Operational Procedures for Setting SPAN Parameters

As of June 2016
Japan Securities Clearing Corporation

Items	Procedures	Remarks
I. Objectives	・ This document specifies the operational procedures to set parameters necessary for calculating margin via Standard Portfolio Analysis of Risk (SPAN®) system[1] ("SPAN parameters").	
II. Regularly-reviewed SPAN parameters	・ JSCC sets the following SPAN parameters for each Combined Commodity. On the last business day of a week, JSCC reviews the SPAN parameters and notifies them to its Clearing Participants on the same day. All or part of the SPAN parameters may be modified and then applied on the next business day following the date of notification, if such modification is considered necessary. ・ However, when a stock split occurs for an underlying security or when JSCC deems it necessary due to sudden changes in the financial markets, JSCC may modify all or part of the SPAN parameters.	・ SPAN parameters are not set for dormant commodities. ・ "Combined Commodity" refers to a group of Futures & Options that have the same underlying instrument.
1 Price Scan Range	・ Price Scan Range shall be determined in the following manner: ① For Nikkei Stock Average Group, 10-year JGB Group, Dow Jones Industrial Average ("DJIA") Group and Nifty 50 Group: ・ Price Scan Range will be the product of the Expected Price Volatility calculated by using a Volatility Index[2] designated by JSCC ("VI") and	・ Expected Price Volatility is the value obtained by multiplying the product of the value designated by

[1] 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.

[2] Calculated on a business day count basis

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	"Contract multiplier". ・ VI to be used for the calculation of Price Scan Range will be the smaller of the following (i) or (ii); provided that if such value is smaller than the average VI for past 250 business days counting backwards from the date on which JSCC calculates SPAN Parameters (hereinafter referred to as the "Reference Date"), then the average VI for past 250 business days shall be used: (i) VI on the Reference Date; and (ii) the average VI for past 5 business days counting backwards from the Reference Date. ② For TOPIX Group, JPX-Nikkei Index 400 Group, TOPIX Core30 Group and RN Prime Index Group ・ Price Scan Range will be the product of the Expected Price Volatility and "Contract Multiplier". Expected Price Volatility will be obtained as a product of the VI designated by JSCC and the ratio of historical volatility of the underlying instrument in the relevant Combined Commodity, to the historical volatility of Nikkei Stock Average over the previous 250 business days counting backwards from the Reference Date (hereinafter referred to as "Adjusted VI"). ・ Adjusted VI to be used for the calculation of Price Scan Range will be the smaller of the following (i) or (ii); provided that if such value is smaller than the average Adjusted VI for past 250 business days counting backwards from the Reference Date, then the average Adjusted VI for past 250 business days shall be used: (i) Adjusted VI on the Reference Date; and (ii) the average Adjusted VI for past 5 business days counting backwards from the Reference Date;	JSCC as value to cover 99% of both sides of the relevant price change, on an assumption that the price change of the underlying instrument follows a normal distribution, and 2.58, by the latest closing value of the underlying instrument of the relevant Combined Commodity on the Reference Date (rounded up to the integral multiple of 30yen in case of Nikkei Stock Average group, 1.5 point in case of TOPIX group, 0.03yen in case of 10-year JGB group, and the nearest quote unit of the futures in that Combined Commodity in case of JPX-Nikkei Index 400 group, DJIA group, Nifty 50 group, RN Prime Index group and TOPIXCore30 group). ・ "Contract Multiplier" shall be: - 10,000 for TOPIX group, TOPIX Dividend Index group, TOPIX Core30 Dividend Index group, RN Prime Index group, Nikkei Stock Average Volatility Index ("Nikkei 225 VI") group and TOPIX Banks Index group; - 1,000 for Nikkei Stock Average group, TSE Mothers group, TOPIX Core30 group, Nikkei 225 Dividend Index group and TSE REIT Index

