

Proposed Revision to "Contingency Plan with Regard to Trading in the TSE Market"

March 5, 2021

Tokyo Stock Exchange, Inc.

I. Purpose

The arrowhead cash equity trading system failure on October 1, 2020 revealed not only issues with the system itself but also other issues, such as an absence of rules for handling orders in the event of a system failure. In response to this, Tokyo Stock Exchange, Inc. (TSE) established a "Council for Recurrence Prevention Measures" and deliberated with market users on how TSE should develop its rules and regulations. TSE has compiled the proposed revision to the "Contingency Plan with Regard to Trading in the TSE Market" for the purpose of clarifying the standards, etc. for trading halts and trading resumptions.

II. Outline

Please refer to the proposed revision to the "Contingency Plan with Regard to Trading in the TSE Market" as attached.

III. Implementation Date

The attached revisions are scheduled to be implemented in April 2021.

Contingency Plan with Regard to Trading in the TSE Market

Established on July 19, 1999

Revised on March 16, 2004

Revised on April 1, 2007

Revised on January 15, 2008

Revised on June 16, 2008

Revised on January 4, 2009

Revised on March 24, 2014

Revised on September 24, 2015

Revised on July 3, 2017

Revised on MMDD, 2021

Tokyo Stock Exchange, Inc.

Tokyo Stock Exchange, Inc. (TSE) hereby sets forth the following contingency plan with regard to trading in the TSE market, in case TSE is unable to continue or considers it inappropriate to continue the trading of securities, etc. in its market due to failures in TSE's trading systems or other related systems. The plan shall be applied when TSE is unable to continue or considers it inappropriate to continue trading in securities, etc. in its market in instances of not only system failures but also other events such as earthquakes, wind/flood damage, terrorist acts, and stoppage of social infrastructure including power/telecommunications networks.

○ Basic Policy

As TSE's role as the central securities market in Japan becomes more and more important, the potential impact at home and abroad of a trading halt in the TSE market grows increasingly larger. TSE will take measures with respect to trading in its market, comprehensively considering the state of the disaster and/or system failure as well as its social roles while paying due attention to such aspects as the balance between securing trading opportunities and forming prices, as ensuring fairness and reliability in price formation in the market is an important function that TSE should provide.

○ Concrete Plans (Changes are indicated in red.)

Possible Situations	Measures to be taken by TSE	Rationale/ <u>Remarks</u>	Regulatory Basis
I. In the event of a failure in TSE trading systems	<p>1. Matching Systems:</p> <ul style="list-style-type: none"> TSE will halt trading of issues for which continued trading is difficult. <p>2. Order Placement Systems:</p> <p>① Stocks and the like</p> <ul style="list-style-type: none"> <u>TSE will consider whether to halt trading of securities tradable through arrowhead, comprehensively taking into account the past market share based on trading value of trading participants that are unable to participate in trading (generally above 50% <u>of the overall share of trading value</u>) and the state of the system failure (including the number of trading participants, etc. that are unable to participate in trading and their attributes).</u> <u>When considering whether to resume trading, TSE will also take into account the above factors. With regard to decisions on resuming trading, TSE will make sufficient considerations to ensure fair price formation after trading resumes, and will secure order acceptance time and trading hours of at least 15 minutes respectively after trading</u> 	<ul style="list-style-type: none"> It is impossible, as a matter of fact, to execute trades manually. <u>Failures involving trading participants that account for market share above a certain level are considered to have a material impact on market liquidity, <u>and if a diverse range of investors is unable to participate, it is considered that the fairness and reliability in price formation is not likely to be ensured.</u></u> <u>When taking into account the state of the system failure, TSE will consider the attributes of</u> 	<ul style="list-style-type: none"> Rule 29, Item 4 of the Business Regulations, etc. Rule 29, Item 4 of the Business Regulations, etc.

Possible Situations	Measures to be taken by TSE	Rationale/ <u>Remarks</u>	Regulatory Basis
	<p>trading participant is able to place orders.</p> <p>② Convertible bonds (CB) and the like</p> <ul style="list-style-type: none"> ▪ After taking into account the past market share based on trading volume of trading participants that are unable to participate in trading, etc., TSE will consider whether to halt trading in securities tradable through arrowhead. ▪ However ToSTNeT trading will continue as long as any trading participant is able to place orders. 	<ul style="list-style-type: none"> ▪ In light of actual trading activities, TSE will halt trading if it deems necessary. 	
II. In the event of a failure in the TSE Market Information system	<ul style="list-style-type: none"> ▪ If a failure is likely to distort price formation in the market, such as an overall system failure or where normal quote information is not distributed, TSE will halt trading. ▪ In the event that appropriate price checks cannot be conducted for the auction trading price due to a failure in the information distribution function, TSE will halt only ToSTNeT trading. 	<ul style="list-style-type: none"> ▪ If investment continues without sufficient dissemination of market information in a situation such as where there is a failure in the arrowhead information distribution function, it is considered that price formation in the market is likely to be distorted. 	<ul style="list-style-type: none"> ▪ Rule 29, Item 3 of the Business Regulations, etc.
III. In the event of a system failure at the clearing	<ul style="list-style-type: none"> ▪ In the event of a system failure at the clearing organization (Japan Securities Clearing Corporation, Inc. (JSCC)) or the settlement organization(s) (Japan Securities Depository 		

