Comprehensive Improvement Plan of the Risk Management System

Revised February 13, 2009

March 26, 2008

Japan Securities Clearing Corporation

This English version of "Comprehensive Improvement Plan of the Risk Management System" is prepared only for reference purpose. The original Japanese version shall prevail in case if any discrepancy exists."

Ⅰ. Objective of the plan

- Japan Securities Clearing Corporation assumes obligations, as a core clearing organization in Japan, in connection with all cash transactions that are executed at any of the stock exchanges in Japan, as well as derivatives transactions at Tokyo Stock Exchange, hence undertaking an important role of providing a clearing and settlement infrastructure.
- Clearing organizations in general concentrate credit and settlement risks of clearing participants and in that respect they are required to identify and manage the risks appropriately and to have settlement guarantees in place in case of a clearing participant's default. In addition to regular monitoring of the clearing participants, JSCC requires clearing participants to deposit collateral such as clearing funds as settlement guarantees based on the principle of self-responsibility. Furthermore, in readiness for an event of a shortfall in the collateral, financial resources are in place to bear the loss through loss compensation by the exchanges, shareholders' equity of JSCC, and ultimately by clearing participants as a whole.
- While a framework is secured through these measures above to avoid systemic risks in settlement systems, nevertheless utmost efforts should be made to avoid situations where losses are absorbed by clearing participants. To this end, it is of critical importance to take necessary steps such as enhancing the system to manage the positions of clearing participants and refining the collateral system to minimize losses in the event of a default.

- Strengthening the risk management system, which will lead to improved safety in the securities market in Japan, is also a key issue in terms of maintaining the competitive edge in the international arena. It is urgent to outline the direction of actions for achieving the risk management standard with respect to the credit exposure management and collateral requirements presented in the "Recommendations for Central Counterparties" by CPSS/IOSCO which is regarded as the global standard for clearing organizations.
- For these reasons, JSCC is reviewing the risk management system across the board to develop a comprehensive improvement plan to attain a higher level of risk management comparable to the global standards.

II. Items under review

1. Collateral system and other settlement guarantees

(1) Acceleration of the deadline for the deposit of the daily recalculated clearing fund requirement for cash products (on the day after the transaction day)

Issues in the current system	Direction of amendment	Remarks
• With regards to clearing funds for cash products, when the daily recalculated clearing fund requirement is applied, the deadline for the deposit is set to the second day after the transaction day. This leaves risks associated with increase in open positions or changes in price that may occur between the trading day	• When the daily recalculated clearing fund requirement for cash products is applied, the required amount shall be deposited on the day after the transaction day. • The daily recalculated clearing fund requirement, when applied, currently reverts to the monthly required amount on the second day after the settlement day. This	• When the daily recalculated clearing fund requirement is applied, the required amount will be notified via the clearing system by approximately 8:00 am on the first day after the transaction day. • The time limit to deposit clearing funds, etc., is extended from the current 12:00 noon to 2:00 pm to facilitate smoother administration. • The time limit to deposit margin funds for derivatives remains unchanged at 12:00 noon. However, additional deposit that exceeds the required amount and refund may be accepted until 2:00 pm.

Issues in the current system	Direction of amendment	Remarks
and the deposit uncovered. • When the required amount reverts to the monthly required amount, the refund is not made until the second day after the settlement is complete, causing excessive burdens.	will change to the first day after the settlement day.	• Please see Exhibit 1 for administrative time flows in detail. • Under the current system, the deposit received in excess of the required amount for the clearing funds can be transferred, upon application, to the DVP settlement progress collateral. However, this transfer facility will be terminated because the required amount for the clearing funds and the excess amount will be determined late in the day of one day earlier compared to the current system, which leaves insufficient length of time to process the transfer.

(2) Intra-day deposit of collateral

Issues in the current system	Direction of amendment	Remarks
• With regard to the clearing funds for cash products, a time lag of one day remains even when the time limit to deposit is brought forward to the first day after the transaction day as suggested in (1) above. • With regards to derivative products, both the transfer of mark-to-market margin and deposit of transaction margin for derivatives take place on T+1, leaving the same time lag of one day. (The emergency	• Intra-day deposit will have a significant effect on operational procedure, and hence this is regarded as the next step following the introduction of the next-day deposit after transaction day. • One possible method is to re-calculate the required collateral amount at a certain point in the morning based on the open positions at that time and	• The following points would require attention in implementing the change. ✓ Sufficient length of time should be allowed between the time when required amount is notified to clearing participants and the time limit to deposit, in order to reduce the operational burden and ensure operational accuracy. ✓ Internal systems for participants are "batch processing" rather than real-time, and hence intra-day

Issues in the current system	Direction of amendment	Remarks
transaction margin is required to be deposited intra-day when prices fluctuate significantly, and hence the time lag is shortened. However, the emergency transaction margin is not triggered by intra-day increase in positions, and hence the relevant risk is not covered.) • According to CPSS-IOSCO recommendations, participants' risks should be monitored during the day, and should shortages arise, intra-day deposit of collateral is required.	require deposit before a certain time during the day.	calculation of the required amount would demand significant burden to their systems. ✓ Operational burden and funding cost during the day will increase. ✓ Funding on the day will bear a greater burden. ✓ The required amount concerning customer positions will increase the burden on participants.

(3) Review of collateral calculation, etc.