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		group; - 100 for JPX-Nikkei Index 400 group, DJIA Group, Nifty 50 Group, TAIEX group and FTSE China 50 Index group; - 1,000,000 for 5-year, 10-year and 20-year JGB Groups; and - the trading unit for securities underlying the option contracts for various securities group.
	③ Other Combined Commodities ・ Obtain the products of the smallest value of the daily Price Fluctuation Ratio of the underlying instrument that exceeds the 99%[3] of such value for each of the Period a. and b. and the latest closing value[4] of the underlying instrument of the relevant Combined Commodity on the Reference Date. Price Scan Range will be the value calculated by multiplying the larger product by "Contract Multiplier": Period a. 4 weeks up to the reference date Period b. 54 weeks up to the reference date	・ Price Fluctuation Ratio means a quotient of the absolute value of the difference between the closing value of the underlying instrument on a business day and the previous business day and the closing value of the underlying instrument on the previous business day.
	・ However, for each of the Combined Commodities, if the value so obtained is not considered appropriate, Price Scan Range shall be the product of Y% of the closing value of the underlying instrument in the Combined Commodity on the Reference Date[5] and X yen for the period designated by JSCC at each occasion.	・ Assuming a case where the level of Price Scan Range is obviously low comparing to the price fluctuation of the underlying instrument. ・ Y% will be notified separately.

[3] Calculated on a class value basis

[4] To be rounded up to the nearest integral multiple of the quote unit used for auction trading of relevant Futures contract, if there is Futures contract in the relevant Combined Commodity, and to the nearest integral multiple of the quote unit at the closing level of the underlying instrument of the relevant securities group in case of securities group

[5] To be rounded up to the integral multiple of the tick size for the auction trading of the futures contracts in the relevant Combined Commodity

Items	Procedures	Remarks
	・ When JSCC deems it inappropriate to apply the value obtained in the above manner as Price Scan Range, in light of the market conditions, or the underlying instruments of options have been listed for less than 54 weeks, JSCC will set the Price Scan Range on a case-by case basis. (Note)The underlying instrument and its closing value for each Combined Commodity are as follows: ・Combined commodity containing Index Futures and Index Options: (Underlying instrument) Index (Closing value of the underlying instrument) Last index ・Combined commodity containing JGB Futures, Options on JGB Futures and Dividend Index Futures (Underlying instrument) Leading Contract Month (Closing value of the underlying instrument) Settlement Price for Leading Contract Month ・Combined commodity containing Securities options (Underlying instrument) Underlying securities (Closing value of the underlying instrument) Last price of the underlying Securities	・ The "Leading Contract Month" of the JGB Futures, shall shift from the current Leading Contract Month for auction trading to another contract month for auction trading on the business day immediately following the day on which the trading volume of the latter exceeds the volume of the former. ・ The "Leading Contract month" of Dividend Index Futures is the contract month with the highest liquidity.
2 Volatility Scan Range	・ Obtain the smallest values of daily change in base volatility of the Combined Commodity that exceeds the 99% of such value for each of the Periods a. and b.	

Items	Procedures	Remarks
	Volatility Scan Range shall be the larger of the values. Period a. 4 weeks up to the reference date Period b. 54 weeks up to the reference date ・ When JSCC deems it inappropriate to apply the value obtained in the above manner as Volatility Scan Range, in light of the market conditions, or when the underlying instruments of options have been listed for less than 54 weeks, JSCC will set the Volatility Scan Range on a case-by case basis. (Note) Base volatility to calculate Volatility Scan Range shall be applied for each Combined Commodity in the following order: ① Average of the implied volatility of options for relevant Combined Commodity ② If the implied volatility prescribed in ① is unavailable, or JSCC deems it inappropriate, the historical volatility of underlying instrument for each Combined Commodity shall be used ③ If JSCC deems it inappropriate to adopt the volatilities prescribed in ① above, and ②, an applicable volatility shall be set by JSCC on a case-by-case basis.	
3 Intracommodity Spread (inter-month) Charge per Net Delta	・ Intracommodity Spread Charge per Net Delta shall be determined in the following manner: ① Various Securities Group ・ Value equal to 10% of the Price Scan Range for the relevant securities group. ② Other Combined Commodities	