Possible Situations	Measures to be taken by TSE	Rationale/ <u>Remarks</u>	Regulatory Basis
<p>organization or settlement organization(s)</p>	<p>Center, Inc., the Bank of Japan, fund-settlement banks, etc.), the handling of the settlement date, etc. shall be governed by the provisions of JSCC.</p> <ul style="list-style-type: none"> ▪ If it takes several days for the recovery of the systems at the clearing organization or the settlement organization(s), TSE may temporarily halt trading entirely. 	<ul style="list-style-type: none"> ▪ In order to prevent settlement risk from increasing due to accumulation of unsettled transactions. 	<ul style="list-style-type: none"> ▪ Rule 4 of the Business Regulations, etc.
<p>IV. In the event of a likelihood of exceeding the processing capacity of TSE's trading systems or the clearing organization's systems</p>	<ul style="list-style-type: none"> ▪ If there is a likelihood of exceeding the processing capacity of TSE trading systems or the systems used by the clearing organization (JSCC), TSE will halt trading with advance notice. 	<ul style="list-style-type: none"> ▪ It is difficult to continue trading with the processing capacity of each system being exceeded. ▪ If there is a likelihood of exceeding arrowhead processing capacity, TSE will halt trading in securities tradable through arrowhead. ▪ If there is a likelihood of exceeding the processing capacity of an individual trading server or the like in arrowhead, TSE will, as a general rule, halt trading in issues processed by the trading server. 	<ul style="list-style-type: none"> ▪ Rule 29, Item 4 of the Business Regulations, etc.

Possible Situations	Measures to be taken by TSE	Rationale/ <u>Remarks</u>	Regulatory Basis
<p>V. In the event of a system failure on the side of trading participants</p>	<p>1. Stocks and the like</p> <ul style="list-style-type: none"> ▪ <u>TSE will consider whether to halt trading of securities tradable through arrowhead, comprehensively taking into account the past market share based on trading value of trading participants that are unable to participate in trading (generally above 50% <u>of the overall share of trading value</u>) and the state of the system failure (including the number of trading participants, etc. that are unable to participate in trading and their attributes).</u> ▪ <u>When considering whether to resume trading, TSE will also take into account the above factors. With regard to decisions on resuming trading, TSE will make sufficient considerations to ensure fair price formation after trading resumes, and will secure order acceptance time and trading hours of at least 15 minutes respectively after trading resumes.</u> ▪ If only specific divisions at a trading participant are unable to participate in trading due to a failure in the trading participant's internal system, the past market share based on trading value of the affected trading participant shall be the total trading share through the virtual server numbers that are unable to participate in trading only if the trading participant declares such virtual server numbers to TSE in a prescribed form. 	<ul style="list-style-type: none"> ▪ <u>Failures involving trading participants that account for market shares above a certain level are considered to have a material impact on market liquidity, and if a diverse range of investors is unable to participate, it is considered that the fairness and reliability in price formation is not likely to be ensured.</u> ▪ <u>When taking into account the state of the system failure, TSE will consider the attributes of investors, including whether the share of trading value by retail investors is approximately above 30%, and whether the number of trading participants broking retail orders is approximately 5 or more.</u> ▪ <u>In a case where it is deemed inappropriate to make a decision based on the share of trading value and the number of trading participants, TSE will respond flexibly, taking</u> 	<ul style="list-style-type: none"> ▪ Rule 29, Item 3 of the Business Regulations, etc.

Possible Situations	Measures to be taken by TSE	Rationale/ <u>Remarks</u>	Regulatory Basis
	<ul style="list-style-type: none"> • However, ToSTNeT trading will continue as long as any trading participant is able to place orders. <p>2. Convertible bonds and the like</p> <ul style="list-style-type: none"> • After taking into account the past market share based on trading volume, etc. of trading participants that are unable to participate in trading, TSE will consider whether to halt trading in securities tradable through arrowhead. • However, ToSTNeT trading will continue as long as any trading participant is able to place orders. 	<p><u>into account the impact of the system failure. (For example, in the case where a system failure has occurred and its impact cannot be foreseen, since trading needs to be halted immediately, TSE will consider whether to halt trading regardless of the numerical criteria.)</u></p> <ul style="list-style-type: none"> • <u>The trading value, etc. by retail investors will be checked based on data on investment trends by investor category.</u> <p>• In light of actual trading activities, TSE will halt trading if it deems necessary.</p>	