①Calculation of clearing funds for cash transactions

Issues in the current system	Direction of amendment	Remarks
• Under the current method of calculating the required amount of clearing funds for cash transactions, those positions subject to the same settlement day are netted before the position value is multiplied by the relevant price volatility value. The risk born by JSCC, however, should be measured based on the netted open positions regardless of the settlement day, and hence the amount may currently be over-estimated. • Similarly, the position value with respect to each settlement day is currently multiplied, in the order from older positions, by the price volatility value for 4 days, 3 days or 2 days calculated as "those assumed to be substantially high volatility value based on the historical data". However, the position values can be re-evaluated using actual latest prices, and hence the risk may be over-estimated (or under-estimated) in some cases.	【Daily recalculation】 • All open positions, regardless of the settlement day, will be netted before calculating the required amount. • In relation to price fluctuations, the required clearing fund amount will be obtained by aggregating the amount equivalent to the "mark to market value" calculated as the sum of the difference between traded price and the latest prices for each issues and the amount of "potential loss value" calculated by multiplying the value of the latest position evaluated based on the latest prices by a certain volatility value. • The least value of daily volatility of individual stocks which exceeds the 99% of the last 120 days historical daily volatility of each stock will be used as the "certain volatility value" to calculate the potential loss value mentioned above. 【Monthly required amount calculation】 • The calculation of monthly required amount will be altered according to the changes made	• Please refer to Exhibit 2 for calculation in detail. • Please refer to Exhibit 3 for the simulation using the new calculation method. • The current method covers 99% of the volatility for the last 60 days. However, it takes the highest value for calculation and does not exclude seemingly outliers. The method will be changed to cover 99% for the last 120 days and exclude the highest value. • When the daily recalculated clearing fund requirement exceeds the monthly required amount, then the former becomes the required amount. This remains unchanged.

Issues in the current system	Direction of amendment	Remarks
• Furthermore, TOPIX is currently used as surrogate of the price of each issue to calculate the price volatility value, but this may not necessarily reflect the risk of each issue appropriately as each issue's volatility varies.	to the daily recalculation of clearing fund requirement. • In particular, it will be "the least amount that exceeds the 95% of the amount of change in the daily recalculated clearing fund requirement for the last three months.	

②**Calculation of clearing funds for derivative products**

Issues in the current system	Direction of amendment	Remarks
• The risks arising from derivatives products are managed through "transfer of mark-to-market margin" and "deposit of transaction margin." However, there is a time lag of one day between the transaction day and the deposit day for both measures. • Deposit of clearing funds are required in order to cover the risks during the time lag. However, the amount required is to "cover the 95% of the daily mark-to-market margin payments for the last three months", and hence the risk associated with the failure of transaction margin payment is not covered.	• Required amount for clearing funds will be the sum of "the least amount that exceeds the 95% of the daily mark-to-market margin payment for the last three months" and "the least amount that exceeds the 95% of the daily increase of required transaction margin (for proprietary and customer positions in total) for the last three months."	• Please refer to Exhibit 4 for the calculation in detail. • Please refer to Exhibit 5 for the simulation results using the new calculation method. • The current calculation is based on "the mark-to-market margin payment" and "the daily decrease in the net value of options for proprietary account." This will change to be based on "the mark-to-market margin payment" and "the daily increase of required transaction margin (for proprietary and customer positions in total)."

③ SPAN risk parameters in calculating transaction margin

Issues in the current system	Direction of amendment	Remarks
• Currently, SPAN risk parameters are regularly recalculated once in three months, leaving a time lag between the change in market environment and the time when it is reflected in the parameters.	• SPAN risk parameters will be recalculated once a week.	• The recalculated parameters will be published on the first business day of every week, and the new values will be applicable from the first business day of the following week. • Variables which are used to calculate transaction margin funds (SPAN parameters) will be further refined.

(4) Amendment of evaluation method of collateral securities

Issues in the current system	Direction of amendment	Remarks
• With regards to evaluation of collateral securities, it is desirable to refine the evaluation method to take into account the characteristics of each product.	• Deposit of bonds (excluding Japanese government bonds, Japanese government guaranteed bonds, yen-denominated bonds as specified under the "Financial Instruments and Exchange Law" Enforcement Order 2-11, local government bonds, and convertible warrant bonds) will be restricted to those which JSCC regards as eligible due to their being rated over a certain	• Bonds that are regarded by JSCC as eligible due to their being rated over a certain rating refer to those which JSCC acknowledges that all ratings acquired from eligible rating agencies are equivalent to A or over. • With the introduction of restriction by rating, the restriction to bonds issued by listed companies will be lifted. • When a deposited bond needs to be excluded as a collateral security due to its rating being lowered, a certain moratorium period will be set. • With regards to the assessment rates depending on the remaining years to maturity, the same rates as those adopted by the Bank of Japan and Japan Government Bond Clearing Corporation will be used

Issues in the current system	Direction of amendment	Remarks
	rating. Assessment rate will be set depending on the remaining years to maturity.	in principle. • Please refer to Exhibit 6 for changes to the assessment rate in detail. • With regards to individual stocks, it is perceivable to set an assessment rate for each stock depending on the liquidity. However, it is difficult to set a level for individual stocks, and furthermore, it will cause excessive operational burden. As for setting by the market where the individual stocks are listed, the listing criteria of each market does not necessarily correspond to liquidity, and there are cases where liquidity varies significantly by stocks even in the same market. Hence, the evaluation method of stocks is not subject of amendment at this occasion.

(5) Settlement guarantees in the case that loss amount caused by a default exceeds the collateral

Issues in the current system	Direction of amendment	Remarks
• Clearing funds are set to maintain the level which covers the risks caused by 99% of the daily price fluctuations over a certain period in the past. Should the price fluctuate beyond this level, the risks need to be covered by separate	• Collecting special clearing charge from other participants creates concerns that it may lead to more participants defaults, and it ought to be avoided wherever possible. It is desirable to set the amount of financial resources other than collateral which could cover most default cases. • In particular, the targeted amount of financial resources should	

Issues in the current system	Direction of amendment	Remarks
financial resources. ・ In addition to refining the collateral system, the above mentioned financial resources need to be reviewed.	be set to cover the expected loss caused by the default of the participant with the second largest position, which means to cover 99% of the participants, when the daily price fluctuation is larger than the 99.7% of the daily price fluctuations ever since the markets are established.	