Items	Procedures	Remarks
	・ The smallest value of the daily price differential between contract months of Futures[6] that exceed 99% of such value for each of the Periods a. and b., multiplied by "Contract Multiplier". The larger of the values shall be applied. Period a. 4 weeks up to the reference date Period b. 54 weeks up to the reference date ・ When JSCC deems it inappropriate to apply the value obtained, in light of the market conditions, or when a new commodity is listed, JSCC will set the Intracommodity Spread Charge on a case-by case basis.	
4 Intercommodity Delta Per Spread Ratio	・ Delta per Spread Ratio for calculating the Intercommodity Spread Credits, which are subtracted from the IM requirement, shall be set as follows: ① For the period of 54 weeks prior to the reference date, the daily settlement prices of the front contract month of the futures contract[7] on one leg of the spread are multiplied by "Contract Multiplier". These are then divided by the daily settlement prices of the futures contract[8] on the other leg of the spread multiplied by "Contract Multiplier"; ② Taking the values calculated in ① into account, an applicable Delta per Spread Ratio is set. ・ When JSCC deems it inappropriate to apply the value obtained, in light of the market conditions, or when a new commodity is listed, JSCC will set the	

6 "Daily price differential between contract months of Futures" shall be the absolute value of the difference between the day on day change of the settlement price of front contract month and the settlement price of second current month.

7 If the Combined Commodity does not have a futures contract listed, then the closing value of the underlying instrument of the relevant Combined Commodity is used.

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Items	Procedures	Remarks
	Intercommodity Delta per Spread Ratio on a case-by case basis.	
5 Intercommodity Spread Credit Rate	・ The Intercommodity Spread Credit Rate, which is used for calculating Intercommodity Spread Credits that are subtracted from the IM requirement shall be set as follows: ① Calculate the absolute value of the daily Implicit Profit or Loss[9] for each Intercommodity Spread, over 54 weeks prior to the reference date. ② Taking the values calculated in ①, obtain the smallest value that exceeds 99% of all values for each of the Periods a. and b.: Period a. 4 weeks up to reference date Period b. 54 weeks up to reference date ③ The Intercommodity Spread Credit Rate applicable to the relevant Intercommodity Spread shall be calculated[10] by dividing the largest value obtained in ② by the sum of the Price Scan Range for each Combined Commodity, and then subtracting the quotient from 1. ・ When JSCC deems it inappropriate to apply the value obtained, in light of the market conditions, or when a new commodity is listed, JSCC will set the	・ "Implicit Profit or Loss" refers to the profit or loss resulting from a portfolio of one unit[11] of short position and one unit of long position for the front month futures contract on each side of the Intercommodity Spread.

9 When calculating the Implicit Profit or Loss in the portfolio forming a:b (a < b) Intercommodity Spread, where the Delta per Spread Ratio is not 1:1, it shall be calculated assuming the long b/a unit of the underlying instrument of Combined Commodity on the leg with smaller Intercommodity Delta per Spread Ratio.

10 When calculating the sum of Price Scan Range of portfolio forming the a:b (a < b) Intercommodity Spread, where the Delta per Spread Ratio is not 1:1, the Price Scan Range of Combined Commodity with smaller Delta per Spread Ratio shall be adjusted by b/a.

11 For the Combined Commodity which has multiple contract size (i.e. large contract and mini contract), one unit means one unit of large contract.
For the Combined Commodity which does not have a futures contract listed, one unit means the closing value of the underlying instrument multiplied by "Contract Multiplier."

Items	Procedures	Remarks
	Intercommodity Spread Credit Rate on a case-by case basis.	
6 Short Option Minimum Charge	・ Short Option Minimum Charge per position shall be 0.4% (0.01% for 10-year JGB group) of the closing value of the underlying instrument on the reference date, multiplied by "Contract Multiplier". ・ When JSCC deems it inappropriate to apply this value, in light of the market conditions, JSCC will set the Short Option Minimum Charge on a case-by-case basis.	
III. Other SPAN parameters	・ Along with the parameters specified above, JSCC also sets other SPAN parameters, which are reviewed on ad-hoc basis.	
1 Delta Weight[12]	・ For all Combined Commodities, Delta Weights shall be set as follows: 1) 0.135 for Scenarios 1 and 2; 2) 0.1085 for Scenarios 3, 4, 5 and 6; 3) 0.0555 for Scenarios 7, 8, 9 and 10; and 4) 0.0185 for Scenarios 11, 12, 13 and 14.	
2 Parameters for Scan Risk Scenarios 15 and 16	・ For Scenarios 15 and 16, the Risk Array Value shall be calculated by taking 30% of the profit or loss for shift to the underlying instrument price which is three times as large as the Scan Range, with no volatility shift.	