Possible Situations	Measures to be taken by TSE	Rationale/ <u>Remarks</u>	Regulatory Basis
VI. In the event of an earthquake, wind/flood damage, terrorist act, failure in social infrastructure including power/telecommunications networks, etc.	<ol style="list-style-type: none"> 1. When TSE is unable to monitor trading in securities, etc. <ul style="list-style-type: none"> ▪ If TSE concludes that it is difficult to continue operations and is unable to monitor trading in securities, etc. sufficiently in the event that employees of TSE are forced to evacuate the building due to disaster, terrorist act, etc., TSE will halt trading in such securities, etc. 2. When trading participants are unable to participate in trading in stocks and convertible bonds, etc. <ol style="list-style-type: none"> ① Stocks and the like <ul style="list-style-type: none"> ▪ <u>TSE will consider whether to halt trading of securities tradable through arrowhead, comprehensively taking into account the past market share based on trading value of trading participants that are unable to participate in the market (generally above 50% <u>of the overall share of trading value</u>), the state of the disaster or system failure (the number of trading participants, etc. that are unable to participate in trading and their attributes, the state of the entire financial market, etc.), and its social roles.</u> ▪ <u>When considering whether to resume trading, TSE will also take into account the above factors. With regard to decisions on resuming trading, TSE will make sufficient considerations to ensure fair price formation after resuming trading, and will secure order acceptance time and trading hours of at least 15 minutes respectively after trading resumes.</u> ▪ If only specified divisions of a trading participant are unable to participate in trading, the past market share based on trading value of the affected trading participant shall be the 	<ul style="list-style-type: none"> • <u>TSE will coordinate with the relevant authorities and related organizations in order to understand the societal demand for trading and the actual damage situation before deciding on trading halts and resumptions.</u> • <u>In a case where the co-location area cannot be used, TSE will also take into account the trading value from use of the co-location service when making a decision.</u> ▪ <u>When taking into account the state of the system failure, TSE will consider the attributes of investors, including whether the share of trading value by</u> 	<ul style="list-style-type: none"> ▪ Rule 29, Item 3 of the Business Regulations, etc.

Possible Situations	Measures to be taken by TSE	Rationale/Remarks	Regulatory Basis
	<p>total trading share of the participant through the virtual server numbers that are unable to participate in trading only if the trading participant declares such virtual server numbers to TSE in a prescribed form.</p> <ul style="list-style-type: none"> ▪ However, ToSTNeT trading will continue as long as any trading participant is able to place orders. ② Convertible bonds and the like <ul style="list-style-type: none"> ▪ After taking into account the past market share based on trading volume of trading participants that are unable to participate in trading, etc., TSE will consider whether to halt trading in securities tradable through arrowhead. ▪ However, ToSTNeT trading will continue as long as any trading participant is able to place orders. 3. When clearing/settlement is impossible at the clearing organization or settlement organization(s) <ul style="list-style-type: none"> ▪ In the event of a system failure at the clearing organization (JSCC) or the settlement organization(s) (Japan Securities Depository Center, Inc., the Bank of Japan, fund-settlement banks, etc.), the handling of the settlement date, etc. shall be 	<p><u>retail investors is approximately above 30%, and whether the number of trading participants broking retail orders is approximately 5 or more.</u></p> <ul style="list-style-type: none"> • <u>The trading value, etc. by retail investors will be checked based on data on investment trends by investor category.</u> <ul style="list-style-type: none"> ▪ In light of the actual trading activities, TSE will halt trading if it deems necessary. ▪ In order to prevent settlement risk from increasing due to the accumulation of unsettled transactions. 	

Possible Situations	Measures to be taken by TSE	Rationale/ <u>Remarks</u>	Regulatory Basis
	<p>governed by the provisions of JSCC.</p> <ul style="list-style-type: none"> If it will take several days for the recovery of the systems at the clearing organization or the settlement organization(s), TSE may temporarily halt trading entirely. 		<ul style="list-style-type: none"> Rule 4 of the Business Regulations, etc.
VII. When trading is expected to be halted over an extended period of time	<ul style="list-style-type: none"> TSE will consider whether to resume trading after comprehensively taking into account the state of recovery from the disaster and/or system failure (the state of the recovery of the affected system, the situation of trading participants, etc. that are unable to participate in trading, the state of the entire financial market, etc.) as well as its social roles. 	<ul style="list-style-type: none"> TSE will decide after taking into account such aspects as the state of trading participants' responses while paying due attention to securing trading opportunities. 	
VIII. When stock indices are miscalculated	<ul style="list-style-type: none"> In the event that an underlying stock index for index-linked investment fund beneficiary certificates (ETFs, etc.) is miscalculated and TSE deems that it may have a material impact on investment decisions, TSE will halt trading in such beneficiary certificates (ETFs, etc.) and resume trading after disseminating information regarding the miscalculation. 	<ul style="list-style-type: none"> Since miscalculation of the underlying index is highly likely to disrupt price formation of ETFs, TSE will halt trading to disseminate the relevant information. 	<ul style="list-style-type: none"> Rule 29, Item 3 of the Business Regulations, etc.

○ System for notices and communications with trading participants

All of the following communication methods that are used in ordinary times and are available at the time will be used:

Simultaneous broadcast fax, the Internet (JPX website), TSE-WAN (Target), etc.

For communications, etc. between TSE and trading participants/Market Information System users, existing methods will be used.

When checking the share of trading value, TSE will contact the persons responsible for securities trading at each trading participant to check whether they

| are able to participate in trading. Such checks will, as a general rule, be conducted via TSE-WAN (Target).