

## Operational Procedures for Setting SPAN Parameters

As of June 2008  
Japan Securities Clearing Corporation

Items	Procedures	Remarks
I. Objectives	This document specifies the operational procedures to set parameters that are applied when calculating margin via Standard Portfolio Analysis of Risk (SPAN <sup>®</sup> ) system (Hereinafter, these parameters are referred to as “SPAN parameters”).	
II. Regularly-reviewed SPAN parameters	<ul style="list-style-type: none"> <li>• In principle, JSCC sets the following SPAN parameters for each Combined Commodity. On the first business day of a week, JSCC reviews the SPAN parameters and notifies them to its clearing participants. All or part of the SPAN parameters may be modified and then applied on the first business day of the next week.</li> </ul> <p style="margin-left: 2em;">Provided, however, when option’s underlying stock is split or when JSCC deems it necessary due to sudden changes in the financial market etc., JSCC may modify all or part of the SPAN parameters.</p>	<ul style="list-style-type: none"> <li>• SPAN parameters are not set for dormant commodities.</li> <li>• “Combined commodity” refers to a group of futures and options that have the same underlying instrument. (e.g. 10-year JGB group, TOPIX group)</li> </ul>
1 Price Scan Range	<ul style="list-style-type: none"> <li>• Price Scan Range shall be calculated by multiplying the smallest value of daily price fluctuation of the underlying instrument that exceeds the 99% of such value for the last 24 weeks up to a reference date*<sup>1</sup> by X-yen(¥). *<sup>2</sup></li> </ul> <p style="margin-left: 2em;">*<sup>1</sup> The reference date is the last business day of each week. The same shall apply hereinafter.</p> <p style="margin-left: 2em;">*<sup>2</sup> When the underlying instrument is an index, the value shall be rounded up to the nearest quote unit of the futures in that Combined Commodity (with regards to TOPIX group, the value shall be rounded up to the nearest multiples of 3.0 point).</p> <p style="margin-left: 2em;">Provided, however, when there is not enough data of daily price fluctuation of the option’s underlying instrument because it has been listed for less than 24 weeks before its selection as the underlying, or when the calculated Price Scan Range is deemed unsuitable taking the market situation, etc. into account, JSCC may set Price Scan Range on a case-by case basis.</p>	<ul style="list-style-type: none"> <li>• “Value of daily price fluctuation” is the absolute difference between a closing price of an underlying instrument on one day and that of the previous day. (When the previous day falls on a holiday, the preceding business day.)</li> </ul>

	<p>(Note)The underlying instrument and its closing price for each commodity are as follows:</p> <ul style="list-style-type: none"> <li>• Index futures and Index options <ul style="list-style-type: none"> <li>(Underlying instrument)                      Index</li> <li>(Closing price of the underlying instrument)                      Last index</li> </ul> </li> <li>• JGB Futures and JGB Futures Options <ul style="list-style-type: none"> <li>(Underlying instrument)                      Leading contract month of the futures</li> <li>(Closing price of the underlying instrument)                      Clearing price of the leading contract month of the futures</li> </ul> </li> <li>• Securities options <ul style="list-style-type: none"> <li>(Underlying instrument)                      Underlying securities</li> <li>(Closing price of the underlying instrument)                      The last price of the underlying securities.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• The applicable values of “X” is as follows and the same shall apply to any “X” in this document: <ul style="list-style-type: none"> <li>-10,000 for the TOPIX group, the TSE Electric Appliances Index group and the TSE Bank Index group;</li> <li>-1,000 for TOPIX Core 30 group and TSE REIT Index group; and</li> <li>-1,000,000 for 5-year JGB group and 10-year JGB group.</li> </ul> </li> <li>-For each securities group, the value of X is the same as the trading unit of each underlying security,</li> </ul> <ul style="list-style-type: none"> <li>• The “leading contract month” of the JGB futures shall be changed from the current leading contract month to the next leading contract month on the day after the day when the trading volume of the latter exceeds that of the former.</li> </ul>
<p>2 Volatility Scan Range</p>	<ul style="list-style-type: none"> <li>• Volatility Scan Range shall be the smallest value*<sup>3</sup> of daily volatility fluctuation of the Combined Commodity that exceeds the 99% of such value for the last 24 weeks up to a reference date.</li> </ul> <p>*<sup>3</sup> Rounded to two decimal places. The same shall apply hereinafter when calculating volatility.</p> <p>Provided, however, when the data of daily volatility fluctuation of the option’s</p>	

