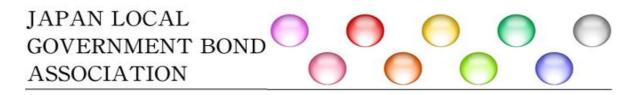
Local Government Bond Market and Public Offering Joint Local Government Bond

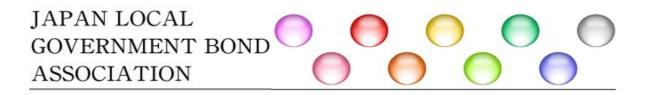
Japan Local Government Bond Association

July 2019

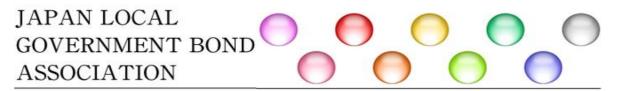


Contents

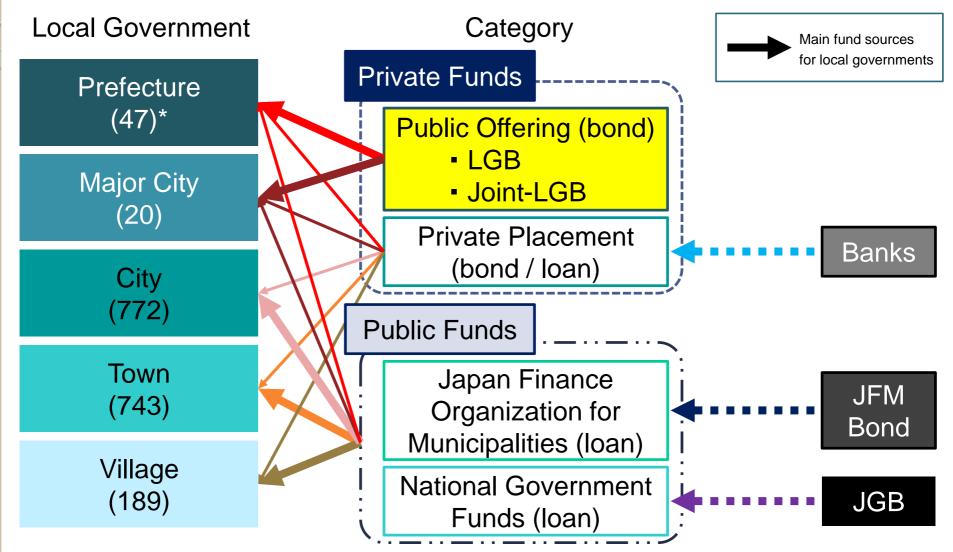
[Part 1]
Outline of Japan Local Government Bond Market
[Part 2]
Public Offering Joint Local Government Bond
[Part 3]
Frequently Asked Questions & Appendix

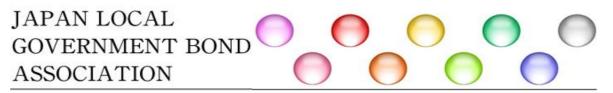


[Part 1] Outline of Japan Local Government Bond Market

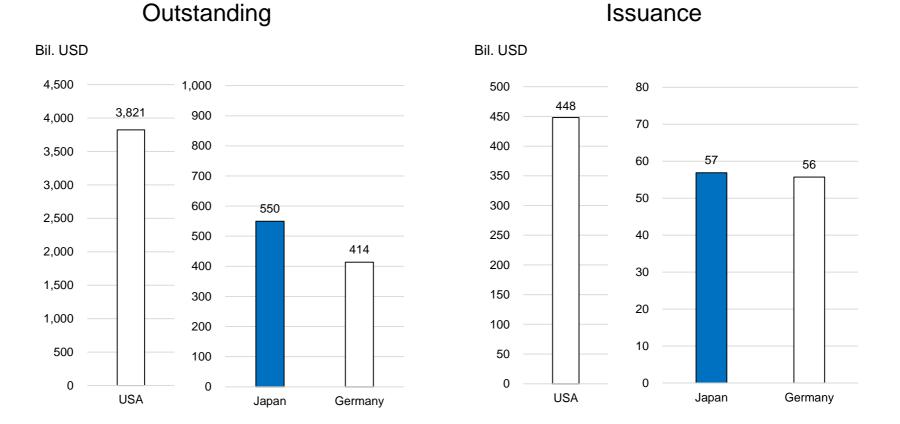


How the Local Governments raise fund





Market Size of Public Offering LGB



Note: 1. For USA and Germany, "Outstanding" as at end-December 2018 and "Issuance" in 2018. For Japan, "Outstanding" as at end-March 2019, "Issuance" in 2018FY.

