทะเบียนผู้ถือหุ้นกู้ในขณะนั้นๆ ตามอัตราส่วนและโดยเท่าเทียมกัน
   - ในการใช้สิทธิชำระคืนหนี้หุ้นกู้ก่อนครบกำหนด ผู้ออกหุ้นกู้จะชำระค่าธรรมเนียมการใช้สิทธิฯ ให้แก่ผู้ถือหุ้นกู้แต่ละรายในอัตราเท่ากับร้อยละ 0.25 ของจำนวนเงินต้นหุ้นกู้ที่ผู้ออกหุ้นกู้ชำระคืนให้แก่ผู้ถือหุ้นกู้แต่ละรายนั้น ๆ โดยชำระพร้อมกับการชำระเงินต้นหุ้นกู้และดอกเบี้ยในวันไถ่ถอนหุ้นกู้ก่อนวันครบกำหนดไถ่ถอนหุ้นกู้ดังกล่าว ทั้งนี้ ผู้ออกหุ้นกู้มีสิทธิหักภาษี ณ ที่จ่ายหรือภาษีอื่นใดบนเงินค่าธรรมเนียมดังกล่าวข้างต้นตามอัตราที่กฎหมายกำหนด (ถ้ามี) โดยมิต้องชำระเงินเพิ่มใด ๆ ให้แก่ผู้ถือหุ้นกู้เพื่อชดเชยค่าภาษีที่หักไว้ดังกล่าว (no gross-up)
2. หากผู้ออกหุ้นกู้ใช้สิทธิไถ่ถอนหุ้นกู้ก่อนวันครบกำหนดไถ่ถอนหุ้นกู้ จะส่งผลให้ผู้ถือหุ้นกู้ต้องรับความเสี่ยงในการลงทุนต่อ (Reinvestment Risk) ผู้ถือหุ้นกู้อาจไม่สามารถได้รับผลตอบแทนตามที่คุ้มค่าลงทุนคาดไว้ เพราะผู้ถือหุ้นกู้อาจไม่สามารถนำเงินที่ได้รับจากการไถ่ถอนก่อนครบกำหนดนั้นไปลงทุนต่อในตราสารอื่นๆที่ให้ผลตอบแทนที่เท่ากับหรือดีกว่าหุ้นกู้นี้ได้

ทั้งนี้ สามารถศึกษารายละเอียดเรื่องการไถ่ถอนก่อนกำหนดเพิ่มเติมได้จากข้อกำหนดสิทธิข้อ 11.5 และข้อกำหนดสิทธิเพิ่มเติมข้อ 21

ความหมายและความต่างในสาระสำคัญระหว่างข้อกำหนดว่าด้วยสิทธิและหน้าที่ของผู้ออกหุ้นกู้และผู้ถือหุ้นกู้ และผู้ถือหุ้นกู้และข้อกำหนดสิทธิมาตรฐานของสำนักงาน ก.ล.ต.

ข้อกำหนดสิทธิ กับข้อกำหนดสิทธิมาตรฐานของสำนักงาน ก.ล.ต. มีความแตกต่างในสาระสำคัญในหัวข้อดังต่อไปนี้

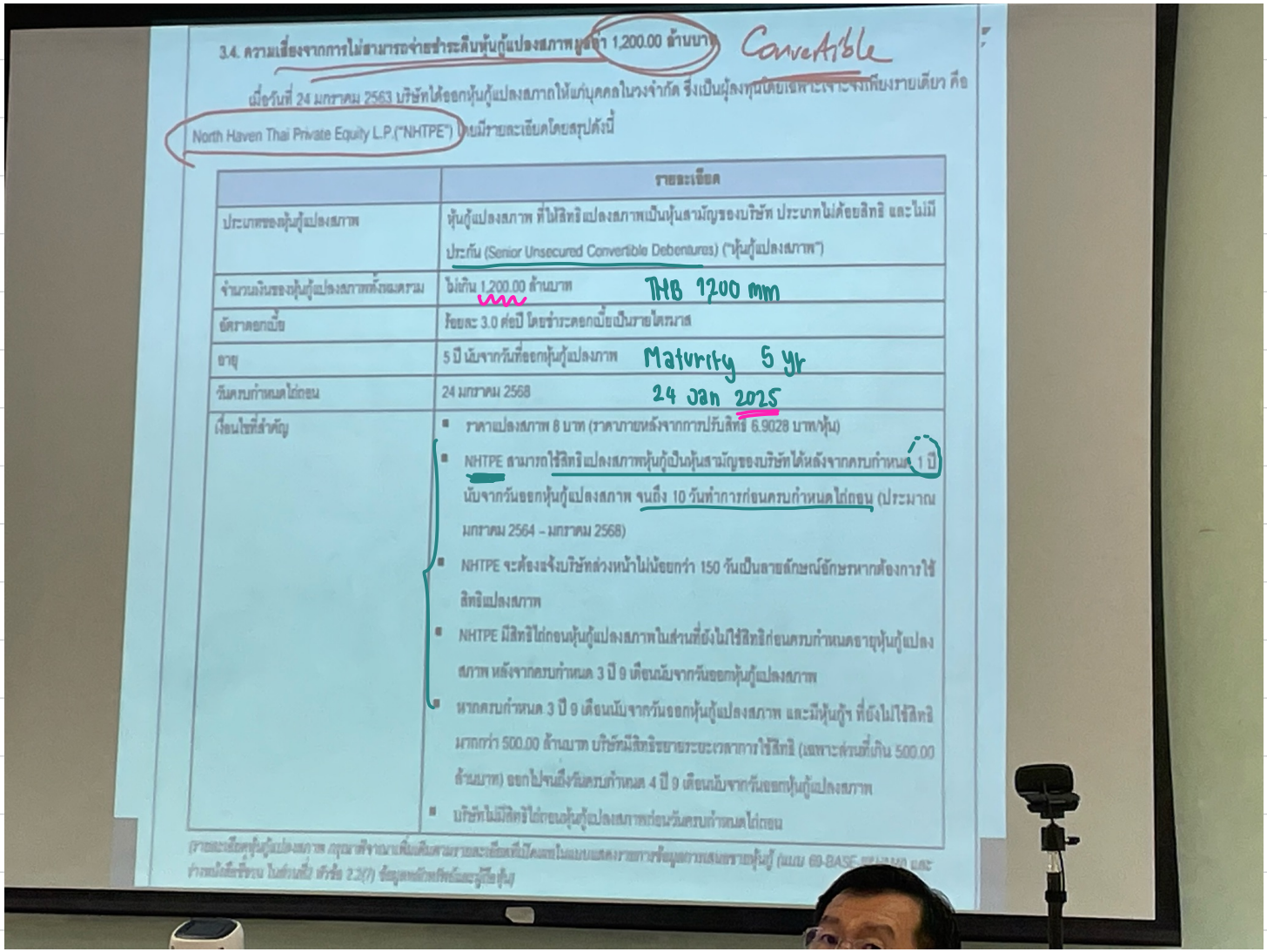
1. ข้อ 8 หน้าที่ของผู้ออกหุ้นกู้ มีการกำหนดแตกต่างจากข้อกำหนดสิทธิมาตรฐานของสำนักงาน ก.ล.ต. เช่น การส่งเอกสารหรือข้อมูลให้แก่ผู้แทนผู้ถือหุ้นกู้ตรวจสอบ (ข้อ 8.1 (ข)) และการต่างไปซึ่งอัตราส่วนทางการเงิน (ข้อ 8.2.1 (ก))
2. ข้อ 9 ดอกเบี้ยหุ้นกู้ มีการกำหนดหลักเกณฑ์ในการคำนวณดอกเบี้ยเพิ่มเติมจากข้อกำหนดสิทธิมาตรฐานของสำนักงาน ก.ล.ต.
3. ข้อ 10 วิธีการ เวลา และสถานที่ชำระคืนหนี้ดอกเบี้ยดังกล่าว

F

5. ข้อ 12 การผิดนัดและเหตุผิดนัด มีการกำหนดเหตุผิดนัดแตกต่างจากที่ข้อกำหนดสิทธิมาตรฐานของสำนักงาน ก.ล.ต. เช่น
   - ข้อ 12.1 (ง) "ผู้ออกหุ้นกู้ ผิดนัดชำระหนี้ซึ่งเป็นมูลหนี้ตามสัญญาเงินกู้ ตราสารหนี้หรือซึ่งเป็นมูลหนี้เกิดจากการดำเนินการทางการเงินใดใด (เพื่อป้องกันข้อสงสัย ไม่ให้รวมถึงธุรกรรมอนุพันธ์ใดๆ ไม่ว่าจะเกี่ยวข้องกับมูลหนี้ทางการเงินหรือไม่ก็ตาม) เป็นจำนวนเงินรวมกันเกินกว่า 300,000,000 (สามร้อยล้าน) บาท หรือเงินสกุลอื่นที่มีจำนวนเทียบเท่า จากการที่ (1) ผู้ออกหุ้นกู้ไม่ชำระหนี้ดังกล่าวภายในกำหนดชำระหนี้ หรือภายในระยะเวลาที่เจ้าหนี้ขยายให้ หรือ (2) หนี้ดังกล่าวถูกเจ้าหนี้เรียกให้ชำระคืนก่อนกำหนดตามสิทธิของเจ้าหนี้ในสัญญาที่เกี่ยวข้อง ทั้งนี้ทั้งแต่ (1) เป็นการผิดนัดชำระหนี้ในเจ้าหนี้การค้าและการผิดนัดชำระหนี้ดังกล่าวยังไม่มีข้อยุติ หรือ (2) เป็นการผิดนัดในมูลหนี้ใด ๆ ที่ไม่กระทบต่อการชำระเงินต้นและดอกเบี้ยของหุ้นกู้ตามข้อกำหนดสิทธิ"