2. Enhancement of regulatory measures concerning risk management

(1)Measures concerning position management

① Request for reports on risks

Issues	Summary of measures	Remarks
・ If the position risk of a clearing participant which holds excessive volume of positions in relation to its financial base materializes as losses, the possibility of the default of the participant will be very high. Depending on the size of such a default, collection of special clearing charge from other participants may be necessary, and thus	・ When the estimated amount of position risk of a participant exceeds a certain ratio in relation to its own capital, the participant is required to report the reasons, etc.	・ The estimated amount of position risk is obtained by subtracting the "deposited amount of the transaction margin on customer positions," which is the collateral the defaulted clearing participant could secure in the worst case, from the expected loss amount that may arise due to price fluctuations that cover a significant percentage of the past movements based on the unsettled positions. ・ With regards to participant's own capital, the "net assets" for financial instruments firms, and the "shareholders equity" for those without net worth figures are used. ・ The "certain ratio" which triggers the demand for a report is "100%", at which the estimated risk amount is at par with the net assets. ・ Please refer to Exhibit 7 for the calculation method in detail. ・ With regards to items for reporting, it is expected to include the following:

Issues	Summary of measures	Remarks
measures shall be taken to avoid such a situation from occurring.		for customer positions, the level of distribution and the situation of customers with large positions; for proprietary positions, assets for hedging and the risk management method, etc.

② Measures to increase collateral, etc.

Issues	Summary of measures	Remarks
• Same as above	• In cases when JSCC finds a clearing participant having excessive risks from the report on risks, etc., JSCC has the right to take measures including increasing the required collateral amount for the positions on proprietary account of the clearing participant or the positions based on a certain customer orders, up to the necessary level.	• The cases of having excessive risks refer to the situations where the risks are not appropriately managed in the cases that proprietary positions are not hedged or positions are held by an extremely small number of customers. • Increase of the collateral amount, etc., refers to an increase of collateral (clearing fund or transaction margin), restriction on issues or devaluation of securities specified as collateral, and restriction on substitution by securities (introduction of cash ratio). • When the collateral is to be increased for transactions relating to a customer (including a non-clearing participant) of the clearing participant concerned, a committee comprising of third parties will be consulted beforehand to assess the appropriateness. • The above mentioned committee will be a permanent committee, which will be newly established.

③ Instruction to improve position status

Issues	Summary of measures	Remarks
• Same as above	• Despite the fact that measures including increase in the collateral amount mentioned above have been taken, if the situation which triggered the above measures persists with the reason that, for example, the clearing participant does not execute compulsory offset transactions when the customer concerned does not deposit margin exceeding the amount to cover its shortfall, or if it is deemed necessary to promptly resolve any concern over certainty of fulfillment of obligations to JSCC by the clearing participant with the reason that, for example, the positions are further increased, then JSCC has the right to instruct the clearing participant concerned to improve their position status up to the necessary level. • The clearing participant that is instructed to improve its position status must take particular measures to resolve the situation including increase of the capital, transfer of unsettled positions to other clearing participants, or settlement of the positions and others by the deadline set by JSCC on a case-by-case basis.	• The instruction to improve position status will only be issued concerning derivative products, and not for cash product. • When a customer of a clearing participant wishes to transfer its positions to the other clearing participant, the transfer will be permitted provided the other clearing participant gives consent to it. • An instruction to improve the position status will be issued after the above mentioned committee has been consulted. • If the clearing participant concerned is dissatisfied with the instruction for position status improvement, the participant may raise an objection against JSCC before a predetermined time and date. • Customer positions will also be subject to the instruction to increase collateral amount and improve the position status, and the agreement for setting up futures and options trading account at the relevant exchange will need to be revised accordingly. • A clause will be stipulated that dismisses minor negligence of the clearing participant concerned and JSCC in case an instruction for position status improvement is issued and the clearing participant concerned settles the outstanding positions that presented the reason for such an instruction.

(2) Introduction of regulatory measures concerning collateral

Issues	Summary of measures	Remarks
• With regard to collateral securities, if one participant deposits the same issue in a large volume, the necessary collateral value may not be secured as the impact on the market would be significant should it be disposed of. • Collateral securities are deposited as collateral in case of default of a participant, and thus securities issued by the parent or subsidiary company of the clearing participant are not appropriate, let alone those issued by the clearing participant itself. • In case of market fluctuations and deterioration of financial standing of an individual participant, it is desirable to restrict the deposit of collateral securities, from the viewpoint of ensuring the certainty of collateral value.	• When a clearing participant deposits collateral securities of more than 5% of outstanding shares of a particular issue, JSCC has the right to restrict the deposit of the issue concerned, or to lower the valuation. • When securities issued by the clearing participant (including the parent company, subsidiary, and a subsidiary of the parent company) are deposited, JSCC has the right to restrict the deposit of the issue concerned, or to lower the valuation. • When it is deemed inappropriate to value the collateral securities at a stipulated market price and the assessment rate due to reasons such as significant change in the market, or when JSCC deems it necessary in terms of ensuring the fulfillment of obligations by clearing participants, JSCC has the right to restrict the deposit of the issue concerned, to lower the valuation, or to introduce a cash ratio (to restrict the substitution by securities).	• In order to obtain information concerning the parent and subsidiary companies, submission will be required of the "Report concerning affiliated companies" as specified under the Cabinet Office Regulations article 173, 188 and 195 regarding financial instruments business. • The first and the second items in the left column are only applicable to the clearing deposit and transaction margin for derivatives (for proprietary positions and replacement deposit) deposited by clearing participants.

