Liquidity Indicators in the JGB Markets*

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* As for the definition of each indicator, refer to


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JGB Futures Market:
Transaction Volume and Bid-ask Spreads

(1) Transaction Volume

![Transaction Volume Chart]

Notes: 1. "Daily average" in (2) is the average of bid-ask spreads with a 1-minute frequency. "Average of the widest 10 percent" in (2) is the average of the widest 10 percent of the bid-ask spread with a 1-minute frequency.

2. 10-day backward moving average. Latest data as at end-November 2019.

Sources: QUICK; Osaka Exchange, Inc.; Nikkei Inc., "NEEDS."
Notes: 1. (1) is calculated by taking the median of the volume of orders at the best-ask price with a 1-minute frequency.
   2. "Price impact" in (2) is the average price impact with a 5-minute frequency. "Daily price range to transaction volume ratio" in (2) is daily price range (difference between the highest and the lowest prices) divided by transaction volume.
   3. 10-day backward moving average. Latest data as at end-November 2019.

Sources: Nikkei Inc., "NEEDS;" QUICK; Osaka Exchange, Inc.
JGB Cash Market: Dealer-to-client Transaction Volume

(1) Monthly Transaction Volume (Gross Amount Purchased by Clients)

(2) Monthly Transaction Volume by Clients (Gross Amount Purchased by Clients)

Notes:
1. Treasury Discount Bills, etc. are excluded from the transaction volume.
2. "Clients" include city banks, regional financial institutions, investors, and foreigners. Other institutions (government, Bank of Japan, Japan Post Bank, Japan Post Insurance, business corporations, other financial institutions, etc.) are excluded from "clients."

Source: Japan Securities Dealers Association.
Notes: 1. Daily transaction volume in (1) is the sum of 2-year, 5-year, 10-year, 20-year, 30-year, and 40-year JGBs via Japan Bond Trading.
Source: QUICK.
JGB Cash Market:
Bid-ask Spreads of Dealer-to-client Transactions

(1) 5-year JGBs

(2) 10-year JGBs

(3) 20-year JGBs

Notes: 1. Quotations through Trade web as of 3:00 p.m. Dotted lines indicate the first/third quartile spreads between January 2010 and March 2013.
2. 10-day backward moving average. Latest data as at end-November 2019.

Source: Eikon from Refinitiv.
Chart 6

JGB Cash Market:
Bid-ask Spreads of Inter-dealer Transactions

(1) 5-year JGBs

(2) 10-year JGBs

(3) 20-year JGBs

Notes:
1. Figures indicate the average of bid-ask spreads with a 1-second frequency.
2. Bid-ask spreads are calculated only for time periods in which both best-bid and best-ask prices were submitted.
3. 10-day backward moving average. Latest data as at end-November 2019.

Source: Japan Bond Trading.
JGB Cash Market:
Total Observation Time of Bid-ask Spreads of Inter-dealer Transactions

(1) 5-year JGBs

(2) 10-year JGBs

(3) 20-year JGBs

Notes:
1. Figures indicate the total length of time (as percentage of total trading hours) in which both best-bid and best-ask prices were submitted. Total trading hours per day were shortened from 7h to 5h 20min, from 20th August 2018.
2. 10-day backward moving average. Latest data as at end-November 2019.
3. Note that moving average figures for 20-30th August 2018 include data both prior to and after the change in trading hours.

Source: Japan Bond Trading.
Notes: 1. (1) is calculated by averaging the spreads between the best and worst quotes offered by dealers against each client request. Transactions with spreads wider than 10 bps are excluded from the calculation.
2. (2) is calculated by summing up the median of volume of orders at the best-ask (best-bid) price with a 1-second frequency per issue. 10-day backward moving average.
Sources: Yensai.com; Japan Bond Trading.
JGB Cash Market: Ratio of Issues by Total Observation Time of the Best-bid (Best-ask) Price of Inter-dealer Transactions

(1) Ratio of Issues by Total Observation Time of the Best-bid Price

Notes: 1. Figures indicate the percentage of issues by daily observation time (as percentage of total trading hours) of best-bid (best-ask) prices. Total trading hours per day were shortened from 7h to 5h 20min, from 20th August 2018.
   2. 10-day backward moving average. Latest data as at end-November 2019.
   3. Note that moving average figures for 20-30th August 2018 include data both prior to and after the change in trading hours.

Source: Japan Bond Trading.
Chart10

SC Repo Market: Scarcity of Specific Issues

(1) GC-SC Repo Rate Spreads

Notes: 1. SC repo rates are calculated by volume weighted average of all traded issues for S/N trades (until April 2018) or T/N trades (from May 2018). GC repo rates are defined by the Tokyo Repo Rate (until April 2018; T/N, from May; O/N).
2. The bold lines indicate 10-day backward moving average. Latest data as at end-November 2019.
Sources: JBond Toton Securities; Japan Securities Dealers Association.

(2) SC Repo Rates

Notes: 1. SC repo rates are calculated by volume weighted average of all traded issues for S/N trades (until April 2018) or T/N trades (from May 2018). GC repo rates are defined by the Tokyo Repo Rate (until April 2018; T/N, from May; O/N).
2. The bold lines indicate 10-day backward moving average. Latest data as at end-November 2019.
Sources: JBond Toton Securities; Japan Securities Dealers Association.