     อนึ่ง การผิดนัดนัดชำระหนี้ในว่ามูลหนี้ใด ๆ ดังกล่าว หากได้รับการยกเว้นอันเป็นผลให้การผิดนัดชำระหนี้ระงับลงก่อนที่ผู้แทนผู้ถือ หุ้นกู้จะมีหนังสือส่งไปยังผู้ออกหุ้นกู้ให้ชำระหนี้หุ้นกู้ตามข้อ 12.2 หรือก่อนที่จะมีการจัดการประชุมผู้ถือหุ้นกู้ตามข้อ 13.1 (ก) มิให้ถือว่าเป็นการผิดนัดตามข้อกำหนดสิทธิ
   - ข้อ 12.1 (จ) "โดยผู้ออกหุ้นกู้ไม่สามารถชำระหนี้ดังกล่าวได้ภายในระยะเวลาที่กำหนดไว้ในคำพิพากษาเสร็จเด็ดขาดหรือคำชี้ขาดอันเป็นที่สุดของอนุญาโตตุลาการนั้น ๆ หรือการชำระหนี้ดังกล่าวโดยผู้ออกหุ้นกู้ จะก่อให้เกิดผลกระทบอย่างร้ายแรง (Material Adverse Effect)"
6. ข้อ 13 การประชุมผู้ถือหุ้นกู้ มีการหลักเกณฑ์เกี่ยวกับการประชุมของผู้ถือหุ้นกู้และมติของที่ประชุมของที่ผู้ถือหุ้นกู้เพิ่มเติม เช่น หลักเกณฑ์เกี่ยวกับการลงมติเป็นลายลักษณ์อักษรโดยไม่ต้องมีการจัดประชุมผู้ถือหุ้นกู้
7. ข้อ 14 อำนาจ หน้าที่ และความรับผิดชอบของผู้แทนผู้ถือหุ้นกู้ มีการกำหนดขอบเขตอำนาจ หน้าที่ และความรับผิดชอบของผู้แทนผู้ถือหุ้นกู้มากกว่าที่กำหนดในข้อกำหนดสิทธิมาตรฐานของสำนักงาน ก.ล.ต.
8. ข้อ 15 การแต่งตั้ง การเปลี่ยนตัวผู้แทนผู้ถือหุ้นกู้และการสิ้นสุดของสัญญาแต่งตั้งผู้แทนผู้ถือหุ้นกู้ มีการกำหนดกรณีการเปลี่ยนตัวผู้แทนผู้ถือหุ้นกู้เพิ่มเติมมากกว่าที่กำหนดในข้อกำหนดสิทธิมาตรฐานของสำนักงาน ก.ล.ต.

ทั้งนี้ โปรดพิจารณาข้อกำหนดสิทธิ ของแบบแสดงรายการข้อมูลการเสนอขายหุ้นกู้ (แบบ69-BASE-II&HNW) และร่างหนังสือชี้ชวน และข้อกำหนดสิทธิเพิ่มเติมของแบบแสดงรายการข้อมูลการเสนอขายตราสารหนี้ (แบบ 69-Pricing) และร่างหนังสือชี้ชวนสำหรับหุ้นกู้ที่เสนอขายในครั้งนี้

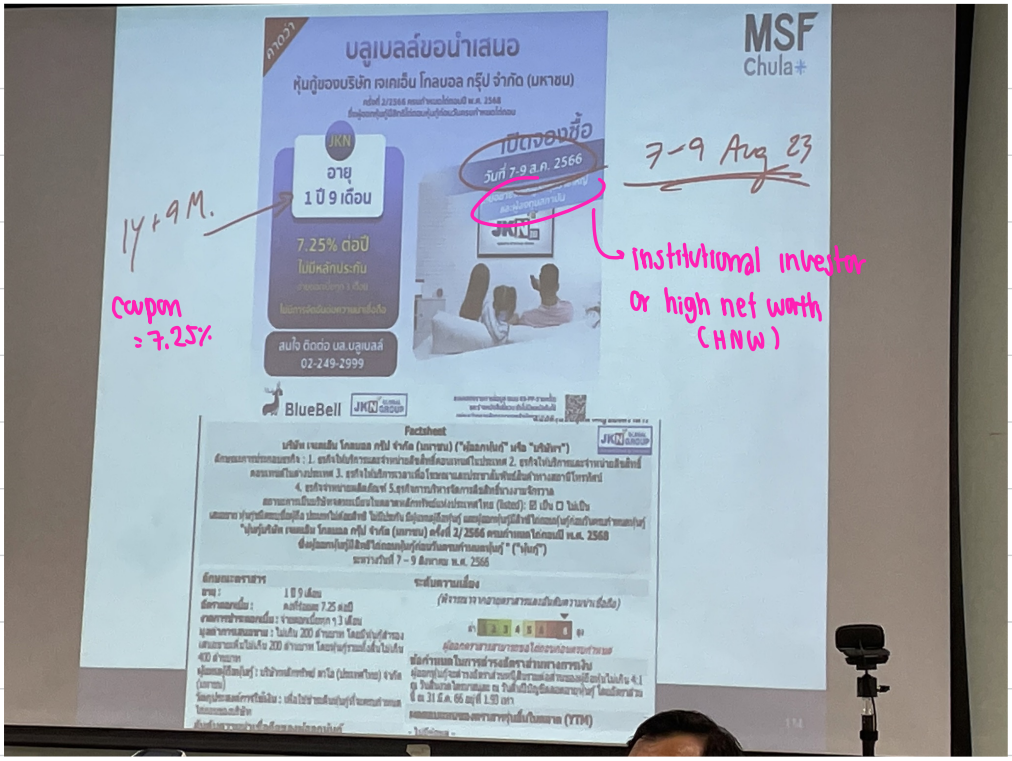


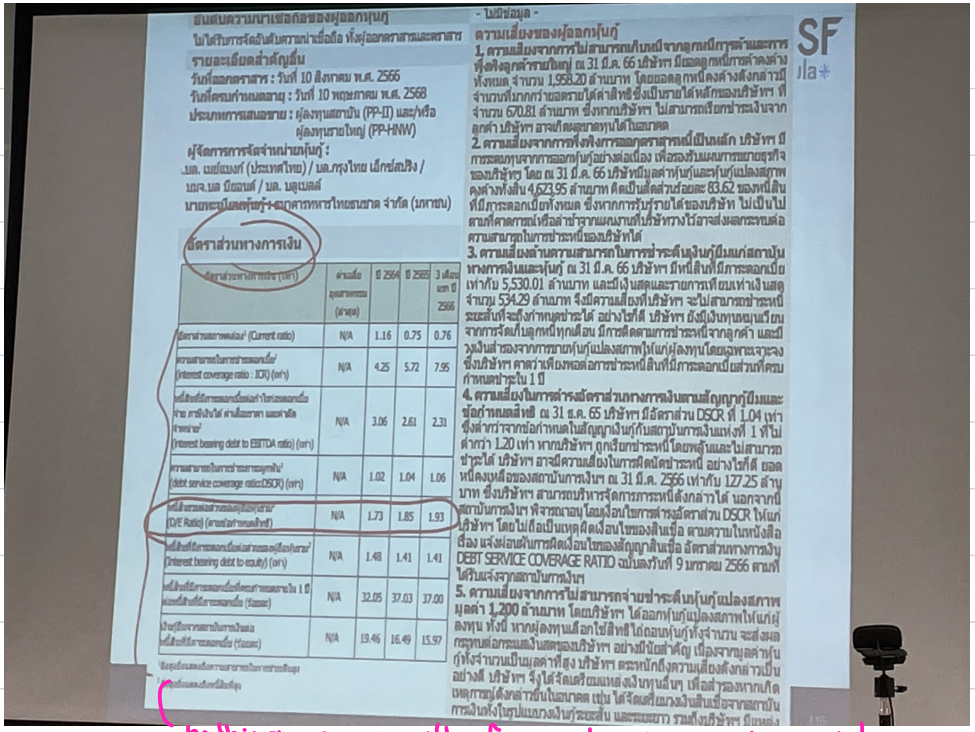
3.4. ความเสี่ยงจากการไม่สามารถจ่ายชำระคืนหุ้นกู้แปลงสภาพมูลค่า 1,200.00 ล้านบาท Convertible

เมื่อวันที่ 24 มกราคม 2563 บริษัทได้ออกหุ้นกู้แปลงสภาพให้แก่บุคคลในวงจำกัด ซึ่งเป็นผู้ลงทุนโดยเฉพาะเจาะจงเพียงรายเดียว คือ North Haven Thai Private Equity L.P.("NHTPE") โดยมีรายละเอียดโดยสรุปดังนี้

