

Revisions to Trading Rules at the Time of arrowhead Renewal

December 16, 2014
Tokyo Stock Exchange, Inc.

I. Purpose

Currently, TSE is working toward the renewal of arrowhead, the trading system for auction trading of stocks, etc., (scheduled for September 24, 2015) to enhance trading system capacity and capability, add and improve functions, and partially revise the trading rules, etc. The changes are aimed at maintaining investor confidence in the market and catering to diverse needs of trading participants and investors, in light of expansion of electronic trading and recent changes in the environment surrounding stock markets.

In tandem with arrowhead renewal, Tokyo Stock Exchange (TSE) will implement Phase III for the optimization of tick sizes of bids and offers, considering factors such as the trading conditions after the implementation of Phases I and II and opinions of trading participants and investors.

Taking into account the above, TSE has compiled the revisions to the trading rules at the time of the arrowhead renewal as outlined below.

In Phase III, partial revisions will be made to the small tick sizes that were set in Phases I and II. However, the small tick sizes will continue to be applied only to TOPIX100 constituents. Furthermore, an additional condition for displaying sequential trade quotes will be introduced in order to prevent sharp price moves due to multiple orders.

II. Outline

Item	Content	Remarks
1. Phase III of Optimization of Tick Sizes (1) Issues subject to Phase III (2) Tick Size Revision	<ul style="list-style-type: none">Partial revisions will be made to the small tick sizes newly set in Phases I and II.As is the case with Phases I and II, the small tick sizes will only be applied to TOPIX100 constituents (hereinafter "Phase III issues").To achieve price improvements and increase trading convenience, the tick sizes will be partially revised for Phase III issues.The tick size for prices above JPY 3,000 but JPY 5,000 or less will be changed to JPY one (1) (currently, JPY 0.5).	<ul style="list-style-type: none">Phase III issues will be subject to change in connection with reviews of TOPIX100 constituents.Current tick sizes will continue to apply to other issues.Tick sizes for price bands at tenfold increments (e.g., above JPY 30,000 but JPY 50,000 or less) will be similarly revised to the next larger tick size.For details on tick sizes, please refer to Attachment 1.
2. Additional Condition for Display of Sequential Trade Quote	<ul style="list-style-type: none">A new condition will be added to display a sequential trade quote for sharp price fluctuations due to multiple bids/offers.	

Item	Content	Remarks
(1) Additional Display Condition	<ul style="list-style-type: none"> A sequential trade quote will be displayed when the price is expected to move beyond a certain range and within a set time interval, which are deemed appropriate by TSE. 	<ul style="list-style-type: none"> Specifically, a sequential trade quote will be displayed if the price is expected to move beyond twice the special quote renewal price interval within one (1) minute from the reference execution specified by TSE. Please refer to Attachment 2. The current condition for display of sequential trade quotes will continue to apply.
3. New Category of Trading System Facilities Usage Fees	<ul style="list-style-type: none"> In connection with the start of provision of virtual servers (for orders) that can send up to 200 messages per second, the usage fee for such virtual servers will be set at JPY 90,000 per month. 	<ul style="list-style-type: none"> Existing virtual server usage fees will not be revised. However, virtual servers (for orders) that can send up to 20 messages per second will be abolished.

III. Implementation Date (Scheduled)

The above revisions will be implemented at the time of arrowhead renewal (scheduled for September 24, 2015).

