Guide to TSE Trading Methodology

2019 Edition

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JPX

TOKYO STOCK EXCHANGE

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SECTION 1

— Background information —

Q1 What is the relationship between investors, securities companies, and securities exchanges such as the Tokyo Stock Exchange?

A securities exchange does not only have the role of establishing a market to provide investors with a venue for trading, but also performs operations such as disseminating market information and ensuring appropriate disclosure by listed companies, in order to provide fair and smooth trading on its markets. (At Tokyo Stock Exchange (TSE), regulatory business, which includes examining companies seeking to list on the market, and market surveillance of whether trading is conducted in a fair manner, is entrusted to Japan Exchange Regulation, the self-regulatory organization.)

The parties who may be directly involved in trading at securities exchanges are limited to trading participants of the exchange. In other words, orders placed by individual investors and other securities companies who are not trading participants of the exchange will be routed to the exchange market through a trading participant.

For example, Customer A of securities company A (a trading participant) will be able to place orders directly through securities company A. On the other hand, an order placed by Customer B through securities company B (not a trading participant) will be further routed through securities company A.

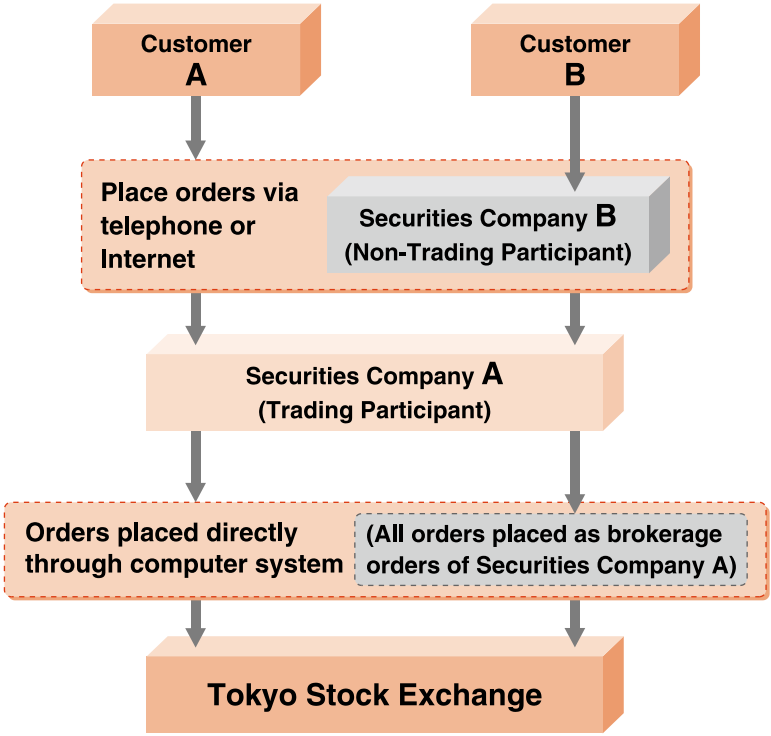
After receiving the brokerage order, securities company A will screen the order for insider trading and other manipulative intent before sending it to the TSE market. Once securities company A is certain that the order is legitimate, it will be placed and declared as a brokerage order.

Trading participants are also able to make trades on their proprietary accounts, that is conduct trading using their own cash and securities. They must declare such orders as proprietary orders when they send them to the market. Trading on proprietary accounts is often referred to as “dealing.”

The sections responsible for brokerage and proprietary trading are strictly segregated within a securities company so that there is no possibility of information being shared between the two.

Orders placed through securities company A will be sent and executed with the securities company A as the party involved in the trade, and settlement at the exchange will also be performed through the same securities company.

How orders are placed



Trading at a securities exchange is performed in this way through securities companies. There are several different methods for individual investors to place orders with securities companies such as internet or online trading, or trading through staff of securities companies. Individual investors are thus able to select a method most suited to their needs, basing their decisions on commission rates, and access to market information.

(In order to facilitate understanding, trading participants are referred to as securities companies in other parts of this guide.)

Q2 How are orders placed with securities companies dealt with in the TSE trading system?

Previously, transactions at TSE were handled by people on the trading floor, known as floor-traders. Many people are probably familiar with the scene of floor-traders of various securities companies competing with each other's bids and offers on a bustling trading floor. However, nowadays trading no longer goes through floor-traders, because trading on the market has been completely computerized.

1. Orders from Securities Companies to TSE

Orders placed by investors to securities companies who are trading participants are sent through the network to TSE.

2. Processing of Order Acceptance at TSE

All orders received from securities companies are sorted according to, amongst other things, the securities company (which company placed the order), the name of the issue, the number of stocks, whether it is a buy or sell order, the order price, the order type, and the time of order acceptance (the time the order reached TSE), and registered to the trading system.

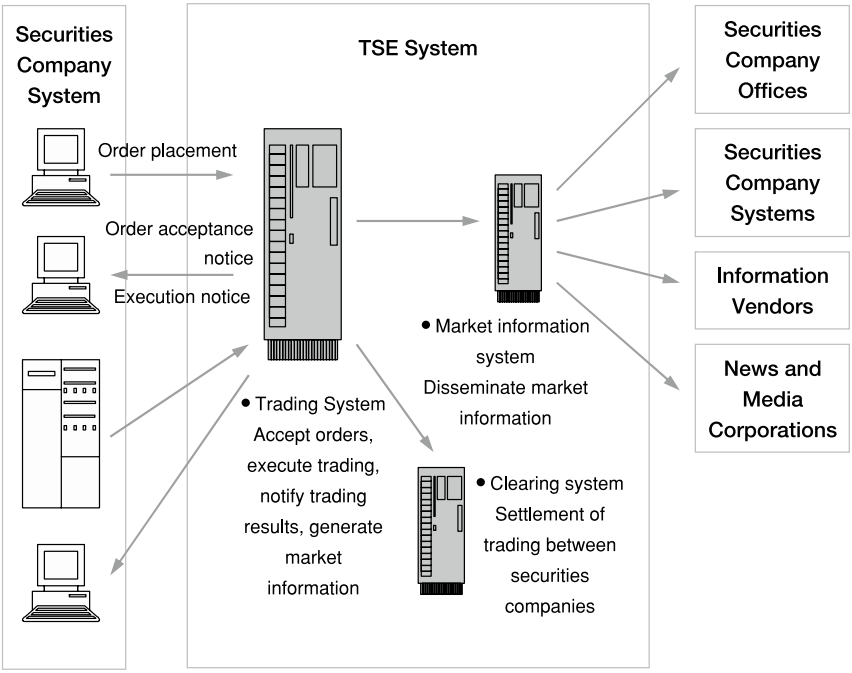
3. Trade Execution at TSE

All registered orders are executed according to TSE trading rules, and execution notices are immediately sent to the securities companies electronically through the network.

4. Dissemination of market information

In addition to accepting orders and trade execution, at the same time TSE also disseminates market information such as “what is the price of X stock”, and “how many shares of Y stocks can be bought or sold at what price” on a real-time basis, allowing individual investors to make informed decisions. Normally, individual investors access such information via information vendor terminals and securities companies’ websites.

Please see Q31 for more details on information provided by TSE.

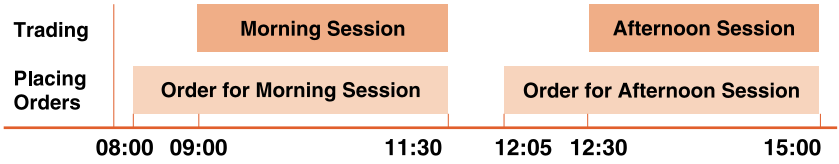


Q3 What time (auction trading sessions) is trading conducted at the TSE ?

Trading hours at TSE are split into two sessions: 09:00~11:30 and 12:30~15:00. The trading session in the morning is known as the “morning trading session”; the one in the afternoon is the “afternoon trading session”.

The first transactions of each session are executed at the “opening auction”, and they are known as the “morning opening auction” and “afternoon opening auction” for the morning and afternoon trading sessions respectively. The end of the sessions is when the “closing auction” is conducted, and they are known as the “morning closing auction” and “afternoon closing auction” for the morning and afternoon trading sessions respectively. The period other than the opening and closing auctions, are known as “continuous auction” or “*Zaraba*”.

The hours at which orders from securities companies are accepted by TSE are 08:00~11:30 and 12:05~15:00, as illustrated in the diagram below.



This diagram only illustrates the hours that TSE accepts orders from securities companies. This may be different from the hours investors may place orders with securities companies. Indeed, the Internet and other developments mean that some securities companies accept orders 24 hours a day.

Orders at TSE are valid for only one day, so if an order is not executed and a customer wishes for it to be placed on the following day, a securities company must place the order again in the morning of the following day.

Q4 What types of orders are there?

Basically there are two types of orders available on the TSE equities market: limit orders and market orders.

Limit orders

Limit orders are orders at specific prices, meaning that investors have stated that they want to "buy at not more than XX yen, or sell at not less than XX yen".
In other words a limit order represents the lowest/highest price at which the investor is willing to sell/buy. Limit orders offer investors the reassurance that they will not find themselves selling/buying at an unexpectedly low/high price. Consequently though, limit orders will not be executed if there are no orders matching the specific price requirements.

Market orders

Market orders are orders by investors who want to "sell or buy at any available price". They do not indicate specific prices, but are executed at the available price on the market at the time.
Market orders take precedence over limit orders, and its ease of execution is a key merit. However, since no price conditions are set for market orders, it is possible that an order may be executed at an unexpected price such as buying at ¥1,050 instead of the expected price of ¥1,000. Thus it is very important that investors exercise caution when placing market orders.

Q5 Are there orders that are placed with specific conditions, such as execution only at the opening auctions or afternoon session closing auctions?

As explained in Q4, the two main types of orders are limit and market orders. There are some specific execution conditions which may be attached to orders. Some examples are given below.