(3) Clarification of rules on measures against participants with regards to risk management

Issues	Summary of measures	Remarks
• It is not clearly stated in the rules that submission of reports and materials are required and inspections are carried out for the purpose of ensuring fulfillment of obligation by clearing participants. • The events and situation that will prompt measures against clearing participants and the procedure to inspect clearing participants are not clearly stated in the rules. • When a measure is taken against a clearing participant, this is currently announced to the public. However, this is not clearly stated in the rules.	• In the rules concerning the submission of reports and materials and inspection against clearing participants, JSCC clearly states that the purpose is "to investigate the reliability of fulfillment of obligation by clearing participants" • JSCC clearly states that the measures against clearing participants, namely, "improvement instruction", "suspension of obligation assumption" and "cancellation of clearing participant qualification", are implemented in the following situations. ① Notification or report is not made in a timely manner, or false notification or report is submitted. ② Investigation or submission of materials is refused, obstructed, or avoided, or materials requested are not submitted, or false materials are submitted. ③ A problem is found with the business execution structure. ④ Measures taken by JSCC are violated. ⑤ A participant is in violation of the Business Rules, etc.; or a participant erodes the credibility of JSCC or other clearing participants and it is deemed necessary from the viewpoint of	• The reasons for taking measures as currently specified (when a participant is in violation of the Business Rules, etc.; or when a participant erodes the credibility of JSCC or other clearing participants and it is deemed necessary from the viewpoint of operating obligation assumption business, etc.,) remains unchanged. • The scope and timing of any public announcement will be decided on a case-by-case basis depending on the details.

Issues	Summary of measures	Remarks
	operating obligation assumption business, etc. ・"Rules concerning investigations" that specifies the investigation procedures will be made. ・Any measures taken against clearing participants will be announced to the public within six months.	

(4) Submission of audit reports

Issues	Summary of measures	Remarks
• Financial information submitted by a clearing participant is not ascertained by a third party.	• Submission of an audit report once every business year will be imposed.	・A business report or an annual report with an audit report attached will be accepted as an alternative. ・With regards to participants who are exempt from an accounting audit stipulated in Company Law, documents which JSCC recognizes as appropriate will be accepted as an alternative.

III. Timing for implementation*

Item	Expected time of implementation
1．Review of settlement guarantees, such as collateral system	
（1）Earlier deposit of the temporarily amended clearing funds for cash products (on the day after the transaction day)	From July 2008 (Implemented)
（2）Intra-day deposit of collateral	Continue the review to aim to implement in the second half of 2009 or later
（3）Review of collateral calculation, etc.	
① Calculation of clearing funds for cash transaction	From July 2008 (Implemented)
② Calculation of clearing funds for derivative products	From July 2008 (Implemented)
③ SPAN risk parameters in calculating margin funds for derivatives	From June 2008 (Implemented)
（4）Review of evaluation method of collateral securities	In September 2009
（5）Settlement guarantees when loss amount caused by a default exceeds the collateral	—
2．Review of regulatory measures concerning risk management	
（1）Measures concerning position management	
① Request for reports on risks	From June 2008 (Implemented)
② Measures to increase collateral, etc.	From June 2008 (Implemented)
③ Instruction to improve position status	From June 2008 (Implemented)
（2）Introduction of regulatory measures concerning collateral	From June 2008 (Implemented)
（3）Clarification of regulations concerning measures against participants with regards to risk management	From June 2008 (Implemented)
（4）Submission of audit report	Submit from reports for period ending in March 2008 (Implemented)

*As of February 2009

Exhibit 1

Acceleration of the daily recalculated clearing fund deposit “Deposit on T+1” - Flow image

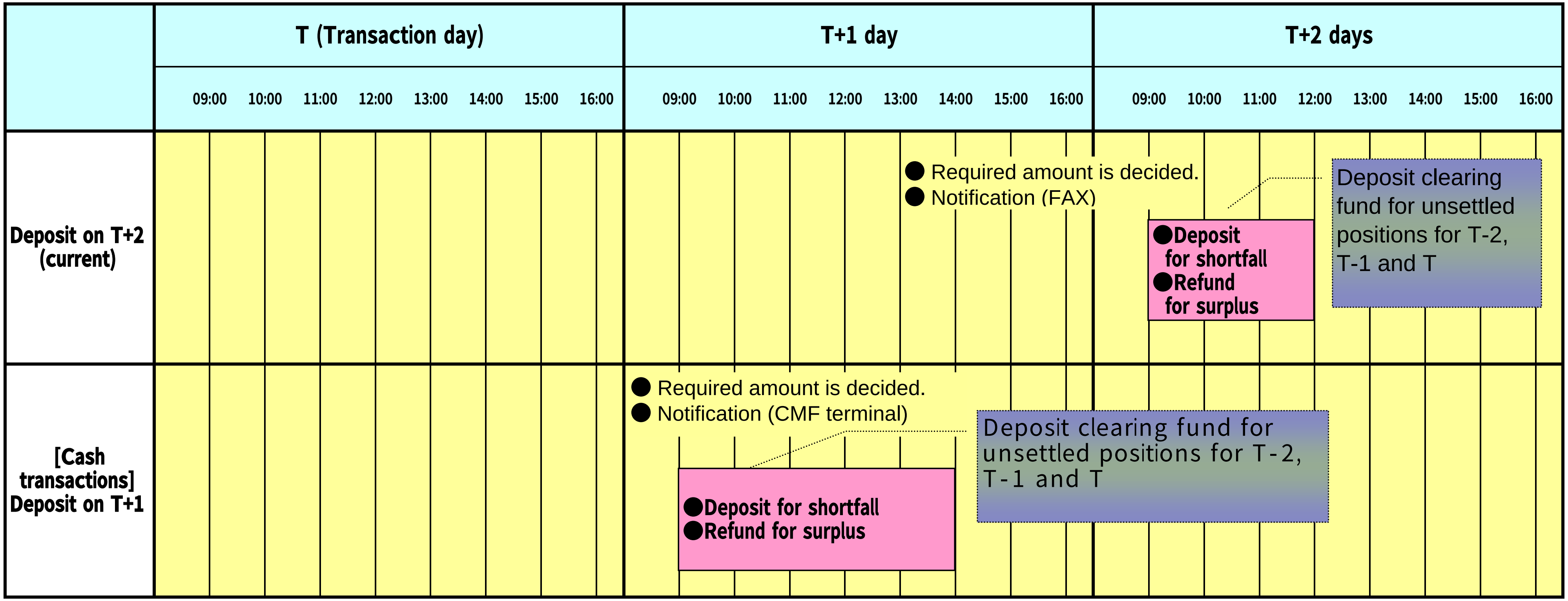


Exhibit 2-1

Clearing fund for cash products:
Example of the daily recalculation of clearing fund requirement