- Increments of Bids and Offers (Tick Sizes) in Phase III

Price				Tick Size			
				Other Issues	TOPIX100 Constituents		
					Phase I	Phase II	Phase III
	Up to	1,000 yen		1 yen	1 yen	0.1 yen	0.1 yen
More than	1,000 yen	"	3,000 yen	1 yen	1 yen	0.5 yen	0.5 yen
"	3,000 yen	"	5,000 yen	5 yen	1 yen	0.5 yen	<u>1 yen</u>
"	5,000 yen	"	10,000 yen	10 yen	1 yen	1 yen	1 yen
"	10,000 yen	"	30,000 yen	10 yen	5 yen	5 yen	5 yen
"	30,000 yen	"	50,000 yen	50 yen	5 yen	5 yen	<u>10 yen</u>
"	50,000 yen	"	100,000 yen	100 yen	10 yen	10 yen	10 yen
"	100,000 yen	"	300,000 yen	100 yen	50 yen	50 yen	50 yen
"	300,000 yen	"	500,000 yen	500 yen	50 yen	50 yen	<u>100 yen</u>
"	500,000 yen	"	1,000,000 yen	1,000 yen	100 yen	100 yen	100 yen
"	1,000,000 yen	"	3,000,000 yen	1,000 yen	500 yen	500 yen	500 yen
"	3,000,000 yen	"	5,000,000 yen	5,000 yen	500 yen	500 yen	<u>1,000 yen</u>
"	5,000,000 yen	"	10,000,000 yen	10,000 yen	1,000 yen	1,000 yen	1,000 yen
"	10,000,000 yen	"	30,000,000 yen	10,000 yen	5,000 yen	5,000 yen	5,000 yen
"	30,000,000 yen	"	50,000,000 yen	50,000 yen	5,000 yen	5,000 yen	<u>10,000 yen</u>
"	50,000,000 yen			100,000 yen	10,000 yen	10,000 yen	10,000 yen

- Details of Additional Condition for Displaying Sequential Trade Quotes

To display sequential trade quotes at the time of sharp price fluctuations due to multiple bids/offers, a new condition will be introduced as shown below.
Specifically, the sequential trade quote will be displayed under either the additional condition or current condition when an order is placed. When both conditions are satisfied at the same time, a sequential trade quote will be displayed at the price that is nearer the last execution price.

Additional condition:

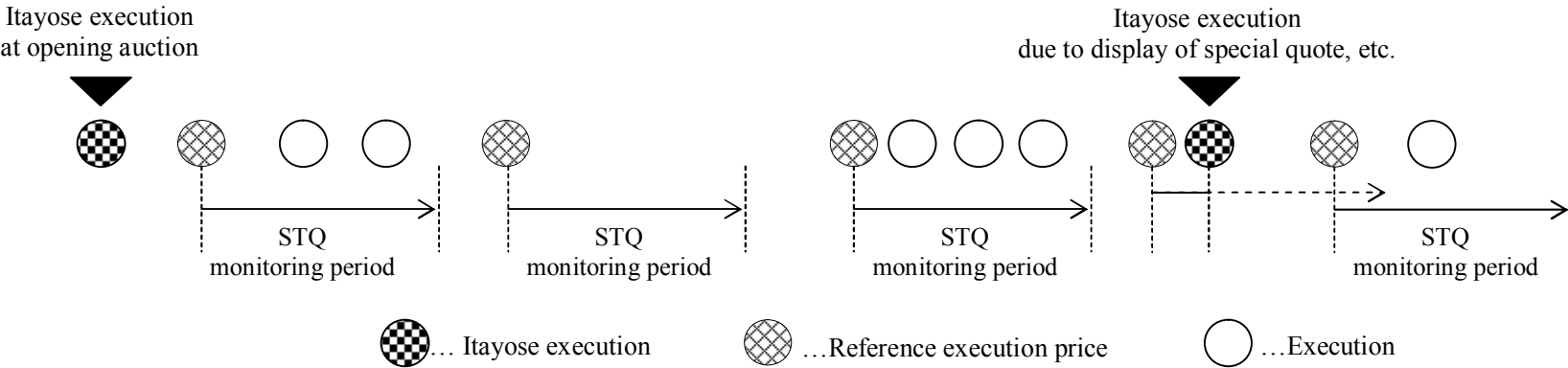
A sequential trade quote (hereinafter referred to as "STQ") will be displayed when orders match at a price beyond the price range that TSE deems appropriate (twice the special quote renewal price interval; hereinafter the "sequential trading price range") from the price of the reference execution (Note) within a time interval that TSE deems appropriate from the time of the reference execution (one (1) minute; hereinafter the "STQ monitoring period").