1) Orders to be executed only during the opening auction
2) Orders to be executed only during the closing auction
3) Limit orders that become market orders at the closing auction if not already executed
4) IOC (Immediate or Cancel) orders

1) "Orders to be executed only during the opening auction" are orders that are only executed at the opening auctions of either the morning session or the afternoon session, where the opening price for the day or after the break in the day is determined. When placing such orders with your securities company, attach a condition by giving specific instructions, for example "I want to buy 1,000 shares of XX company at ¥1,500 at the opening auction of the afternoon session (when the opening price for the afternoon session is determined)."
Such orders are only effective during the opening auction. It follows that if a customer's order was not executed during the opening auction, it will become void.
In addition, in the case of an order placed for execution during the opening auction of the morning session, if it was not executed during the morning session (opening price was not determined), the order will be brought over to the afternoon session.

2) "Orders to be executed only during the closing auction" are orders that are only executed at the closing auctions of either the morning session (11:30) or the afternoon session (15:00). When placing such orders with your securities company, attach a condition by giving specific instructions, for example "I want to buy 1,000 shares of XX company at ¥1,500 at the closing auction of the afternoon session."
Such orders are only effective during the closing auction. It follows that if a customer's order was not executed during the closing auction, it will become void.
In addition, if an order that is placed for execution at the closing auction of the morning session was not executed at the closing auction of the morning session, it will not be brought over to the afternoon session.

3) "Limit orders that become market orders at the closing auction if not already executed" (also known as funari orders) are orders that are effective as limit orders up till the end of the auction sessions, and in case they are not executed during the continuous auction or Zaraba, they become market orders during the closing auction of the morning or afternoon sessions. An example of use is a case where a customer says, "It would be best if I could buy them at ¥1,000 or less, but if I can't do that before the closing auction, I will change the order to a market order, because I want to buy the shares at any price."

4) "IOC (Immediate or Cancel) Orders" are orders with the condition to immediately execute all or part of the quantity of the order at a specified or better price and the remaining unexecuted quantity of such order will become void. They are not available in situations where execution does not occur immediately, for example before the opening auction and during a trading halt.

Q6 What is the price increment (tick sizes) when placing orders?

When placing limit orders, the prices at which you can place orders are based on price increments, which are also known as “tick sizes”. Tick sizes are determined by the stock price.

For example, if you wish to place an order for a stock priced at ¥3,000 or less, you can place orders in ¥1 intervals. However, orders for a stock priced above ¥3,000 but ¥5,000 or less cannot be placed at ¥1 intervals at prices such as ¥3,001 or ¥3,673. Instead, orders may only be placed at ¥5 intervals, for example at ¥3,005 or ¥3,675.

Narrower tick sizes are applied to TOPIX100 constituents, which are high liquidity stocks, to offer price improvement and shorter waiting times till order execution.

price				Tick size	
				TOPIX100 Constituents	Other Issues
		¥ 1,000	or less	¥ 0.1	¥ 1
Above	¥ 1,000 ～	¥ 3,000	or less	¥ 0.5	¥ 1
Above	¥ 3,000 ～	¥ 5,000	or less	¥ 1	¥ 5
Above	¥ 5,000 ～	¥ 10,000	or less	¥ 1	¥ 10
Above	¥ 10,000 ～	¥ 30,000	or less	¥ 5	¥ 10
Above	¥ 30,000 ～	¥ 50,000	or less	¥ 10	¥ 50
Above	¥ 50,000 ～	¥ 100,000	or less	¥ 10	¥ 100
Above	¥ 100,000 ～	¥ 300,000	or less	¥ 50	¥ 100
Above	¥ 300,000 ～	¥ 500,000	or less	¥ 100	¥ 500
Above	¥ 500,000 ～	¥ 1,000,000	or less	¥ 100	¥ 1,000
Above	¥ 1,000,000 ～	¥ 3,000,000	or less	¥ 500	¥ 1,000
Above	¥ 3,000,000 ～	¥ 5,000,000	or less	¥ 1,000	¥ 5,000
Above	¥ 5,000,000 ～	¥ 10,000,000	or less	¥ 1,000	¥ 10,000
Above	¥ 10,000,000 ～	¥ 30,000,000	or less	¥ 5,000	¥ 10,000
Above	¥ 30,000,000 ～	¥ 50,000,000	or less	¥ 10,000	¥ 50,000
Above	¥ 50,000,000			¥ 10,000	¥ 100,000

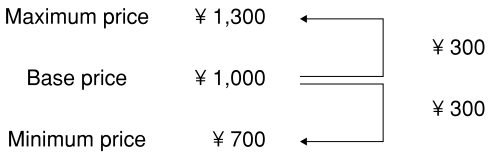
Q7 How are the "daily price limits" determined?

Stock prices are determined on a real-time basis by the equilibrium between bids and offers. However, prices do not reach 10 or 20 times the opening price during the day. This is because TSE sets a price range, known as the "daily price limit", within which price fluctuations are limited in a single trading day.

Stock prices should ideally be determined based on a free market, and price restrictions are deemed undesirable. However, because stock prices reflect investor psychology, there may be sudden large price fluctuations which lead to investors incurring unexpected losses. To prevent such wild volatility, TSE sets daily price limits for each stock, within the range of which stock prices may fluctuate safely.

Daily price limits are set in absolute yen basically according to prices such as the previous day's closing price (This is known as the "base price". Please see Q8 for more details on the base price). Daily price limits are set out in the table on the next page. For example, if the previous day's closing price is ¥1,000, the lower and upper limits will be ¥700 and ¥1,300 respectively. No trading may take place outside of these limits.

Daily price limits also apply to orders, so that no limit orders may be placed outside of these limits.



Daily Price Limits

Base price					Daily price limit (±)
			Less than	¥ 100	¥ 30
¥ 100	or more	～	〃	¥ 200	¥ 50
¥ 200	〃	～	〃	¥ 500	¥ 80
¥ 500	〃	～	〃	¥ 700	¥ 100
¥ 700	〃	～	〃	¥ 1,000	¥ 150
¥ 1,000	〃	～	〃	¥ 1,500	¥ 300
¥ 1,500	〃	～	〃	¥ 2,000	¥ 400
¥ 2,000	〃	～	〃	¥ 3,000	¥ 500
¥ 3,000	〃	～	〃	¥ 5,000	¥ 700
¥ 5,000	〃	～	〃	¥ 7,000	¥ 1,000
¥ 7,000	〃	～	〃	¥ 10,000	¥ 1,500
¥ 10,000	〃	～	〃	¥ 15,000	¥ 3,000
¥ 15,000	〃	～	〃	¥ 20,000	¥ 4,000
¥ 20,000	〃	～	〃	¥ 30,000	¥ 5,000
¥ 30,000	〃	～	〃	¥ 50,000	¥ 7,000
¥ 50,000	〃	～	〃	¥ 70,000	¥ 10,000
¥ 70,000	〃	～	〃	¥ 100,000	¥ 15,000
¥ 100,000	〃	～	〃	¥ 150,000	¥ 30,000
¥ 150,000	〃	～	〃	¥ 200,000	¥ 40,000
¥ 200,000	〃	～	〃	¥ 300,000	¥ 50,000
¥ 300,000	〃	～	〃	¥ 500,000	¥ 70,000
¥ 500,000	〃	～	〃	¥ 700,000	¥ 100,000
¥ 700,000	〃	～	〃	¥ 1,000,000	¥ 150,000
¥ 1,000,000	〃	～	〃	¥ 1,500,000	¥ 300,000
¥ 1,500,000	〃	～	〃	¥ 2,000,000	¥ 400,000
¥ 2,000,000	〃	～	〃	¥ 3,000,000	¥ 500,000
¥ 3,000,000	〃	～	〃	¥ 5,000,000	¥ 700,000
¥ 5,000,000	〃	～	〃	¥ 7,000,000	¥ 1,000,000
¥ 7,000,000	〃	～	〃	¥ 10,000,000	¥ 1,500,000
¥ 10,000,000	〃	～	〃	¥ 15,000,000	¥ 3,000,000
¥ 15,000,000	〃	～	〃	¥ 20,000,000	¥ 4,000,000
¥ 20,000,000	〃	～	〃	¥ 30,000,000	¥ 5,000,000
¥ 30,000,000	〃	～	〃	¥ 50,000,000	¥ 7,000,000
¥ 50,000,000	〃				¥10,000,000

Q8 What price is used as the basis (base price) for the daily price limit?

The price used as the basis (base price) for the daily price limit for a day is basically the closing price of the previous day, except in cases where a special quote was displayed at the closing or the previous day was an ex-dividend day. (Please see Q19 for more details on special quotes.)

Special quotes

Even in the event that there is trading during the "*Zaraba*" or continuous auction session, if there is a large volume of buy or sell orders at the close of the afternoon session, there may be a case where the afternoon session ends with a special quote displayed. In such cases, the special quote is not the last execution price during "*Zaraba*", but instead indicates the balance of the order book at the close of the afternoon session.

For example, if a stock's last recorded transaction at 14:50 is at ¥1,000 but there are no subsequent transactions, and due to a deluge of buy orders trading closes with a special bid quote at ¥1,030, then the following day's base price will be ¥1,030, not ¥1,000 (the daily price limit is ¥300, and the lower and upper limits are ¥730 and ¥1,330 respectively). If the stock price moves to ¥1,330 on the following day, even though it seems that the price has risen by ¥330 since the last execution price, it had essentially risen by ¥300.

This is the main reason why there may be discrepancies between the daily price limits calculated using the closing prices reported in newspapers and such media organizations and the actual daily price limits; these closing prices are usually last execution prices, not last special quotes.

Ex-dividend and ex-rights day

In the case where the rights such as those to receive dividends on shares or subscribe to new shares are granted to shareholders, the base price will be adjusted. Such rights are granted to shareholders on a particular record date. Investors who become shareholders after the record date (known as "ex-dividend day" and "ex-rights day") will not be eligible for such rights.