【Issue A】

	Traded price	Traded number of shares	Payment or collection of money	Last price	Share value at the last price	Mark-to-market value (Receiving value - paying or delivering value)
3 days ago	500 yen	-200 shares (sold)	100,000 yen (receive)	580 yen	580 x 200=116,000 yen (deliver)	100,000 - 116,000=−16,000yen (loss)
2 days ago	550 yen	+800 shares (bought)	440,000 yen (pay)		580 x 800=464,000 yen (receive)	464,000−440,000=24,000 yen (profit)
Previous day	600 yen	-300 shares (sold)	180,000 yen (receive)		580 x 300=174,000 yen (deliver)	180,000−174,000=6,000 yen (profit)

【Issue B】

	Traded price	Traded number of shares	Payment or collection of fund	Last price	Share value at the last price	Mark-to-market value (Receiving value - paying or delivering value)
3 days ago	100 yen	+1,000 shares (bought)	100,000 yen (pay)	110 yen	110 x 1,000 = 110,000 yen (receive)	110,000 - 100,000 = 10,000 yen (profit)
2 days ago	95 yen	-10,000 shares (sold)	950,000 yen (receive)		110 x 1,000 = 110,000 yen (deliver)	950,000 - 1,100,000 = -150,000 yen (loss)
Previous day	90 yen	+4,000 shares (bought)	360,000 yen (pay)		110 x 4,000 = 440,000 yen (receive)	440,000 - 360,000 = 80,000 yen (profit)

＜Mark-to-market value＞

Issue A：【-16,000 yen】+【24,000 yen】+【6,000 yen】=14,000 yen (profit)

Issue B：【10,000 yen】+【-150,000 yen】+【80,000 yen】=−60,000 yen (loss)

⇒**<u>Mark-to-market value of -46,000 yen (loss)</u>**

＜Potential loss value＞

Issue A：**【Share value at the last price：174,000 yen (-116,000 yen+464,000 yen-174,000 yen)】** x **【5%※1】** =8,700 yen (receive)

Issue B：**【Share value at the last price：−550,000 yen (110,000 yen-1,100,000 yen+440,000 yen)】** x **【10%※1】** =−55,000 yen (pay)

⇒ |8,700 yen−55,000 yen| (Absolute value after netting※2)=**<u>46,300 yen</u>**

※1：Volatility for Issue A is assumed to be 5%, and 10% for Issue B.

※2：When Issue A is to receive and B is to pay, the absolute value after netting is used.

＜Daily recalculated clearing fund amount＞

46,000 yen (Mark-to-market value：loss※3) +**46,300 yen** (Potential loss value) =**<u>92,300 yen</u>**

※3：When the mark-to-market value is in profit, treat the value as minus in calculating the daily recalculated clearing amount (i.e. subtract from the potential loss value).

Exhibit 2-2

Example of calculating the price volatility to be used in the daily recalculation of clearing fund requirement for cash products

Issue A

Month/Date	Share price	Change from previous day	Volatility
4/1	5,390	+130	2.47%
4/2	5,410	+20	0.37%
4/3	5,350	-60	-1.11%
4/4	5,320	-30	-0.56%
4/5	5.330	+10	0.19%
⁜	⁜	⁜	⁜
9/26	5,260	+30	0.57%
9/27	5,500	+240	4.56%
9/28	5,750	+250	4.55%
9/29	5,940	+190	3.30%
9/30	6,040	+100	1.68%

Re-arrange in the order of the size of volatility in absolute value

Ranking	Volatility (absolute value)	Coverage ratio
1	4.56%	100.00%
2	4.55%	99.17%
3	3.30%	97.50%
4	2.47%	96.67%
5	1.68%	95.83%
⁜	⁜	⁜
116	1.11%	4.17%
117	0.57%	3.33%
118	0.56%	2.50%
119	0.37%	1.67%
120	0.19%	0.83%

Issue B

Month/Date	Share price	Change from previous day	Volatility
4/1	655,000	-3,000	-0.46%
4/2	644,000	-11,000	-1.68%
4/3	661,000	+17,000	2.64%
4/4	691,000	+30,000	4.54%
4/5	703,000	+12,000	1.74%
⁜	⁜	⁜	⁜
9/26	517,000	-1,000	-0.19%
9/27	550,000	+33,000	+6.38%
9/28	546,000	-4,000	-0.73%
9/29	532,000	-14,000	-2.56%
9/30	526,000	-6,000	-1.13%

Re-arrange in the order of the size of volatility in absolute value

Ranking	Volatility (absolute value)	Coverage ratio
1	6.38%	100.00%
2	4.54%	99.17%
3	2.64%	97.50%
4	2.56%	96.67%
5	1.74%	95.83%
⁜		⁜
116	1.68%	4.17%
117	1.13%	3.33%
118	0.73%	2.50%
119	0.46%	1.67%
120	0.19%	0.83%

1 For each issue, calculate the price volatility from the previous day for the last 120 days.

2 Re-arrange the daily price volatility in absolute value in the order of size.

3 Find the day when the coverage ratio is 99% or more (second from the top), and select the volatility.

※ In the example on the left, the price volatility of 4.55% (Issue A) and 4.54% (Issue B) will be used in the daily recalculation.

Exhibit 2-3

Example calculation of the monthly required amount for the clearing fund for cash products

Month / Date	Daily recalculated clearing fund requirement	Increase in the requirement
7/1	35,000,000	-115,000,000
7/2	500,000,000	+465,000,000
7/3	153,000,000	-347,000,000
7/4	324,000,000	+171,000,000
～	～	～
9/28	220,000,000	+120,000,000
9/29	84,000,000	-136,000,000
9/30	356,000,000	+272,000,000

Re-arrange in the order of size of the amount of increase

Ranking	Increase in the requirement	Coverage ratio
1	+465,000,000	100%
2	+272,000,000	98.3%
3	+171,000,000	96.7%
4	+120,000,000	95.0%
～	～	～
58	-115,000,000	5.0%
59	-136,000,000	3.3%
60	-347,000,000	1.7%

1 With regards to the daily recalculated clearing fund requirement for cash products, calculate the amount of increase from the previous day.

