Review of policy for trade cancellation / annulment

Objective

To review the existing mechanism for trade annulment and seek views and suggestions of the investors and market participants to improve the framework of trade annulment with the view to ensure orderly trading and market integrity.

A. Introduction

1. The trades undertaken on the stock exchange are treated as final and their settlement is guaranteed by the clearing corporation of the stock exchange. Rules / Bye Laws / Regulations of the stock exchange and the clearing corporation govern the execution and settlement of the trades.

2. Stock exchanges, however, under exceptional situations have annulled trades undertaken on their platform. Byelaws of Indian stock exchanges empower them to annul trades. Indian stock exchanges have annulled trades in the past on account of fraud or wilful misrepresentation or material mistake in the trade. Example of few instances of trade cancellation are as follows:

   (a) Trade annulled by stock exchanges on account of erroneous orders / trades

Sr. No.	Stock Exchange	Details of annulled trades	Reason
(i)	BSE	All trades of equity derivatives segment on October 26, 2011 were annulled	Malfunctioning of trading algorithm of a stock broker

   (b) Trade annulled by stock exchanges on account of fraud or market manipulation

Sr. No.	Stock Exchange	Details of annulled trades	Reason
(i)	NSE	Trades executed in the scrip of Maruti Organics Ltd. in settlement no 1996027	Market manipulation
(ii)	NSE	Trades in Kamal Overseas Ltd. from April 23 – April 29, 1997 and April 30 - May 06, 1997	Market manipulation and falsification of documents
(iii)	BSE	Trades in scrip of Balaji Bonds and Holding Ltd from September 11 - September 22, 2000	Delivery of Fake share certificates

B. Market manipulation

3. A transparent and un-biased discovery of the fair price of securities is one of the important functions served by the stock exchanges. Stock exchanges achieve this by bringing together interested buyers and sellers in an unbiased, anonymous and transparent manner.

4. SEBI (Prohibition of Fraudulent and Unfair Trade Practices relating to securities market) Regulations, 2003 define what can construe as manipulative, fraudulent and unfair trade practices in Indian Securities Market.

5. In order to deter market manipulation, the stock exchanges have deployed online surveillance mechanism which involves monitoring positions, prices and volumes in real time. Effective investigation and penal actions against market manipulators further deter market manipulation and improve confidence in the market mechanism.

C. Error trades and concerns raised due to error trades

6. Error Trades (or freak trades) are not a new problem for the securities market. Securities markets have faced the challenge posed by error trades from the days of pit-based trading when an incorrect hand-signal (or an incorrect interpretation of the hand signals) would result in an erroneous purchase/sale of security.

7. Advancements in technology have fundamentally changed the way orders are placed by the market participants. In the age of computerised trading, errors have taken the form of fat-finger errors and system faults (malfunction in trading systems / algorithms of the stock brokers or malfunction in stock exchanges' trading platforms). While some of such incidents of errors trades were observed to cause localised damage resulting in price variations in few securities, other such incidents have impacted orderly trading by causing large-scale and market-wide price movements, and in certain cases, even leading to a situation of default of members.

8. "Error Trades" may result from system or human errors with the order parameters such as 'name/code of the security', 'volume to be traded', 'price of order', etc. Such unintended trades can have an adverse affect on price formation of the securities, and may even impact price formation of the related securities such as derivatives of the securities, ETFs, etc. Price volatility resulting from erroneous trades can also automatically trigger the execution of contingent orders e.g., "stop loss" orders or "limit" orders.

9. Prevention of erroneous orders forms an important part of the risk management framework of the stock exchanges. Hygiene checks such as *price bands (including dynamic price bands)*, *order quantity limit*, *value per order limit*, *client / broker level trade limit*, etc have been used to avoid entry of erroneous orders in the stock exchange's systems. In addition, upfront real-time margining and the mechanism of

compulsory risk reduction mode after 90% utilisation of collateral in our markets also help in limiting the damage caused by erroneous orders placed by non-institutional clients.

