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**香港中央結算有限公司**

(香港交易及結算所有限公司全資附屬公司)

**Hong Kong Securities Clearing Company Limited**

(A wholly-owned subsidiary of Hong Kong Exchanges and Clearing Limited)

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## 通告 CIRCULAR

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To: CCASS Participants

事項

Subject: CCASS and CCMS Enhancements related to HKSCC Risk Management Reform Measures

查詢

Enquiry: Hotline 2979 7111 or Iris Lui 2211 6907

Reference is made to the circular issued on 12 March 2012 (Ref. No.: RMD/CCRM/001/2012) in relation to the Consultation Conclusions on HKEx Clearing House Risk Management Reform Measures. Implementation of the Reform Measures is tentatively scheduled for the third quarter of 2012, subject to the approval of the necessary rule amendments by the Securities and Futures Commission (SFC).

1. The key features of the HKSCC Risk Management Reform Measures are:
  - a. To introduce a standard Margin system and a dynamic component (Dynamic Fund) to the existing Guarantee Fund (GF);
  - b. To revise the price movement assumptions in the stress testing; and
  - c. To revise the counterparty default assumption in the stress testing.
2. We have outlined the key terms and relevant details of the Reform Measures in the Appendix for Clearing Participants' (CPs') reference. CPs can also refer to the [Consultation Paper](#) and [Consultation Conclusions](#) posted on the HKEx website for further information.

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Hong Kong Exchanges and Clearing Limited

Simulation Reports

3. To facilitate CPs' understanding of the newly introduced measures, simulation reports will be provided to CPs prior to the launch of the Reform Measures. During the simulation period, collection of Margin and Dynamic Fund will not be made but simulation reports will be provided to CPs for download through their CCASS terminals. The simulation reports will provide an estimation of a CP's Margin and GF contribution requirements under the new measures based on its positions and other prevailing market information applicable to the simulation period. However, the simulation reports will not reflect individual CP's arrangements with respect to certain enhancement features that will be launched with the Reform Measures, such as the deposit of Specific Cash Collateral or the option to choose a Preferred Settlement Currency for Marks, Margin and Concentration Collateral (please refer to paragraph 2 to 4 of the Appendix). As such, CPs should note that these estimations can only serve as a reference.
4. We will provide briefing sessions to CPs to walk through the Reform Measures, the relevant reports and system enhancements, and to answer any questions that CPs might have. Further information on the implementation schedule, the simulation arrangement and the briefing sessions will be announced in due course. Should you have any enquiries regarding the above information, please contact our hotline at 2979 7111 or Iris Lui at 2211 6907.

Wallace Chan  
Vice President  
Cash Clearing Risk Management  
Risk Management Division

## Margin System

### Computation of Margin Requirement

- The Margin requirement is calculated on each business day in the original trade currencies of the CNS positions as the formula below:

Margining Position	×	Margin Rate	—	Favourable Marks Offset	—	Margin Credit
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#### a. Margining Position

Margining Position is the higher of:

- the CP's total cross-day net long CNS position (valued at market prices) – SSC (valued at contract prices) – SCC (valued at market prices); or
- the CP's total cross-day net short CNS positions (valued at market prices) – SSC (valued at market prices)

where SSC and SCC refer to Specific Stock Collateral and Specific Cash Collateral respectively. Please see paragraph 2 below.

#### b. Margin Rate

The Margin Rate is determined with reference to a benchmark rate according to the followings:

<p>Margin Rate = Benchmark Rate + a Cushion of 10%; subject to a minimum of 5%</p> <p><i>Example: If benchmark rate is 6%, then Margin Rate = 6% × (1 + 0.1) = 6.6%</i></p>
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The benchmark rate is in turn determined by using a statistical model based on key parameters as follows:

Method	Exponentially Weighted Moving Average
Volatility	Change on daily closing of Hang Seng Index based on historical data for the past 90 trading days.
Confidence interval	3 standard deviation of the volatility function (i.e. 99.73%)

#### c. Margin Credit

Each CP will be granted a Margin Credit of HK\$5 million to alleviate the possible financial and operational burdens.

Specific Cash Collateral (SCC) and Specific Stock Collateral (SSC)

2. Subject to the approval of the SFC, SCC will be introduced as a new CCMS function. This function aims to provide CP an option to deposit prepaid settlement monies with HKSCC as SCC. Similar to a short CNS position covered by SSC, a long CNS position covered by SCC will be excluded from the computation of Marks, Margin and Concentration Collateral. Also, SCC will be used to offset the settlement obligations of the respective long CNS positions on due settlement day.

