Frequently Asked Questions and HKEx's Answers on the Proposed Volatility Control Mechanism and Closing Auction Session

16 January 2015

BACKGROUND

On 16 January 2015, Hong Kong Exchanges and Clearing Limited (HKEx) published a consultation paper on the proposed introduction of a Volatility Control Mechanism (VCM) in its securities and derivatives markets and a Closing Auction Session (CAS) in its securities market.

The proposed enhancements are aimed at enhancing the global competitiveness of Hong Kong's markets and preserving market integrity. They constitute HKEx's major reform initiatives for the Hong Kong markets' microstructure for the near to medium term. They are put forward for consultation simultaneously as both initiatives involve market structure and system changes, and the same target group is being consulted. If the proposals are supported, implementation of the two microstructure initiatives will be coordinated but their rollout may be in phases to mitigate any rollout risk.

Interested parties are encouraged to submit their views on or before 10 April 2015. HKEx aims to publish its consultation conclusions by the end of the second quarter of this year.

VOLATILITY CONTROL MECHANISM (VCM)

1. Why is there a need for a VCM in the Hong Kong securities and derivatives markets?

In view of the impact of technological change on market integrity and efficiency, the Group of 20, or G20 and the International Organisation of Securities Commissions (IOSCO) have issued guidance on implementing volatility control mechanisms in trading venues, with the objective of preventing major trading incidents such as the Flash Crash incident in the US market. Many of the world's exchanges have implemented some form of volatility control mechanism to contain systemic risk caused by large price movements. As a market operator, it is HKEx's statutory duty to safeguard market integrity.

2. What is a VCM?

According to IOSCO's guidance, VCMs should address systemic risks arising from the inter-connectedness of securities and derivatives markets, particularly with respect to index products. HKEx's proposed dynamic VCM is designed to help keep markets' orderliness when there's volatility by introducing a temporary cooling-off period for trading within price limits. The cooling-off period is triggered by the sharp move in the

price of an individual instrument and applies only to that instrument. When the VCM is triggered, market participants have an opportunity to reassess their trading strategies and reset their trading algorithm parameters. The proposed VCM differs from measures such as circuit breakers, which halt trading, and static daily price limits, which set a fixed price range for trading, used in some other markets.

3. Why is a VCM being proposed instead of a circuit breaker or other price limit?

Based on some informal discussions with market participants, HKEx decided a light-touch and simple model would be most suitable for Hong Kong's markets since they've never had a VCM and may not be familiar with such mechanisms.

The proposed VCM is relatively simple and minimises market interruption because it applies to individual instruments, not the entire market.

HKEx welcomes market feedback on whether a VCM is needed for the Hong Kong markets, and if so, what form should it take.

4. How does the proposed VCM work?

The proposed VCM works as follows:

- During the Continuous Trading Session, or CTS (morning and afternoon session), order execution of each instrument subject to the VCM (VCM Instrument) would be monitored against a dynamic price limit (±10% for stocks; ±5% for stock index futures contracts) from the last trade in the market 5 minutes ago[1].

- If the potential execution price falls outside of the price limit, the order would be rejected, and a 5-minute cooling-off period would start immediately. The instrument would only be allowed to trade within a fixed price limit (the price range right before the VCM trigger) during the cooling-off period. High bid and low ask orders (otherwise known as aggressive orders) violating the upper and lower price limits would also be rejected immediately during the cooling-off period.

- Normal trading would resume after the cooling-off period ends, with the same dynamic price limit monitoring mechanism (±10% and ±5%) from the last trade 5 minutes ago in the securities or derivatives market.

- For each VCM Instrument, there would be a maximum of two VCM triggers in a single trading session (i.e. two in the Morning Session and two in the Afternoon Session), with the VCM monitoring completely relaxed in that trading session upon expiry of the second cooling-off period.

[1] This refers to the last trade of the instrument five minutes prior to the current potential trade.