	รายละเอียด
ประเภทของหุ้นกู้แปลงสภาพ	หุ้นกู้แปลงสภาพ ที่ไม่มีสิทธิแปลงสภาพเป็นหุ้นสามัญของบริษัท ประเภทไม่ด้อยสิทธิ และไม่มีประกัน (Senior Unsecured Convertible Debentures) ("หุ้นกู้แปลงสภาพ")
จำนวนเงินของหุ้นกู้แปลงสภาพทั้งหมดรวม	ไม่เกิน 1,200.00 ล้านบาท THB 1200 mm
อัตราดอกเบี้ย	ร้อยละ 3.0 ต่อปี โดยชำระดอกเบี้ยเป็นรายไตรมาส
อายุ	5 ปี นับจากวันที่ออกหุ้นกู้แปลงภาพ Maturity 5 yr
วันครบกำหนดไถ่ถอน	24 มกราคม 2568 24 มค 2025
เงื่อนไขที่สำคัญ	▪ ราคาแปลงสภาพ 8 บาท (ราคาภายหลังจากการปรับสิทธิ 6.9028 บาทต่อหุ้น) ▪ NHTPE สามารถใช้สิทธิแปลงสภาพหุ้นกู้เป็นหุ้นสามัญของบริษัทได้หลังจากครบกำหนด 1 ปี นับจากวันออกหุ้นกู้แปลงสภาพ จนถึง 10 วันทำการก่อนครบกำหนดไถ่ถอน (ประมาณ มกราคม 2564 – มกราคม 2568) ▪ NHTPE จะต้องแจ้งบริษัทล่วงหน้าไม่น้อยกว่า 150 วันเป็นลายลักษณ์อักษรหากต้องการใช้สิทธิแปลงสภาพ ▪ NHTPE มีสิทธิไถ่ถอนหุ้นกู้แปลงสภาพในส่วนที่ยังไม่ใช้สิทธิก่อนครบกำหนดอายุหุ้นกู้แปลงสภาพ หลังจากครบกำหนด 3 ปี 9 เดือนนับจากวันออกหุ้นกู้แปลงสภาพ ▪ หากครบกำหนด 3 ปี 9 เดือนนับจากวันออกหุ้นกู้แปลงสภาพ และมีหุ้นกู้ฯ ที่ยังไม่ใช้สิทธิมากกว่า 500.00 ล้านบาท บริษัทมีสิทธิขยายระยะเวลาการใช้สิทธิ (เฉพาะส่วนที่เกิน 500.00 ล้านบาท) ออกไปจนถึงวันครบกำหนด 4 ปี 9 เดือนนับจากวันออกหุ้นกู้แปลงสภาพ ▪ บริษัทไม่มีสิทธิไถ่ถอนหุ้นกู้แปลงสภาพก่อนวันครบกำหนดไถ่ถอน

(รายละเอียดหุ้นกู้แปลงสภาพ กรุณาศึกษาเพิ่มเติมตามรายละเอียดที่ปรากฏในแบบแสดงรายการข้อมูลการเสนอขายหุ้นกู้ (แบบ 69-BASE-[illegible]) และข่าวหนังสือชี้ชวน ในส่วนที่ 2 หัวข้อ 2.2(7) ข้อมูลหลักทรัพย์และผู้ถือหุ้น)


MSF
Chula
บลูเบลล์ขอนำเสนอ
หุ้นกู้ของบริษัท เจเคเอ็น โกลบอล กรุ๊ป จำกัด (มหาชน)
JKN
อายุ
1 ปี 9 เดือน
7.25% ต่อปี
ไม่มีหลักประกัน
สนใจ ติดต่อ บล.บลูเบลล์
02-249-2999
เปิดจองซื้อ
วันที่ 7-9 ส.ค. 2566
BlueBell
Factsheet
1Y+9M.
coupon = 7.25%
7-9 Aug 23
institutional investor or high net worth (HNW)


ความเสี่ยงของผู้ออกหุ้นกู้
ตัวชี้วัดทางการเงิน
nothing wrong with financial ratio → not enough!

DDLS : debt distribution
MSF
Chula
Debt Distribution
Expiration Date
firm has alot of burden to repay in short term
⇓
liquidity mismatch

Secondary Markets for Corporate Bonds

- Bonds are traded mostly in OTC markets where dealers are the major player.
- Buyers and sellers transact with dealer (e.g. commercial banks)
- Dealers set the trading conditions such as price and volume.
- Trading in exchange market is relatively low

TRUE248A : DEBENTURES OF TRUE CORPORATION PUBLIC COMPANY LIMITED NO. 3/2562 TRANCHE 3 DUE B.E. 2567

Symbol	TRUE248A PO	**Registration Date**	24 May 2019
Issuer	TRUE CORPORATION PUBLIC COMPANY LIMITED	**Name (Thai)**	หุ้นกู้ของบริษัท ทรู คอร์ปอเรชั่น จำกัด (มหาชน) ครั้งที่ 3/2562 ชุดที่ 3 ครบกำหนดไถ่ถอนปี พ.ศ. 2567
ISIN Code (Local)	TH0375034806	**Put/ Call Option**	-
ISIN Code (Foreign)		**Collateral**	-
Bond Type	[Senior][Unsecured]	**Payment Frequency**	Quarterly
Initial Par	THB 1,000.0000	**Calculation Method**	30/360
Current Par	THB 1,000.0000	**Issue Term / TTM**	5.26 Yrs./1.10 Yrs.
Issue Size	THB 11,841.60 mln.	**Issue Date**	24 May 2019
Outstanding Size	THB 11,841.60 mln.	**Maturity Date**	24 August 2024
Distribution	Public Offering	**Prospectus**	
Index Ratio		**External Review Report (ESG)**	Not Available

Issue Rating

Rating Agency		Issue Rating	Rating Date
Local	TRIS	A+	28 Apr 2023

Issuer Rating

Issuer Name	Rating Agency		Issuer Rating	Rating Date
TRUE	Local	TRIS	A+	28 Apr 2023

Guarantor Rating

Guarantor Name	Rating Agency	Guarantor Rating	Rating Date

Coupon Payment

Reference	Max.	Min.	From	To
Fixed: 5.0%			24 May 2019	24 Aug 2024

Amortized Schedule

Coupon Date	Principal Amount

Registrar	BANK OF AYUDHYA PUBLIC COMPANY LIMITED	**Debenture Holder Representatives**	BANK OF AYUDHYA PUBLIC COMPANY LIMITED
Lead Underwriter(s)	BANGKOK BANK PUBLIC COMPANY LIMITED CIMB THAI BANK PUBLIC COMPANY LIMITED KRUNG THAI BANK PUBLIC COMPANY LIMITED THE SIAM COMMERCIAL BANK PUBLIC COMPANY LIMITED KASIKORNBANK PUBLIC COMPANY LIMITED THANACHART BANK PUBLIC COMPANY LIMITED	**Financial Advisor(s)**	-

Bond Information

Symbol TRUE248A

Search

Feature | Rating | Pricing Data | News | Auction & Result | Outstanding Value | Financial Covenant | Embedded Option | Participants | XI | XM | CD | Cross Default

TRUE248A : DEBENTURES OF TRUE CORPORATION PUBLIC COMPANY LIMITED NO. 3/2562 TRANCHE 3 DUE B.E. 2567

Date	Executed			Weighted Average Executed			Spread (bp)	Remark
	Price(%)	Yield(%)	Value (THB)	Price(%)	Yield(%)	Value (THB)		
23-Jun-2023	101.277945	3.859440	2,034,600.00	101.277945	3.859440	2,034,600.00	177	SL
16-Jun-2023	101.414932	3.767765	508,650.00	101.414932	3.767765	508,650.00	166	SL
14-Jun-2023	101.144156	4.000000	507,296.12	100.626337	4.447680	1,009,387.21	191	SL
13-Jun-2023	101.442329	3.749950	610,380.00	101.442329	3.749950	610,380.00	166	SL
23-May-2023	102.780961	2.739138	5,651,446.02	102.780961	2.739138	5,651,446.02	73	NL
28-Apr-2023	101.636986	3.747391	5,125,000.00	101.636986	3.747391	5,125,000.00	193	NL
26-Apr-2023	101.990685	3.478065	514,200.00	101.990685	3.478065	514,200.00	169	SL
20-Apr-2023	103.242071	2.559487	1,559,932.44	103.244624	2.559382	2,495,829.89	77	SL
19-Apr-2023	101.593549	3.800000	1,023,469.74	102.478354	3.143089	5,882,501.46	201	SL
12-Apr-2023	103.165634	2.657862	1,037,957.71	103.165634	2.657862	1,037,957.71	87	SL

Risks in Bond Investing

- Bonds are the most popular alternative to stocks for long-term investing by institutional investors.
- Even though the bonds of a corporation are less risky than its equity, investors still have risk: *price risk* and *interest rate risk.*
- The longer the maturity, the larger price change when market interest rate changes. Thus interest rate risk is an important consideration when investing in bonds.