It follows that investors who become shareholders before the record date will be eligible to receive dividends, while those who become shareholders after that will not. After the record date, the share price will theoretically be lower by the amount equivalent to the dividend amount per share.

← Record Date →	
Shareholders eligible for ¥5 dividend. Share price (closing price) ¥1,100	eligible for ¥5 dividend. Share price (base price) is theoretically ¥1,095 (i.e., ¥1,100 - ¥5)

For example, in cases that the expected dividend is ¥5 per share, the base price after the ex-dividend day is the previous day's closing price minus ¥5 and the daily price limit is based on this revised base price. Therefore, if the previous day's closing price was ¥1,100, the base price after the ex-dividend date will be ¥1,095. The daily price limit on the following day will be ¥300 and trading may take place between the lower and upper limits of ¥795 and ¥1,395 respectively.

In cases relating to rights allotment, we will not be able to do a direct comparison with the previous day because the conditions are different.

Q9 What is a “trading unit”?

Stocks at a securities exchange are traded in quantities that are integral multiples of the predetermined trading unit of each issue.
The trading unit of common shares for all listed domestic companies is standardized to 100 shares, while that of ETFs, REITs, listed foreign companies, and other products varies depending on the issue.

For example, the trading unit for NIPPON STEEL CORPORATION (code: 5401) is 100 shares, as it is trading of common shares of a domestic listed company. It follows that trading will be in lots of 100, 200, or 300 shares. In the case of Nikkei 225 Exchange Traded Fund (code: 1321), on the other hand, the trading unit is set to one unit and said product can be traded in one unit.

The most accessible source of information on trading units of individual stocks is probably the markets section in the newspaper and the JPX website. You will be able to find out the trading unit for each individual stock.

As less variation in trading units results in a reduction in erroneous order placements in stock trading, trading units of all common stocks of listed domestic companies were consolidated to 100 shares on October 1, 2018, so that the market will be more convenient to investors and market users as a whole.

Q10 How do investors exchange funds and the like?

Investors are required to settle their transactions by hand over purchase money, etc. to their securities company on the two business days after the trade date.

For example, transactions on Monday need to be settled on Wednesday, and those on Friday on the following Tuesday.

Relationship between transaction and settlement

Day		Activity
1		Transaction 1
2		Transaction 2
3		Settlement of Transaction 1 (T+2)
4	Record date for dividend payment, etc. to shareholders	Settlement of Transaction 2 (T+2)

SECTION 2

— How trading works on TSE —

Q11 How are stock prices determined? (*Itayose and Zaraba* methods)

At the TSE, stock prices are determined by two methods, the *Itayose* and *Zaraba* methods. The *Itayose* method is mainly used to decide opening and closing prices in consideration of the balance between buy and sell orders; the *Zaraba* method is used to execute orders as and when they enter the order book during continuous auction trading.

Itayose

The *Itayose* method is used to determine prices in the following situations:

1. The opening and closing prices for the morning and afternoon sessions.
2. The initial price after resumption of trading after a trading halt.
3. The price when a special quote is indicated.
   (Please see Q19 for an explanation of special quotes.)
4. The price when a sequential trade quote is indicated.
   (Please see Q23 for an explanation of sequential trade quotes)

The following table illustrates the order book at the start of the morning session. Orders are accepted from 08:00, but no transactions take place before the session opens at 09:00. This means that there are many sell and buy orders at various prices. It is in such situations that the *Itayose* method is used to execute orders.

Offer (sell)	Price	Bid (buy)
A300 B300	Market orders	B300 F100
A100 A300 C400	502	
D1,000 E500 F500	501	D900
G400	500	H800 I100 J100
	499	K1,000 A1,500 B500
C400	498	D100 E400

Note: Numerals - numbers of shares
Letters - securities companies

Zaraba

On the other hand, the *Zaraba* method is used in a continual process to match orders during the rest of the trading session. New orders are matched with those already in the order book. After the opening price is determined, trading is executed as below when the order book is not crossed with orders.

Offer (sell)	Price	Bid (buy)
A100 A300 C400	502	
D1,000 E500 F500	501	
	500	H700 I100 J100
	499	K1,000 A1,500 B500
	498	D100 E400

Note: Numerals - numbers of shares
Letters - securities companies

The TSE uses these two different methods to deal with different order book conditions.

Q12 How are opening prices determined? (Conditions for *Itayose* method)

The term "*Itayose*" comes from the use of paper order books (*Ita*) used to record offers (sell quotes) and bids (buy quotes) on the left and right respectively, with prices indicated in the center, when prices were determined manually. The price is determined using the following 3 requirements:

a. All sell/buy market orders must be executed
b. All limit orders to sell/buy at prices lower/higher than the execution price must be executed
c. At the execution price, the entire amount of either all sell or all buy orders must be executed

Itayose method is also used for stop allocation after the closing of the afternoon auction session, in such instances the conditions will be different from those mentioned above. (Please see Q25 for more details.)

The following table represents the order book. The center column indicates prices, the second column from the left shows the volume of individual offers (sell), and the far left column shows the aggregate volume of offers. The right side of the table is a mirror image and represents the bid side (buy), with individual bids in the second column from the right and the aggregate volume in the far right column. Market orders on both sides are displayed in the first line at the top.

We start by focusing on requirements (a), (b) and (c) as set out above in order to determine the opening price. These 3 conditions aim to determine the price at which the amount of the aggregated* bids and offers balance out. In order to find this price, we look at the prices at which the aggregated bids and offers invert. In this case these are ¥501 and ¥500, so the opening price is likely to be one of these two prices.

	Offer (sell)		Price	Bid (buy)		
	Aggregate	Quantity		Quantity	Aggregate	
		600	Market orders	400		
	4,400	800	502	100	500	
	3,600	2,000	501	700	1,200	
add	1,600	400	500	1,000	2,200	add
	1,200	200	499	800	3,000	
	1,000	400	498	3,000	6,000	

*(Note) Offers are totalled from the bottom (lowest price) of the order book plus market orders.
Bids are totalled from the top (highest price) of the order book plus market orders.

So let's see what happens when we assume an opening price of ¥500.

Offer	Price	Bid
600	M.O.	400
800	502	100
2,000	501	700
400	500	1,000
200	499	800
400	498	3,000

First, according to requirement (a), the market orders of 400 shares to buy and 600 shares to sell are matched, leaving sell orders of 200 shares.

Offer	Price	Bid
200	M.O.	
800	502	100
2,000	501	700
400	500	1,000
200	499	800
400	498	3,000

Next, according to requirement (b), the market sell orders of 200 shares and sell orders of 600 shares at limit prices of ¥499 or less are matched with the buy orders of 800 shares at limit prices of ¥501 or more.
All market orders, and bids/offers above/below ¥500 are matched, i.e., requirements (a) and (b) are satisfied.

Offer	Price	Bid
	M.O.	
800	502	
2,000	501	
400	500	1,000
	499	800
	498	3,000

Finally, the sell orders of 400 shares at a limit price of ¥500 are matched with the buy orders of 1,000 shares at a limit price of ¥500. In this way, the full amount of sell orders of 400 shares are matched with the buy orders of 400 shares.

Offer	Price	Bid
	M.O.	
800	502	
2,000	501	
	500	600
	499	800
	498	3,000

Thus the opening price is determined at ¥500. After the opening price is determined, the order book will look like this.

Now, let's double-check that ¥501 will not be determined as the opening price.

Offer	Price	Bid
600	M.O.	400
800	502	100
2,000	501	700
400	500	1,000
200	499	800
400	498	3,000

According to requirement (a) and as explained above, the market orders of 400 shares are matched leaving sell orders of 200 shares.

Offer	Price	Bid
200	M.O.	
800	502	100
2,000	501	700
400	500	1,000
200	499	800
400	498	3,000

Then, assuming an opening price of ¥501, the remaining market sell orders of 200 shares and sell orders of 100 shares at limit prices of ¥500 or less are matched with the buy orders of 100 shares at limit prices of ¥502 or more.

However, with only 100 shares on the bid side it is impossible to execute all the market sell orders. Therefore the *Itayose* requirement (a) cannot be met at ¥501.

Q13 How are stock prices determined during a continuous auction (*Zaraba*)?.

The *Zaraba* method, or continuous auction method, is the process used to match individual incoming orders with orders in the order book after the opening price has been determined and before the closing price is determined. The tables below illustrate how the *Zaraba* method works.

Let's see an example of how prices are determined during *Zaraba*.

1.

Offer	Price	Bid
	M.O.	200
800	502	
2,000	501	
	500	600
	499	800
	498	3,000

Currently the best offer is 2,000 shares at ¥501, and the best bid is 600 shares at ¥500.

A market buy order for 200 shares arrives in the book.

2.

Offer	Price	Bid
	M.O.	200
800	502	
2,000	501	
	500	600
	499	800
	498	3,000

This new market buy order is matched with the sell order with the highest priority, i.e., the sell order at the lowest price of ¥501.

3.

Offer	Price	Bid
	M.O.	
800	502	
1,800	501	
	500	600
	499	800
1,000	498	3,000

Next, a sell order of 1,000 shares at a limit price of ¥498 is placed. This is first matched with the buy order with the highest priority, i.e., 600 shares at ¥500.

4.

Offer	Price	Bid
	M.O.	
800	502	
1,800	501	
	500	
	499	800
400	498	3,000

The remaining 400 shares of the limit order are then matched with 400 shares out of the next highest priority buy order, i.e., 800 shares at ¥499.

Transactions are carried out continuously in this way under the *Zaraba* method after determination of the opening price during trading hours.

Q14 How is the priority of order execution decided? (Principles of price and time priority)

During auction trading, order priority is determined based on two principles: price and time priority. This ensures that all orders are handled fairly.
The principles of time and price priority apply across the board to all orders, regardless of whether they are orders from general investors and proprietary orders of securities companies. Orders with high priority are executed first.