D. <u>Recent instances of erroneous trades</u>

10. The following are few of the recent incidents that were observed in Indian securities market:

Sr. No.	Stock Exchange	Date	Details of the incident
(i)	BSE	October 26, 2011	A trading algorithm malfunctioned resulting in a large movement in the SENSEX futures within a span of less than 3 minutes.
(ii)	NSE	April 20, 2012	An error by a trading algorithm resulted in fall in prices of Infosys futures by 19%.
(iii)	NSE	October 05, 2012	On account of erroneous orders of a stock broker resulting in multiple trades for an aggregate value of over Rs. 650 crore, the Nifty circuit breakers got triggered and trading in the NSE's cash market segment was halted.
(iv)	NSE	February 01, 2013	Malfunction of a trading software of a stock broker resulted in erroneous orders in scrips of Tata Motors and UltraTech Cement.

11. Similar instances of trading disruptions have also been observed in other jurisdictions. Few such incidents are:

(a) <u>Flash Crash in US Securities Market on May 06, 2010</u>: Dow Jones Industrial Average Index (a US securities market index) plunged about nine percent and recovered the losses within minutes.

(b) <u>Trading disruption in NYSE on August 01, 2012 due to an error with the Knight Capital's trading algorithm</u> – The error caused disruption in prices of 148 stocks and ultimately resulted in Knight Capital bearing a loss of $440million.

(c) <u>Cancellation of trades in Kraft Foods undertaken on NASDAQ on October 03, 2012</u> – A trading glitch caused by a faulty trading algorithm resulted in the company's shares to soar by nearly 30 per cent. Trades in Kraft food were cancelled by NASDAQ.

(d) <u>Trading error on Stockholm Stock Exchange on November 28, 2012</u>: The Stockholm Stock Exchange, which is operated by NASDAQ OMX, was forced to halt trading for four hours in derivatives on November 28, 2012 following an order in OMX30

December future contracts of approximate value of 460 trillion SEK (131 times the nation's GDP).

(e) Erroneous orders placed on August 16, 2013 at Shanghai Stock Exchange: A series of orders from a broker caused the market index to surge nearly 6 percent in 3 minutes before dropping back. The Chinese securities market regulator has apportioned the cause to a design flaw in a broker's computer.

(f) Erroneous orders placed at US exchanges by trading system of Goldman Sachs on August 20, 2013: Orders with inaccurate price limits were sent to exchanges due to malfunction of the internal system of Goldman Sachs.

E. Mechanism to handle error trades

12. Erroneous orders / trades may occur despite all preventive measures. Different market authorities (Regulators and Stock exchanges) have adopted different approaches to handle incident of error trades in their jurisdictions. Further, their approach also varies depending on the magnitude and nature of error trades.

13. The approach adopted by securities market regulators and the stock exchanges can be broadly categorised as (a) no modifications / cancellations of trades, (b) price adjustments of the erroneous trades, and (c) cancellation of the erroneous trades. Extant framework adopted by Indian stock exchanges on trade cancellation / annulment is placed at Annexure 1. Trade cancellation policies of the some of the stock exchanges in the other jurisdictions are also placed at Annexure 2.

14. At present, SEBI has not prescribed any regulatory framework with regard to 'annulment of trades'. Indian stock exchanges are empowered by their byelaws to annul trades that they deem fit. A facility is available to the stock brokers to initiate trade cancellation request whereupon the counterparty or counterparties to the trade receive the request in an anonymous manner. Such requests are examined on a case-to-case basis.