2. For Japan, USD 1 = JPY 110.92 as at end-March, 2019. For Germany "Outstanding", Euro 1 = USD 1.164 as at end-December 2018. For Germany "Issuance", the exchange rates for conversions as of issue dates for every bond calculated by Bloomberg.

Source: SIFMA, Ministry of Internal Affair and Communication, Bundesbank, Bloomberg

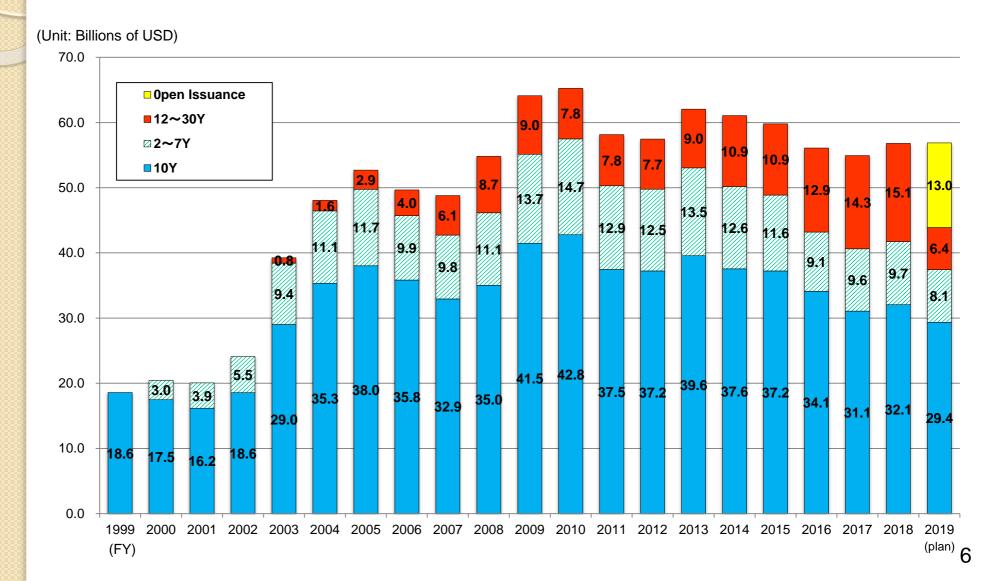
The type and the issuance amount of JLGBs and JFM Bonds (FY2018)

	Denominated in JPY	Denominated in foreign currency
Japan LGBs	LGB <jpy 5.1="" trillion=""> ≒USD 46.0 billion Joint LGB <jpy 1.2="" trillion=""> ≒USD 10.9 billion</jpy></jpy>	Tokyo Met. <usd 0.5="" billion=""></usd>
JFM Bonds	<jpy 1.1="" trillion=""> ≒USD 9.6 billion</jpy>	<usd 3.2="" billion=""></usd>
Total	<jpy 7.4="" trillion=""> ≒USD 66.5 billion</jpy>	

Note: 1. Issuance amount of JGB (FY2018): JPY 150 trillion ≒ USD 1,352 billion

2. USD 1 = JPY 110.92 as at end-March, 2019

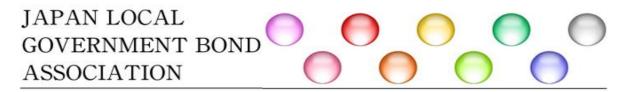
Various Maturities of JLGBs



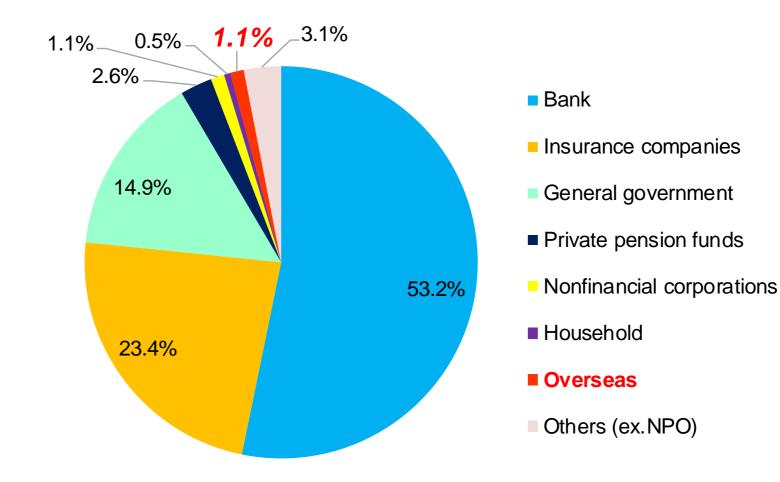
JLGBs' Key Stats for Liquidity

Bid Ask Spread*	1 bp
Transaction (in 2018)	29 trillion yen (second to JGB)
Turnover Ratio (in 2018)	0.48
Time needed for conversion into cash*	One or two days
HQLA Asset Level (for domestic banks)	A-1
Settlement Utility	JASDEC (electronic-based, via Clearstream, Euroclear etc.)