Question

- Consider the following bonds, assumed currently traded at Par. Which one is more sensitive to changes in the interest rate?
- Bond#1. A **3-year** coupon bond with the face value of $1000 and a coupon rate of **10%** payable semiannually

longer maturity

- Bond#2. A **5-year** coupon bond with the face value of $1000 and a coupon rate of **10%** payable semiannually

- Bond#3. A **3-year** coupon bond with the face value of $1000 and a coupon rate of **10%** payable semiannually
- Bond#4. A **3-year** coupon bond with the face value of $1000 and a coupon rate of **5%** payable semiannually

lower coupon rate

Bond Price Volatility (Price Risk)

- Percentage change in price for given change in interest rates:

10% → semi → c $50

bond #1 price =

$$PB = \frac{C_1}{(1+i)^1} + \frac{C_2}{(1+i)^2} + \ldots \frac{C_N + F_N}{(1+i)^N} = \frac{50}{(1+5\%)^1} + \frac{50}{(1+5\%)^2} + \ldots + \frac{1050}{(1+5\%)^6}$$

6% 6% 6%

3×2

trading at par

yield = coupon = 10% $\xrightarrow{\text{semi}}$ 5%

Price = $1000

Price = $950

-5%

$$\%\Delta P_B = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$$

N = 10

5yr, 10% coupon

bond #2 ; yield 10% p.a : price = 1000

yield 12% p.a : price = 926

-7.36% price drops even more as yield increases by 1%

Bond Price Volatility (Price Risk)

EXHIBIT 5.1
Relationship Among Price, Maturity, Market Yield, and Price Volatility for a $1,000, 5% Coupon Bond (Annual Payments)

$\frac{C}{(1+i)^N}$

		Price Change if Yield Changes to 6%			Price Change if Yield Changes to 4%		
(1) Maturity (years)	(2) Bond Price at 5% Yield ($)	(3) Bond Price ($)	(4) Loss from Increase in Yield ($)	(5) Price Volatility (%)	(6) Bond Price ($)	(7) Gain from Decrease in Yield ($)	(8) Price Volatility (%)
1	1,000	990.57	$9.43	−0.94	1,009.62	9.62	0.96
5	1,000	957.88	42.12	−4.21	1,044.52	44.52	4.45
10	1,000	926.40	73.60	−7.36	1,081.11	81.11	8.11
20	1,000	885.30	114.70	−11.47	1,135.90	135.90	13.59
40	1,000	849.54	150.46	−15.05	1,197.93	197.93	19.79
100	1,000	833.82	166.18	−16.62	1,245.05	245.05	24.50

This exhibit shows that the longer the maturity of a bond, the greater the bond's price volatility. Thus, long-term bonds have greater interest rate risk than short-term bonds.

Bond Price Volatility (Price Risk)

lower coupon rate → more sensitive

EXHIBIT 5.2
Relationship Among Price, Coupon Rate, Market Yield, and Price Volatility for a $1,000, 10-Year Bond (Annual Payments)

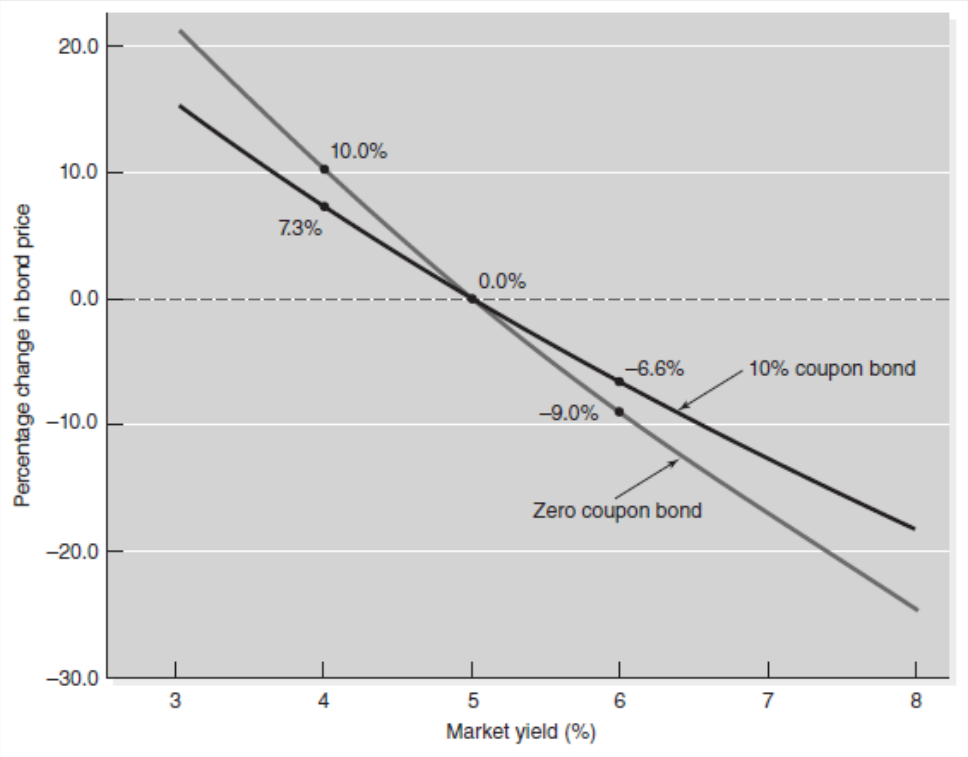
		Price Change if Yield Changes to 6%			Price Change if Yield Changes to 4%		
(1) Coupon Rate (%)	(2) Bond Price at 5% Yield ($)	(3) Bond Price ($)	(4) Loss from Increase in Yield ($)	(5) Price Volatility (%)	(6) Bond Price ($)	(7) Gain from Decrease in Yield ($)	(8) Price Volatility (%)
0	613.91	558.39	55.52	−9.04	675.56	61.65	10.04
5	1,000.00	926.40	73.60	−7.36	1,081.11	81.11	8.11
10	1,386.09	1,294.40	91.69	−6.62	1,486.65	100.56	7.25

more sensitive

This exhibit shows that the lower the coupon rate of a bond, the greater the bond's price volatility. Thus, low-coupon bonds have greater interest rate risk than high-coupon bonds.

Bond Price Volatility (Price Risk)

EXHIBIT 5.3
The Relationship Between Bond Price Volatility and the Coupon Rate



For two bonds with the same maturity, the bond with the lower coupon rate (0%) exhibits a larger percentage change in price for a given change in market yield and thus has more interest rate risk.

Interest Rate Risk and Duration

- In the context of bond investment, “interest rate risk” comprises price risk & reinvestment risk.
- **Price risk** is the variability in bond prices caused by their inverse relationship with interest rates.
- **Reinvestment risk** is the variability in realized yield caused by changing market rates at which coupons can be reinvested.
- Price risk and reinvestment risk work against each other.
  - As interest rates fall —
    - Bond prices rise but
    - Coupons are reinvested at lower return.
  - As interest rates rise—
    - Bond prices fall but
    - Coupons are reinvested at higher return.

Interest Rate Risk and Duration

- Assume that you have 6-year investment horizon to meet you goal, says, for a vacation. Bond is a relatively safe investment but subject to interest rate risk. Now has $ 1,000
- Let's assume you expect that your vacation will cost you approximately $1,695.65 FV at 6 years from now. How could you manage to protect your investment (your trip) from the risk? lowest risk as possible
- Now the market yield is 9.2% and three bonds are available

A – Zero coupon bond with 6 years maturity costing at $1000. D = 6

B – Coupon bond with 6 years maturity at 9.2% annual coupon payment, sold at par

C – Coupon bond with 8 years maturity at 9.2% annual coupon payment, sold at par ↳ D ≅ 6 years = 5.99 yr match target by duration

A : zero-coupon bond normally

$FV = 1{,}000$

$PV < 1{,}000$

$$PV = \frac{FV}{(1+i)^6}$$

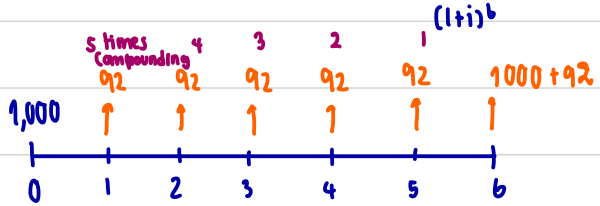
but in question,

FV

$$PV = 1{,}000 = \frac{FV}{(1+i)^6} \rightarrow FV = 1{,}695.65$$

$i = 9.2\%$

B :



$i = 9.2\%$; get paid with 92 → then reinvest at mkt rate

$$92(1+i)^5 + 92(1+i)^4 + 92(1+i)^3 + 92(1+i)^2 + 92(1+i) + 1{,}092$$

$FV = 1{,}695$

Mkt yield

$i = 9.2\%$

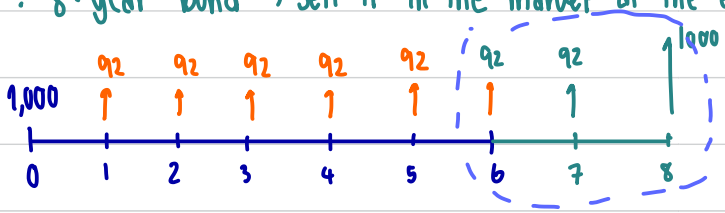
↳ in reality, interest rate will not remain the same

Mkt yield ↓ as bank cuts rate

$i = 8.9\% \rightarrow FV\downarrow$

↳ this is your risk

C : 8-year bond ⇒ sell it in the market at the end of year 6



buyer: 92 92+1000

$$Price = \frac{C}{(1+i)} + \frac{C+FV}{(1+i)^2}$$

$$= \frac{92}{(1+8.9\%)} + \frac{1092}{(1+8.9\%)^2}$$

$$= 1{,}005.28$$

↳ sell it at higher price in year 6

* Mkt yield can change and you may not get target

Duration to Manage Interest Rate Risk

MSF Chula

Cash Flow from Maturity-Matching Strategy			
Cash Flow at 6 Years from now	8.9%	9.2%	9.5%
- Principle	$1000	$1000	$1000
- FV of Coupon	690.40	695.65	700.93
Total CF	**$1690.4**	**$1695.65**	**$1700.93**