Principle of price priority

The lowest sell and highest buy orders take precedence over other orders. This method is the same as that applied in a simple bidding auction.
For example, a buy order at ¥1,010 has priority over a buy order at ¥1,000, and will be executed first.

Principle of time priority

Among orders at the same price, the order accepted earliest by the exchange takes precedence.

Let's take a look at how order priority is determined based on the two principles.

Buy and sell orders are placed as illustrated below.

Offer (sell)	Price	Bid (buy)
A300(5) C400(4)	502	
D1,000(3) E900(2) F500(1)	501	
	500	H8,000(1) B100(2) J400(3)
	499	K100(4) A15,000(5)
late early		early late
time of acceptance		time of acceptance

Note: Numerals - numbers of shares
Numerals in brackets - priority
Letters - securities company identifiers

Although there are sell orders at both ¥501 and ¥502, those at ¥501 take precedence over those at ¥502 as a result of price priority. Of the three orders at ¥501, in terms of time priority, securities company F's order takes precedence, followed by securities company E and then securities company D. These are then followed by the orders at ¥502, with securities company C's order taking precedence over securities company A's order.

Looking at the buy side of the order book, we can see that there are orders at ¥499 and ¥500. In this case the orders at ¥500 take precedence due to price priority. Of the three orders at ¥500, securities company H's order takes precedence, followed by securities company B and then securities company J, as a result of time priority.

In this way, each offer and bid is prioritized and executed accordingly.

Q15 Orders before the determination of the opening price, etc. are handled as orders accepted at the same time (i.e., simultaneous orders). How is order priority determined and how are such orders executed?

As explained in Q14, orders are normally executed based on price and time priority. However, in the following circumstances orders are treated as simultaneous orders and time priority is ignored:

a. All orders placed before the opening price is determined during the morning and afternoon trading sessions (Note)
b. All orders placed before the initial price is determined when trading resumes after a trading halt
c. All orders at the daily limit price, which will be executed with market orders at the closing price of the afternoon session

Note: Regardless of whether trading occurred during the opening auction of morning trading session, all remaining orders from the opening auction of the morning trading session will be included in the opening auction of the afternoon session and treated as simultaneous orders.

Since time priority does not apply for simultaneous orders, there is a problem of order priority for orders at the same price. How then is order priority determined?

While orders are executed by order unit during continuous auction, simultaneous orders are allocated and executed by securities companies. In other words, the TSE totals up the quantity of orders from each securities company and arranges them in descending order of aggregated quantity of orders. One trading unit is then allocated to each securities company in turn.

If there are multiple securities companies with the same number of orders, trading units will be allocated based on time priority of the first order placed by the securities company.

This allocation method is also used for allocation at the daily price limit during the end of the afternoon trading session (Please see Q25 for details on “allocation at the daily price limit”).

Since simultaneous orders are executed by securities companies, after execution, a securities company will then allocate the number of shares among their customers according to their internal rules based on the execution results.

Q16 How are simultaneous orders allocated? (Part 1) (Method to determine quantity allocated to each securities company)

As explained in Q15 above, simultaneous orders are allocated not on an order basis, but on a securities company basis. A concrete example of how the quantity allocated is determined is shown below.

1. Let's assume that securities companies A, B, C, and D have placed a number of buy orders at ¥500 before the opening price is determined in the morning trading session. The total volume of these orders is 2,900 shares.

Price	Total bids	Breakdown of bids							
500	2,900	1,000	800	100	200	100	500	100	100
		A	B	C	C	D	A	B	D

2. Since these are simultaneous orders, the TSE totals the number of orders for each securities company and ranks them in descending order of quantity.

Price	Total bids	Breakdown of bids			
500	2,900	1,500	900	300	200
		A	B	C	D

3. As explained in Q15, one trading unit is allocated in turn to each securities company in descending order of number of orders placed. The number of shares allocated to each securities company is determined as follows:

Price	Total bids	TP	A	B	C	D	Total
500	2,900	Shares placed	1,500	900	300	200	2,900
		(1) 1 unit	100	100	100	100	400
		(2) 1 unit	100	100	100	100	400
		(3) 1 unit	100	100	100	—	300
		⋮					
		(15) 1 unit	100	—	—	—	100

Simultaneous orders are allocated in this way to each securities company. With each execution, simultaneous orders will be allocated accordingly until all orders are allocated.

Q17 How are simultaneous orders allocated? (Part 2) (Allocation of orders according to priority with each execution)

Simultaneous orders are allocated to each securities company according to the rules outlined in Q16.

1. When 300 shares are executed at ¥500, TSE allocates 100 shares to securities companies A, B, and C in order of descending order of order quantity as illustrated below.

		Securities Company	A	B	C	D	Total
Price	Bids	Execution	100	100	100	0	300
500	2,600	(1) 1 unit	0	0	0	100	100
	2,900-300	(2) 1 unit	100	100	100	100	400
		(3) 1 unit	100	100	100	—	300
				⋮			
		(15) 1 unit	100	—	—	—	100

2. When the next batch of 800 shares is executed, 100 shares are allocated to each securities company from securities company D, which was not given any the previous time. As such, the 200 shares of securities company D and the 300 shares of securities company C will all be executed.

		Securities Company	A	B	C	D	Total
Price	Bids	Execution	300	300	300	200	1,100
500	1,800	(1) 1 unit	0	0	0	0	0
	2,600-800	(2) 1 unit	0	0	0	0	0
		(3) 1 unit	0	0	0	—	0
				⋮			
		(15) 1 unit	100	—	—	—	100

Even if buy orders (bids) are accepted at ¥500 after the opening price is determined, execution of simultaneous orders will take precedence over such orders, because time priority applies to such orders. It follows that orders accepted after the opening price is determined will only be executed during the continuous trading session after all remaining simultaneous orders (1,800 shares) of securities companies A and B are allocated.

Q18 Is it possible for stock prices to jump suddenly, for example from ¥1,000 to ¥1,100?

Stock prices are constantly fluctuating. However, if prices make sudden leaps, such as from ¥1,000 to ¥1,100, and then immediately fall back down to ¥950, investors placing market orders can find their orders being executed at unexpected and unfavorable prices, leading to heavy losses. All this makes it extremely difficult for both securities companies and investors to judge the timing for placing orders.

On the TSE market, an immediate execution only takes place if the next execution price is within certain parameters based on the previous execution price. These special quote renewal price intervals are outlined in the chart on the next page.

For example, if the most recently executed price was ¥500, the next execution price must be within the range ¥490~510. In other words, it may only fluctuate up to ¥10 in either direction.

So what happens when the next execution looks likely to take place at a price beyond these quote parameters, for example at ¥550 when the preceding price was ¥500? In such instances execution does not take place. Instead, TSE indicates a special quote, which helps to make a smooth transition between such widely divergent prices. (For more details about special quotes, please see Q19.)

Due to higher demand for execution at closing auctions, to facilitate the formation of closing prices, for the closing auction of the afternoon session, TSE broadens the executable price range to twice the renewable price interval from the last price, as shown in the table on the next page.

When a stock price is ¥500 immediately before the closing auction of the afternoon session, the closing auction will be conducted with the price range from ¥480 to ¥520, because the renewal price interval for the closing auction of the afternoon session is ± ¥20; however, if a trade cannot be executed within said price range, the trading will be closed without executing the closing auction.

Special quote renewal price interval

Last stock price or special quote price					Renewal price interval (±)	Renewal price interval for the afternoon closing auction(±)
			Less than	¥ 200	¥ 5	¥ 10
¥ 200	or more	～	〃	¥ 500	¥ 8	¥ 16
¥ 500	〃	～	〃	¥ 700	¥ 10	¥ 20
¥ 700	〃	～	〃	¥ 1,000	¥ 15	¥ 30
¥ 1,000	〃	～	〃	¥ 1,500	¥ 30	¥ 60
¥ 1,500	〃	～	〃	¥ 2,000	¥ 40	¥ 80
¥ 2,000	〃	～	〃	¥ 3,000	¥ 50	¥ 100
¥ 3,000	〃	～	〃	¥ 5,000	¥ 70	¥ 140
¥ 5,000	〃	～	〃	¥ 7,000	¥ 100	¥ 200
¥ 7,000	〃	～	〃	¥ 10,000	¥ 150	¥ 300
¥ 10,000	〃	～	〃	¥ 15,000	¥ 300	¥ 600
¥ 15,000	〃	～	〃	¥ 20,000	¥ 400	¥ 800
¥ 20,000	〃	～	〃	¥ 30,000	¥ 500	¥ 1,000
¥ 30,000	〃	～	〃	¥ 50,000	¥ 700	¥ 1,400
¥ 50,000	〃	～	〃	¥ 70,000	¥ 1,000	¥ 2,000
¥ 70,000	〃	～	〃	¥ 100,000	¥ 1,500	¥ 3,000
¥100,000	〃	～	〃	¥ 150,000	¥ 3,000	¥ 6,000
¥ 150,000	〃	～	〃	¥ 200,000	¥ 4,000	¥ 8,000
¥ 200,000	〃	～	〃	¥ 300,000	¥ 5,000	¥ 10,000
¥ 300,000	〃	～	〃	¥ 500,000	¥ 7,000	¥ 14,000
¥ 500,000	〃	～	〃	¥ 700,000	¥ 10,000	¥ 20,000
¥ 700,000	〃	～	〃	¥ 1,000,000	¥ 15,000	¥ 30,000
¥ 1,000,000	〃	～	〃	¥ 1,500,000	¥ 30,000	¥ 60,000
¥ 1,500,000	〃	～	〃	¥ 2,000,000	¥ 40,000	¥ 80,000
¥ 2,000,000	〃	～	〃	¥ 3,000,000	¥ 50,000	¥ 100,000
¥ 3,000,000	〃	～	〃	¥ 5,000,000	¥ 70,000	¥ 140,000
¥ 5,000,000	〃	～	〃	¥ 7,000,000	¥ 100,000	¥ 200,000
¥ 7,000,000	〃	～	〃	¥ 10,000,000	¥ 150,000	¥ 300,000
¥ 10,000,000	〃	～	〃	¥ 15,000,000	¥ 300,000	¥ 600,000
¥ 15,000,000	〃	～	〃	¥ 20,000,000	¥ 400,000	¥ 800,000
¥ 20,000,000	〃	～	〃	¥ 30,000,000	¥ 500,000	¥ 1,000,000
¥ 30,000,000	〃	～	〃	¥ 50,000,000	¥ 700,000	¥ 1,400,000
¥ 50,000,000	〃				¥ 1,000,000	¥ 2,000,000

Q19 What is a "special quote"?