* Under the current market.



Composition of LGB Holders (2019 1Q)



Increasing Overseas Investors

FY	Holding Amount (Mil. USD)	Composition
2008	1,074.6	0.19%
2009	1,106.2	0.18%
2010	1,357.7	0.22%
2011	1,347.8	0.21%
2012	1,412.7	0.21%
2013	1,751.7	0.26%
2014	2,103.3	0.31%
2015	3,166.2	0.46%
2016	5,118.1	0.75%
2017	6,328.9	0.92%
2018	7,715.5	1.11%

Note: USD 1 = JPY 110.92 as at end-March, 2019 Source: "Flow of Funds Accounts", Bank of Japan

Comparison with Other Yen-denominated Bonds

	T-Spread (bp)	Outstanding (Billion USD)	Duration (year)
Govt. Guaranteed	15	231.4	7.18
Japan LGB	20	565.7	7.31
MBS	23	120.8	5.56
Bank Debenture	25	47.8	2.87
Corporates	34	472.8	7.17
ABS	54	6.2	5.41
Yen Denominated Foreign	67	51.6	4.15

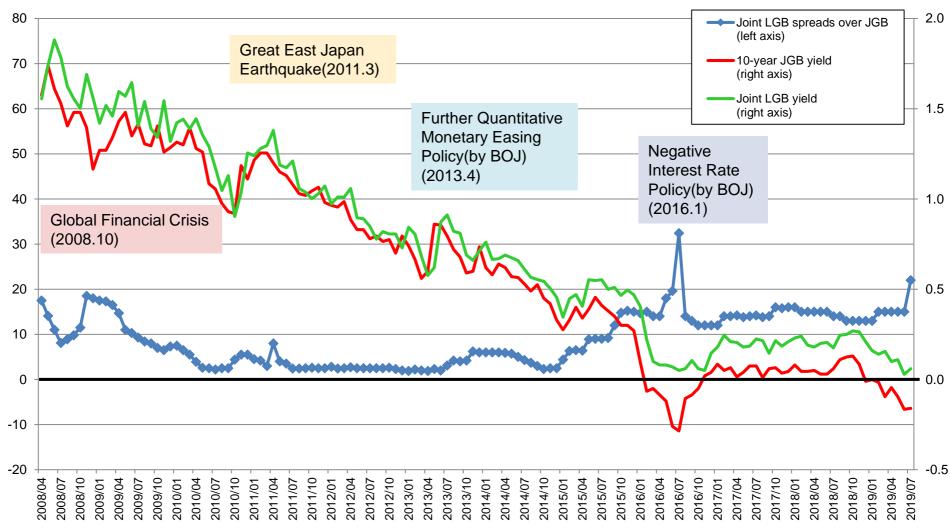
Source: Nomura-BPI

Note: 1. As of end-May 2019

2. USD 1 = JPY 110.92 as at end-March, 2019

Spread Over JGB

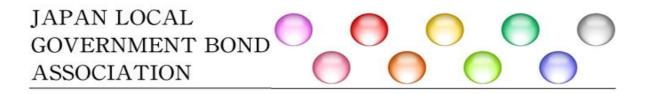
(Unit : Basis Points)



Note: "10-year JGB yield" and "Joint LGB yield" indicate issuance yield.

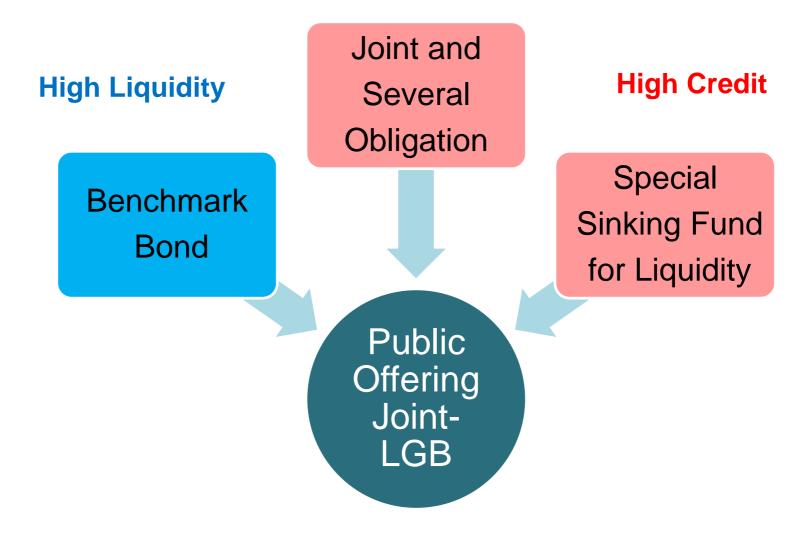
Source: Japan Local Government Bond Association

