SFC reprimands and fines Interactive Brokers Hong Kong Limited $4.5 million for failures concerning its electronic and algorithmic trading systems

14 Feb 2018

The Securities and Futures Commission (SFC) has reprimanded and fined Interactive Brokers Hong Kong Limited (IBHK) $4.5 million after resolving concerns over IBHK's breaches of the Code of Conduct in its execution of market orders using electronic and algorithmic trading systems (Notes 1 & 2).

The SFC's disciplinary action followed two market disruption incidents in 2015 and 2016 where the share prices of Hong Kong-listed O-Net Communications (Group) Limited and AAG Energy Holdings Limited were ramped up by 48.7 per cent and 126 per cent, respectively, in less than two minutes.

In light of the incidents, the SFC and IBHK jointly engaged an independent reviewer to review IBHK's electronic and algorithmic trading systems, in particular, the controls to monitor and prevent the generation of or passing to the market for execution order instructions which may interfere with the operation of a fair and orderly market.

The review found that, in the two incidents, IBHK executed market orders by placing the entire order volume to the market and repeatedly submitting the unexecuted part of the order at the next available price until the entire order was completed. It also found that IBHK did not take into account the liquidity of the market when executing the market orders. Furthermore, IBHK failed to put in place effective price and volume controls to prevent its execution of market orders from disrupting the market (Note 3).

In respect of IBHK's electronic and algorithmic trading systems, the review indicated that:

- IBHK's electronic trading system was developed by its head office in the United States, where its programming function was responsible for both development and quality assurance of the system. IBHK did not conduct adequate user acceptance testing on the system; and
- the technical design documents of the systems were high level and did not provide a detailed explanation of the components of the trading systems. A specific example is that IBHK did not keep adequate records in relation to the design, development, deployment or operation of the order cancellation functionality in its electronic trading system (Note 4).

In reaching the resolution, the SFC took into account that IBHK:

- involved their senior management in the liaison with the SFC about the regulatory concerns;
- took the initiative to bring this matter to a conclusion by fully and frankly discussing the regulatory concerns with the SFC;
- undertook a review with the SFC to address the regulatory concerns and identify the deficiencies in its internal controls; and
- co-operated with the disciplinary action by resolving the SFC's regulatory concerns.

The SFC also took into consideration IBHK's board of directors have undertaken that reasonable steps will be implemented to ensure IBHK's compliance with the regulatory requirements for electronic and algorithmic trading, and the failures set out above will be rectified within 12 months. Otherwise, similar failures would have resulted in a substantially higher level of fine.

End

Notes:

1. IBHK is licensed under the Securities and Futures Ordinance to carry on business in Type 1 (dealing in securities), Type 2 (dealing in futures contracts) and Type 3 (leveraged foreign exchange trading) regulated activities.
2. Code of Conduct for Persons Licensed by or Registered with the SFC (Code of Conduct).
3. Among others, paragraph 3.3.1 of Schedule 7 to the Code of Conduct provides that a licensed person should have controls that are reasonably designed to monitor and prevent the generation of or passing to the market for execution order instructions from its algorithmic trading system which may interfere with

the operation of a fair and orderly market.

4. Paragraph 3.2 of Schedule 7 to the Code of Conduct provides that a licensed person should ensure that the algorithmic trading system and trading algorithms it uses or provides to clients for use are adequately tested to ensure that they operate as designed. Paragraphs 1.3 and 3.4 of Schedule 7 to the Code of Conduct provide that a licensed person should keep, or cause to be kept, proper records on the design, development, deployment and operation of its electronic trading system.

A copy of the Statement of Disciplinary Action is available on the SFC website

Page last updated : 14 Feb 2018

STATEMENT OF DISCIPLINARY ACTION

The Disciplinary Action

1. The Securities and Futures Commission (**SFC**) has publicly reprimanded and fined Interactive Brokers Hong Kong Limited (**IBHK**) $4.5 million pursuant to section 194 of the Securities and Futures Ordinance (**SFO**).

2. The disciplinary action is taken according to an agreement pursuant to section 201 of the SFO dated 6 February 2018 in relation to deficiencies in IBHK's electronic and algorithmic trading systems in relation to the execution of market orders.

3. IBHK is licensed under the SFO to carry on business in Type 1 (dealing in securities), Type 2 (dealing in futures contracts) and Type 3 (leveraged foreign exchange trading) regulated activities.

Summary of facts

Regulatory requirements

4. Among others, General Principle 2 of the Code of Conduct[1] requires a licensed corporation to exercise due skill, care and diligence in carrying on its business in regulated activities in the interests of market integrity.