A special quote is indicated whenever prices look likely to jump beyond a certain price range (special quote renewal price interval) from the last execution price (e.g. the last execution price is ¥500, but the next execution price is likely to be less than ¥490 or more than ¥510). In this way, special quotes are mechanisms to prevent short-term wild price fluctuations.

Special quotes can be indicated at any time during the trading session, whether it is before the opening price has been set or during *Zaraba* trading. They are indicated if there is any likelihood of inappropriate price fluctuations, for example, as a result of a major order imbalance between bids and offers. Special offer quotes are indicated when the next price is anticipated to be at a price lower than the given renewal price interval, and special bid quotes are indicated when the next price is anticipated to be at a price higher than the given renewal price interval. (For details on special quote renewal price intervals, please see Q18.)

Special quote information is publicly disseminated through the TSE market information system, thus notifying market participants of the order imbalance as soon as possible. A special quote displayed in the sell side of the order book is a special offer quote; one on the buy side is a special bid quote. (Please see Q33.)

A special quote indicates to investors that there are orders beyond that price, and encourages them to place balancing orders on the other side of the order book. If such orders are placed, matched, and executed, market equilibrium will have been achieved and the special quote will be removed. If on the other hand, no orders are received the special quote will be renewed at three minute intervals until equilibrium is achieved.

For example, if a buy order is placed at ¥550 immediately after an execution price of ¥500 and there is no sell order below ¥550, a special bid quote of ¥510 (±¥10 as shown in the table in Q18) will be indicated. If no offers are received at this price, the special bid quote will be raised to ¥520 after three minutes, and so on until equilibrium is achieved.

Through the use of a special quote, there will be no sudden fluctuation in prices and investors can pick a time to place an order. In addition, when a special bid quote is displayed and a counter-offer comes in, the investor who placed the bid will be able to get a price nearer to the previous execution price. In other words, execution would take place at a much lower price than the original bid.

Q20 How are prices determined when a special quote is indicated? (Part 1) (E.g.1: Trading is executed at a price widely divergent from the last price)

The renewal of special quotes (SQ) is a gradual process so as to minimize price volatility when the next execution price looks likely to be beyond the special quote renewal price interval. This process is explained below.

Let's assume that a market sell order of 200 shares is placed when the last price is ¥530. At that point the order book is as follows: a sell order of 100 at a limit price of ¥531, a buy order of 100 shares at a limit price of ¥510, and a buy order of 300 shares at a limit price of ¥500.

Offer	Price	Bid
200	M.O.	
100	531	
	530	
	520	
	510	100
	500	300

In theory, this market sell order should be matched with the limit buy order with the highest price (¥510). However, the gap between the two prices (¥530 and ¥510) exceeds the permissible renewal price interval (±¥10).

Note: The last execution price is ¥500 or more but less than ¥700. The price range within which orders may be executed immediately is ±¥10.

Offer	Price	Bid
200	M.O.	
100	531	
	530	
	S 520	
	510	100
	500	300

So TSE indicates a sell SQ at ¥520, a ¥10 decrease from the previous price of ¥530. Once an SQ has been indicated, executions take place using the *Itayose* (Q12) not *Zaraba* method.

Note: 'S' indicates a special quote

Now that the *Itayose* method is being used, the anticipated next price becomes ¥500 and all market orders must be executed. Thus, the market sell order of 200 shares will be matched at ¥500 with the 100 shares of the buy order at ¥510, and 100 of the 300 shares of the buy order at ¥500.

Offer	Price	Bid
200	M.O.	
100	531	
	530	
	520	
	S 510	100
	500	300

However, these orders cannot be executed yet because the expected price (¥500) is beyond the ±¥10 renewal price interval based on the SQ of ¥520. So the SQ is renewed to ¥510 after three minutes.

Offer	Price	Bid
	M.O.	
100	531	
	530	
	520	
	510	
	500	200

Once the SQ is lowered to ¥510, the price of ¥500 is within the ±¥10 renewal price interval, so the orders can be executed at ¥500 after three minutes.

Thus the market sell order of 200 shares is finally matched and executed with the buy order at ¥510 (100 shares) and at ¥500 (100 shares).

Offer	Price	Bid
200	M.O.	
100	531	
	530	
	520	
	S 510	100 200
	500	300

Let's look at another variation. Suppose a new buy order for 200 shares at a limit price of ¥510 is entered while the SQ is at ¥510.

Offer	Price	Bid
	M.O.	
100	531	
	530	
	520	
	510	100
	500	300

In this case, the market sell order is immediately matched with the initial buy order of 100 shares at ¥510 and with 100 of the second limit order at the same price. This leaves a buy order of 100 shares at a limit price of ¥510.

In this way, when an SQ is indicated, investors placing market orders benefit from the best price available and are able to obtain a price nearer the last execution price.

Q21 How are prices determined when a special quote is indicated? (Part 2) (E.g. 2: No execution due to order imbalance)

As explained in Q20, SQs are used when there is a large price discrepancy, but as you will see, SQs are also used to alleviate major imbalances in the order book, for example many more buy orders than sell orders. The use of SQs notifies investors of the situation and encourages opposing orders into the order book to regain equilibrium. Imbalance is not dependent on the number of shares; an SQ will be shown if there is a market order of 100 shares and no opposing orders.

Let's suppose that a large number of bids (buy orders) have been received prior to the setting of the opening price, and that the base price is ¥1,200.

Offer	Price	Bid
100	M.O.	5,000
	⋮	
300	1,260	4,000
800	1,230	3,000
400	1,200	

According to the *Itayose* method, all market orders must be executed in order to set the opening price. However, it is clear from this order book that there are not enough sell orders to fulfil all the buy orders.

Note: In *Itayose*, all market orders must be executed.

Offer	Price	Bid
100	M.O.	5,000
	⋮	
300	1,260	4,000
800	1,230 S	3,000
400	1,200	

TSE indicates a bid SQ at ¥1,230 (at this price, the renewal price interval is ±¥30) to notify the public of an order book imbalance.

Note: The last execution price is ¥1,000 or more but less than ¥1,500. The price range within which orders may be executed immediately is ±¥10.

Offer	Price	Bid
100	M.O.	5,000
	⋮	
300	1,260 S	4,000
800	1,230	3,000
400	1,200	

The SQ is renewed upwards at ¥30 intervals at ¥1,230, ¥1,260 and so on every three minutes until enough opposing orders enter the order book, and execution can take place.

Q22 Why are special quotes sometimes not renewed to their daily limit prices? (Why are there cases where an SQ is not renewed?)

Special quotes cannot be renewed beyond the price of the order that originally prompted the SQ.

Offer	Price	Bid
	M.O.	
100	1,010	
	995	1,000
	980	
	965	
	950	

Let's assume that a buy order for 1,000 shares is placed during *Zaraba* trading, at a limit price of ¥995, ¥45 higher than the last executed price of ¥950. As there is no matching order within the prices from the last execution price, it cannot be executed.

Offer	Price	Bid
	M.O.	
100	1,010	
	995	1,000
	980	
	965 S	
	950	

So a bid SQ of ¥965 is indicated to alert investors of the existence of an order above the last executed price.

Offer	Price	Bid
	M.O.	
100	1,010	
	995 S	1,000
	980	
	965	
	950	

If a matching order is not received after three minutes, the SQ is renewed to ¥980, and if necessary to ¥995 after an additional three minutes. If a market sell order or an offer up to ¥995 comes in, the bid will be executed.

In this case, the bid SQ was displayed to indicate an interest to buy at prices up to ¥995. In other words, it indicates a situation where bids at ¥995 have the highest priority over all bids at other prices. It follows that the bid SQ cannot be renewed above the original bid such as ¥1,010.

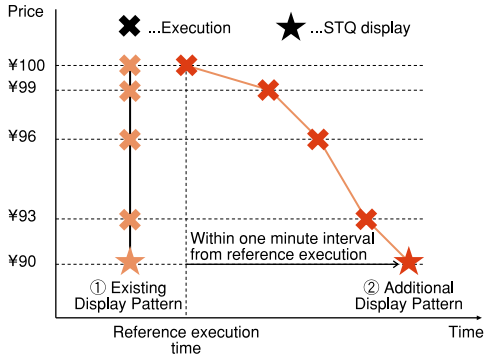
Q23 What is a "sequential trade quote"?

In high-speed order matching and execution, sequential buying-up or selling-down within the special quote renewal price interval may result in instantaneous and sharp price fluctuations without a special quote being displayed at all. The sequential trade quote (STQ) was a new rule that was introduced to inform investors of such instantaneous price movement.

If there is sequential execution that is likely to move beyond twice the special quote renewal price interval from the reference execution price, after execution up to the "reference price + (renewal price interval x 2)" (or in the case of offers, down to the "reference price - (renewal price interval x 2)"), a sequential trade quote will be displayed at this price for one minute. This quote informs investors of an instantaneous and sudden change in price and attracts opposing orders to counter this price movement. An explanation of the sequential trade quote mechanism follows.