(Unit :%)



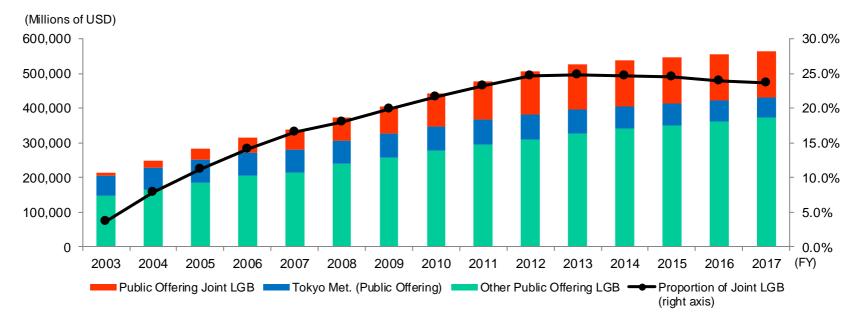
[Part 2] Public Offering Joint Local Government Bond

Three Characteristics of Joint LGB



1. Benchmark Bond: High Liquidity

- Total outstanding of Joint LGB was nearly JPY 14.1 trillion (USD 127 billion*) at the end of FY 2017. (*JPY110.92/USD)
- Joint LGB has become one of the leading benchmark bonds among non-JGB bonds because it provides about USD 1 billion on a monthly basis.

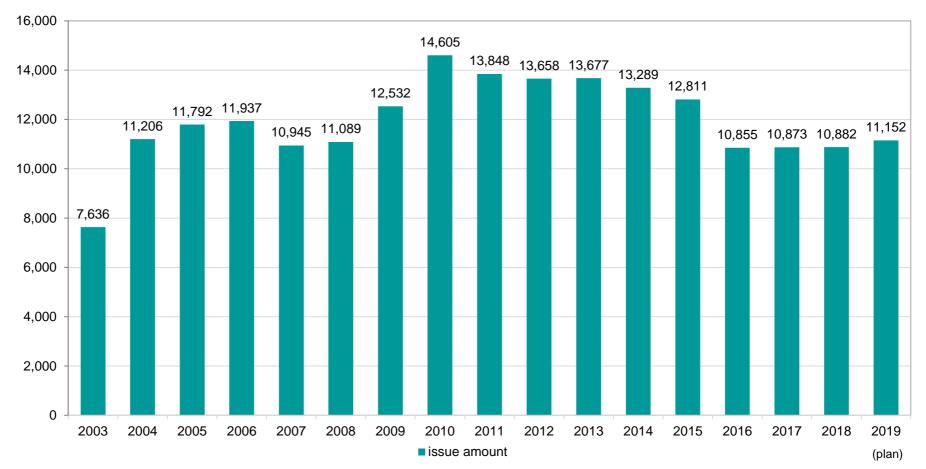


< Outstanding of Public Offering LGBs and Proportion of Joint LGB >

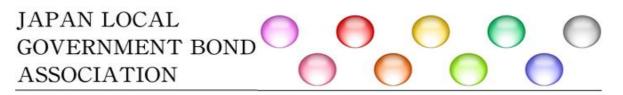
Note: USD 1 = JPY 110.92 as at end-March, 2019 Source: Japan Local Government Bond Association

Transition of annual issue amount of Joint LGB

(Unit: millions of USD)



Note: USD 1 = JPY 110.92 as at end-March, 2019 Source: Japan Local Government Bond Association



Issuance Information of Joint LGB

	Issuance Terms
FY2019 Yearly Issuance Plan	Total of JPY 1.24trillion (USD 11.2 Billion) →Monthly Ave. JPY 100 billion (USD 0.93 Billion) *one of the largest size among Japanese non-JGB bonds (*JPY110.92/USD)
Redemption method / Maturity	Bullet / 10 years
Amount of Minimum Unit	100,000 yen
Issuing Date	25 th of every month
Coupon	Fixed Rate (Rate differs every month)
Coupon Payment	25 th of February and August of each year, not regarding the issuing date
Pricing date	2 business days after auction of 10yrs JGB *If the pricing date falls on a bank's non-business day, the pricing will be advanced to the next business day.
When-Issued Transactions	Available