- The VCM would not be in effect in the last 15 minutes of the CTS[2] to allow efficient price discovery at market close and to avoid any restraints on investors wishing to close out their positions to avoid overnight risks. After-Hours Futures Trading in the derivatives markets would also be excluded from the VCM, as it already has a static price limit of ±5% from the last traded price in the day session.

- When there is a VCM trigger, the trading of linked instruments such as derivative warrants would not be affected.

5. What are the applicable instruments for the proposed VCM?

In accordance with IOSCO's guidance, HKEx focused on systemic risks arising from the inter-connectedness of securities and derivatives markets, particularly with respect to benchmark index products. As most of trading in the securities and derivatives markets in Hong Kong is related to Hang Seng Index (HSI) and Hang Seng China Enterprises Index (HSCEI or H-shares Index) stocks and related instruments, they require special attention. Therefore, the proposed VCM applies to HSI and HSCEI constituent stocks in the securities market, and HSI, Mini-HSI, H-Shares Index and Mini H-Shares Index futures (spot month and next calendar month) in the derivatives market.

6. What is the anticipated market impact if the VCM is introduced? Would it result in frequent trading interruptions?

The VCM was designed with a view towards minimising the likelihood of market interruptions. For example, reference prices are dynamic, not static, and would be triggered at level to prevent them from being overly sensitive or intrusive in normal trading conditions. Moreover, the VCM would not be applicable in the last 15 minutes of CTS to allow for efficient price discovery at market close, and there would be a maximum of two triggers per trading session for each VCM instrument to prevent frequent interruptions. HKEx welcomes market feedback on the maximum number of triggers (for example, fewer or more than four, or no limit).

CLOSING AUCTION SESSION (CAS)

7. How does a CAS work and which other markets have a CAS like the one being proposed or something similar?

Closing auction, which allows execution at the closing price, is a trading mechanism commonly used in securities markets across the globe. During a closing auction, market participants interested in trading at the closing price may input buy and sell orders. Then their orders interact with each other to form a consensus closing price for each security and orders are executed at that price.

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[2] The VCM monitoring would stop 20 minutes before the end of CTS as the duration of a cooling-off period is 5 minutes.

Internationally, all 23 developed markets[3] except Hong Kong have a closing auction session; and among the 24 emerging markets, only Egypt, Chile, Shanghai and India do not have a closing auction session.

8. Why is a CAS needed and what's the current arrangement at the end of the securities market's afternoon trading session?

The primary users of a CAS are institutional investors, including passive funds and retirement funds with mandates that require them to trade at the closing price. For example, the first Exchange Traded Fund (ETF) in Hong Kong, the Tracker Fund, needs to trade at the closing price as its fund valuation is based on closing price. When there is fund unit creation and/or redemption, or when its benchmark index, the Hang Seng Index, has one of its four rebalancings over the course of a year, the fund manager of the Tracker Fund needs to trade the constituent stocks at their closing price. Without a CAS, there's a tracking error that hampers the fund's return and results in lost performance that hurts general retail investors.

Although investors tracking the benchmark indices are the primary users of closing auctions, based on international experience, other investors such as retail investors and the long (buy and hold) funds not benchmarked to indices also like to participate in a closing auction. This is because closing auctions tend to be a liquidity point of the day, and so investors may be able to complete their trades at a good price or with the volume that they want. Therefore, even in some retail oriented markets such as South Korea and Thailand where retail investors contribute about half of market turnover, retail investors actively participate in the closing auction and its turnover usually accounts for close to 10 per cent of daily turnover.

Currently, the closing price of a stock in the HKEx's securities market is determined by taking the median of 5 nominal prices[4] in the last minute of the CTS. The system takes 5 snapshots of the nominal prices at 15-second intervals starting from 15:59:00. The 5 snapshot nominal prices are then arranged in ascending order and the median would then be taken as the closing price.

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[3] Based on MSCI classification.