[STQ Display Condition]
(1) A single order is likely to trigger a series of executions that will move the price beyond twice the special quote renewal price interval from the reference execution price. (The reference execution price is the last execution price.)
(2) Regardless of whether it is a single order, there is likely to be a series of executions that will move the price beyond twice the special quote renewal price interval within one minute from the reference execution. (The reference execution is set as the first execution during the continuous trading session, and it is reset to the first execution after each time interval elapses.)

STQ Display Pattern



During the one-minute period when the sequential trade quote is shown, the *Itayose* method is used. After this period, if there is an opposing order at a price within the special quote renewal price interval from the sequential trade quote, the order will be executed immediately. If this opposing order is at a price beyond the special quote renewal price interval from the sequential trade quote, the sequential trade quote will not be renewed, instead a new special quote will be shown at the price which is the "sequential trade quote ± special quote renewal price interval."

Even if one minute has not passed since an STQ was indicated, orders can be executed immediately if the sell order volume matches the buy order volume or the balance of the sell order volume and the buy order volume reverses; and the STQ will be removed. However, even in the case, the reference execution price will not be renewed until one minute has passed.

As such, until one minute has passed since the reference execution price was set, even though orders are executed immediately by the Itayose method, the price will not move beyond the range of "reference price ± (renewal price interval x 2)".

Q24 How are prices determined when a sequential trade quote is indicated?

Sequential buying-up or selling-down within the special quote renewal price interval may result in instantaneous and sharp price fluctuations without a special quote being displayed at all. In such cases, a sequential trade quote is shown to inform investors of an instantaneous and sudden change in price and attract opposing orders to counter this price movement.

First of all, sequential execution by a single order is shown as follows:
Let's suppose that there is a market buy order for 1,000 shares when the last price in *Zaraba* trading is ¥100.

Offer	Price	Bid
	M.O.	1,000
700	111	
~~100~~	110	
~~100~~	108	
~~100~~	105	
~~100~~	102	
	100	200

This buy M.O. is first matched with the lowest sell limit order of 100 shares at ¥102, and is sequentially executed with 100 shares each at ¥105, ¥108, and ¥110.

Note: If there are no offers at ¥102 and ¥105, because the next matching order is at ¥108, an SQ will be shown at ¥105. (For details on "special quotes", please see Q19.)

Offer	Price	Bid
	M.O.	600
700	111	
	110	
	108	
	105	
	102	
	100	200

Next, the remaining 600 shares of the buy M.O. will then be matched with the offer of 700 shares at ¥111. However, this would mean sequential execution of a single order (buy M.O. of 1,000 shares) beyond twice the special quote renewal price interval (¥5 for prices less than ¥200) from the last execution price (¥100). So there is no immediate execution at ¥111.

Offer	Price	Bid
	M.O.	600
700	111	
	110 K	
	108	
	105	
	102	
	100	200

Instead a sequential trade quote will be displayed at ¥110, which is twice the renewal price interval (2 x ¥5) from the last execution price (¥100).

In addition, even though orders were executed in *Zaraba* trading up till this point, if a sequential trade quote is displayed, trading will be executed by *Itayose* (Please see Q11.) after one minute.

In *Itayose* trading, all market orders and bids and offers at prices better than the contract price must be executed. So in this case, we can expect execution at ¥111.

In actual operations, the whole process from 1,000 market buy orders coming into the order book up to the display of the buy sequential trade quote at ¥110 is handled at extremely high speed, and may not be visible to the naked eye.

Offer	Price	Bid
	M.O.	600
700	111	
700	110 K	
	108	
	105	
	102	
	100	200

Now let's see what happens if the price of the sell limit order at ¥111 is changed to ¥110 when the sequential trade quote is shown.

Offer	Price	Bid
	M.O.	~~600~~
	111	
100	110	
	108	
	105	
	102	
	100	200

600 shares of the sell limit order of 700 shares will be executed with the buy M.O. at ¥110, and the order book will look like this.

In this way, a sequential trade quote can suppress instantaneous and sudden price movement caused by executions of a single order.

Next, sequential execution by multiple orders within one minute is shown as follows:
Let's suppose that there is execution at ¥100 in *Zaraba* after the first transaction at 9:00, and multiple orders are placed below.

Offer	Price	Bid
	M.O.	100
100	111	
	110	
100	108	
~~100~~	104	
	100	100
	99	100

This buy M.O. is matched with the lowest sell limit order of 100 shares at ¥104.

Offer	Price	Bid
	M.O.	100
100	111	
	110	
~~100~~	108	
	104	
	100	100
	99	100

Next, a new buy M.O. is placed and is matched with the sell limit order of 100 shares at ¥108.

Offer	Price	Bid
	M.O.	100
100	111	
	110 K	
	108	
	104	
	100	100
	99	100

In addition, if a new buy M.O. is placed within one minute from the reference execution (in this case, the first *Zaraba* transaction at ¥100), it will not be instantly matched at ¥110. Instead, a sequential trade quote will be displayed at ¥110, which is twice the renewal price interval (2 x ¥5) from the reference execution price (¥100).
If a new sell order does not come in at ¥110 or below, matching by *Itayose* will occur at ¥111 for 100 shares after the sequential trade quote is displayed for one minute.

In this way, if there is sequential execution due to orders placed by different investors in a short time, a sequential trade quote is indicated.
The reference execution is set as the first execution during the continuous trading session and is reset to the first execution after each time interval elapses.
A sequential trade quote will be displayed even when the series of executions is not in a single direction (for example, ¥100-> ¥96-> ¥97-> ¥93->…).

Q25 What is a "closing auction at the limit price"?

As explained in Q7, all stocks have fixed ranges within which their prices can fluctuate during a day. Occasionally, the price of a stock may rise or fall to their upper or lower daily limit price as a result of strong positive or negative public sentiment. Due to investor decisions to "buy at any price" or "sell at any price", there may be cases of a large number of market orders which cause a major order imbalance.

Normally, *Itayose* is used during the closing auction to determine the closing price. It follows that all market orders and bids and offers at better prices must be executed. However, if there is a large volume of orders on either side of the order book, this condition cannot be fulfilled, there will be no order matching or execution, and the closing price cannot be set.

In order to match and execute orders at the daily limit price, instead of the normal *Itayose* method, TSE uses a special mechanism with relaxed conditions for closing auctions at the limit price to determine the closing price of the afternoon session.

[Requirements of Closing Auction at the Limit Price]

1. All market orders are treated as limit orders at the daily limit price.

2. In the case of a closing auction at the upper daily limit price, if there is a sell order of at least one trading unit, the allocation by the "closing auction at the limit price" will take place. (In the case of the closing auction at the lower limit price, there must be a buy order of at least one trading unit at the lower daily limit price.)

* The "closing auction at the limit price" will take place if one unit is allocated to any securities company. As a result, some securities companies may not receive any units.

These requirements only apply "when there is order matching and execution at the daily limit price at the afternoon closing auction, and also orders cannot be executed under normal *Itayose* requirements".

In other words, these requirements do not apply to the closing auction of the morning trading session, execution at the daily limit prices during continuous auction trading, or execution at the daily limit prices at the afternoon closing auction if normal *Itayose* requirements can be met.

Q26 How are closing auctions at the limit price processed?

During closing auctions at the limit price, shares are executed as follows:

1. The table below is a summary of the situation at the afternoon closing auction. The current price, a bid SQ, is ¥500. Execution cannot take place because there are insufficient sell orders (400 shares) to fulfil the conditions of matching all the market buy orders (1,100 shares).

Offers (sell)	Price	Bids (buy)
	Market Order	1,100 (A:200, B:200, C:300, D:400) (securities companies A, B, C, D)
400 (total of all offers)	500	400 (A:300, E:100)
	[limit price]	(securities companies A and E)
	499	

2. TSE initiates a closing auction at the limit price. This means that all market orders are treated as limit orders at the limit price. This gives us bids for a total of 1,500 shares at ¥500.

Offers	Price	Bids
		1,500 (A:500, D:400, C:300, B:200, E:100) (securities companies A, B, C, D, E)
400 (total of all offers)	500 [limit price]	
	499	

The requirements for the closing auction at the limit price are fulfilled as long as buy orders of one trading unit at the limit price of ¥500 is allocated to any one securities company, orders are matched and the closing price is set.

In a closing auction at the limit price, all orders at the daily limit price are treated as simultaneous orders, and time priority does not apply. (For details on the allocaton of simultaneous orders, please see Q15.)

Since all market orders and orders at the daily limit price are treated as orders at the same price with no time priority, in other words there is no clear order priority. Orders are allocated one trading unit each in turn to securities companies in descending order of total number of shares placed per securities company.

In this case, the sell orders of 400 shares will be allocated in descending order of total number of shares placed. This means that one trading unit will be allocated to each of the securities companies A, D, C, and B in that order.

Q27 Is there a special mechanism for trading newly-listed stocks?

Basically newly-listed stocks are traded in the same way as any other listed stocks. The *Itayose* method is used to determine the initial price (Note 1) and after that the *Zaraba* method is used.

(Note 1: The first execution price after listing is known as the "initial price".)

However, there is one point in which the trading rules for newly listed stocks do differ from those of other listed stocks. This is that the daily price limit does not apply until an initial price has been determined. This rule only applies to "directly listed stock" or stocks that have never been listed or registered on any other market before. This is because they do not have a previous market price, and it is important for a reasonable market price to be determined as quickly and smoothly as possible. Daily price limits can only come into effect once an initial price has been determined. (Note 2)

Also, after the initial price is determined, bids above the upper limit price and offers below the lower limit price will be replaced with orders at the limit prices, and bids below the lower limit price and offers above the upper limit price will become void.

For example, let's consider the case of a directly listed stock that has a public offering price of ¥700. If TSE applies the daily price limits, the stock will only be able to trade between ¥550 and ¥850 (the renewal price interval is ±¥150 for this base price). However, because the daily price limits are not applied until the initial price has been determined it is possible for an initial price of ¥1,000 to be achieved. Daily price limits are applied based on the initial price, so in this case the stock may trade at ¥700~¥1,300 after the initial transaction (the renewal price interval is ±¥300 for this base price). In the case of bids, those above ¥1,300 will be replaced with bids at ¥1,300, and those below ¥700 will become void. In the case of offers, those below ¥700 will be replaced with offers at ¥700, and those above ¥1,300 will become void.