- (Note) The reference execution means any of the following:
- (1) The first execution during continuous auction after execution by Itayose method
 - (2) The first execution during continuous auction after the STQ monitoring period

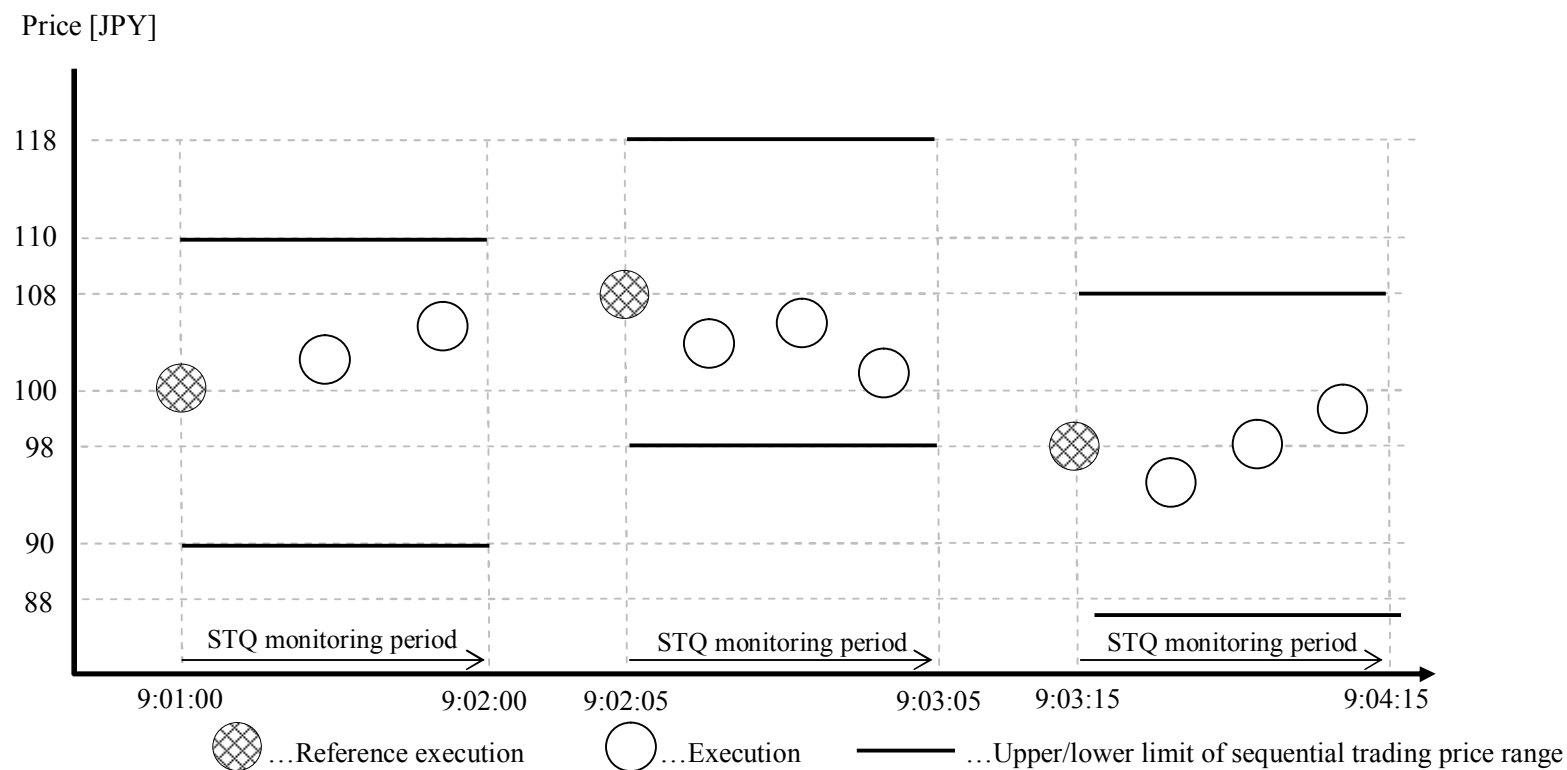
[Reference] Current display condition:

When the price of an issue rises/drops due to a series of executions based on a single order, and is likely to move to a price beyond the sequential trading price range from the last execution price, an STQ will be displayed at the price.