15. In the event, all the parties to the trade are in favour of such annulment, stock exchanges usually annul such trades after scrutinizing the request. Stock exchange may also on its own decide to annul trades if such annulment is viewed to be in the interest of the market at large. For example, BSE annulled all the trades of its equity derivatives segment on October 26, 2011 when a large downward movement was observed in the SENSEX futures due to the malfunctioning of trading algorithm of a stock broker. Currently, no time limit is prescribed for exchanges to complete the decision to annul or not

16. Globally, stock exchanges that have adopted a 'no trade modification or cancellation policy' expect the policy to encourage stock brokers to put in place appropriate checks to prevent occurrence of such errors. Further, the policy is also expected to promote market certainty by requiring the stock broker that has committed an error to accept

the responsibility and consequences of the error trades. On the other hand, stock exchanges that allow modification / cancellation of error trades handle such trades as *exceptions* and have well defined polices to cover errors resulting from either or both human and system fault. Such policy may also cover situations leading to certain degree of *order imbalances*. Other set of stock exchanges have adopted a *middle-path* by defining 'no-bust' ranges above and below the prevailing price within which erroneous trades may not be cancelled under error trade policies.

F. IOSCO's Report on Policies on Error Trades (October 2005)

17. IOSCO in its report published in October 2005 defined error trades as transactions that are executed in error either due to the actions of a market user or through malfunction of a trading system. The report inter-alia includes the following recommendations for designing error trade policies:

Adoption of Policies	• Exchanges should evaluate the need for and consider adopting error trade policies. • Exchanges should have, and regulators should take into account, an exchange's need for flexibility in the design of error trade policies.
Comprehensiveness	• Exchange error trade policies should be comprehensive in order to promote the predictability, fairness and consistency of actions taken under the policy.
Predictability and Timeliness	• Policies concerning the resolution of error trades should be designed to provide a predictable and timely process.
Transparency	• Exchange error trade policies should be made transparent to market users. • Cancellation decisions involving material transactions and resulting from the invocation of error trade policies should be made transparent to market users. • Exchanges should be encouraged to develop and adopt measures to specifically identify or "highlight" error trade messages to market users.
Cooperation with other markets	• Exchanges should be prepared to share information with other markets when possible concerning the cancellation of trades.
Prevention	• Exchanges should evaluate the need for measures to prevent error trades.
Role of the Market Supervisor	• Market supervisors should support the implementation of error trade policies that are consistent with the above

	recommendations. • Market supervisors should take affirmative steps to help ensure that there is adequate surveillance conducted in the markets they supervise to detect whether error trades are related to problematic market activity.

G. Views of Financial Sector Legislative Reforms Commission (FSLRC)

18. The Commission while discussing on the matter of 'Finality of financial transactions' in its report 'Volume I: Analysis and Recommendations' dated March 2013 has inter-alia noted that "*transactions on an Infrastructure Institution cannot be easily undone. In netting and settling systems, if any individual transaction is undone, all dependant transactions will also have to be undone. This would create uncertainty for all persons using such institutions. Problems could also arise on exchanges where trades are executed at one point of time but the exchange of securities and money happens at a later point of time. If a person refuses to uphold the trade or goes bankrupt after making a trade but before completing it, a transaction may fail. Failure of a transaction in the exchange may have domino effect on other transactions. The Commission is of the view that transactions on an Infrastructure Institution should be final and not undone under any circumstances*." (emphasis supplied)

19. Thus, FSLRC does not appear to be in favour of unwinding of trades as such annulment is usually a complex process that may necessitate cancellation of all dependent / resultant trades.

H. Issues for consideration

20. The broad issues to be deliberated are:
    - Whether it may be justified to cancel / modify trades that have resulted from orders designated by stock exchanges as “Valid for execution”?
    - Whether erroneous orders resulting from lapses in internal risk controls of the stock broker can qualify for trade annulment?

21. Stock brokers in Indian securities market are responsible for all the orders placed from their terminals and it is their responsibility to put in place mechanism to ensure that all orders are risk-managed before being released to the stock exchanges.

22. In other words, incidents of error related to placement of orders indicate lapses in the risk management mechanism of the stock broker. A provision to cancel erroneous trades may prove counterintuitive as it may provide a way to patch-up things instead of penalizing the stock broker for the fault of running a weak risk management system. Erroneous trades may point to a need to further strengthen the risk checks at the end of stock brokers and the stock exchanges so as to minimise occurrence of such errors.

