



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

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To: Structured Products Issuers
Liquidity Providers

Dear Sirs

Liquidity Provision Interruptions and Pricing Issues

The Listing Rules require structured products issuers (**Issuers**) to appoint liquidity providers (**LPs**) to provide liquidity in each structured product issue. Issuers and LPs should ensure adequacy and reliability of liquidity provision systems to provide uninterrupted liquidity for trading of structured products in the market at prices that largely reflect the value of the products. Interruptions to liquidity provision and mispricing are not conducive to the healthy development of the listed structured products market. As a result, we believe it is appropriate to provide this guidance to assist Issuers/LPs in achieving the following objectives:

- reduce liquidity provision interruption and mispricing;
- minimize negative market impact in the event of occurrence; and
- raise performance standards generally.

I. Liquidity Provision Interruptions

Causes and preventive measures

1. Most of the interruptions in liquidity provision were caused by technical failure (such as malfunctioning of hardware component or software bug) or human errors (such as improper update of system configuration or parameters). There were also incidents where the setting of system parameters was inadequate. Changes of procedures and practices without anticipating the effect on other systems or operations had also caused system disruption.
2. Based on past experience, liquidity provision disruption could have been avoided or its adverse effect could have been lessened had the following measures been adopted:-
 - (a) rigorous change control and deployment procedures across different platforms/systems;
 - (b) robust impact assessment before making changes to existing procedures and practices;
 - (c) thorough testing of the liquidity provision system after changes have been made to the liquidity provision system itself or other related systems that have an impact on the liquidity provision system;

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- (d) immediate health checking (i.e. integrity or functionality testing) after implementing routine system/operational changes;
- (e) disallow implementation of system changes during trading hours;
- (f) set up adequate monitoring tools or alerts to detect potential failure or system instability;
- (g) implement adequate procedures and validation checks to minimize human errors or staff miscommunication when carrying out IT operational tasks;
- (h) allow sufficient buffer when setting system parameters (such as file size limit and memory capacity) to meet business needs or system requirements;
- (i) periodic review to ensure all components and related architecture is functional, updated and properly maintained;
- (j) establish effective internal escalation and decision making process when invoking contingency procedures;
- (k) enhance failover procedures to shorten recovery time; and
- (l) provide regular training and updated user manual to staff to familiarize them with functionality and operating procedures of the liquidity provision system.

The above list is not intended to be exhaustive. Issuers/LPs should take into account their own circumstances and operational requirements in devising their own measures.

Contingency plan maintenance and regular drills

3. Upon occurrence of liquidity provision interruption, effective contingency procedures are crucial to minimize disruption time and maintain acceptable service levels. In this respect:
 - (a) contingency plan should be reviewed and updated regularly as part of the organization's change management process to ensure new information is documented and contingency measures are revised if required; and
 - (b) regular drills should be conducted to familiarize staff with contingency procedures including rehearsals on invoking backup system, failover arrangements and fall back on manual quoting.
4. We recommend that the plan should be reviewed and tested at least annually or whenever significant changes occur to any element of the plan. However, Issuers/LPs may consider reviewing and testing their plans more frequently depending on their specific circumstances.

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Minimum service level

5. While LPs may not be able to provide active quotes during the period of liquidity provision interruption, they should use their best efforts to meet service commitments of quote requests as set out in the supplemental listing documents. LPs should ensure that adequate resources including backup systems/equipment and manpower supporting manual quotes are in place to ensure uninterrupted liquidity providing services. Other broker numbers may be used to provide liquidity in the event that the original LP broker numbers are unable to send quotes to the Exchange. Proper record should also be kept for quotes provided and trades transacted by the LP using non-LP broker numbers.

Notification to the Exchange

6. “The Guide on Enhancing Regulation of the Listed Structured Products Market” published by the Exchange on 27 July 2012 requires Issuers to inform the Exchange immediately upon becoming aware of any events which affect their ability to provide liquidity (quote request and active quotes) and publish announcements to inform the market as soon as possible. We expect the announcement on liquidity provision interruption be published within one hour after the service disruption.

II. Pricing Issues

A. Mispricing

Causes and preventive measures

7. Price quotes provided by LPs which deviate materially from fair prices may be misleading to the market. Investors buying or selling at such abnormal prices may suffer when prices return to normal. Other participants may be misled into posting prices at the mis-priced level causing a disorderly market to develop.
8. Past incidents of mis-pricing and/or trading error involving LPs were mostly caused by manual inputting error when traders adjusted the pricing parameters, such as volatility. While price alert mechanism was in place, price alert messages were sometimes overridden by traders inadvertently. In some other cases, pricing parameters were not timely updated, such as ex-dividend date or newly listed products were not properly set up prior to listing.
9. Issuers/LPs should review their operating procedures and take appropriate measures to ensure accuracy of pricing parameters and price quotes. Display of price parameters and system alerts should be informative and prominent for ease of checking and validation. Traders should be vigilant in adjusting pricing parameters and give appropriate response to system alerts. There should be procedures in place for regular monitoring of corporate action of underlying securities such as declaration of dividend to ensure timely update of pricing parameters.

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10. In addition, Issuers/LPs should act in the best interests of the integrity of the listed structured products market and should not intentionally provide quotes at artificial levels which substantially deviate from fair values of structured products.

Notification to the Exchange

11. Issuers should inform the Exchange immediately of any matters which may cause unusual trading price or volume or an establishment of a disorderly market.
12. Where the mis-pricing or unusual prices occur (whether caused by LPs or other market participants) and are causing a disorderly market to develop, LPs should use best endeavors to rectify the situation immediately. If the disorderly market cannot be rectified, Issuers should apply for a trading halt of the relevant structured products as a last resort.

B. Pricing Strategy

13. We have received investor complaints about price quotes provided by LPs, which were not supported by the movement of underlying price/level. While most cases could be explained, there were some incidents where the movements in LP price quotes were difficult to justify. For example, LP price quotes of call warrants dropped substantially while underlying price remained largely the same. In other cases, LP price quotes of call warrants remained broadly unchanged despite the fact that underlying price moved upwards considerably. There were also cases where LP price quotes of call warrants moved in opposite direction to the change in underlying price/level.
14. Investors would generally expect a consistent trend in price quotes of structured products in the absence of material changes in pricing factors, such as price of the underlying assets or implied volatility (where applicable). We appreciate that structured products are priced based on Issuers' own pricing model. However, pricing behavior that deviates from general expectation may lead to complaint and undermine investors' confidence in Issuers and the market as a whole. We consider this undesirable from the principle of promoting investor confidence in the listed structured products market. Issuers/LPs should be mindful of investor expectations and concerns when devising their pricing strategies.

If you have any questions on the above, please contact our case officers.

Yours faithfully
For and on behalf of
The Stock Exchange of Hong Kong Limited

[Signed]

David Graham
Chief Regulatory Officer and Head of Listing