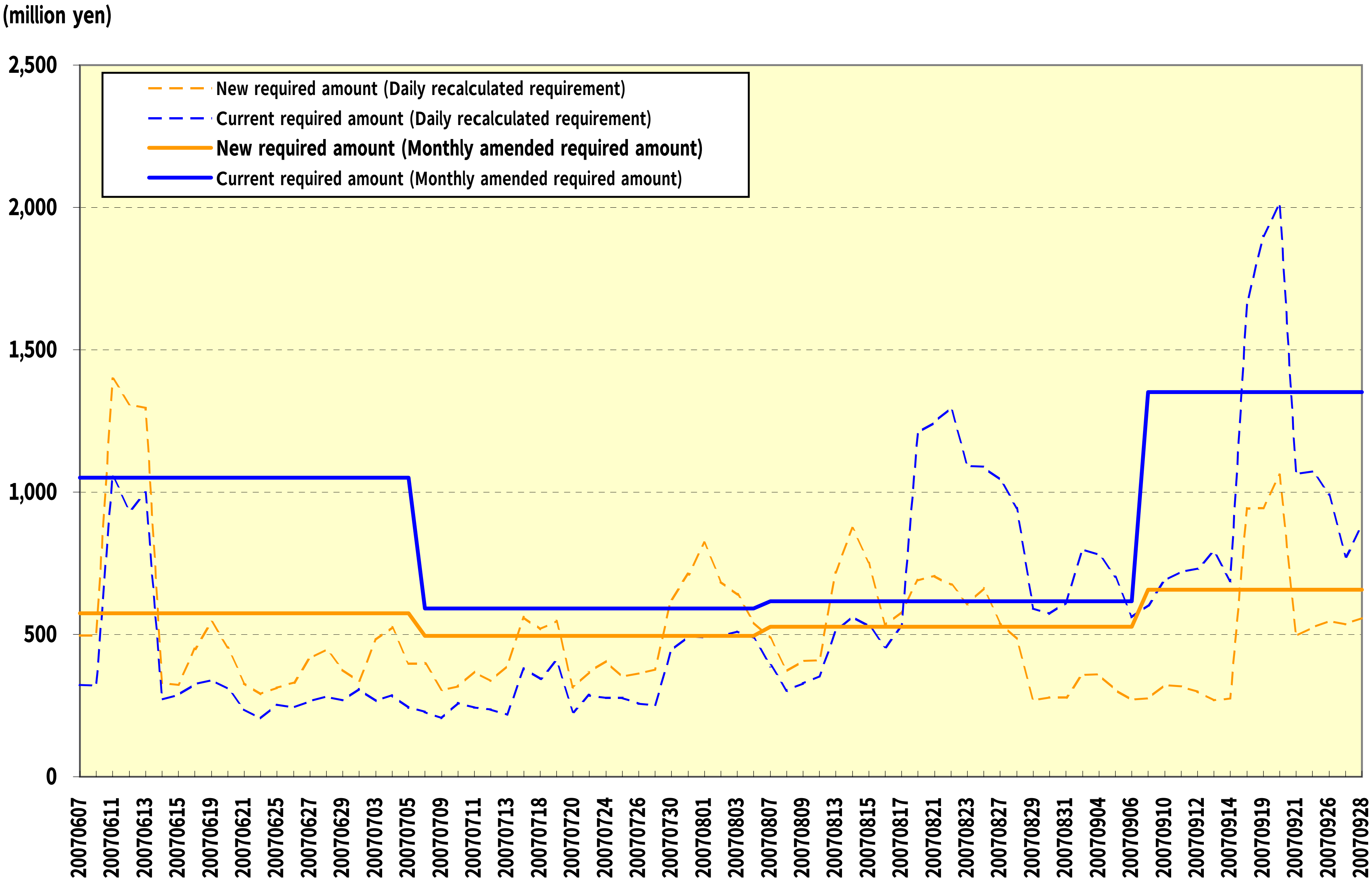
2 Re-arrange the amount of increase in the required amount for the last three months (the above example assumes there were 60 days) in the order of size.

3 The figure on the day when the increase in the requirement covers 95% becomes the monthly required amount for the clearing fund.

※In the above example, the amount of increase of “120,000,000” yen on the day when the coverage was 95.0% becomes the monthly required amount for the clearing fund for cash products.

Exhibit 3

Simulation results of required amount of clearing funds for cash products (Average for all participants)



※Test caculation based on the data from June to September 2007
※Dummy data were used for a part of volatility of newly listed issues, etc.

Example calculation of the required amount for the clearing fund for derivatives products

1. Calculate "Mark-to-market margin payment: 95% for the last 3 months"

Month / date	"Mark-to-market" margin
7/1	-5,000,000
7/2	5,000
7/3	4,500
7/4	10,000,000
∫	∫
9/28	-50,000,000
9/29	-4,000,000
9/30	-3,000,000

→ Re-arrange in the order of the size of the payment amount

Ranking	"Mark-to-market" margin	Coverage ratio
1	-50,000,000	100%
2	-5,000,000	98.3%
3	-4,000,000	96.7%
4	-3,000,000	95.0%
∫	∫	∫
58	4,500	5.0%
59	5,000	3.3%
60	10,000,000	1.7%

1 Calculate the daily mark-to-market margin (sum of the mark-to-market value for futures transactions and contracted value of options transactions) for three months, for each product group (index futures, index options; JGB futures, Options on JGB futures; equity options.)

2 Re-arrange the daily mark-to-market margin in the order of size of the payment.

3 Obtain the figure on the day when the coverage ratio is 95% or more for each product group and add them up.

※ In the example on the left, the mark-to-market margin of "3,000,000" on the day with the 95% coverage is used in the calculation.