[12] Delta Weight is the probability of each scenario which is used for calculating Net Delta position.

Items	Procedures	Remarks
3 Tier	・ No tiers are defined for any Combined Commodity.	
4 Delta per Spread Ratio (Intracommodity)	・ The Delta per Spread Ratio for the Intracommodity Spread shall be 1:1 for all instruments.	
5 Delivery Month Charge	・ Delivery Month Charges are not imposed on any instrument.	
6 Combination and order for calculating Intercommodity Spread Credits	・ Intercommodity Spread Credits shall be defined in the order detailed in the Annex[13].	
7 Delta Scaling Factor	・ Delta Scaling Factor shall be: 10 for JPX-Nikkei Index 400 Options 1 for all commodities except Mini 10-year JGB Futures, Mini TOPIX Futures, Mini Nikkei 225 and JPX-Nikkei 400 Options 0.1 for Mini 10-year JGB Futures, Mini TOPIX Futures and Mini Nikkei 225	
8 Initial to Maintenance Ratio	・ Initial to Maintenance Ratio shall be 1 for all commodities and account types (hedger, speculator, participant).	

[13] No Intercommodity Spread Credits are calculated for the TSE REIT Index group, TOPIX Dividend Index Group, TOPIX Core30 Dividend Index Group, Nikkei 225 Dividend Index group and Nikkei 225 VI group.

Items	Procedures	Remarks
9 Adjustment Factor for each account type	・ Adjustment Factor for each account type shall be set as 1.	

Items	Procedures	Remarks
IV Ad Hoc Modification of SPAN Parameters	・ If, on any day (“Trigger Date”), the value specified in the following items for each Combined Commodity exceeds 90% of the base value of Price Scan Range[14], SPAN parameters related to the Combined Commodity falling under the relevant judgment conditions will be recalculated as Trigger Date is deemed as the Reference Date, and if modification is considered to be necessary, all or a part of SPAN parameters will be modified on the next business day following the Judgment Date ① Nikkei Stock Average Group, TOPIX Group and JPX-Nikkei Index 400 Group Rise/decline in the closing value of the Nikkei Stock Average, or TOPIX, compared to previous business day ② 10-year JGB Group Rise/decline in the settlement price for the Leading Contract Month of the 10-year JGB Futures compared to previous business day (absolute value of the difference) ③ Nikkei 225 VI Group Rise/decline in closing value of Nikkei 225 VI compared to previous business day (absolute value of the difference) ④ TOPIX Dividend Index Group, TOPIXCore30 Dividend Index Group and Nikkei 225 Dividend Index Group Rise/decline in the settlement price for the Leading Contract Month of the Nikkei 225 Dividend Index group compared to previous business day (absolute value of the difference)	・ Prior notice will be given to clearing participants at the time of any ad hoc modification. ・ Margins based on parameters after modification will be deposited on the second business day from the Judgment Date ・ Judgment of SPAN Parameters is not conducted on the last business day of a week. ・ For the Nikkei Stock Average Group, TOPIX Group and JPX-Nikkei Index 400 Group, SPAN parameters for each Combined Commodity are to be modified if the conditions are met with respect to the Nikkei Stock Average Group or the TOPIX Group or both. ・ For TOPIX Dividend Index Group, TOPIXCore30 Dividend Index Group and Nikkei 225 Dividend Index Group, recalculation of SPAN parameters will also be conducted for each of the Combined Commodities if the conditions are met with respect of Nikkei 225 Dividend Index Group.

[14] The value obtained by dividing the Price Scan Range by “Contract Multiplier”.