	<p>underlying instrument for the last 24 weeks are not available, or when calculated Volatility Scan Range is deemed unsuitable taking the market situation, etc. into account, JSCC may set Volatility Scan Range on a case-by case basis.</p> <p>(Note) Applicable volatility to calculate Volatility Scan Range shall be calculated for each Combined Commodity by using the following method:</p> <p style="padding-left: 40px;">In principle, a Volatility Scan Range shall be the average of the implied volatility for each option of all contract months weighted by the trading volume of each option (excluding options JSCC deems unsuitable).</p> <p style="padding-left: 40px;">When JSCC deems it inappropriate to use the implied volatility of an option, the historical volatility of its underlying instrument (volatility of prices for the last 20 business days) is adopted to calculate Volatility Scan Range.</p> <p style="padding-left: 40px;">When JSCC deems it inappropriate to adopt the historical volatility calculated in above, JSCC may set applicable volatility to calculate Volatility Scan Range.</p>	
<p>3 Intracommodity Spread (inter-month) Charge per Net Delta</p>	<ul style="list-style-type: none"> <li>• Intracommodity Spread Charge per Net Delta shall be calculated by multiplying the smallest value of daily price differential between contract months of futures that exceeds 99% of such value for the last 24 weeks up to the reference date by X-yen(¥).</li> </ul> <p style="padding-left: 40px;">Provided, however, when a new commodity is listed, or when calculated Intracommodity Spread Charge is deemed unsuitable taking the market situation, etc. into account, JSCC may set it on a case-by case basis.</p> <p>(Note) Daily price differential between contract months of futures shall be the absolute difference between “fluctuation of the clearing price index for the most current contract month” and “fluctuation of the clearing price index for the second current contract month.”</p>	<ul style="list-style-type: none"> <li>• Intracommodity Spread Charge is not imposed on securities options.</li> <li>• Fluctuation of clearing price index is the difference between clearing price on one day and that on the previous day. In the case of JGB Futures, its clearing price shall be used as price index.</li> </ul>
<p>4 Intercommodity Delta Per Spread Ratio</p>	<ul style="list-style-type: none"> <li>• Applicable Delta per Spread Ratio for calculating Intercommodity Spread Credits, which JSCC may subtract from its margin requirement, shall be set as follows.</li> </ul> <p style="padding-left: 40px;">Calculating estimated amount of correlation coefficient ( ) between the following figures for the last 24 weeks up to a reference date (rounded to the nearest hundredth place):</p> <ul style="list-style-type: none"> <li>- The figure obtained by multiplying the closing price of underlying</li> </ul>	

	<p>instrument of the Combined Commodity which forms one side of the intercommodity spread by X-yen(¥);</p> <ul style="list-style-type: none"> <li>- The figure obtained by multiplying the closing price of underlying instrument of the Combined Commodity which forms the other side of the intercommodity spread by X-yen(¥).</li> </ul> <p>Taking the calculated in above into account, applicable Delta per Spread Ratio is set.</p> <p>Provided, however, when a new commodity is listed, or when the calculated Delta per Spread Ratio is deemed unsuitable taking the market situation, etc. into account, JSCC may set it on a case-by case basis.</p>	
<p>5 Intercommodity Spread Credit Rate</p>	<ul style="list-style-type: none"> <li>• Applicable Intercommodity Spread Credit Rate for calculating Intercommodity Spread Credits, which JSCC may subtract from margin requirement, shall be set as follows.</li> </ul> <p>Calculating the absolute value of daily implicit profit or loss in portfolio that forms a pair of intercommodity spread for the last 24 weeks up to reference date. For the purpose of this calculation, when Delta per Spread Ratio is not 1:1, the underlying instrument with larger Delta per Spread Ratio shall be adjusted by using the Ratio.</p> <p>Among the values calculated in above, obtaining the smallest value that exceeds the 99% of the values of all trading days during the period concerned.</p> <p>Intercommodity Spread Credit Rate shall be calculated by dividing the value obtained in above by the sum of the Price Scan Range for each Combined Commodity, and then subtracting the quotient (rounded to the nearest hundredth place) from 1. For the purpose of this calculation, when Delta per Spread Ratio is not 1:1, the Price Scan Range of Combined Commodity with larger Delta per Spread Ratio shall be adjusted by using that Ratio in calculating the sum of Price Scan Range.</p> <p>Provided, however, when a new commodity is listed, or when the calculated Intercommodity Spread Credit Rate is deemed unsuitable taking the market situation, etc. into account, JSCC may set it on a case-by case basis.</p>	<ul style="list-style-type: none"> <li>• “Implicit profit or loss” refers to the profit or loss resulting from a portfolio of one unit of short position of the underlying instrument of the Combined Commodity which forms one side of Intercommodity Spread, and one unit of long position of the other Combined Commodity. (In case of index groups or JGB groups, the underlying instrument multiplied by X-yen (¥) is treated as one unit. The same shall apply hereinafter.)</li> </ul>