Cash Flow from Duration-Matching Strategy			
Cash Flow at 6 Years from now	8.9%	9.2%	9.5%
- Principle sell it	$1005.28	$1000	$994.76
- FV of Coupon	690.40	695.65	700.93
Total CF	**$1695.68**	**$1695.65**	**$1695.69**

can sell higher

sell at lower price

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avoid interest rate risk

Duration

- Duration is a measure of interest rate risk.
- Macaulay's duration is computed as

$$D = \frac{\sum_{t=1}^{n} \frac{CF_t \cdot t}{(1+i)^t}}{\sum_{t=1}^{n} \frac{CF_t}{(1+i)^t}} = \frac{\sum_{t=1}^{n} \frac{CF_t \cdot t}{(1+i)^t}}{PB}$$

bond price

$$P = \frac{C_1}{(1+i)^1} + \frac{C_2}{(1+i)^2} + \dots + \frac{C+F}{(1+i)^N}$$

where: D = duration of the bond

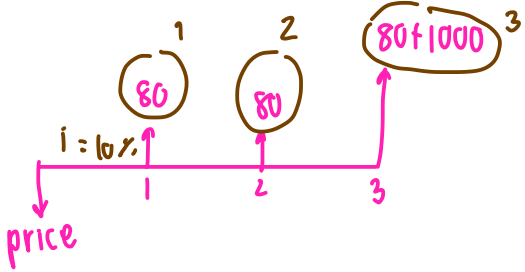
CF_t = interest or principal payment at time t

t = time period in which payment is made

n = number of periods to maturity

i = the yield to maturity (interest rate)

Duration



- Suppose we have a bond with a 3-year term to maturity, an 8% coupon paid annually, and a market yield of 10%. Duration is:

$$D = \frac{\frac{\$80(1)}{(1.10)^1} + \frac{\$80(2)}{(1.10)^2} + \frac{\$1,080(3)}{(1.10)^3}}{\frac{\$80}{(1.10)^1} + \frac{\$80}{(1.10)^2} + \frac{\$1,080}{(1.10)^3}} = 2.78 \text{ years.}$$

time-weighted average of cash flow

aka actual maturity of bond

* Zero coupon bond ?

↳ Remaining : $D = \dfrac{\frac{\$1000(3)}{(1.1)^3}}{\frac{\$1000}{(1.1)^3}}$ = 3 years = maturity

Note: http://www.fncalculator.com/

Duration

EXHIBIT 5.4
Duration for Bonds Yielding 10% (Annual Compounding)

	Duration in Years		
Maturity (Years)	Zero Coupon	4% Coupon	8% Coupon
1	1.00	1.00	1.00
2	2.00	1.96	1.92
3	3.00	2.88	2.78
4	4.00	3.75	3.56
5	5.00	4.57	4.28

Duration is a measure of bond price volatility that considers both the coupon rate and term to maturity.

Properties of Duration

- Higher coupon rates mean shorter duration and less price volatility.
- For zero coupon securities, the duration equals term to maturity.
- Longer maturities mean longer durations and greater price volatility.
- The higher the market rate of interest, the shorter the duration.

Duration to Manage Interest Rate Risk

- Simplest way to avoid interest rate risk is to invest in zero coupon bond that matures in 6 years and hold to maturity.
- Maturity matching is a naïve alternative for investors. You may eliminate price risk but not reinvestment risk as you receive coupon. Interest rate change affect future value of cash flow earned.
- Duration matching is a better way to eliminate price risk and reinvestment risk. Capital gain and loss from interest rate change offset by reinvestment income.

Duration to Manage Interest Rate Risk

Cash Flow from Maturity-Matching Strategy				
Cash Flow at 6 Years from now		8.9%	9.2%	9.5%
- Principle		$1000	$1000	$1000
- FV of Coupon		690.40	695.65	700.93
Total CF		**$1690.4**	**$1695.65**	**$1700.93**

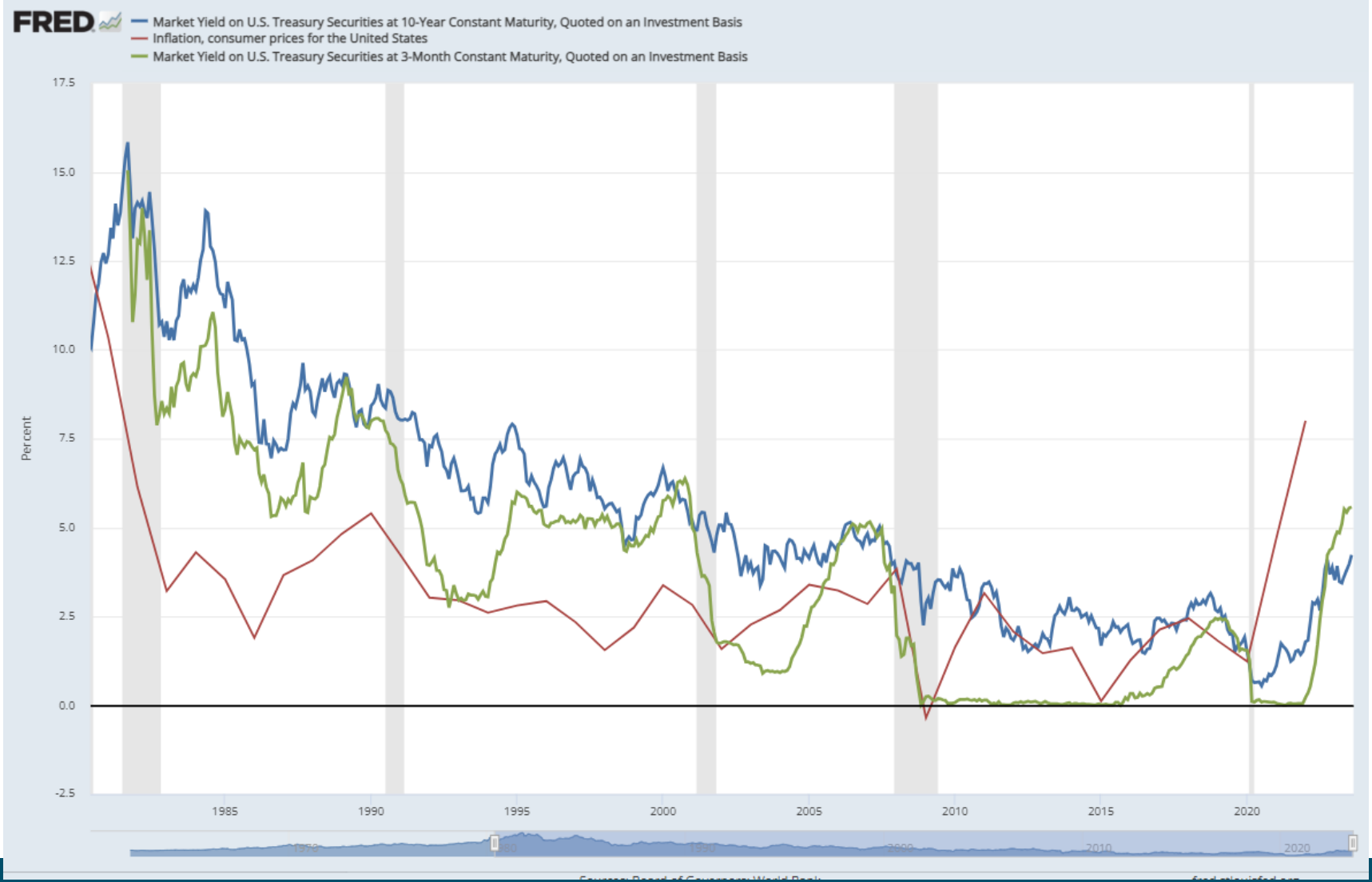
Cash Flow from Duration-Matching Strategy				
Cash Flow at 6 Years from now		8.9%	9.2%	9.5%
- Principle		$1005.28	$1000	$994.76
- FV of Coupon		690.40	695.65	700.93
Total CF		**$1695.68**	**$1695.65**	**$1695.69**

Other Type of Bonds

- Treasury Inflation-Protected Securities (TIPS)
  - The principal amount is tied to the current rate of inflation to protect investor purchasing power
- Treasury STRIPS
  - The coupon and principal payments are “stripped” from a T-Bond and sold as individual zero-coupon bonds
- Green Bonds, ESG bonds, etc...

(TIPS) protect investors from inflation

Treasury Inflation-Protected Securities



Treasury Inflation-Protected Securities

- Historically, 10-year Treasury bond earn more than inflation. But during certain periods, 10-year Treasury bonds earned less than the rate of inflation.
- Rate of return on short-term bills (e.g. 3-month) is typically lower than 10-year bond. Also the short-term rate is more volatile than the long-term rate.

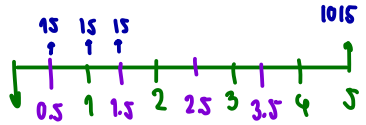
Treasury Inflation-Protected Securities

- To remove inflation risk from holding treasury securities
- The interest rate (coupon) does not change but the principal does.

3% x 1000 = 30 < 15, 15

- Let's assume the 5-year TIPS pays 3% coupon semiannually. Face value is $1,000. The following table show numerical example of payments to its holders.