Items	Procedures	Remarks
1. Price Scan Range after Ad Hoc Modification	・ To be calculated by using the same method as that used for regular update. ・ However, for any of the Combined Commodities, Price Scan Range will not be modified when the new Price Scan Range is smaller than the previous Price Scan Range, and if the relevant value is considered inappropriate in light of the market conditions, then the Price Scan Range shall be the value JSCC considers appropriate.	
2. Volatility Scan Range after Ad Hoc Modification	・ To be calculated by using the same method as that used for regular update. ・ However, if the value is smaller than the previous value, then no modification shall be implemented, and if the relevant value is considered inappropriate in light of the market conditions, then the Volatility Scan Range shall be the value JSCC considers appropriate.	
3. Intracommodity Spread (inter-month) Charge per Net Delta after Ad Hoc Modification	・ To be calculated by using the same method as that used for regular update. ・ However, if the new value is smaller than the previous value, then no modification shall be implemented, and if the relevant value is considered inappropriate in light of the market conditions, then the Intracommodity Spread Charge per Net Delta shall be the value JSCC considers appropriate.	
4. Short Option Minimum Charge after Ad Hoc Modification	・ To be calculated by using the same method as that used for regular update. ・ However, if the new value is smaller than the previous value, then no modification shall be implemented, and if the relevant value is considered inappropriate in light of the market conditions, then the Short Option Minimum Charge shall be the value JSCC considers appropriate.	

Items	Procedures	Remarks
IV Other Announcement of modification to SPAN parameters	・ When all, or part, of the SPAN parameters are modified, JSCC shall announce the detail of the modification before the modified parameters are applied.	・ Notification shall be posted on JSCC's website.

(Note) Descriptions concerning Combined Commodities related to new products whose trading is scheduled to start at the same timing as the launch of next J-GATE (scheduled in July 19th, 2016) (TSE Mothers Futures, TAIEX Futures, FTSE China 50 Index Futures and JPX-Nikkei 400 Options) will apply from the timing when calculating SPAN Parameters for such Combined Commodities.

List of Order of Calculation related to Intercommodity Spread Credit

Before adding new Products (Until July 15th, 2016)

Combined Commodity Group: JGB		
Order	Combination of Commodity Groups	
1	20-year JGB Group	10-year JGB Group
2	10-year JGB Group	5-year JGB Group
3	20-year JGB Group	5-year JGB Group

Combined Commodity Group: Index		
Order	Combination of Commodity Groups	
1	Nikkei Stock Average Group	TOPIX Group
2	Nikkei Stock Average Group	JPX-Nikkei Index 400 group
3	Nikkei Stock Average Group	TOPIXCore30 Group
4	Nikkei Stock Average Group	RN Prime Index Group
5	TOPIX Group	JPX-Nikkei Index 400 group
6	TOPIX Group	TOPIXCore30 Group
7	TOPIX Group	RN Prime Index Group
8	JPX-Nikkei Index 400 group	TOPIXCore30 Group
9	JPX-Nikkei Index 400 group	RN Prime Index Group
10	TOPIXCore30 Group	RN Prime Index Group
11	Nikkei Stock Average Group	TOPIX Banks Index Group
12	TOPIX Group	TOPIX Banks Index Group
13	JPX-Nikkei Index 400 group	TOPIX Banks Index Group
14	TOPIXCore30 Group	TOPIX Banks Index Group
15	RN Prime Index Group	TOPIX Banks Index Group
16	Nikkei Stock Average Group	Dow Jones Industrial Average Group
17	TOPIX Group	Dow Jones Industrial Average Group
18	JPX-Nikkei Index 400 group	Dow Jones Industrial Average Group
19	TOPIXCore30 Group	Dow Jones Industrial Average Group
20	RN Prime Index Group	Dow Jones Industrial Average Group
21	Nikkei Stock Average Group	Nifty 50 Group
22	TOPIX Group	Nifty 50 Group
23	JPX-Nikkei Index 400 group	Nifty 50 Group

