2-1-2000

Hong Kong's Reformed Broker Contribution Rules

Lin (Lynn) Bai
University of Cincinnati College of Law, lin.bai@uc.edu

Hong Kong's reformed broker contribution rules

Lynn Bai of the Hong Kong Securities and Futures Commission outlines the new risk-based calculation method for brokers' contributions to the stock clearing fund

Hong Kong Clearing's new calculation method for the required contribution from broker-participants ties more closely each broker's contribution to the risk that they bring to Hong Kong Clearing.

Hong Kong Securities Clearing Company, which functions as the clearing house for the Stock Exchange of Hong Kong, clears about 99% of trades on the exchange.

Hong Kong Clearing maintains a guarantee fund to cover any loss resulting from broker-participants' defaults and subsequent liquidations of their accounts. If a broker owes Hong Kong Clearing $10 million and the assets in his account turn in only $5 million in liquidation, the balance is paid to Hong Kong Clearing out of the guarantee fund.

Each broker who is a member of Hong Kong Clearing is required to contribute to the guarantee fund. Prior to January 1999 the required contribution from each broker was calculated based on their share of the market turnover for the past 12 months, subject to a minimum contribution in the amount of HK$50,000 in respect of each A-share he held in the stock exchange. The total contribution from all broker-participants was fixed at $100 million.

A broker's share of market turnover is not an adequate measure of the risk they bring to Hong Kong Clearing

Hong Kong Clearing reserves the right to call for more contributions from brokers when necessary. Upon ceasing to be a clearing member, a broker receives a refund of his existing contribution.

Reasons for the change

The guarantee fund is a back-up risk management measure of Hong Kong Clearing and as such, reflects the clearing house's risk exposure. The old contribution method was inadequate in this regard for several reasons.

It was unrelated to open Continuous Net Settlement (CNS) positions, which are trades executed on the stock exchange and settled at Hong Kong Clearing under a specified netting mechanism. Hong Kong Clearing guarantees the settlement of CNS positions by performing obligations of the party that fails to settle (and seeking recourse against the defaulter). Open CNS positions represent the bulk of Hong Kong Clearing's obligations and are the main cause of its concern over abnormal market movements. The old guarantee fund contribution formula did not adequately capture Hong Kong Clearing's risk exposure on heavy trading days when brokers were likely to have large open CNS positions.

A broker's share of market turnover is not an adequate measure of the risk they bring to Hong Kong Clearing. Turnover does not take into account offsetting long and short positions and includes non-CNS positions the settlement of which is not guaranteed by Hong Kong Clearing.

The old calculation method was based on a broker's share of the market turnover in the past 12 months. Historical trading activities bear no relevance to the risk that a broker generates at the present time.

The new calculation method

Under the proposed amendments, each broker-participant's required contribution to the guarantee fund is calculated based on the following formula:

(Average daily net open CNS position ÷ Overall daily net open CNS position for all broker-participants) × Total required broker contributions.

The amount calculated from the above formula is compared with the minimum contribution requirement, which is still HK$50,000 for each A-share held in the exchange by the broker. The higher of the two numbers is the broker's required contribution.

An illustration of net open CNS position: suppose on T day, broker A sold 10 shares of stock X, for which he would receive $100, and bought 20 shares in stock Y, for which he would pay $150. On T+1 the broker sold 20 shares in stock Z, for which he would receive $300. His net open CNS positions on T day would be -$50 (ie, $100 - $150), and his net open CNS positions on T+1 would be $250 (ie, $100 - $150 + $300).

In other words, netting applies to long and short positions in different stocks and includes all unsettled CNS positions as opposed to only those positions that are due for settlement on a particular day. Because Hong Kong has a T+2 settlement requirement, open CNS positions on any day typically includes 3 days' trades from T to T+2. For the purpose of calculating a broker's contribution to the guarantee fund, Hong Kong Clearing uses the average of the net daily open CNS positions during the past 30 days.

The value of the net daily open CNS position of each broker-participant is aggregated to obtain the overall net daily open CNS position of all broker-participants. Suppose the market has only 3 brokers and their net open CNS positions are -$50, $100, $150, respectively, the overall net daily open CNS position is $300 (ie, $50 + $100 + $150). Hong Kong Clearing uses the average of the overall net daily open CNS position over the past 30 days in the new broker contribution formula.

Total brokers' required contribution: This is the higher of $100 million and an amount associated with Hong Kong Clearing's risk exposure. For the purpose of convenience of illustration in the following paragraphs, this amount is referred to as the risk-related amount.

The risk-related amount is calculated as follows:

(The average overall daily net CNS position for the previous month × Default rate × Liquidation risk) - insurance cover - transfers from Hong Kong Clearing's reserves.

The default rate is defined as an estimated percentage of CNS positions failing settlement due to brokers' defaults. Liquidation risk is defined as an estimated percentage of market movement from the time of the last mark collection to the time of a liquidation of the positions. Both rates are to be determined from time to time by Hong Kong Clearing based on observations of historical data. Currently, Hong Kong Clearing assumes the default rate to be 15% and the liquidation risk to be 20%.

It is expected that the new formula will not significantly increase the total contribution of broker-participants from the current level of $100 million if the open CNS positions are not substantially more than $27 billion

At the present time, Hong Kong Clearing has an insurance coverage of $500 million and reserves transferred to the guarantee fund in the amount of $200. The total contribution from broker-participants is thus reduced by $700 million.