[4] The nominal price in the CTS is determined by comparing the current bid price, current ask price and last trade price / previous closing price, as the case may be. For details, please refer to Chapter 1 of the Rules of the Stock Exchange of Hong Kong.

9. How does the proposed CAS model work?

The proposed CAS consists of four periods:

- In the first period (Blocking Period, 16:00-16:01), a reference price, which sets the allowable price limit of the CAS (±5% from the reference price), is calculated for each CAS Security.

- In the second period (Order Input Period, 16:01-16:08), at-auction orders and at-auction limit orders within the ±5% price limit can be entered, amended or cancelled.

- Starting from the third period (No-Cancellation Period, 16:08-16:10), prices of new at-auction limit orders must be between the lowest ask and highest bid of the order book, and no orders can be amended or cancelled.

- In the last period (Random Closing Period, 16:10-16:12), the order rules from the No-Cancellation period apply and the market closes randomly within two minutes. After the period, there's order matching for all CAS Securities.

The proposed CAS is aimed at facilitating a smooth price discovery process while addressing the price volatility issue of the previous CAS at HKEx.

10. How is the proposed CAS different from the previous CAS?

The new CAS has several measures to address potential instability, price formation challenges and execution inefficiencies. They include:

- A price limit on at-auction limit orders during the CAS, initially at ±5 per cent from a reference price and later at the best bid and best ask;

- The CAS closes at a random time (random close);

- Auction transparency is enhanced by displaying the possible Indicative Equilibrium Price (IEP[5]) range, the 4 pm closing price and imbalance information (both direction and quantity);

- At-auction limit orders are allowed throughout the CAS;

- Short selling with tick rule is allowed during the CAS; and

[5] The IEP is the indicative auction price for matching at any time during the auction process as if the auction is concluded then. It is the price within the highest bid and the lowest ask and at which the aggregate volume of matchable orders is maximised.

- There's a reference price for trade execution in the absence of a final IEP to maximise matching opportunity.

11. How is the price limit in the proposed CAS set?

In the proposed CAS, there's a price limit on the limit orders carried over to the CAS from the afternoon trading session as well as the new at-auction limit orders entered during the CAS. The price limit is ±5 per cent from the reference price during the Order Input Period, and the best bid and best ask for the subsequent periods. The objective of the price limit is to prevent excessive price movement in the CAS.

Price limit of ±5 per cent from reference price during Order Input Period

After the previous CAS was introduced, HKEx consulted the market on the addition of a price control mechanism to curb extreme price volatility. At the time, the market preferred a 5 per cent price limit as it would have offered protection against extreme price volatility while not confining liquidity in the CAS. However, since the CAS had no other price volatility control measures, a 2 per cent price limit was to be introduced, but the CAS was suspended before the price limit was implemented.

In addition to the price limit during the Order Input Period, the proposed CAS has other price control measures such as a price range in the No-Cancellation and Random Closing periods, better auction transparency, allowing at-auction limit orders throughout the CAS and a random closing. Accordingly, the price limit in the proposed CAS does not need to be set very low.

HKEx is of the view that a 5 per cent price limit would be suitable as it can prevent excessive price movement during heightened volatility without being overly restrictive on index rebalancing days. Based on past statistics[6], a price limit of 5 per cent could accommodate over 99 per cent of the price volatility during the last 10 minutes on normal trading days and over 95 per cent on index rebalancing days. The percentages would be reduced to 95 per cent during normal trading days and below 90 per cent on index rebalancing days respectively if the price limit was set at 2 per cent.

Price limit at lowest ask and highest bid prices during No-Cancellation and Random Closing Period

In order to prevent unexpected price volatility due to entry of extreme priced (aggressive) at-auction limit orders near the end of the proposed CAS, the permissible price range of the orders after the Order Input Period is between the lowest ask and highest bid. With this approach, there's a highly transparent and efficient auction process.

[6] The analysis is based on trading statistics from April to June 2014.