Combined Commodity Group: Index		
Order	Combination of Commodity Groups	
24	TOPIXCore30 Group	Nifty 50 Group
25	RN Prime Index Group	Nifty 50 Group
26	Dow Jones Industrial Average Group	Nifty 50 Group

After adding new Products (After July 19th, 2016)

Combined Commodity Group: JGB		
Order	Combination of Commodity Groups	
1	20-year JGB Group	10-year JGB Group
2	10-year JGB Group	5-year JGB Group
3	20-year JGB Group	5-year JGB Group

Combined Commodity Group: Index		
Order	Combination of Commodity Groups	
1	Nikkei Stock Average Group	TOPIX Group
2	Nikkei Stock Average Group	JPX-Nikkei Index 400 group
3	Nikkei Stock Average Group	TOPIXCore30 Group
4	Nikkei Stock Average Group	RN Prime Index Group
5	TOPIX Group	JPX-Nikkei Index 400 group
6	TOPIX Group	TOPIXCore30 Group
7	TOPIX Group	RN Prime Index Group
8	JPX-Nikkei Index 400 group	TOPIXCore30 Group
9	JPX-Nikkei Index 400 group	RN Prime Index Group
10	TOPIXCore30 Group	RN Prime Index Group
11	Nikkei Stock Average Group	TOPIX Banks Index Group
12	TOPIX Group	TOPIX Banks Index Group
13	JPX-Nikkei Index 400 group	TOPIX Banks Index Group
14	TOPIXCore30 Group	TOPIX Banks Index Group
15	RN Prime Index Group	TOPIX Banks Index Group
16	Nikkei Stock Average Group	TSE Mothers Group
17	TOPIX Group	TSE Mothers Group
18	JPX-Nikkei Index 400 group	TSE Mothers Group
19	TOPIXCore30 Group	TSE Mothers Group
20	RN Prime Index Group	TSE Mothers Group
21	TOPIX Banks Index Group	TSE Mothers Group
22	Nikkei Stock Average Group	Dow Jones Industrial Average Group
23	TOPIX Group	Dow Jones Industrial Average Group
24	JPX-Nikkei Index 400 group	Dow Jones Industrial Average Group
25	TOPIXCore30 Group	Dow Jones Industrial Average Group

Combined Commodity Group: Index		
Order	Combination of Commodity Groups	
26	RN Prime Index Group	Dow Jones Industrial Average Group
27	TOPIX Banks Index Group	Dow Jones Industrial Average Group
28	TSE Mothers Group	Dow Jones Industrial Average Group
29	Nikkei Stock Average Group	Nifty 50 Group
30	TOPIX Group	Nifty 50 Group
31	JPX-Nikkei Index 400 group	Nifty 50 Group
32	TOPIXCore30 Group	Nifty 50 Group
33	RN Prime Index Group	Nifty 50 Group
34	TOPIX Banks Index Group	Nifty 50 Group
35	TSE Mothers Group	Nifty 50 Group
36	Dow Jones Industrial Average Group	Nifty 50 Group
37	Nikkei Stock Average Group	TAIEX Group
38	TOPIX Group	TAIEX Group
39	JPX-Nikkei Index 400 group	TAIEX Group
40	TOPIXCore30 Group	TAIEX Group
41	RN Prime Index Group	TAIEX Group
42	TOPIX Banks Index Group	TAIEX Group
43	TSE Mothers Group	TAIEX Group
44	Dow Jones Industrial Average Group	TAIEX Group
45	Nifty 50 Group	TAIEX Group
46	Nikkei Stock Average Group	FTSE China 50 Index Group
47	TOPIX Group	FTSE China 50 Index Group
48	JPX-Nikkei Index 400 group	FTSE China 50 Index Group
49	TOPIXCore30 Group	FTSE China 50 Index Group
50	RN Prime Index Group	FTSE China 50 Index Group
51	TOPIX Banks Index Group	FTSE China 50 Index Group
52	TSE Mothers Group	FTSE China 50 Index Group
53	Dow Jones Industrial Average Group	FTSE China 50 Index Group
54	Nifty 50 Group	FTSE China 50 Index Group
55	TAIEX Group	FTSE China 50 Index Group