Net daily CNS position

	Money Flow ($ millions) Receivable	Payable	Net
Broker A	**100**	**-150**	**-50**
Broker B	**200**	**-300**	**-100**
Broker C	**300**	**-150**	**150**

Connection between brokers' total contribution and Hong Kong Clearing's risk exposure

Let us use an example to illustrate the connection between brokers' total contribution and Hong Kong Clearing's risk. Assume that there are three brokers trading in the Hong Kong market and clearing through Hong Kong Clearing. Their average net daily CNS positions for the past month is listed in the table above.

The overall net open CNS position is therefore $300 million. Hong Kong Clearing assigns a default rate to this amount. Under the current default rate of 15%, $45 million is assumed to be in default.

It is worth noting again that the overall net open CNS position includes 3 days' trades (ie, trades executed today, yesterday, and the day before yesterday). Therefore, the assumed default amount attributes partially to positions that are not yet due for settlement. Those positions are deemed in default despite their immaturity because they will be liquidated together with positions that are due for settlement once a broker is declared a defaulter for failing to meet its settlement obligations.

The noted $45 million is likely to compose of both net long and net short positions of different brokers. In a down market the net long positions will result in a liquidation loss, and the net short positions will result in a gain. The opposite is true in a rising market. Therefore, Hong Kong Clearing's risk as a result of the default is likely to be less than $45 million. However, Hong Kong Clearing takes a conservative approach by assuming the worst scenario that $45 million consists of only net long or net short positions and thus the entire amount is subject to market risk.

Positions in, or deemed in, default will be liquidated by Hong Kong Clearing. Liquidation proceeds, together with any mark collected by Hong Kong Clearing on the liquidated positions, will be applied toward broker-participants' settlement obligations. Mark is a risk management measure applied by Hong Kong Clearing to open CNS positions. CNS positions are marked-to-market at least daily and broker-participants are required to make up any paper loss by depositing sufficient collateral in their accounts to cover the shortfall. In the example given above, broker A who held an open short position valued at $100 at the end of T day would be charged a mark of $20 by the end of T+1 for a 20% increase in the stock price.

The marked-to-market measure limits Hong Kong Clearing's risk to any adverse market movement since the last time marks were collected. The risk is equivalent to about one-day price fluctuation given that marks are collected at least daily. In the example given above, assuming the percentage of one-day market movement is 20%, Hong Kong Clearing's risk exposure is $9 million (ie, $45 million × 20%).

Assumption of no partial performance by defaulting brokers

The total broker contribution calculated in accordance with the new formula is expected to be higher than Hong Kong Clearing's real risk exposure because the formula does not take into account cash inflows generated by brokers as a result of their fulfillment of obligations on short positions. Let us go back to the example of brokers A, B, and C given in the previous section to illustrate this point.

Given the assumed default rate of 15%, brokers A, B, and C each has performed 85% of its long and short contracts. The cash inflows on their short positions and unpaid balances on long positions are listed in the following table.

It can be seen that the cash inflow is not only sufficient to cover unpaid balances on long positions but also leaves a surplus which can be used by Hong Kong Clearing to offset any liquidation loss. However, Hong Kong Clearing has again taken a conservative approach by assuming that the entire amount in default is attributed to brokers who have not fulfilled any short contract and therefore there is no cash inflow generated by the brokers.

Implications for broker participants

It is expected that the new formula will not significantly increase the total contribution of broker-participants from the current level of $100 million if the open CNS positions are not substantially more than $27 billion. Given that the current open CNS positions are far below $10 billion, the trading volume must increase significantly before this threshold can be reached. As for particular broker-participants, the new formula affects their guarantee fund obligations in the several ways.

Broker participants who buy and sell in the same stock and thus do not bring any risk to Hong Kong Clearing are not required to contribute on such positions. In addition, brokers who buy and sell different stocks are not required to contribute on such positions to the extent that their contract values offset one another. Brokers who have significant net long or short positions are required to contribute more to the guarantee fund than those with relatively flat trading patterns.

Each broker-participant's required contribution will be reviewed on a monthly as opposed to quarterly basis. Brokers who have placed unusually large orders during the month may see a drastic increase in the next review of their guarantee fund contributions. Brokers who are thinly capitalized may find it difficult to finance any additional assessment in such a short period of time. Any increase in a broker's guarantee fund obligation may also trigger concerns under the Financial Resource Rules of the Securities & Futures Commission. ∎

INTERNATIONAL BRIEFINGS

February 2000

Securities

Canada	**Regulatory authorities get tough on selective disclosure** *Smith Lyons, Toronto* *tel: +1 416 369 7200* *fax: +1 416 369 7250*	54
Germany	**New database disclosing major shareholdings** *Gleiss Lutz Hootz Hirsch, Frankfurt* *tel: +49 69 955 14 0* *fax: +49 69 955 14 638*	52
Netherlands	**Proxy solicitation madepossible** *Houthoff Buruma, Amsterdam* *tel: +31 20 577 20 00* *fax: +31 20 577 27 00*	52
Spain	**The Latin American Stock Exchange** *Uría & Menéndez, Madrid* *tel: +34 91 586 0340* *fax: +34 91 586 0331*	52
Ukraine	**Depositary receipts and privatization** *Frishberg & Partners, Kiev* *tel: +380 44 220 4952* *fax: +380 44 220 1406*	53

Banking/Financial Services

Brazil	**International funds borrowed by domestic banks** *Noronha Advogados, London* *tel: +44 207 581 5040* *fax: +44 207 581 8002*	54
Switzerland	**New FBC Circular on outsourcing** *Belser Altorfer & Partner* *tel: +41 1 252 9100* *fax: +41 1 1 252 9793*	53

Foreign investment

United States	**Effect of foreign bankruptcy proceeding on US litigation** *Patton Boggs LLP, Dallas* *tel: +1 214 758 1500* *fax: +1 214 758 1550*	54