Use of the Margin and SCC to reduce the required Cash Prepayment Amount

3. If a CP has maintained a Cash Prepayment Standing Instruction in CCASS for releasing CNS allocated shares with “CHATS” as the selected payment method (regardless of gross or net basis), the Margin and SCC collected on hand for CNS positions due for settlement on T+2 day will be deducted from the required cash prepayment amount. As a result, the cash payment for releasing allocated securities on settlement day will be reduced.

Preferred Single Settlement Currency for Marks, Margin and Concentration Collateral

4. A new CCMS function, Preferred Single Settlement Currency for Marks & Margin, will be introduced. This option aims to provide flexibility for a CP to select its preferred currency for meeting its Marks, Margin and Concentration Collateral requirements. Requirements for Marks, Margin and Concentration Collateral will first be calculated in denominated currencies of the CNS stock positions. If a CP has selected a Preferred Single Settlement Currency, Marks, Margin and Concentration Collateral requirements will be collected at the preferred currency by converting these requirements at exchange rates and haircut ratios determined by HKSCC.

Use of Non-cash Collateral

5. To relieve CPs’ financial burden after the introduction of margining, CPs will be allowed to meet up to 50% of their Marks, Margin and Concentration Collateral requirements in the form of bank guarantee, subject to the HKSCC bank guarantee acceptance policy.

Collection of Exercised Options Trade (EOT) related Marks, Margin and Concentration Collateral by the SEHK Stock Options Clearing House Limited (SEOCH)

6. HKSCC will calculate Day-end Marks, Margin and Concentration Collateral attributable to EOT as part of its day end processing. HKSCC and SEOCH are currently exploring possible system and process enhancements to provide CP with the alternative to offset its EOT related Marks, Margin and Concentration Collateral requirement with its excess margin deposited with SEOCH by that CP (in its capacity as SEOCH Participant) or a SEOCH Participants designated by that CP. If such alternative arrangement is selected by a CP, Marks, Margin and Concentration Collateral attributable to EOT will be collected by SEOCH from that designated SEOCH Participant. If such alternative arrangement is not selected by a CP, the Marks, Margin and Concentration Collateral attributable to EOT will be collected by HKSCC from the CP. More details on the related arrangement will be separately announced by SEOCH in due course.

## Guarantee Fund

### Determination of GF size based on stress testing assumptions

7. The existing GF size is maintained at around HK\$245 million (Fixed Fund). As part of the new measures, a Dynamic Fund will be added on top of the Fixed Fund and forms part of the GF.

$$\text{GF} = \text{Fixed Fund} + \text{Dynamic Fund}$$

HKSCC will conduct daily stress testing to calculate the projected loss on potential CP default based on the following assumptions:

- Price movement: +/-22%, except for structured products which is +/-100%
- Counterparty default: Default of the largest CP plus the fifth largest CP

A daily stressed GF size will be calculated as below:

<p>Daily Stressed GF Size</p> <p>= Daily projected loss calculated based on the price movement and counterparty default assumptions</p> <p><u>Less:</u></p> <p>Margin of the defaulting CPs under the counterparty default assumption</p>
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The required GF size will generally be determined on a monthly basis by making reference to the daily stressed GF sizes of the preceding month. A review will be conducted every month on the first business day. The required GF size for a month will be based on the largest daily stressed GF size of the preceding month. Ad hoc review may be conducted if HKSCC considers necessary in the circumstances. Individual CP's required GF contribution will be adjusted after each review. Collection and refund of GF contribution will be conducted on the fourth business day every month.

### Determination of a CP's Required Contribution

8. CP's contribution to the Fixed Fund and the Dynamic Fund are outlined below.

- a. CP's contribution to the Fixed Fund

The calculation and collection mechanisms for CP's contribution to the Fixed Fund will remain unchanged.

- b. CP's contribution to the Dynamic Fund

The required Dynamic Fund size will be the required GF size less the Fixed Fund size. Individual CP's contribution requirement toward the Dynamic Fund will be determined by reference to its share of the risk in the market.

$$\begin{array}{ccccc} \text{A CP's} & & & & \\ \text{Dynamic Fund} & = & \text{Dynamic} & \times & \text{The CP's share of} \\ \text{contribution} & & \text{Fund size} & & \text{average daily} \\ \text{requirement} & & & & \text{Market GF position} \\ & & & & \text{in the preceding} \\ & & & & \text{month} \\ & & & & - \text{Dynamic} \\ & & & & \text{Fund Credit} \end{array}$$

c. CP's share of Market GF Position

To approximate a CP's risk level, a daily GF position is calculated based on the higher of (i) its total cross-day net long CNS position plus net settlement obligation, or (ii) its total cross-day net short CNS position. The Market GF Position is the aggregate of all CP's GF positions.

d. Dynamic Fund Credit

Each CP will be granted a Dynamic Fund Credit of HK\$1 million to alleviate the possible financial and operational burdens.