6 Short Option Minimum Charge	<ul style="list-style-type: none"> <li>Short Option Minimum Charge per position shall be 2.5% of Price Scan Range of the Combined Commodity to which the concerned option belongs (rounded to the nearest yen).</li> </ul>	
III. Other SPAN parameters	<ul style="list-style-type: none"> <li>Along with the parameters specified in II above, JSCC also sets the following SPAN parameters. While these parameters are not reviewed regularly, all or part of them shall be modified when JSCC deems it necessary.</li> </ul>	
1 Delta Weight	<ul style="list-style-type: none"> <li>For all Combined Commodities, Delta Weights shall be set as follows: <ul style="list-style-type: none"> <li>1) 0.135 for Scenario 1 and 2;</li> <li>2) 0.1085 for Scenario 3, 4, 5 and 6;</li> <li>3) 0.0555 for Scenario 7, 8, 9 and 10;</li> <li>4) 0.0185 for Scenario 11, 12, 13 and 14.</li> </ul> </li> </ul>	
2 Parameters for Scan Risk Scenarios 15 and 16	<ul style="list-style-type: none"> <li>Among the 16 standard risk scenarios for calculating Risk Array Value, on Scenario 15 and 16, Risk Array Value shall be calculated as the 30% of expected profit or loss assuming that the underlying instrument price fluctuate three times as large as the maximum Scan Range and its volatility remains the same.</li> </ul>	
3 Tier	<ul style="list-style-type: none"> <li>No tiers are set for any Combined Commodities.</li> </ul>	
4 Delta per Spread Ratio (Intracommodity)	<ul style="list-style-type: none"> <li>Delta per Spread Ratio for the Intracommodity Spread shall be 1:1 for all instruments.</li> </ul>	
5 Delivery Month Charge	<p>Delivery Month Charge is not imposed on any instrument.</p>	
6 Intercommodity Spread Credit and order of calculation	<ul style="list-style-type: none"> <li>Intercommodity Spread Credits shall be set as follows. <ol style="list-style-type: none"> <li>Among JGB group, Intercommodity Spread Credits shall be applied between 5-year JGB group and 10-year JGB group.</li> <li>Among index group, Intercommodity Spread Credits shall be recognized across TOPIX group, TOPIX Core 30 group, TSE Electric Appliances Index</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>“JGB group” and “Index group” are Combined Commodity Group which refers to a collection of Combined Commodity with the same nature of</li> </ul>

	<p>group and TSE Banks Index group. The priority order in calculation shall be as follows:</p> <ol style="list-style-type: none"> <li>(1) between TOPIX group and TSE Electric Appliances Index group;</li> <li>(2) between TOPIX group and TSE Banks Index group;</li> <li>(3) between TOPIX group and TOPIX Core 30 group;</li> <li>(4) between TOPIX Core 30 group and TSE Electric Appliances Index group;</li> <li>(5) between TOPIX Core 30 group and TSE Banks Index group</li> </ol>	<p>underlying instruments.</p> <ul style="list-style-type: none"> <li>• Intercommodity Spread Credits are not applied between TSE REIT Index group and any other commodity groups for the time being.</li> </ul>
7 Delta Scaling Factor	<ul style="list-style-type: none"> <li>• Delta Scaling Factor shall be 1 for all commodities except Mini TOPIX Futures.</li> <li>• Delta Scaling Factor shall be 0.1 for Mini TOPIX Futures.</li> </ul>	
8 Initial to Maintenance Ratio	<ul style="list-style-type: none"> <li>• Initial to Maintenance Ratio shall be 1 for all commodities and account types (hedger, speculator, participant).</li> </ul>	
9 Adjustment Factor for each account type	<ul style="list-style-type: none"> <li>• Adjustment Factor for each account type shall be 1 for all types of account.</li> </ul>	
IV. Other Announcement of modification to SPAN parameters	<ul style="list-style-type: none"> <li>• When all or part of SPAN parameters are modified, JSCC shall announce the content of modification before the modified parameters are applied.</li> </ul>	<ul style="list-style-type: none"> <li>• Notification is posted on JSCC home page, etc.</li> </ul>

(Note) SPAN® is a registered trademark of Chicago Mercantile Exchange Inc. , used herein under license. Chicago Mercantile Exchange assumes no responsibility in connection with the use of SPAN® by any person or entity.