Regular coupon



US - TIPS

Thai - I,L,B (inflation linked bond)

$C_{1yr} = 1024.14 \times 1.5\% = \$15.36$

Par = 1010

Par = 1010 × (1 + 1.4%)

Treasury Inflation-Protected Securities

$C = 1.5\% \times (\underbrace{1000 \times (1+1\%)}_{1010}) = \$15.15$ inflation

inflation 1% | inf = 1.4%

Par = 1000 | 0.5 yr | 1 yr

Period	Principal	Coupon	Inflation	Interest payment
1	1000.00	1.5%	1.0%	15.150
2	1010.00	1.5%	1.4%	15.362
3	1024.14	1.5%	1.7%	15.623
4	1041.55	1.5%	1.3%	15.826
5	...	...	...	...
⋮				
10				

× (1 + 1%)

× (1 + 1.4%)

× (1 + 1.7%)

× (1 + 1.3%)

par at year 5

1150

compensate for inflation risk

FV = 1150

5yr

Treasury Inflation-Protected Securities

CPI, Reference CPI and Index Ratio

Consumer Price Index (CPI) | Reference CPI | Index Ratio

Consumer Price Index (CPI) : 2022

Month	CPI (Base B.E. 2562)
Jan-2022	103.01
Feb-2022	104.10
Mar-2022	104.79
Apr-2022	105.15
May-2022	106.62
Jun-2022	107.58
Jul-2022	107.41
Aug-2022	107.46
Sep-2022	107.70
Oct-2022	108.06
Nov-2022	107.92
Dec-2022	107.86

1 All items per page

CPI, Reference CPI and Index Ratio

Consumer Price Index (CPI) | Reference CPI | Index Ratio

Consumer Price Index (CPI) : 2023

Month	CPI (Base B.E. 2562)
Jan-2023	108.18
Feb-2023	108.05
Mar-2023	107.76
Apr-2023	107.96
May-2023	107.19
Jun-2023	107.83
Jul-2023	107.82

1 12 items per page

Treasury STRIPS

ในไทยไม่มี

- Separate Trading of Registered Interest and Principal Securities (STRIPS)
- Each coupon and principal of a U.S. Treasury note or bond is sold separately as a separate zero-coupon security by a dealer. Each has its own identifying number and can be traded separately.
- Dealers engage in creating STRIPs because investors value zero-coupon default risk-free securities and are willing to pay more for STRIPs than underlying bonds.

R	Name	Ticker	Coupon	Maturity	Mty Type	Ctry...	Curr	Identifier	BB Rtg	Ask Px
		S								
1)	United States Treasury Strip Coupon	S	0.000	07/31/2023	NORMAL	US	USD	912834QN1	NA	99.8282
2)	United States Treasury Strip Coupon	S	0.000	08/15/2023	NORMAL	US	USD	912833LM0	NA	99.6479
3)	United States Treasury Strip Coupon	S	0.000	08/31/2023	NORMAL	US	USD	912834QQ4	NA	99.3908
4)	United States Treasury Strip Coupon	S	0.000	09/15/2023	NORMAL	US	USD	912834WE4	NA	99.1798
5)	United States Treasury Strip Coupon	S	0.000	09/30/2023	NORMAL	US	USD	912834QS0	NA	98.9649
6)	United States Treasury Strip Coupon	S	0.000	10/15/2023	NORMAL	US	USD	912834WG9	NA	98.7539
7)	United States Treasury Strip Coupon	S	0.000	10/31/2023	NORMAL	US	USD	912834QU5	NA	98.5440
8)	United States Treasury Strip Coupon	S	0.000	11/15/2023	NORMAL	US	USD	912833LP3	NA	98.4656
9)	United States Treasury Strip Coupon	S	0.000	11/30/2023	NORMAL	US	USD	912834QW1	NA	98.1243
10)	United States Treasury Strip Coupon	S	0.000	12/15/2023	NORMAL	US	USD	912834WL8	NA	97.9223
11)	United States Treasury Strip Coupon	S	0.000	12/31/2023	NORMAL	US	USD	912834QY7	NA	97.7203
12)	United States Treasury Strip Coupon	S	0.000	01/15/2024	NORMAL	US	USD	912834WN4	NA	97.5219
13)	United States Treasury Strip Coupon	S	0.000	01/31/2024	NORMAL	US	USD	912834RA8	NA	97.3083
14)	United States Treasury Strip Coupon	S	0.000	02/15/2024	NORMAL	US	USD	912833LQ1	NA	97.2901
15)	United States Treasury Strip Coupon	S	0.000	02/29/2024	NORMAL	US	USD	912834RE0	NA	96.9075
16)	United States Treasury Strip Coupon	S	0.000	03/15/2024	NORMAL	US	USD	912834WV6	NA	96.7115
17)	United States Treasury Strip Coupon	S	0.000	03/31/2024	NORMAL	US	USD	912834RG5	NA	96.5132
18)	United States Treasury Strip Coupon	S	0.000	04/15/2024	NORMAL	US	USD	912834WX2	NA	96.3217
19)	United States Treasury Strip Coupon	S	0.000	04/30/2024	NORMAL	US	USD	912834RJ9	NA	96.1237

	R	Name	Ticker	Coupon	Maturity	Mty Type	Ctry...	Curr	Identifier	BB Rtg	Ask Px
			SP								
1)		United States Treasury Strip Principal	SP	0.000	07/31/2023	NORMAL	US	USD	9128203D7	NA	99.8204
2)		United States Treasury Strip Principal	SP	0.000	08/15/2023	NORMAL	US	USD	912803BC6	NA	99.6465
3)		United States Treasury Strip Principal	SP	0.000	08/31/2023	NORMAL	US	USD	9128205N3	NA	99.3556
4)		United States Treasury Strip Principal	SP	0.000	09/15/2023	NORMAL	US	USD	912821FD2	NA	99.1815
5)		United States Treasury Strip Principal	SP	0.000	09/30/2023	NORMAL	US	USD	9128205S2	NA	98.9063
6)		United States Treasury Strip Principal	SP	0.000	10/15/2023	NORMAL	US	USD	912821FH3	NA	98.7380
7)		United States Treasury Strip Principal	SP	0.000	10/31/2023	NORMAL	US	USD	9128205W3	NA	98.4612
8)		United States Treasury Strip Principal	SP	0.000	11/15/2023	NORMAL	US	USD	912820J65	NA	98.3591
9)		United States Treasury Strip Principal	SP	0.000	11/30/2023	NORMAL	US	USD	9128206B8	NA	98.0205
10)		United States Treasury Strip Principal	SP	0.000	12/15/2023	NORMAL	US	USD	912821FT7	NA	97.8887
11)		United States Treasury Strip Principal	SP	0.000	12/31/2023	NORMAL	US	USD	9128206G7	NA	97.5955
12)		United States Treasury Strip Principal	SP	0.000	01/15/2024	NORMAL	US	USD	912821FX8	NA	97.4555
13)		United States Treasury Strip Principal	SP	0.000	01/31/2024	NORMAL	US	USD	9128206M4	NA	97.1628
14)		United States Treasury Strip Principal	SP	0.000	02/15/2024	NORMAL	US	USD	912820L47	NA	97.0575
15)		United States Treasury Strip Principal	SP	0.000	02/29/2024	NORMAL	US	USD	9128206S1	NA	96.7376
16)		United States Treasury Strip Principal	SP	0.000	03/15/2024	NORMAL	US	USD	912821GH2	NA	96.5647
17)		United States Treasury Strip Principal	SP	0.000	03/31/2024	NORMAL	US	USD	9128206W2	NA	96.3292
18)		United States Treasury Strip Principal	SP	0.000	04/15/2024	NORMAL	US	USD	912821MB8	NA	96.2050
19)		United States Treasury Strip Principal	SP	0.000	04/30/2024	NORMAL	US	USD	9128207B7	NA	95.9530

R	Name	Ticker	Coupon	Maturity	Mty Type	Ctry...	Curr	Identifier	BB Rtg	Ask Px
		SP								
1)	United States Treasury Strip Principal	SP	0.000	08/15/2043	NORMAL	US	USD	912803ED1	NA	44.2060
2)	United States Treasury Strip Principal	SP	0.000	11/15/2043	NORMAL	US	USD	912803EE9	NA	43.7611
3)	United States Treasury Strip Principal	SP	0.000	02/15/2044	NORMAL	US	USD	912803EF6	NA	43.2552
4)	United States Treasury Strip Principal	SP	0.000	05/15/2044	NORMAL	US	USD	912803EH2	NA	42.8453
5)	United States Treasury Strip Principal	SP	0.000	08/15/2044	NORMAL	US	USD	912803EJ8	NA	42.4357
6)	United States Treasury Strip Principal	SP	0.000	11/15/2044	NORMAL	US	USD	912803EK5	NA	41.9646
7)	United States Treasury Strip Principal	SP	0.000	02/15/2045	NORMAL	US	USD	912803EL3	NA	41.5727
8)	United States Treasury Strip Principal	SP	0.000	05/15/2045	NORMAL	US	USD	912803EN9	NA	41.1540
9)	United States Treasury Strip Principal	SP	0.000	08/15/2045	NORMAL	US	USD	912803EP4	NA	40.7355
10)	United States Treasury Strip Principal	SP	0.000	11/15/2045	NORMAL	US	USD	912803EQ2	NA	40.3518
11)	United States Treasury Strip Principal	SP	0.000	02/15/2046	NORMAL	US	USD	912803ER0	NA	40.0391
12)	United States Treasury Strip Principal	SP	0.000	05/15/2046	NORMAL	US	USD	912803ET6	NA	39.7260
13)	United States Treasury Strip Principal	SP	0.000	08/15/2046	NORMAL	US	USD	912803EU3	NA	39.3333
14)	United States Treasury Strip Principal	SP	0.000	11/15/2046	NORMAL	US	USD	912803EV1	NA	39.0822
15)	United States Treasury Strip Principal	SP	0.000	02/15/2047	NORMAL	US	USD	912803EW9	NA	38.7155
16)	United States Treasury Strip Principal	SP	0.000	05/15/2047	NORMAL	US	USD	912803EY5	NA	38.3835
17)	United States Treasury Strip Principal	SP	0.000	08/15/2047	NORMAL	US	USD	912803EZ2	NA	38.1326
18)	United States Treasury Strip Principal	SP	0.000	11/15/2047	NORMAL	US	USD	912803FA6	NA	37.8447
19)	United States Treasury Strip Principal	SP	0.000	02/15/2048	NORMAL	US	USD	912803FB4	NA	37.5843