Flexibility is also shown with regard to the application of special quotes. Generally TSE allows special quotes to renew to a price which is 2.3 times the public offering price when the price goes up (depending on the circumstances, special quotes may be renewed at intervals of 5% of the public offering price, or at renewal price intervals), or 75% of the offering price when the price goes down (special quotes will be renewed at renewal price intervals).

As indicated above, these measures do not apply to stocks that transferred from other markets (including overseas markets) as reasonable market prices have already been established for them. Such stocks are treated in exactly the same way as other listed stocks even if the initial price on the TSE market has not been determined.

(Note 2: Before the initial price is determined, orders can only be placed within a certain price range.
Upper price limit: Public offering price* × 4
Lower price limit: Public offering price* ÷ 4
*: On or after the second day of listing, the final quote price)

Q28 What is a trading halt?

A trading halt is used to confirm the truth and content of information before disclosure to the public when information considered likely to materially affect investment decisions becomes available.

TSE temporarily halts trading in stocks of companies about which important information, such as a merger or capital increase, is officially disclosed and TSE deems it is necessary to disseminate it to the public. In such cases, trading resumes 15 minutes after an official announcement is made by those listed companies.

TSE also halts trading in stocks of companies about which unclear but materially important information is broadcasted via information vendors or other news sources. In such cases, trading resumes 15 minutes after an official announcement on the details or truth of such information is disclosed.

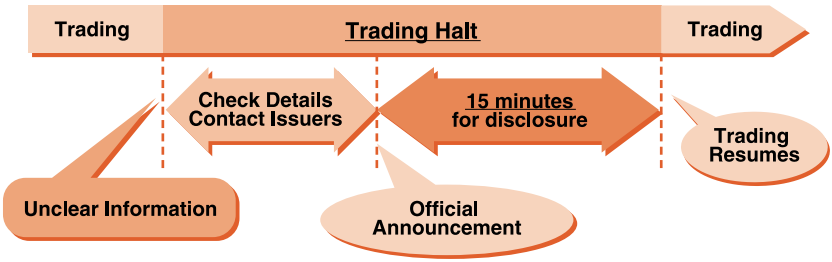
Placement, correction, and cancellation of orders may be made during a trading halt; however, each securities company has its own rules for treatment of orders when trading is halted, so investors should clarify how their orders will be treated during a trading halt.

Trading resumes under the *Itayose* method. All orders placed before the initial price is determined after trading resumes are treated as simultaneous orders.

Timeline of a Trading Halt

When an official announcement is made by a listed company

When confirming and disclosing details of unclear information about a listed company



Q29 What are a Security to Be Delisted, Security Under Supervision, Security on Alert, and Alert Regarding Unclear Information, etc.?

TSE designates listed stocks as a Security to Be Delisted or Security under Supervision in order to warn investors of the situation of certain stocks and to give them enough time to prepare for when TSE decides to delist such stocks. In the market data section of most Japanese newspapers, prices of stocks which have been so designated are printed in a section separate from sector classifications.

Securities Under Supervision

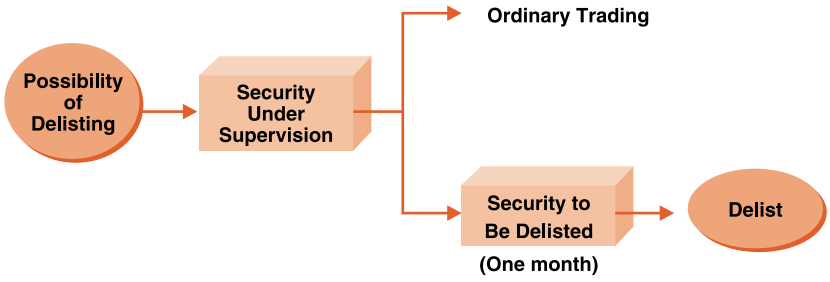
Listed stocks are designated as a Security Under Supervision (examination) or Security Under Supervision (confirmation) when they are likely to fall under any of TSE's delisting criteria so that investors are properly warned and prepared.

If a listed company is found to have made a false statement in documents such as the Securities Report and TSE deems that it is clearly difficult to maintain order in the market if the listed company is not delisted immediately, the stock will be designated as a Security Under Supervision (examination) during the period when TSE examines whether such listed company falls under the delisting criteria. During the period when TSE checks whether such listed company falls under specific delisting criteria such as number of shareholders, the stock will be designated as a Security Under Supervision (confirmation). Trading methods for stocks so designated are the same as those used in ordinary trading.

If a decision is made to delist a stock, it will be designated as a Security to Be Delisted.

Security to Be Delisted

Listed stocks are designated as Securities to Be Delisted in order to warn investors and give them enough time to trade out of the stock after the listed stocks fall under the delisting criteria of TSE and TSE decides to delist them. In principle, TSE delists a stock after one month's trading as Securities to Be Delisted. Trading methods for such stocks are, in principle, the same as those in ordinary trading; however, on the day after a stock is designated as a Security to Be Delisted, TSE may broaden its daily price limits. (Please see Q30 for more details.)



Securities on Alert

Sometimes a listed company is found to have made a false statement in documents such as the Securities Report or TSE deems that a listed company has violated the timely disclosure rules, and if TSE deems that it is necessary for such listed company to make improvements to aspects such as its internal control system, the stock of such company shall be designated as a Security on Alert.

Alert Regarding Unclear Information, etc.

TSE has a system for issuing alerts regarding information about securities or its issuers if it deems necessary to inform investors. In particular, TSE will issue an alert in such situations as: i) when unclear information that is deemed likely to have material impact on investment decisions becomes available in news reports, etc.; ii) when the issuer of a security will require some time to disclose information in an appropriate manner; or iii) when the information that can be immediately disclosed is limited.

When an alert is issued, TSE informs investors of such alert by means including notices to securities companies and posts on the JPX website.

If a stock, for which margin transactions can be made, becomes subject to the alert, TSE may publish outstanding margin transactions of said stock on a daily basis.

Q30 When does TSE broaden the daily price limits?

As explained in Q7, all listed stocks on the TSE market have daily price limits which limit price fluctuation in one day. Sometimes trading in a stock cannot be executed for several days due to these daily price limits even though investors place orders, targeting prices beyond the price limits due to positive or negative information about the stock. In such cases, TSE broadens the stock's daily price limits in order to prompt smooth execution if certain conditions are met. Various conditions are considered before broadening a stock's daily price limits.

TSE disseminates information about an adjustment of daily price limits in advance via channels such as the JPX website.

Abolition of Daily Price Limit

Generally, a stock price will fall rapidly when a stock is designated as a Security to Be Delisted due to reasons such as bankruptcy and civil rehabilitation. However, depending on the current stock price, it sometimes takes several days after such designation for the stock to reach an equilibrium price because the daily price limits prevent the price from fluctuating excessively.

In such cases, TSE monitors the situation of orders in the stock on the first trading day after such designation, and when TSE judges that the stock price will obviously drop, TSE will then abolish the daily price limits (i.e., broaden the lower price limit of the stock to ¥1) on the next trading day in order to prompt smooth execution.

SECTION 3

— TSE market information services —

Q31 What kind of market information is available to investors?

Market information allows investors to assess the current market situation and judge whether stock prices are relatively high or low. This allows investors to make informed investment decisions.

TSE provides the following kinds of market information: the price of every transaction, the opening/highest/lowest/closing prices for each stock, trading value and trading volume, as well as TOPIX (Tokyo Stock Price Index) information, which reflects price trends across the entire TSE First Section.

While information on stock prices and trading volume is only generated after a transaction, the following information on the current situation in the order book is also available for each stock:

Order book information distribution

TSE provides information on order quantity at the various prices for orders (including orders for execution at the closing auction) on a particular stock. Market order quantity is provided when *Itayose* method is used, such as before continuous auction trading sessions and when a special quote is displayed. Other information such as base prices and order book information are also available.
Please note that information available to investors may vary depending on securities companies and content provided by information terminal services.
(Please see Q32 for more details.)

Ten best bid/offer quotes

TSE provides information on order quantities at the best bid (offer) price, the second to tenth highest (lowest) prices, and the aggregated bid (offer) quantity of the eleventh highest (lowest) prices or lower (higher). (Please see Q32 for more details.)

Special quote

Special quotes are indicated when there is an order imbalance. TSE provides information on special quote prices and the aggregated offers and bids up to that price, the nine next best quotes on each side with the total number of shares at those prices, as well as market order quantity (only during Itayose). (Please see Q33 for more details.)

Pre-opening quote

Investors are obviously interested in the state of the order book before the opening auction takes place. So TSE provides a pre-opening quote, which indicates the price at which bids and offers will balance, the nine best bid and offer prices with the total number of shares at those prices, as well as market order quantity (only during *Itayose*). In other words, the pre-opening quote is an estimate of the opening price. This quote changes frequently up until the opening auction as more orders continue to reach the order book. (Please see Q34 for more details.)

TSE provides this information to securities companies and information vendors. Individual private investors can access this information by contracting one of these companies.

Q32 How are the ten best offer/bid quotes indicated?

As mentioned in Q31, TSE provides details of the ten best bid and offer quotes during *Zaraba* trading, allowing investors to assess what orders are most appropriate.

The table below shows that, looking at the ten best offer/bid quote information, an investor placing a market buy order of 1,000 shares can expect immediate execution at ¥501. Likewise, an investor placing a sell order for 1,000 shares at a limit price of ¥499 can expect execution of 600 shares at ¥500 and 400 shares at ¥499.