12. What are the applicable securities for the proposed CAS, and why is there a phased approach?

In order to minimise market impact and ensure a smooth rollout, the proposed CAS only applies in the initial phase to major stock index constituents (the constituent stocks of the Hang Seng Composite LargeCap Index and Hang Seng Composite MidCap Index and other Stock Connect securities for Southbound trading) as well as ETFs with Hong Kong stocks as their underlying stocks.

The proposal calls for the CAS's securities coverage to be expanded to all other equity securities and funds when the market is familiar and comfortable with the new mechanism, and for structured products, equity warrants and debt securities to remain separate from the CAS.

The proposed CAS, whether in the first or the sequent phases, does not apply to structured products, equity warrants and debt securities since they do not need to be executed at closing price. It can be argued that these products should not be excluded from the CAS as they are included in the Pre-opening Session (POS). However, the emphasis of the POS is more on price discovery than trade execution, so the treatment need not be identical. Deutsche Börse and London Stock Exchange exclude warrants from their closing auctions although they are included in their opening auctions.

13. How would retail investors benefit from the proposed CAS, and would they be able to opt out if they wished?

In the proposed CAS, all outstanding limit orders from the afternoon trading session that are within the price limit are automatically carried forward to the CAS. Besides, investors may enter at-auction limit orders throughout the CAS. Those orders can provide price protection as well as potential price improvement as the executed price would only be at or better than their specified price. Also, the market data available in the proposed CAS (afternoon trading session closing/reference price, best bid/ask, imbalance data) can help investors make trading decisions in the auction session.

Under the proposed CAS, retail investors who do not wish to participate can cancel their orders during the first 7 minutes of the auction session (the Order Input Period).

14. Would there still be large price movement in the CAS?

The price movement allowed in the proposed CAS is capped at ±5% from the CTS price to avoid extreme price instability. However, one should note that price movement due to changes in demand and supply during a CAS is normal price discovery. In fact, it's not uncommon in overseas markets that securities prices move significantly in the CAS when there is a large imbalance in demand and supply. The situation is the same for other trading sessions, during which securities prices can also move significantly within a short span of time. On an average day over 100 equities experience more than 5% price movement within a short time span during the CTS in the Hong Kong securities

market. It is therefore important for market participants to understand the proposed CAS and that the price discovery process is conducted in an orderly, fair and transparent manner, during which the investors' execution needs are fulfilled.

15. With a CAS, would liquidity dry up at the end of the CTS and hence cause unintended price volatility?

Based on overseas market experience (CAS amounts to 5 to 20 per cent of the daily trading volume), it would be unlikely. Also, experience with the CAS in Hong Kong a few years showed that liquidity during the day was not materially affected. However, to address possible concerns, HKEx is taking a phased approach in its proposal, with phase 1 covering some top 320 most liquid stocks, and phase 2 expanding the CAS to other equity securities when the market is familiar with the new mechanism.

16. Would there be any impact on Stock Connect?

The CAS would be applicable to Stock Connect Southbound brokers and investors, and would include all current Stock Connect stocks for Southbound trading in Phase 1.

WAY FORWARD, SUBJECT TO CONSULTATION CONCLUSIONS

17. When would the proposals be implemented if adopted?

The consultation period for the Consultation Paper is 12 weeks and closes on 10 April 2015. HKEx will then summarise the comments received and if applicable, set out the final models of the VCM and the CAS in a Consultation Conclusions paper.

Subject to market feedback, the proposals for the VCM and the CAS would be implemented on the current trading platforms (AMS/3.8 in the securities market and HKATS in the derivatives market) as soon as practicable.

18. Would the VCM and CAS require significant system changes, lots of testing and substantial cost?

It is expected that the major system changes would be made centrally by HKEx itself, and changes required to the Participants' systems would be comparatively minor. Moreover, the new market microstructure initiatives could be implemented together, which would result in development and testing savings for Participant. In any case, adequate preparation time of about a year would be given to the market for system preparation and implementation.