Comparison

Amount of plain yen-denominated bonds issued by Japanese issuers (From April 2018 to March 2019)

Rank	Issuer	Tenor (yr)	Amount (Mil. USD)	F	Rank	Issuer	Tenor (yr)	Amount (Mil. USD)
1	Soft Bank Holdings	6	3,696.4		11	Fast Retailing	10	901.6
2	Joint-LGB (May, 2018)	10	1,027.8		12	Nomura Holdings	5	901.6
3	Joint-LGB (Apr, 2018)	10	1,018.8		13	Joint-LGB (Oct, 2018)	10	739.3
4	Joint-LGB (Jan, 2019)	10	991.7		14	Joint-LGB (Dec, 2018)	10	739.3
5	Joint-LGB (Feb, 2019)	10	982.7		15	Joint-LGB (Nov, 2018)	10	721.2
6	Joint-LGB (Mar, 2019)	10	964.7		16	Central Nippon Expressway	2	721.2
7	Joint-LGB (Sep, 2018)	10	955.6		17	Fast Retailing	5	721.2
8	Joint-LGB (Aug, 2018)	10	937.6		18	East Nippon Expressway	1	676.2
9	Joint-LGB (Jun, 2018)	10	901.6		19	Central Nippon Expressway	4	631.1
10	Joint-LGB (Jul, 2018)	10	901.6		20	East Nippon Expressway	1	586.0

2. Joint and Several Obligation

Participants of Joint-LGB: 36 Local Governments

	24 Pret	12 Cities			
Hokkaido	Kanagawa	Aichi	Okayama	Sapporo	Kyoto
Miyagi	Niigata	Mie	Hiroshima	Sendai	Osaka
Fukushima	Fukui	Kyoto	Tokushima	Chiba	Kobe
Ibaraki	Nagano	Osaka	Kumamoto	Kawasaki	Hiroshima
Saitama	Gifu	Нуодо	Oita	Niigata	Kita-Kyushu
Chiba	Shizuoka	Nara	Kagoshima	Shizuoka	Fukuoka

Article 5-7 of the Local Finance Law

Article 432 of the Civil Law

Public offering Joint LGB is joint and several obligation based on Article 5-7 of the Local Finance Law.

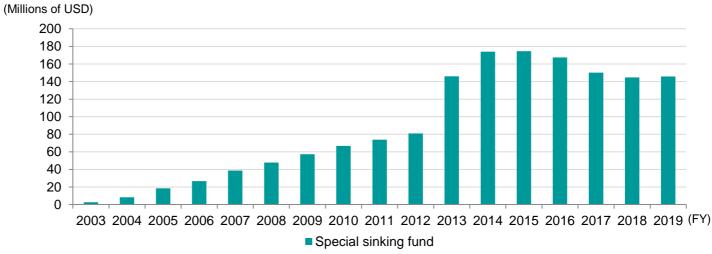
Each joint debtor is responsible for redemption of the entire amount.

Article 5 - 7 (Joint Issuance of Local Government Bonds), Local Finance Law

When local debts are raised by issuing bonds two or more local public bodies may, on approval of their respective assemblies, issue bonds jointly. Such local public bodies shall be collectively responsible for the redemption of the local debts and the interest payment.

3. Special Sinking Fund for Liquidity

- In addition to the Joint Obligation, "Special Sinking Fund for liquidity" has been established in order to fully ensure timely payment of principal and interest in case of unexpected emergency.
- The Fund is being accumulated by each of the 36 LGs depositing a portion of their own sinking fund to the commissioned bank of the Joint LGB, and the total amount yearly accumulated is equivalent to about 1/10 of the installment for the entire Joint LGB, which is in individual the highest amount in that fiscal year.

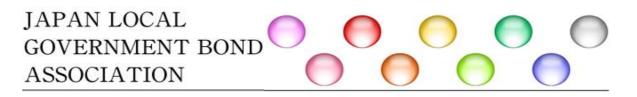


< Outstanding of Special Sinking Fund for Liquidity>

Note: USD 1 = JPY 110.92 as at end-March, 2019 Source: Japan Local Government Bond Association

[Part 3] Frequently Asked Questions & Appendix

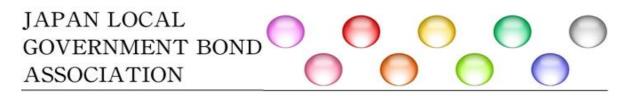
3-1. Frequently Asked Questions



Q1)What is the purpose for the 36 LGs to participate in the joint issuance of Joint LGB ?