Treasury STRIPS

issued by US government

$\frac{6\%}{2} \times 1000 = \$30$ each period

N = 4 × 2 = 8 period

- Let's assume a 4-year treasury note with 6% semi-annual coupon payments and face value is $1,000 is sold for $1007.05. It could be transformed into separated STRIPSs as follows.

price

Treasury STRIPS

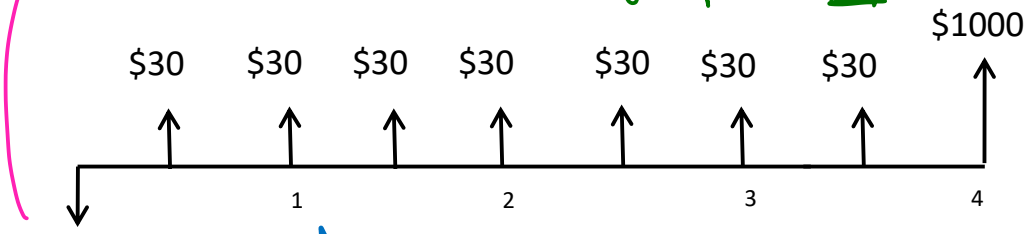
→ take away CF and treat it as zero-coupon bond
↓
resell it to client
e.g. mutual fund that want invest 6-month

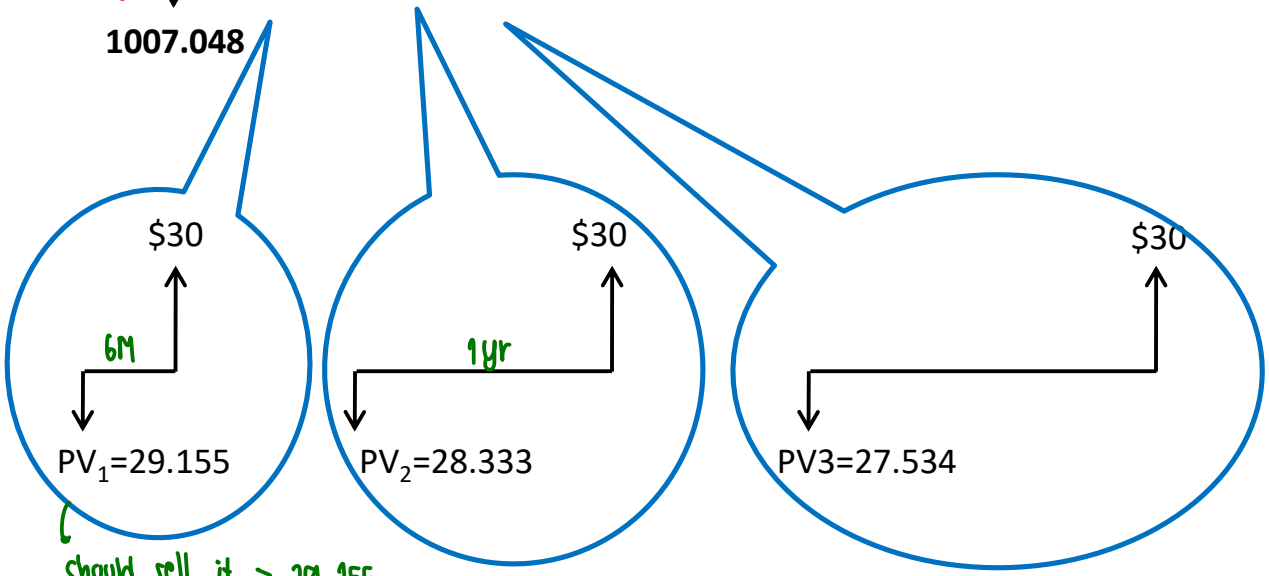
get < 5.8% yield for sure

! If you just invest 4-year then sell it → you will face price risk / interest rate risk

YTM = 5.8% p.a.

buyer is investment banker → should sell it as STRIPS & with higher price to client





should sell it > 29.155

STRIPS AND HEDGING

- STRIPs are effective vehicles for immunizing portfolios against interest rate risk as we can eliminate both price risk and reinvestment risk by structuring our bond investment such that the duration of our bond portfolio matches our holding period.

	Green / Social / Sustainability Bonds	ESG-linked Loans
Purpose	Invest in specific green, social or sustainability projects or project categories	Create a time-bound financial link (via the interest rate) between a borrower's ESG target and its achievement
Use of proceeds	Ring-fenced to green, social or sustainability projects	General-purpose use
Interest rate	Independent of projects invested in through the bond	Interest-rate changes based on success or failure in achieving ESG-linked target
Borrower industry	Primarily financial institutions, utilities, real estate and governments	Various industries
Benefits to issuer/borrower	Investor diversification, "green" reputation	Potential for lower interest rate if target is achieved
Benefits to investor/lender	Increase "green" or "social" portfolio	Potential for higher interest rate if borrower does not meet target
Size of market	~USD 250 billion in 2019	~USD 100 billion in 2019

ThaiBMA: ESG Bond

Green, Social, Sustainability Bond & Sustainability-linked Bond (ESG Bond)

Green Bond | Social Bond | Sustainability Bond | Sustainability-linked Bond | Principles / Guidance / Regulations | ESG Bond Articles

ESG Issuer Ranking

Green bonds are boardly defined as debt securities where the proceeds are used exclusively for new or existing projects with climate and environmental benefits based on specified issuance principles or guidelines.

Issuer Name	ThaiBMA Symbol	Issue Date	Maturity Date	TTM (Yrs.)	Cou... (%)	Rating	Outstand... (Mln.)	Curr...	
Long-term Corporate Bonds									
BTS GROUP HOLDINGS PUBLIC COMPANY LIMITED	BTSG245A II/HNW	24-May-2019	24-May-2024	0.75	3.15	A-/TRIS	3,000.00	THB	CBS, ASE
BTS GROUP HOLDINGS PUBLIC COMPANY LIMITED	BTSG265A II/HNW	24-May-2019	24-May-2026	2.75	3.57	A-/TRIS	2,700.00	THB	CBS, ASE
BTS GROUP HOLDINGS PUBLIC COMPANY LIMITED	BTSG295A II/HNW	24-May-2019	24-May-2029	5.75	3.86	A-/TRIS	5,000.00	THB	CBS, ASE
ENERGY ABSOLUTE PUBLIC COMPANY LIMITED	EA297A II/HNW	11-Jul-2019	11-Jul-2029	5.88	3.61	A-/TRIS	2,000.00	THB	CBS, ASE
ENERGY ABSOLUTE PUBLIC COMPANY LIMITED	EA248A II/HNW	15-Aug-2019	15-Aug-2024	0.97	3.11	A-/TRIS	1,500.00	THB	CBS, ASE
ENERGY ABSOLUTE PUBLIC COMPANY LIMITED	EA298A II/HNW	15-Aug-2019	15-Aug-2029	5.98	3.58	A-/TRIS	2,000.00	THB	CBS, ASE
ENERGY ABSOLUTE PUBLIC COMPANY LIMITED	EA26OA II	16-Oct-2019	16-Oct-2026	3.14	2.744	A-/TRIS	3,000.00	THB	CBS, ASE
GLOBAL POWER SYNERGY PUBLIC COMPANY LIMITED	GPSC258A II/HNW	07-Aug-2020	07-Aug-2025	1.95	2.11	AA+/TRIS	1,500.00	THB	ASEAN
GLOBAL POWER SYNERGY PUBLIC COMPANY LIMITED	GPSC308A II/HNW	07-Aug-2020	07-Aug-2030	6.95	2.94	AA+/TRIS	1,000.00	THB	ASEAN
GLOBAL POWER SYNERGY PUBLIC COMPANY LIMITED	GPSC358A II/HNW	07-Aug-2020	07-Aug-2035	11.96	3.24	AA+/TRIS	2,500.00	THB	ASEAN
RATCH GROUP PUBLIC COMPANY LIMITED	RATCH23NA II/HNW	04-Nov-2020	04-Nov-2023	0.19	1.32	AA+/TRIS	1,000.00	THB	ASEAN
RATCH GROUP PUBLIC COMPANY LIMITED	RATCH25NA II/HNW	04-Nov-2020	04-Nov-2025	2.19	1.76	AA+/TRIS	1,500.00	THB	ASEAN

The eligible Green Projects categories, listed in no specific order, include, but are not limited to:

- **Renewable energy** (including production, transmission, appliances and products);
- **Energy efficiency** (such as in new and refurbished buildings, energy storage, district heating, smart grids, appliances and products);
- **Pollution prevention and control** (including reduction of air emissions, greenhouse gas control, soil remediation, waste prevention, waste reduction, waste recycling and energy/ emission-efficient waste to energy);
- **Environmentally sustainable management of living natural resources and land use** (including environmentally sustainable agriculture; environmentally sustainable animal husbandry; climate smart farm inputs such as biological crop protection or drip-irrigation; environmentally sustainable
- **Terrestrial and aquatic biodiversity** conservation (including the protection of coastal, marine and watershed environments);
- **Clean transportation** (such as electric, hybrid, public, rail, non-motorised, multi-modal transportation, infrastructure for clean energy vehicles and reduction of harmful emissions);
- **Sustainable water and wastewater management** (including sustainable infrastructure for clean and/or drinking water, wastewater treatment, sustainable urban drainage systems and river training and other forms of flooding mitigation);
- **Climate change adaptation** (including efforts to make infrastructure more resilient to impacts of climate change, as well as information support systems, such as climate observation and early warning systems);
- **Circular economy adapted products, production technologies and processes** (such as the design and introduction of reusable, recyclable and refurbished materials, components and products; circular tools and services); **and/or certified eco-efficient products**;

Energy Absolute

Energy Absolute Green Bond Framework

USE OF PROCEEDS

Proceeds from the issuance of Energy Absolute ("EA") green bonds will be applied to finance investments that promote the transition to low carbon and climate resilient growth as determined by EA including, but not limited to, renewable energy and other clean energy and low carbon technologies. Green Bond Proceeds will not be invested in fossil fuel related projects.