5. The regulatory requirements for electronic and algorithmic trading which came into effect in January 2014[2] expect a licensed corporation to have controls reasonably designed to monitor and prevent the generation of or passing to the market for execution order instructions from its algorithm trading system which may interfere with the operation of a fair and orderly market.[3]

6. In addition, the licensed corporation should adequately test its electronic and algorithmic trading systems before implementation,[4] and have comprehensive documentation of its electronic and algorithmic trading systems.[5]

[1] Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission
[2] Paragraph 18 of and Schedule 7 to the Code of Conduct
[3] Paragraph 3.3.1 of Schedule 7 to the Code of Conduct
[4] Paragraph 3.2 of Schedule 7 to the Code of Conduct
[5] Paragraphs 1.3 and 3.4 of Schedule 7 to the Code of Conduct

Market disruptions

7. Notwithstanding the duties to act in the interests of market integrity and prevent orders from unduly impacting the market, the share price of O-Net Communications (Group) Limited (stock code: 877) was ramped up by 48.7% from $1.97 to $2.93 in 101 seconds when IBHK was executing for client a market order to buy 500,000 shares on 23 October 2015.

8. Again on 12 July 2016, the share price of AAG Energy Holdings Limited (stock code: 2686) was ramped up by 126% from $1.15 to $2.60 in 84 seconds when IBHK was executing for client a market order to buy 200,000 shares.

9. A market order is generally understood to be an order to be executed immediately at the best available price. The HKEx does not accept such orders during the continuous trading session. Instead, licensed corporations may use the enhanced limit order[6] or the special limit order[7] to simulate a market order.

10. Executing market orders through algorithmic trading system that does not have reasonably designed controls may cause fluctuation to share prices and result in undue market impact. Such undue market impact could be controlled by, for example: (a) limiting the number of attempts in resubmitting the unexecuted quantities of a market order for matching in the market; or (b) by restricting the execution of market orders to a maximum number of spreads from the prevailing nominal price. Any unfilled quantity of the market order will be cancelled after the predetermined number of attempts or the maximum number of spreads was reached.

Failure to comply with requirements for electronic and algorithmic trading

11. In light of the abovementioned market disruption incidents in October 2015 and July 2016, the SFC and IBHK jointly engaged an independent reviewer to review IBHK's electronic and algorithmic trading systems, in particular, the controls to monitor and prevent the generation of or passing to the market for execution order instructions which may interfere with the operation of a fair and orderly market.

12. The review found that, in the two incidents, IBHK executed market orders by placing the entire order volume to the market and repeatedly submitting the unexecuted part of the order at the next available price until the entire order was completed. It also found that IBHK did not take into account the liquidity of the market when executing the market orders. Furthermore, IBHK failed to put in place effective price and volume controls to prevent its execution of market orders from disrupting the market. As such, the SFC is of the view that IBHK had failed to comply with paragraph 3.3.1 of Schedule 7 to the Code of Conduct.

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[6] An enhanced limit order is similar to limit order except that it will allow matching of up to ten price queues at a time. The bid order price of an enhanced limit order can be inputted at nine spreads higher than the current ask price. Unfilled quantity of an enhanced limit order will not be cancelled but stored as a limit order at the input order price.

[7] A special limit order has no restriction on the order price and will match up to ten price queues as long as the traded price is not worse than the order price. Unfilled quantity of a special limit order will not be stored and will be cancelled.

13. The review also indicated that:

(a) IBHK's electronic trading system was developed by its head office in the United States, where its programming function was responsible for both development and quality assurance of the trading system. IBHK did not conduct adequate user acceptance testing on the trading system; and

(b) the technical design documents of the systems were high level and did not provide a detailed explanation of the components of the trading systems. A specific example is that IBHK did not keep adequate records in relation to the design, development, deployment or operation of the order cancellation functionality in its electronic trading system.

14. As such, the SFC is of the view that IBHK had also failed to:

(a) ensure that the algorithmic trading system it uses or provides to clients for use are adequately tested to ensure they operate as designed in breach of paragraph 3.2 of Schedule 7 to the Code of Conduct; and

(b) keep, or cause to be kept, proper records on the design, development, deployment and operation of its electronic trading system in breach of paragraphs 1.3 and 3.4 of Schedule 7 to the Code of Conduct.

Conclusion

15. In coming to the decision to resolve the abovementioned failures concerning IBHK's electronic and algorithmic trading systems, the SFC took into account all relevant circumstances, including that IBHK:

(a) involved their senior management in the liaison with the SFC about the regulatory concerns;

(b) took initiative to bring this matter to a conclusion by fully and frankly discussing the regulatory concerns with the SFC;

(c) undertook a review with the SFC to address the regulatory concerns and identify the deficiencies in its internal controls; and

(d) co-operated with the disciplinary action by resolving the SFC's regulatory concerns.

16. The SFC also took into consideration IBHK's board of directors have undertaken that reasonable steps will be implemented to ensure IBHK's compliance with the regulatory requirements for electronic and algorithmic trading, and the failures set out above will be rectified within 12 months. Otherwise, similar failures would have resulted in a substantially higher level of fine.