1. Image of Reference Execution Price and STQ Monitoring Period



2. Image of Sequential Trading Price Range



Special quote renewal price interval: JPY 5 (in the case of stock prices less than JPY 200)

Sequential trading price range: JPY 10

STQ monitoring period: 60 seconds

(Note 2) Under the current condition, whether the STQ is displayed depends on the range of price movement from the last execution price before the placement of an order. As such, an STQ may also be displayed within the sequential trading price range shown above (Refer to Example 3.5).

3. Example

(3.1 Display under additional condition)

Time	9:01:00
Execution Price	100
Last Execution Price	98(opening)
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
4	OVER	0
4 1	112	0
3	110	0
3 1	108	0
2	105	0
2 1	104	0
1	103	0
1	101	0
1 1	100	1 1
0	98	1 2
0	96	2
0	95	1 3
0	93	3
0	91	1 4
0	90	4
0	88	1 5
0	UNDER	5

A buy order (1 unit) is placed at JPY 100 and executed at JPY 100. This execution is set as the reference execution.

Time	9:01:10
Execution Price	104
Last Execution Price	100
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
3	OVER	0
3 1	112	0
2	110	0
2 1	108	0
1	105	0
1 1	104	1 1
0	103	1
0	101	1
0	100	1
0	98	1 2
0	96	2
0	95	1 3
0	93	3
0	91	1 4
0	90	4
0	88	1 5
0	UNDER	5

A buy order (1 unit) is placed at JPY 104 and executed at JPY 104.

Time	9:01:20
Execution Price	108
Last Execution Price	104
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
2	OVER	0
2 1	112	0
1	110	0
1 1	108	1 1
0	105	1
0	104	1
0	103	1
0	101	1
0	100	1
0	98	1 2
0	96	2
0	95	1 3
0	93	3
0	91	1 4
0	90	4
0	88	1 5
0	UNDER	5

A buy order (1 unit) is placed at JPY 108 and executed at JPY 108.

Time	9:01:30
Execution Price	-
Last Execution Price	108
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
1	OVER	0
1 1	112	1 1
0	110	K 1
0	108	1
0	105	1
0	104	1
0	103	1
0	101	1
0	100	1
0	98	1 2
0	96	2
0	95	1 3
0	93	3
0	91	1 4
0	90	4
0	88	1 5
0	UNDER	5

A buy order (1 unit) is placed at JPY 112, and because orders match at JPY 112, beyond the sequential trading price range from the reference execution within 1 minute, an STQ is displayed at JPY 110 on the buy side.

(3.2 Reference execution reset)

Time	9:01:00
Execution Price	100, 101
Last Execution Price	98(opening)
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
5		OVER	0
5	1	112	0
4		110	0
4	1	108	0
3		105	0
3	1	104	0
2		103	0
2	1	101	2
1	1	100	2
0		98	1
0		96	3
0		95	1
0		93	4
0		91	1
0		90	5
0		88	1
0		UNDER	6

A buy order (2 units) is placed at JPY 100 and executed instantly at JPY 100 and JPY 101. The execution at JPY 100 is set as the reference execution.

Time	9:01:10
Execution Price	104
Last Execution Price	101
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
3		OVER	0
3	1	112	0
2		110	0
2	1	108	0
1		105	0
1	1	104	1
0		103	1
0		101	1
0		100	1
0		98	1
0		96	2
0		95	1
0		93	3
0		91	1
0		90	4
0		88	1
0		UNDER	5

A buy order (1 unit) is placed at JPY 104 and executed at JPY 104.

Time	9:01:20
Execution Price	108
Last Execution Price	104
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
2		OVER	0
2	1	112	0
1		110	0
1	1	108	1
0		105	1
0		104	1
0		103	1
0		101	1
0		100	1
0		98	1
0		96	2
0		95	1
0		93	3
0		91	1
0		90	4
0		88	1
0		UNDER	5

A buy order (1 unit) is placed at JPY 108 and executed at JPY 108.