Order book

Offer	Price	Bid
100	511	
200	510	
200	509	
100	508	
300	507	
200	506	
300	505	
200	504	
300	503	
800	502	
2,000	501	
	500	600
	499	800
	498	600
	497	300
	496	200
	495	100
	494	200
	493	100
	492	200
	491	100
	490	100

Ten offer/bid quotes

Offer	Price	Bid
1,500 (Aggregated)	OVER	
200	510	
200	509	
100	508	
300	507	
200	506	
300	505	
200	504	
300	503	
800	502	
2,000	501	
	500	600
	499	800
	498	600
	497	300
	496	200
	495	100
	494	200
	493	100
	492	200
	491	100
	UNDER	500 (Aggregated)

Q33 How are special quotes indicated?

As mentioned in Q31, TSE indicates the special quote and the aggregate shares on each side of the order book up to the special quote price, the nine next best buy and sell prices with their number of shares, as well as the market order quantity.

The table below shows the order book with a special bid quote of ¥500. TSE calculates the aggregates of offers at prices lower than and equal to that price, and of bids at prices higher than or equal to that price. Information on bids for prices between ¥491 to ¥499 and offers between ¥501 to ¥509, as well as market order quantity is displayed.

Offer (sell)		Price	Bid (buy)	
Aggregate	Share		Share	Aggregate
	400	M.O.	400	
	2,000	OVER		
4,000	100	509		
3,900	200	508		
3,700	300	507		
3,400	100	506		
3,300	600	505		
2,700	500	504		
2,200	300	503		
1,900	200	502	4,000	4,400
1,700	500	501	700	5,100
1,200	400	500 S	1,000	6,100
800	200	499	800	6,900
600	200	498	3,000	9,900
		497	400	10,300
		496	300	10,600
		495	100	10,700
		494	400	11,100
		493	100	11,200
		492	500	11,700
		491	100	11,800
		UNDER	1,000	

Prices and quantities in the highlighted parts are provided

* When a sequential trade quote is indicated, other than the symbol for the quote, the information available will be the same as described above.

Q34 How are pre-opening quotes indicated?

As mentioned in Q31, investors are keenly interested in the state of the order book before the opening price is determined. TSE provides pre-opening quotes in the period prior to the opening auctions (from 08:00 for the morning session, and from 12:05 for the afternoon session). This quote is an estimate of the expected opening price, and only indicates a probability. It is the equilibrium price of current offers and bids. During this period, aggregated bids and offers, the best nine offers at prices higher than the quote price, the best nine bids at prices lower than the quote price, as well as market order quantity are also shown.

The following table illustrates the order book prior to the start of trading. As you can see, the aggregated bids and offers invert at ¥500 and ¥499 respectively. So TSE indicates an aggregated bid of 900 shares at ¥499 and an aggregated offer of 1,000 shares at ¥500. The quantities of limit sell orders between ¥501and ¥509, limit buy orders between ¥490 and ¥498, as well as market orders will also be shown. This informs investors that the opening price is likely to be either ¥499 or ¥500.

Offer (sell)		Price	Bid (buy)	
Aggregate	Share		Share	Aggregate
	400	M.O.	400	
	2,000	OVER		
2,600	100	509		
2,500	200	508		
2,300	300	507		
2,000	100	506		
1,900	100	505		
1,800	200	504		
1,600	300	503		
1,300	100	502		
1,200	200	501	300	700
1,000	400	500	100	800
600	100	499	100	900
500	100	498	300	1,200
		497	200	1,400
		496	100	1,500
		495	300	1,800
		494	300	2,100
		493	100	2,200
		492	300	2,500
		491	200	2,700
		490	100	2,800
		UNDER	1,000	

Prices and quantities in the highlighted parts are provided

As mentioned in Q31, orders continue to be placed into the trading system right up until the opening auction, so the pre-opening price will change to reflect the balance of orders. Thus, a pre-opening quote indicated earlier could very well change after few moments. So placing a market sell order when the stock seemed likely to open slightly higher puts an investor at risk of execution at a lower price caused by subsequent changes in the order book.

SECTION 4

— How trading works on ToSTNeT —

Q35 What is "ToSTNeT"?

ToSTNeT (Tokyo Stock Exchange Trading Network System) is TSE's new trading system for "off-hour trading" and was launched in 1998 in order to respond to the diversified trading needs of investors.
ToSTNeT has three sub-categories, ToSTNeT-1, ToSTNeT-2 and ToSTNeT-3, designed for different types of trading. ToSTNeT-1 provides two kinds of transactions, Single-Issue Transactions and Basket Transactions, which are mainly for institutional investors. ToSTNeT-2 provides Closing Price Transactions for individual investors. ToSTNeT-3 provides Off-Auction Own Share Repurchase Transactions for listed companies.

Type	Purposes	Contents	Launch
ToSTNeT-1	To respond to the diversified transaction needs of investors, especially institutional investors. To facilitate position adjustments. To widen trading participant's business instruments for institutional investors.	Executes block orders by anonymous negotiation through the network. Executes basket orders anonymously and quickly.	June 29, 1998
ToSTNeT-2	To expand trading opportunities for individual investors. To meet investors' needs to trade at closing prices. To provide listed companies with a convenient market for buying their own shares.	Gathers selling and buying orders at closing price formed in the auction market. No limitation on order quantity.	August 7, 1998
ToSTNeT-3	To provide listed companies with a convenient market for buying their own shares.	The buy side is reserved exclusively for the listed company itself, and sell lots equivalent to buy lots are distributed according to allocation methods prescribed by the TSE.	January 15, 2008

Q36 What are the trading rules and criteria for ToSTNeT?

Trading rules and criteria for ToSTNeT vary by type of transaction as follows.

Type of Transaction	ToSTNeT-1			ToSTNeT-2	ToSTNeT-3
	Single-Issue Transaction	VWAP Guarantee Transaction (*1)・VWAP Target Transaction (*2)	Basket Transaction	Closing Price Transaction	Off-Auction Own Share Repurchase
Hours	8:20-17:30	8:20-9:00 11:30-12:30 15:00-17:30	8:20-17:30	8:20-8:45 11:30-12:15 15:00-16:00	8:45
Minimum Trading Unit	Same as auction market	Same as auction market	Minimum of 15 stocks valued at least JPY100 million	Same as auction market	Same as auction market
Price	Within 7% above or below the last price in the auction market(*3)	(1) VWAP Guarantee: Pre-arranged net price of VWAP (2) VWAP Target: Weighted average of execution result targeting auction market VWAP	Within 5% above or below the last prices of the designated stocks in the auction market	(1) 8:20-8:45: - Closing price of previous day - Previous day VWAP (2) 11:30-12:15: - Morning session closing price - Morning session VWAP (3) 15:00-16:00: - Closing price of that day - Afternoon session VWAP or that day's VWAP	Closing price of previous day
Tick Size	JPY 1/10,000	JPY 1/10,000	JPY 1/10,000	(1) Closing Price: Same as auction (2) Market VWAP: VWAP released by TSE (3) VWAP: For cross orders only	Same as auction market Allocation priority: 1st: Agency orders 2nd: Principal orders (Allocate per trading participant)
Settlement	T+2				

VWAP: Volume Weighted Average Price of an individual stock is calculated by dividing its trading value by its trading volume.
(*1) VWAP guarantee transaction: A type of transaction that aims to guarantee VWAP-based executions. It is cross-matched with clients' sell or buy orders at the pre-arranged VWAP net price (brokerage commissions included).
(*2) VWAP target transaction: A type of transaction that aims for VWAP. Traders first execute a transaction for a number of shares that is pre-arranged with a client in an issue in the auction market. The VWAP target transaction is then cross-matched with clients' sell or buy orders at the VWAP of the execution result. Transactions at the VWAP net price of clients' execution results (brokerage commissions included) are also available.
(*3) In case the amount obtained by multiplying the last price in the auction market by 7% is below JPY5, the range will be JPY5 above or below the last price in the auction market.

Q37 What is Share Buyback (or Repurchase) via ToSTNeT?

A listed company conducts a share buyback with prior announcement to repurchase stocks in the auction market, through ToSTNeT-2 or ToSTNeT-3 in cases where shareholders are scheduled to sell their shares due to their actions such as unwinding cross-shareholdings. In the event of such a buyback, an announcement containing details of the buyback or repurchase program is made one day in advance of the actual buyback.

In general, the merits of a share buyback with prior announcement are:

1. Flexibility and low cost: Able to buy flexibly at prices while monitoring daily stock prices. It also does not require statutory declaration unlike takeover bids (TOB) and such other corporate actions.
2. Able to buy a specified number of shares all at once from shareholders.
3. Disclosure dispels concerns over infringing insider trading and market manipulation rules.
4. Secure trading opportunities for other shareholders, as well as ensure fairness and transparency of transactions by adopting TSE trading rules for the buyback.

In addition, transactions through ToSTNeT-2 also provide the following merits:

1. Predetermined repurchase* value due to transaction at a predetermined price.
   * Depending on the shareholder, it may be a sale.
2. Secure trading opportunities for other shareholders by adopting time priority.
3. Avoid direct impact on the market through fixed price transactions performed outside auction trading hours.

TSE started ToSTNeT-3 on January 15, 2008. While ToSTNeT-3 is similar to ToSTNeT-2 in terms of fixed price transactions, it differs from ToSTNeT-2 on the following points.

1. Since buy orders are limited to bids by listed companies which intend to buy, execution of bids is guaranteed.
2. Securities companies who place such bids on behalf of listed companies are required to notify the TSE one business day before the intended bid.
3. Where the number of offers exceeds the number of bids, trading opportunities for other shareholders are secured through matching by the pro rata ratio method.
4. Margin trading is not allowed.

NOTICE

The sole purpose of this guidebook is to explain TSE' s trading methodology, and is not meant in anyway as investment advice. All comments and calculations are given as examples only.

The contents of this guidebook may be altered or deleted by TSE at any time without prior notice.

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