A1)

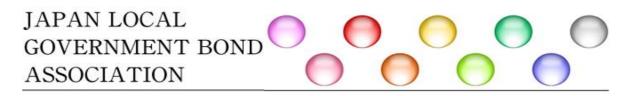
- The purpose is to realize superior character and stable fund procurement by enlarging the size of the issuance to enhance liquidity, issuance with joint obligation, establishment of the Special Sinking Fund for Liquidity, obtainment of favorable fundamentals (volume of finance, population, economic strength, etc) by large-size LGs participation and etc.
- Joint LGB is expected to be a benchmark for LGBs, and to make contribution to expand the whole LGB market.



Q2)What is "Joint Obligation" ?

A2)

- Joint LGB is issued with Joint Obligation which is based on article 5 - 7 of the Local Finance Law. Joint Obligation means that each joint debtor bears the whole responsibility to fulfill obligation of each debt (article 432 of the Civil Law).
- Under Joint LGB, the 36 LGs each individually bears responsibility to fulfill obligation to redeem the total amount of issuance, therefore Joint LGB has a very strong mechanism in terms of redemption.



Q3)How and in what kind of specific case would the Special Sinking Fund for Liquidity be used ?

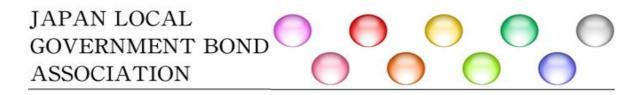
A3)

- The fund has been established by accumulating a certain amount of deposit to the commissioned bank of the Joint LGB, in order to explicitly show that timely payment of principal and interest would be fully ensured.
- The actual usage of the fund would occur for example in a nature disaster. In such case, the LGs consisting the joint issuance may withdraw the deposit for repayment.

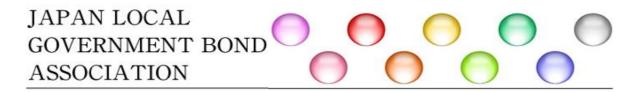
Q4)Since procurement of each LGs consisting the joint issuance varies in each issuance, do you think that credit evaluation of Joint LGB would be difficult?

A4)

- Though the procurement of each LGs consisting the joint issuance varies in each issuance, regardless of whether the LG actually did or did not procure under the joint issuance, all the 36 LGs each individually bears responsibility to fulfill obligation to redeem the total amount of issuance of Joint LGB, due to Joint obligation.
- Therefore, each issuance of Joint LGB is equalized in terms of credit quality.



3-2. Appendix



Number of Local Governments which issues JLGB

 55 LGs plan to issue public offering bonds at the beginning of FY 2019.

- ► 35 Prefectures (in black)
- ► 20 Major cities (in red)



Public Offering Bonds / Planned Issuance FY2019

(Unit: Billions of JPY)

Local Government	Total	5y	10y	20y or 30y	Joint-LGB (10y)	Other	Local Government	Total	5у	10y	20y or 30y	Joint-LGB (10y)	Other
Hokkaido	300	90	90	-	80	40	Kochi	10	-	10	-	-	-
Miyagi	110	10	20	-	40	40	Fukuoka	65	15	15	20	-	15
Akita	10	-	10	-	-	-	Saga	10	-	10	-	-	-
Fukushima	59	10	20	-	29	-	Nagasaki	30	10	10	10	-	-
Ibaraki	70	10	10	10	30	10	Kumamoto	50	10	10	-	30	-
Tochigi	100	-	100	-	-	-	Oita	35	-	10	10	15	-
Gunma	50	10	30	10	-	-	Kagoshima	80	10	-	-	70	-
Saitama	390	40	140	20	70	120	Sapporo City	110	30	30	-	30	20
Chiba	330	40	140	60	30	60	Sendai City	62	15	-	-	27	20
Tokyo	390	-	260	-	-	130	Saitama City	10	-	10	-	-	-
Kanagawa	290	80	120	60	30	-	Chiba City	70	10	40	-	20	-
Niigata	120	-	40	20	60	-	Yokohama City	200	20	70	40	-	70
Fukui	65	-	10	-	10	45	Kawasaki City	91	21	10	30	10	20
Yamanashi	20	-	20	-	-	-	Sagamihara City	10	-	10	-	-	-
Nagano	1050	25	-	-	80	-	Niigata City	30	-	10	-	20	-
Gifu	41	-	15	-	26	-	Shizuoka City	35	-	20	-	15	-
Shizuoka	290	60	80	70	30	50	Hamamatsu City	20	-	20	-	-	-
Aichi	340	20	190	20	50	60	Nagoya City	135	10	60	10	-	55
Mie	20	-	10	-	10	-	Kyoto City	150	20	30	-	40	60
00Shiga	10	-	10	-	-	-	Osaka City	230	40	40	40	30	80
Kyoto	190	50	40	30	50	20	Sakai City	40	-	10	20	-	10
Osaka	640	120	120	-	80	320	Kobe City	140	-	-	45	25	70
Нуодо	200	20	40	80	60	-	Okayama City	10	-	10	-	-	-
Nara	30	10	-	-	10	10	Hiroshima City	70	20	20	20	10	-
Shimane	50	10	-	40	-	-	Kita-Kyusyu City	105	15	20	-	30	40
Okayama	40	-	20	10	10	-	Fukuoka City	135	35	20	20	10	50
Hiroshima	160	10	60	20	50	20	Kumamoto City	10	-	10	-	-	-
Tokushima	35	-	10	-	20	5	Total	6,308	896	2,020	715	1,237	1,440