Time	9:02:05
Execution Price	112
Last Execution Price	108
Ref. Execution Price	112
Ref. Execution Time	9:02:05

Total		MO	Total
0			0
1		OVER	0
1	1	112	1
0		110	1
0		108	1
0		105	1
0		104	1
0		103	1
0		101	1
0		100	1
0		98	1
0		96	2
0		95	1
0		93	3
0		91	1
0		90	4
0		88	1
0		UNDER	5

A buy order (1 unit) is placed at JPY 112 and executed at JPY 112 because more than 1 minute has elapsed from the reference execution, and the reference execution is reset.

(3.3 Reference execution reset - Case of resetting due to Itayose matching)

Time	9:01:00
Execution Price	100
Last Execution Price	98(opening)
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
2		OVER	0
2	1	112	0
1		110	0
1		108	0
1		105	0
1		104	0
1		103	0
1		101	0
1	1	100	1
0		98	1
0		96	2
0		95	1
0		93	3
0		91	1
0		90	4
0		88	1
0		UNDER	5

A buy order (1 unit) is placed at JPY 100 and executed at JPY 100. This execution is set as the reference execution.

Time	9:01:10
Execution Price	-
Last Execution Price	100
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
1		OVER	0
1	1	112	1
0		110	1
0		108	1
0		105	力 1
0		104	1
0		103	1
0		101	1
0		100	1
0		98	1
0		96	2
0		95	1
0		93	3
0		91	1
0		90	4
0		88	1
0		UNDER	5

A buy order (1 unit) is placed at JPY 112, and orders match at JPY 112, beyond the special quote renewal price interval. A special quote is displayed at JPY 105 on the buy side.

Time	9:01:20
Execution Price	105
Last Execution Price	100
Ref. Execution Price	-
Ref. Execution Time	-

Total		MO	Total
0			0
2		OVER	0
2	1	112	1
1		110	1
1		108	1
1	1	105	1
0		104	1
0		103	1
0		101	1
0		100	1
0		98	1
0		96	2
0		95	1
0		93	3
0		91	1
0		90	4
0		88	1
0		UNDER	5

A sell order (1 unit) is placed at JPY 105, and orders match at the JPY 105 special quote, satisfying the Itayose conditions. Execution immediately occurs at JPY 105, and the reference execution is cleared.

Time	9:01:30
Execution Price	108
Last Execution Price	105
Ref. Execution Price	108
Ref. Execution Time	9:01:30

Total		MO	Total
0			0
2		OVER	0
2	1	112	0
1		110	0
1	1	108	1
0		105	1
0		104	1
0		103	1
0		101	1
0		100	1
0		98	1
0		96	2
0		95	1
0		93	3
0		91	1
0		90	4
0		88	1
0		UNDER	5

A sell order (1 unit) is placed at JPY 108, and a buy order (1 unit) is placed at JPY 108. Execution occurs at JPY 108. This execution is set as the reference execution.

(3.4 Reference execution maintained)

Time	9:01:00
Execution Price	100, 104, 108
Last Execution Price	98(opening)
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
4		OVER	0
4	1	112	0
3		110	0
3	1	108	3
2		105	3
2	1	104	3
1		103	3
1		101	3
1	1	100	3
0		98	1 4
0		96	4
0		95	1 5
0		93	5
0		91	1 6
0		90	6
0		88	1 7
0		UNDER	7

A buy order (3 units) is placed at JPY 108 and executed instantly at JPY 100, JPY 104, and JPY 108. The execution at JPY 100 is set as the reference execution.

Time	9:01:10
Execution Price	-
Last Execution Price	108
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
1		OVER	0
1	1	112	1 1
0		110	K 1
0		108	1
0		105	1
0		104	1
0		103	1
0		101	1
0		100	1
0		98	1 2
0		96	2
0		95	1 3
0		93	3
0		91	1 4
0		90	4
0		88	1 5
0		UNDER	5

A buy order (1 unit) is placed at JPY 112, and orders match at JPY 112, beyond the sequential trading price range within 1 minute from the reference execution. A STQ is displayed at JPY 110 on the buy side.