2. Calculate the "95% of the amount of increase of the daily transaction margin for the last three months"

Month / date	Required amount of margin fund	Increase of the required amount
7/1	2,500,000	(0)
7/2	2,200,000	-300,000
7/3	3,000,000	+800,000
7/4	4,000,000	+1,000,000
∫	∫	∫
9/28	1,000,000	(-900,000)
9/29	4,000,000	+3,000,000
9/30	6,000,000	+2,000,000

→ Re-arrange in the order of size of the amount of increase

Ranking	Increase of the margin fund	Coverage ratio
1	+3,000,000	100%
2	+2,000,000	98.3%
3	+1,000,000	96.7%
4	+800,000	95.0%
∫	∫	∫
58	0	5.0%
59	-300,000	3.3%
60	-900,000	1.7%

1 With regards to the daily required transaction margin (total of proprietary and customer positions), calculate the amount of increase from the previous day.

2 Re-arrange it in the order of the size of the amount of increase of the required amount.

3 Use the value on the day when the coverage ratio is 95% or more in calculating the clearing fund.

※ In the example on the left, the amount of increase of "800,000" on the day with the 95.0% coverage is used in calculating the clearing fund.

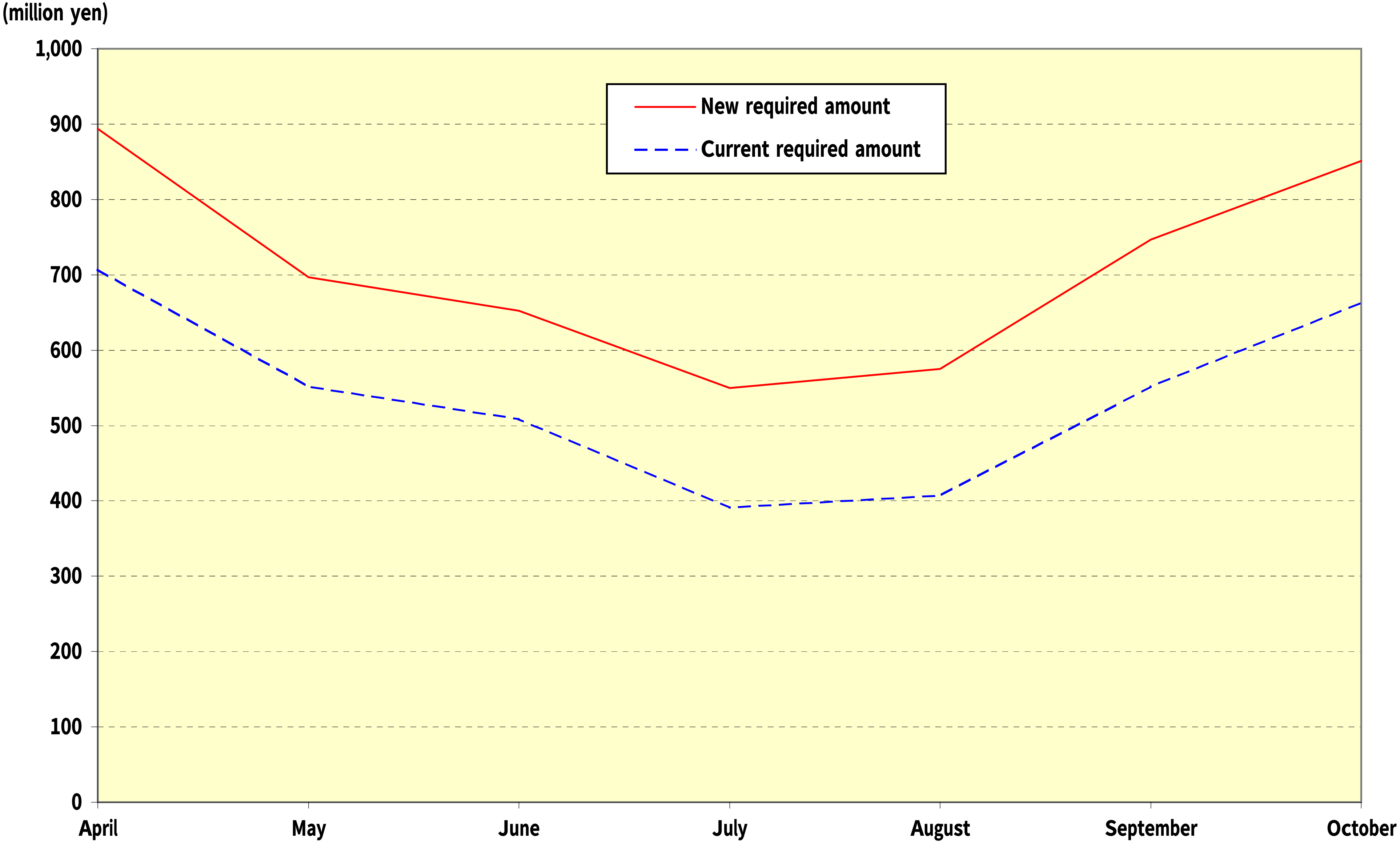
3. Calculate the "required amount for the clearing fund for derivatives products"

3,000,000 + 2,000,000 + 0 + 800,000 = **5,800,000 yen**

- 3,000,000 ↑ Figures on index derivatives (calculated in 1.)
- 2,000,000 ↑ Figures on JGB derivatives (provisional amount)
- 0 ↑ Figures on equity options (provisional amount)
- 800,000 ↑ Amount of increase of the transaction margin (calculated in 2.)
- 5,800,000 yen ↑ Required amount for the clearing fund for derivatives products

Exhibit 5

Simulation results for required amount of clearing funds for derivative products
(Average for all participants)