Eligible form of settlement of Required Contribution

9. There will be no change to the acceptable forms or currency for GF contribution. CPs are required to meet their minimum cash contribution requirements to the Fixed Fund in Hong Kong dollar (HKD) in the form cash. CPs' contribution requirements in addition to the minimum cash requirements can be met by either HKD cash or HKD bank guarantee, subject to the HKSCC bank guarantee acceptance policy.

**CCASS and CCMS enhancements in relation to HKSCC Risk Management Reform Measures**

10. Further enhancements will be made to the existing CCASS and CCMS functions and reports as follows:
  - a. "Enquire Collateral Account Balance" will be enhanced for Participants to enquire the free and on-hold Specific Cash Collateral amount in pending or confirmed status.
  - b. The existing "Marks and Collateral Report (CFIPM01)" and "Intra-day Marks and Collateral Collection Report (CRMIM01)" will be modified to show the calculation of Marks and Concentration Collateral in original trade currencies of CNS stock positions.
  - c. The existing "NCP Marks Projection Report (CRMNP01/02)" will be enhanced to provide for General Clearing Participants (GCPs) to show the projected Marks on pending positions of their underlying Non-Clearing Participants (NCPs) in original trade currencies of CNS stock positions.
  - d. The existing "Statement of Guarantee Fund Contribution Under CCASS (GFR608)" will be renamed to "Statement of Guarantee Fund Contribution" with added information on CPs' required contribution to both the Fixed Fund and Dynamic Fund.

- e. The existing “Collateral Account Balance Report (CCMCA02)” will be modified to show Specific Cash Collateral information.
- f. The existing “Statement of Collateral Account (CCMDS01)” will be enhanced to show the balances and transaction movements for Specific Cash Collateral.
- g. The existing “Participant Collateral Account Movement Report (CCMMV01)” will show the movement of Specific Cash Collateral in the CCMS Collateral Account.
- h. The existing “Posting Collateralisation Result Report (CCMPY01/02)” will be modified to show the Preferred Single Settlement Currency conversion result if there is conversion of Marks and Margin shortfall from original trade currencies to a Preferred Single Settlement Currency for payment collection.

11. The related newly added CCASS and CCMS functions and reports are as follows:

- a. A new “Enquire Specific Cash Collateral Account Movement” function will be provided to allow CPs to enquire Specific Cash Collateral movement for the past 30 business days.
- b. A new “Maintain Preferred Single Settlement Currency for Marks & Margin” function will be provided to select the Preferred Single Settlement Currency for Marks and Margin shortfall. By default, HKD is selected. Should “N/A” be selected by a CP, the shortfall of Marks and Margin will be collected in the currency in which the CNS stock position is denominated.
- c. A new “Maintain Specific Cash Collateral” function will be provided to input the SCC amount with selection of payment methods.
- d. A new report “Specific Cash Collateral Instruction Activity Report (CCMSC01)” will be provided to show the activity of Specific Cash Collateral deposit instruction input by CPs.
- e. Two new reports, namely, “Intra-day Margin Payable Report (CRMMG01)” and “Margin Payable Report (CRMMG02)”, will be provided on days having an Intra-day Margin (~11:45am or ~2:45pm where applicable) and around 8:15pm on each trading day respectively to notify CPs of their Margin requirements.
- f. Two new reports “NCP Margin Projection Report (CRMNP03/04)”, will be provided for GCPs showing an estimated allocation of Margin requirements of their underlying NCPs’ pending stock positions in original trade currencies.
- g. A new report “Maintain Preferred Single Settlement Currency Activity Report (CCMPS01)” will be provided to CPs at day end to show activity of Preferred Single Settlement Currency for Marks & Margin maintained by CPs.
- h. A new report “NCP(s) Guarantee Fund Contribution Projection By Position (GFR616)”, will be provided for GCPs showing the projected GF contribution of the underlying NCPs of a GCP. The average projected position executed for each NCP will be shown on the report and is used as the basis for the projection.