Time	9:01:20
Execution Price	-
Last Execution Price	108
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
1		OVER	0
1	1	112	0
0		110	0
0		108	0
0		105	0
0		104	0
0		103	0
0		101	0
0		100	0
0		98	1 1
0		96	1
0		95	1 2
0		93	2
0		91	1 3
0		90	3
0		88	1 4
0		UNDER	4

The buy order at JPY 112 is cancelled, and the STQ is cancelled.

Time	9:01:30
Execution Price	-
Last Execution Price	108
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		MO	Total
0			0
1		OVER	0
1	1	112	1 1
0		110	K 1
0		108	1
0		105	1
0		104	1
0		103	1
0		101	1
0		100	1
0		98	1 2
0		96	2
0		95	1 3
0		93	3
0		91	1 4
0		90	4
0		88	1 5
0		UNDER	5

A buy order (1 unit) is placed at JPY 112, and orders match at JPY 112 beyond the sequential trading price range within 1 minute from the reference execution. An STQ is displayed at JPY 110 on the buy side.

(3.5 Display under current condition)

Time	9:01:00
Execution Price	100
Last Execution Price	98(opening)
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
5	OVER	0
5 1	112	0
4	110	0
4 1	108	0
3	105	0
3 1	104	0
2	103	0
2 1	101	0
1 1	100	1
0	98	1 2
0	96	2
0	95	1 3
0	93	3
0	91	1 4
0	90	4
0	88	1 5
0	UNDER	5

A buy order (1 unit) is placed at JPY 100 and executed at JPY 100. This execution is set as the reference execution.

Time	9:01:10
Execution Price	98
Last Execution Price	100
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
5	OVER	0
5 1	112	0
4	110	0
4 1	108	0
3	105	0
3 1	104	0
2	103	0
2 1	101	0
1	100	0
1 1	98	1 1
0	96	1
0	95	1 2
0	93	2
0	91	1 3
0	90	3
0	88	1 4
0	UNDER	4

A sell order (1 unit) is placed at JPY 98 and executed at JPY 98.

Time	9:01:20
Execution Price	101, 104, 108
Last Execution Price	98
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
4	OVER	0
4 1	112	4
3	110	4
3 1	108	4
2	105	4
2 1	104	4
1	103	4
1 1	101	4
0	100	4
0	98	4
0	96	4
0	95	1 5
0	93	5
0	91	1 6
0	90	6
0	88	1 7
0	UNDER	7

A buy order (4 units) is placed at JPY 112 and executed instantly at JPY 101, JPY 104, and JPY 108.

Time	9:01:20
Execution Price	-
Last Execution Price	108
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
1	OVER	0
1 1	112	1 1
0	110	1
0	108	K 1
0	105	1
0	104	1
0	103	1
0	101	1
0	100	1
0	98	1
0	96	1
0	95	1 2
0	93	2
0	91	1 3
0	90	3
0	88	1 4
0	UNDER	4

Due to buying up by the single buy order, orders match at JPY 112, beyond the sequential trading price range from the last execution. An STQ is displayed at JPY 108 on the buy side.

(3.6 Display under additional condition - Case due to counter order)

Time	9:01:00
Execution Price	100, 104, 108
Last Execution Price	98(opening)
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
4	OVER	0
4 1	112	0
3	111	0
3	110	0
2 1	108	3
2	105	3
1 1	104	3
1	103	3
1	101	3
0 1	100	3
0	98	1 4
0	96	4
0	95	1 5
0	93	5
0	91	1 6
0	90	6
0	UNDER	6

A buy order (3 units) is placed at JPY 108 and executed instantly at JPY 100, JPY 104, and JPY 108. The execution at JPY 100 is set as the reference execution.

Time	9:01:10
Execution Price	-
Last Execution Price	108
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
1	OVER	0
1 1	112	0
0	111	2
0	110	2
0	108	2
0	105	2
0	104	2
0	103	2
0	101	2
0	100	2
0	98	1 3
0	96	3
0	95	1 4
0	93	4
0	91	1 5
0	90	5
0	UNDER	5

A buy order (2 units) is placed at JPY 111.