※The simulation is based on the data from April to September 2007

Exhibit 6

Changes concerning valuation of collateral securities, etc.①

No.	Current		After amendment (Only the changes are listed below)	
	Type of securities	Assessment rate	Assessment rate	Other changes
1	Japanese government bond (※1) (※2)	95%	(1) Interest-bearing Japanese government bond and discount government bond (excluding government bond with floating rate,and STRIPs) a Years to maturity of less than 1 year 99% b Years to maturity over 1 year and less than 5 years 98% c Years to maturity over 5 year and less than 10 years 97% d Years to maturity over 10year and less than 20 years 95% e Years to maturity over 20 year and less than 30 years 93% f Years to maturity over 30 years 92% (2) Government bond with floating rate a Years to maturity of less than 1 year 99% b Years to maturity over 1 year and less than 5 years 98% c Years to maturity over 5 year and less than 10 years 96% d Years to maturity over 10 year and less than 20 years 96% (3) STRIPs a Years to maturity of less than 1 year 98% b Years to maturity over 1 year and less than 5 years 97% c Years to maturity over 5 year and less than 10 years 96% d Years to maturity over 10year and less than 20 years 94% e Years to maturity over 20 year and less than 30 years 91% f Years to maturity over 30 years 88%	—
2	Japanese government-guaranteed bonds, Yen-denominated bond as specified under the Financial Instruments and Exchange Law, enforcement order 2-11 (※1)	90%	(1) Years to maturity of less than 1 year 98% (2) Years to maturity over 1 year and less than 5 years 97% (3) Years to maturity over 5 year and less than 10 years 96% (4) Years to maturity over 10year and less than 20 years 94% (5) Years to maturity over 20 year and less than 30 years 92% (6) Years to maturity over 30 years 91%	—
3	US Treasury bond (※3)	90%	(1) Years to maturity of less than 1 year 94% (2) Years to maturity over 1 year and less than 5 years 93% (3) Years to maturity over 5 year and less than 10 years 92% (4) Years to maturity over 10year and less than 20 years 90% (5) Years to maturity over 20 year and less than 30 years 88% (6) Years to maturity over 30 years 87%	—

Changes concerning valuation of collateral securities, etc. ②

No.	Current: Type of securities	Current: Assessment rate	After amendment (Only the changes are listed below): Assessment rate	After amendment: Other changes
4	Municipal bond (※1)	85%	(1) Years to maturity of less than 1 year 98% (2) Years to maturity over 1 year and less than 5 years 97% (3) Years to maturity over 5 year and less than 10 years 96% (4) Years to maturity over 10year and less than 20 years 94% (5) Years to maturity over 20 year and less than 30 years 92% (6) Years to maturity over 30 years 91%	—
5	Special bonds, corporate bonds and yen-denominated foreign bonds (excluding items 2 and 7)(※1)	85%	(1) Years to maturity of less than 1 year 97% (2) Years to maturity over 1 year and less than 5 years 96% (3) Years to maturity over 5 year and less than 10 years 95% (4) Years to maturity over 10year and less than 20 years 93% (5) Years to maturity over 20 year and less than 30 years 91% (6) Years to maturity over 30 years 90%	○All ratings obtained from "eligible rating agencies" are A or above. ※"Eligible rating agencies" refer to the designated rating agencies specified under the Article 1, Item of 13-2 of the Cabinet Office regulations concerning the disclosure of corporate information. ○With regards to corporate bonds, the restriction with which only those issued by listed companies are accepted will be lifted.
6	Beneficial securities of corporate and government bond investment trust (※4)	85%	Same as on the left	—
7	Convertible bonds with stock acquisition rights and exchangeable bonds (※5)	80%	Same as on the left	○Exchangeable bonds are excluded (outside the scope of eligibility) .
8	Shares, Securities of preferential equity investment, beneficiary securities of investment, beneficiary securities of investment trust (excluding the beneficiary securities of corporate and government bond investment trust), and investment securities (※6)	70%	Same as on the left	

※1 It is restricted to those for which the Japan Securities Dealers Association publishes "Reference Price (Yields) Table for OTC Bond Transactions" and those listed on securities exchanges in Japan.

※2 Treasury Discount Bill and Financing Bill/Treasury Bill issued by Feb. 2009 are included. Inflation-Indexed Bond should be ineligible for collateral.

※3 With regards to the US Treasury bond, it is accepted as collateral securities for transaction margin only (same as at present).

※4 It is restricted to those for which the Investment Trust Association publishes previous day's market value.

※5 It is restricted to those listed on securities exchanges in Japan.

※6 It is restricted to those which are listed on securities exchanges in Japan or for those the Investment Trust Association publishes previous day's market value.

(Note) The market value which is used in calculating the collateral value of collateral securities remains the same as at present.

Calculation method to obtain the ratio of estimated amount of position risk to net assets (shareholders' equity) for reporting the risk factors

１. Calculate the estimated amount of position risk

（1） Estimated risk amount for cash transactions

Unsettled positions relating to transactions three days ago※1 x price volatility for four days※2
+ Unsettled positions relating to transactions two days ago x price volatility for three days
+ Unsettled positions relating to transactions on the previous day x price volatility for two days

※１：Unsettled positions are the netted contract value of all transactions
※２：Price volatility figures are the least value of the volatility of TOPIX on the day which exceeds 99.7% of the price fluctuations corresponding to the number of the days above since the opening of the Tokyo Stock Exchange market(May 16,1949).

（2） Estimated risk amount for derivatives products

- For each product category (stock index futures, stock index options, JGB Futures & Options on JGB Futures), calculate the potential loss or profit amount with respect to the underlying asset (futures transactions for JGB Futures & Options on JGB Futures) in cases of price fluctuations at the least value of the daily volatility which exceeds 99.7% of the price fluctuations since the establishment of each market.
  - ✓ For futures transactions, calculate the potential loss or profit amount on the net positions for each product (total of proprietary and customer positions).
  - ✓ For options transactions, calculate the potential loss or profit amount (intrinsic value base) for the net positions (total of proprietary and customer positions) for each issue.
- Total the potential loss or profit amount for each product category, and then for all product categories, and subtract the amount deposited as the transaction margin (for customer positions).

２. Calculate the ratio of estimated amount of position risk to net assets (shareholders' equity)

Add the estimated amount of position risk for cash transactions and for derivatives products, and then calculate its ratio to the total of the net assets (shareholders' equity).