PROJECT SELECTION

EA proposes to select project(s) and/or asset(s) which are aligned with an applicable sector criterion under the Climate Bonds Standard and/or other frameworks including the Green Bond Principles and the ASEAN Green Bond Standards.

must be certified

MANAGEMENT OF PROCEEDS

EA has committed to hold green bond proceeds raised in internal treasury cash accounts for allocation to equity and debt obligations associated with nominated project(s) and/or asset(s). EA will apply an amount equal to the green bond proceeds to eligible project(s) and/or asset(s) within 6 months of the bond issuance.

REPORTING

EA will conduct green bond reporting to investors on an annual basis including a summary of projects, the characteristics of the green bond, the use of proceeds, the allocation and outstanding amounts of green bond proceeds, and any unallocated proceeds. Where possible, EA will also provide operational performance details (e.g. megawatt-hours of renewable energy generation). The report will be available publicly on the EA website.

Contents lists available at ScienceDirect

Emerging Markets Review

journal homepage: www.elsevier.com/locate/emr

In theory, green bonds (premium product) should have higher price, lower yield

Are green bonds priced lower than their conventional peers?

Yue Wu [a,b]

[a] EPFL: Ecole Polytechnique Federale de Lausanne, Switzerland
[b] Swiss Finance Institute (SFI), Switzerland

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ABSTRACT

The green bond market's rapid growth has alerted issuers and investors to this sustainable area of investment. This study ascertains whether green bonds are priced lower than conventional bonds—whether a negative green bond premium exists in both Chinese and global bond markets—and the driving forces behind any such green bond premium. First, an event study is set up to observe stock market's reaction upon issuance of green bonds to test whether green bonds are embedded with additional value by improving the issuer's equity market performance. Then, using the matching method and a two-layer regression process, the study estimates the green bond premium in the Chinese and global markets, respectively, and analyses factors affecting the green bond premium. The event study reveals that green bond issuance could reduce the issuer's equity return performance. The regression models found no significant negative green bond premium in either Chinese or global markets, indicating that green bonds are not priced significantly lower than conventional bonds. However, global market models show that issuing green bonds in CNY could reduce the green bond premium, unlike in USD or EUR.

Green Premium

- **Implicit Premium**
  - **Hypothesis 1. Globally, the stock price may act positively upon a green bond issuance announcement.**
  - Two Groups: First-time issues (FIs) and seasoned offerings (SEOs)
  - **Event Study**: Are stock prices affected?
  - **Result**: no significant negative green bond premium → no implicit green premium
- **Hypothesis 2. Green premium in China market exists.**
- **Hypothesis 3. Green premium in the international market exists and is influenced by currency factor.**
- **Explicit Premium**
  - **Matching method**
  - ask-yield premium = liquidity premium + green premium
  - Two-layer Structure
    - First-layer: separating liquidity premium and green premium
    - Second-layer: which factor leads to the green premium?
  - **Results**
    - China Market
      - Average green premium is 3.4 bps → green bonds are priced in higher yields and lower prices
      - Green Certification → positive premium from 0.070% to 0.119%
      - Credit rating AAA → negative premium up to -0.078%
    - International Market
      - Average green premium is 12.5 bps → green bonds are priced in higher yields and lower prices
      - Green → positive premium from 0.010% to 0.134%
      - Lower credit ratings lead to a significant but negative premiums
      - Issuing green bonds in EUR and USD → positive premiums
      - Issuing green bonds in CNY → negative premiums → reducing financing costs

Fig. 1. Research Structure: main intuitions, methodologies and conclusions.

$$i_{sc} = i_s + \frac{i_l - i_s}{t_l - t_s}(t_g - t_s) \tag{1}$$

Here, i_{sc}, i_l, and i_s are the spreads of the synthetic, longer-term, and shorter-term conventional bonds, respectively; t_g is the number of months to the green bond's maturity; and t_l and t_s are, respectively, the number of months to the maturity of the longer- and shorter-term conventional bonds.

The study aims at separating green bond premium and liquidity premium from the total green-conventional bond premium. Instead of using i-spread (Hachenberg and Schiereck, 2018) or OAS (Nanayakkara and Colombage, 2019) as the total bond premium, I propose to adopt the more conventional ask-yield spread originally proposed by Bachelet et al. (2019) and Tang and Zhang (2019), given that i-spread and OAS data are not as universally available as ask-yield spreads. In addition, all bonds included are plain vanilla bonds with no need to be adjusted for options, thus OAS does not have added value compared to the easily collected ask-yield spread. The ask-yield spread is defined as: synthetic corporate bond

$$\Delta y_{i,t} = y_{i,t}^{GB} - y_{i,t}^{SCB} \tag{2}$$

where $\Delta y_{i,t}$ is the ask–yield difference, while $y_{i,t}^{GB}$ and $y_{i,t}^{SCB}$ are the ask yield of the green and synthetic conventional bonds, respectively.

This study refers to Zerbib's (2019) method to build two two-layer model structures. In the first layer, the study employed a fixed-effect model to observe how the liquidity spread and green bond premium affect the green-conventional yield spread. In the second layer, only including green bond data, a linear regression model analyses factors that account for the green bond premium.

The first layer of the fixed model is shown below:

$$\Delta y_{i,t} = GP_i + \beta_1 \Delta LiqSpread_{i,t} + BondID\ FE + \varepsilon_{i,t} \tag{3}$$

Table 9
Descriptive statistics of the green bond premium (Chinese green bond market).

Variable	Mean	Std. Dev.	Min	25% percentile	50% percentile	75% percentile	Max
GP	**0.034**	0.240	−0.833	−0.099	**−0.002**	0.069	0.774

↳ no premium

Table 19
Descriptive statistics of the green bond premium (global green bond market).

Variable	Mean	Std. Dev.	Min	25% Percentile	50% Percentile	75% Percentile	Max
GP	**0.125**	0.553	−0.757	3.138	**−0.246**	3.107	3.138

In the Chinese bond market, an AAA rating reduces the green bond premium, while, through interaction effects, only AAA-rated green-certified bonds negatively affect the green bond premium, indicating a reduction effect on financing cost. Except for bond maturity, all variables in Hypothesis 2 are significant in Chinese bond market models.

In the global bond market, the AAA (BBB) rating increases (effectively reduces) the green bond premium. Issuing a green bond in USD, EUR, and CNY can impose different levels of significant influences on the green bond premium. Meanwhile, issuing green bonds in CNY (USD and EUR) can reduce (increase) the green bond premium and, thus, decrease (increase) the (debt) financing cost of issuers.

not worth getting

The research reveals that under current circumstances, the cost of green certification can make the pricing of green bonds more expensive than their conventional counterparts; therefore, it is highly possible that issuers would choose to issue conventional bonds to finance their qualified green projects, which is not beneficial for the scale-up of the green bond market. Especially for green projects serving carbon neutrality goals, there would be a lacking in disclosure of carbon offsetting and use of proceeds, making it hard for the regulators to monitor the carbon offset effects of the green projects. To address the issue, governments could give green certification subsidies to green bond issuers. In contrast, green certification service providers could establish a tiered pricing structure based on issuing amount, allowing more small-amount issuers to get involved. From the information disclosure angle, policy makers and sectoral experts could cooperate to set up quantified and universally recognized standards on measuring and disclosing emission reduction data of the projects financed by the green bonds. Tax-based incentives are an important type of policy incentive that this paper suggests regulators to consider. For the investor (demand) side, policymakers could allow tax-exempt green bond issuances, so that investors do not have to pay income tax for the interests they receive from holding green bonds; existing examples include a US tax-exempt green bond issuance financing wind projects in Brazil,[4] a US investment tax credit for solar energy (Azhgaliyeva et al., 2018; Sachs et al., 2019) and a tax-free bond issued by the Indian Renewable Energy Development Agency Limited (IREDA) in 2016 (Agliardi and Agliardi, 2019). From the issuer (supply) side, policymakers could impose a lower tax rate for incomes generated from green projects financed by the green bonds. In this way, tax incentive, as an effective fiscal policy, could stimulate both the demand and supply side of the green bond market.