Time	9:01:20
Execution Price	-
Last Execution Price	108
Ref. Execution Price	100
Ref. Execution Time	9:01:00

Total		Total
0	MO	0
2	OVER	0
2 1	112	0
1	111	2
1	110	2
1	108	2
1	105	2
1	104	2
1	103	2
1	101	2
1	100	2
1 1	98	1 3
0	96	3
0	95	1 4
0	93	4
0	91	1 5
0	90	5
0	UNDER	5

A sell order (1 unit) is placed at JPY 98, and orders match at JPY 111, beyond the sequential trading price range within 1 minute from the reference execution. An STQ is displayed at JPY 110.

Time	9:02:20
Execution Price	111
Last Execution Price	108
Ref. Execution Price	-
Ref. Execution Time	-

Total		Total
0	MO	0
2	OVER	0
2 1	112	0
1	111	2
1	110	2
1	108	2
1	105	2
1	104	2
1	103	2
1	101	2
1	100	2
1 1	98	1 3
0	96	3
0	95	1 4
0	93	4
0	91	1 5
0	90	5
0	UNDER	5

After 1 minute elapses from the display of the STQ, execution occurs at JPY 111 by Itayose method. The reference execution is cleared

(3.7 Display of under additional condition - Case involving cumulative number of counter orders)

Time	9:01:00	Time	9:01:10	Time	9:01:20	Time	9:01:20
Execution Price	100, 104, 108	Execution Price	-	Execution Price	110	Execution Price	-
Last Execution Price	98(opening)	Last Execution Price	108	Last Execution Price	108	Last Execution Price	110
Ref. Execution Price	100	Ref. Execution Price	100	Ref. Execution Price	-	Ref. Execution Price	-
Ref. Execution Time	9:01:00	Ref. Execution Time	9:01:00	Ref. Execution Time	-	Ref. Execution Time	-

Total	MO	Total	Total	MO	Total	Total	MO	Total	Total	MO	Total
0		0	0		0	0		0	0		0
4	OVER	0	1	OVER	0	4	OVER	0	2	OVER	0
4 1	112	0	1 1	112	0	4 1	112	0	2 1	112	0
3	111	0	0	111	2	3	111	2	1	111	0
3	110	0	0	110	2	3	110	2	1	110	0
2 1	108	3	0	108	2	3	108	2	1	108	0
2	105	3	0	105	2	3	105	2	1	105	0
1 1	104	3	0	104	2	3	104	2	1	104	0
1	103	3	0	103	2	3	103	2	1	103	0
1	101	3	0	101	2	3	101	2	1	101	0
0 1	100	3	0	100	2	3	100	2	1	100	0
0	98	1 4	0	98	1 3	3 3	98	1 3	1 1	98	1 1
0	96	4	0	96	3	0	96	3	0	96	1
0	95	1 5	0	95	1 4	0	95	1 4	0	95	1 2
0	93	5	0	93	4	0	93	4	0	93	2
0	91	1 6	0	91	1 5	0	91	1 5	0	91	1 3
0	90	6	0	90	5	0	90	5	0	90	3
0	UNDER	6	0	UNDER	5	0	UNDER	5	0	UNDER	3

A buy order (3 units) is placed at JPY 108 and executed instantly at JPY 100, JPY 104, and JPY 108. The execution at JPY 100 is set as the reference execution.

A buy order (2 units) is placed at JPY 111.

A sell order at JPY 98 (3 units) is placed, and orders match at JPY 111, beyond the sequential trading price range within 1 minute from the reference execution. An STQ is displayed at JPY 110 on the buy side, and immediate execution at JPY 110 occurs due to the inversion in the cumulative amount of shares on the sell side and that of the buy side at JPY 110. The reference execution is cleared

The remaining sell order (1 unit) remains in the order book, and orders match at JPY 98, beyond the special quote renewal price interval from the last execution price. A special quote is displayed at JPY 105 on the sell side.