* This is based on the figures of domestic bonds announced by Ministry of Internal Affairs and Communications in April 2019.

Joint LGB / Planned Issuance FY2019

Unit : Billions of JPY

Issuer	Hokkaido	Miyagi	Fukushima	Ibaraki	Saitama	Chiba	Kanagawa	Niigata	Fukui	Nagano	Gifu	Shizuoka	Aichi	Mie	Kyoto	Osaka	Hyogo	Nara
Apr	10		3	6			5	5		10		3	10		5	10	5	
May	10		4	6	10			7			3		15		5	10	10	1
Jun		10			10	5	5	7	2	10				1	5			
July			6	6	10	10	5	9		10	3	3			5		5	
Aug		10	4	6	10			4		10			10		5	10	5	
Sep	10							4	2		5	3		4		10	5	4
Oct	10		4	3	10		5	4	2	10			10	1			5	4
Nov		10				5		4		10	5				5	10	5	
Dec	10		4		10			4				8			5		5	
Jan	10	10	4				10	4		10	5	8			5	10	5	1
Feb	10				10			4		10		5	5	4	5	10	5	
Mar	10			3		10		4	4		5				5	10	5	
Total	80	40	29	30	70	30	30	60	10	80	26	30	50	10	50	80	60	10

Issuer	Okayama	Hiroshima	Tokushima	Kumamoto	Oita	Kagoshima	Sapporo (City)	Sendai (City)	Chiba (City)	Kawasaki (City)	Niigata (City)	Shizuoka (City)	Kyoto (City)	Osaka (City)	Kobe (City)	Hiroshima (City)	Kita- Kyushu (City)	Fukuoka (City)	GRAND TOTAL
Apr		10		5		2	10	3	4								9		115
May						6		3	5	3			5	5	8				116
Jun	1	10	4	5	5	8		3	3		3	3	5			3	5	2	115
July				5		8		3	2				5		1		7	2	105
Aug		10	8			8				3		3					2		100
Sep	3			5	5	8	7	3			3		5	5	2	2			103
Oct						2			3			3				3	4		80
Nov						2	3	3		2	4		5		3			2	81
Dec	3	10	3	5	2	2		3					5	3					82
Jan						8			3		10			7	3	2			113
Feb	3	10		5	3	8		3		2			5				3	4	116
Mar			5			8	10	3				6	5	10	8				111
Total	10	50	20	30	15	70	30	27	20	10	20	15	40	30	25	10	30	10	1,237

Past Issuance of Joint LGB

<u>FY2016</u>

Month	Issuance (Bln JPY)	Coupon	lssue Price	Subscription yield	C-Spread (bps)
April	130	0.406%	100.00	0.406%	6.4
May	131	0.553%	100.00	0.553%	8.9
June	117	0.548%	100.00	0.548%	9.0
July	119	0.553%	100.00	0.553%	9.0
Aug	117	0.500%	100.00	0.500%	9.2
Sep	118	0.510%	100.00	0.510%	12.0
Oct	111	0.466%	100.00	0.466%	14.8
Nov	110	0.496%	100.00	0.496%	15.2
Dec	111	0.469%	100.00	0.469%	15.0
Jan	119	0.405%	100.00	0.405%	14.7
Feb	120	0.220%	100.00	0.220%	15.0
Mar	118	0.100%	100.00	0.100%	14.0

Month	Issuance (Bln JPY)	Coupon	lssue Price	Subscription yield	C-Spread (bps)
April	110	0.080%	100.00	0.080%	14.0
May	109	0.080%	100.00	0.080%	18.0
June	101	0.070%	100.00	0.070%	19.6
July	104	0.050%	100.00	0.050%	32.4
Aug	100	0.060%	100.00	0.060%	14.0
Sep	100	0.105%	100.00	0.105%	13.0
Oct	90	0.060%	100.00	0.060%	12.0
Nov	90	0.050%	100.00	0.050%	12.0
Dec	91	0.145%	100.00	0.145%	12.0
Jan	101	0.180%	100.00	0.180%	12.0
Feb	104	0.245%	100.00	0.245%	14.0
Mar	104	0.210%	100.00	0.210%	14.0

()

Past Issuance of Joint LGB

FY2018

Month	Issuance (Bln JPY)	Coupon	lssue Price	Subscription yield	C-Spread (bps)
April	109	0.205%	100.00	0.205%	14.2
May	112	0.180%	100.00	0.180%	13.8
June	102	0.185%	100.00	0.185%	14.0
July	102	0.225%	100.00	0.225%	14.2
Aug	101	0.215%	100.00	0.215%	13.8
Sep	103	0.145%	100.00	0.145%	14.0
Oct	86	0.215%	100.00	0.215%	16.0
Nov	87	0.185%	100.00	0.185%	15.8
Dec	86	0.210%	100.00	0.210%	16.0
Jan	102	0.230%	100.00	0.230%	16.0
Feb	108	0.240%	100.00	0.240%	15.0
Mar	108	0.190%	100.00	0.190%	15.0

Month	Issuance (Bln JPY)	Coupon	lssue Price	Subscription yield	C-Spread (bps)
April	113	0.180%	100.00	0.180%	15.0
May	114	0.200%	100.00	0.200%	15.0
June	100	0.205%	100.00	0.205%	15.0
July	100	0.175%	100.00	0.175%	14.0
Aug	104	0.245%	100.00	0.245%	14.0
Sep	106	0.250%	100.00	0.250%	13.0
Oct	82	0.269%	100.00	0.269%	13.0
Nov	80	0.264%	100.00	0.264%	13.0
Dec	82	0.210%	100.00	0.210%	13.0
Jan	110	0.160%	100.00	0.160%	13.0
Feb	109	0.140%	100.00	0.140%	15.0
Mar	107	0.156%	100.00	0.156%	15.0

Credit Rating of JLGB

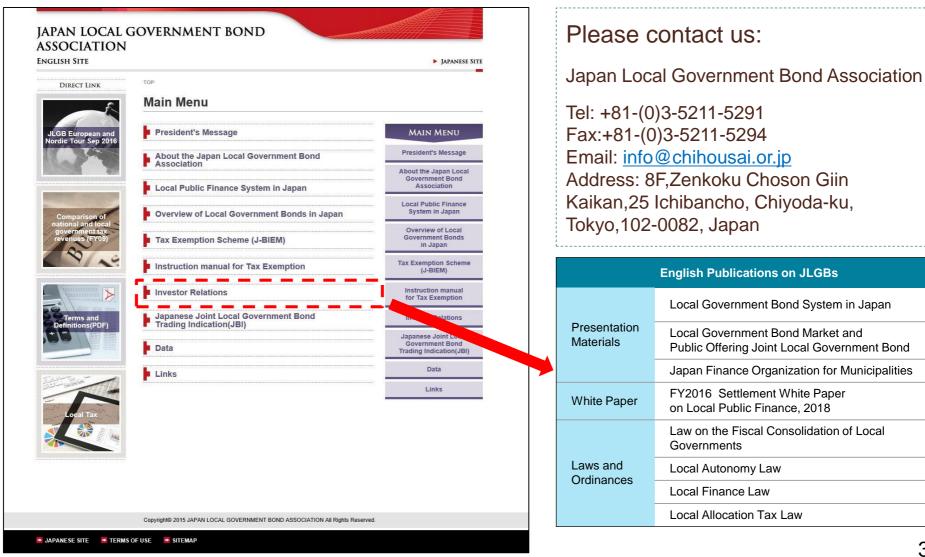
	Ratings		
	Moody's	S&P	
JGB(Central Government)	A1/Stable	A+/Positive	
Tokyo	-	A+/Positive	
Niigata Prefecture*	A1/Stable	-	
Shizuoka Prefecture*	A1/Stable -		
Aichi Prefecture*	- A+/Positive		
Hiroshima Prefecture*	A1/Stable	-	
Fukuoka Prefecture	A1/Stable	-	
Sapporo City*	A1/Stable	-	
Yokohama City*	A1/Stable	-	
Shizuoka City* Hamamatsu City Nagoya City	A1/Stable	-	
	A1/Stable	-	
	A1/Stable	-	
Kyoto City*	A1/Stable	-	
Osaka City* Sakai City Fukuoka City*	A1/Stable A+/Positive		
	A1/Stable -		
	A1/Stable	-	
JFM	A1/Stable	A+/Positive	

Note: 1. Ratings as of 1 July, 2019.

2. Asterisks (*) on issuers for Joint-LGB.

For More Information

Japan Local Government Bond Association Website: <u>http://www.chihousai.or.jp/english</u>



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