23. While lapses at the end of stock broker should be discouraged and avoided at all costs, there is also a view that large error trades that impact the sanctity of the price formation, may be treated as exception and therefore allowed to be annulled.

24. A related issue is the ability to identify and establish an order or trade as ‘erroneous’. The issue of establishing erroneous trades/orders is difficult as all orders are validated by the stock exchanges using pre-trade risk checks before accepting orders for matching. Purely on technical terms, stock exchanges may find it difficult to identify whether an order that was received from a stock broker was placed intentionally or the same was resultant of an error.

25. In addition to the above, while framing any policy related to 'trade annulment', it is important to consider that a decision to cancel such erroneous trades may impact other large set of market users such as arbitrageurs, who may have taken new positions or liquidated their existing positions based on the price formation post such erroneous trades. Such traders/investors may find them at the losing end for no fault of theirs in the event such ‘erroneous’ trades are cancelled or modified.

26. In order to address some of the adverse consequences of trade cancellation on resultant / dependant trades, the policy of 'Price Reset of erroneous trades' is an option used in some markets. Such mechanism of Price Reset would involve adjustment of the price of the executed trades to a new 'Determined Price’. For example, stock exchanges may adjust the price of error trades to the Volume Weighted Adjusted Price of last 30 minutes.

27. The process of price reset may prove to be less disruptive to the market as it would not involve annulling error trades, and thereby, would be less damaging to the market users who may have taken new positions or liquidated their existing positions based on the price formation post erroneous trades.

I. Proposal

28. In view of the foregoing and with the objective to have a uniform policy for trade annulment, the following is proposed:

    (i) In order to provide certainty to the trades executed on the stock exchange's trading platform, the trades should not be annulled under normal circumstances. Trade annulment should only be considered under exceptional circumstances (fraud, market manipulation, regulatory action, error that impact the sanctity of price discovery, etc). In such cases stock exchange may also suo-moto undertake examination of trades for cancellation.

    (ii) Stock exchange shall clearly define the circumstances under which request for trade annulment or price reset shall be entertained. Such situations may include (a) where all counterparties to the trades (erroneous trades) are in agreement for such an action and there are no apparent concerns of market manipulation, or (b) where all the market participants may not be in favour of such action but erroneous / manipulative trades have resulted in severe market disruption, thereby, impacting the sanctity of the related and resultant trades.

(iii) Stock exchange shall define minimum parameters to identify erroneous orders / trades.

(iv) The framework prescribed by the stock exchange shall specify who can invoke the mechanism (e.g. stock brokers, clearing members, clients, etc) and provide details on the procedure to invoke the mechanism.

(v) Stock exchange shall specify the time within which such request for annulment or price reset shall be received (say 30 minutes from the trade execution).

(vi) On receipt of such request for annulment, stock exchanges shall suitably and in a timely manner inform other market participants of such request.

(vii) Stock exchange shall analyse the potential effect of trade annulment within the segment, across segments and preferably across stock exchanges. Stock exchange may also consider to undertake a *price reset* of the trades, if price reset is less disruptive than trade annulment.

(viii) Stock exchange shall adopt a transparent and time-bound approach to decide upon such cases / requests (say, before settlement becomes final and irrevocable).

(ix) While deciding upon the request for trade annulment or price reset, the stock exchanges shall indicate the status of the contingent trades (i.e., trades that resulted as an outcome of error trades), combination trades and trades of related securities post trade cancellation or price reset. Stock exchange may also consider to annul the complete trading session across segments, if required, to ensure sanctity of the process of price discovery.

(x) Stock exchanges shall examine cases of erroneous orders / trades and apply deterrent penalties in form of fines or suspension of trading rights of the stock broker.

(xi) Stock exchange shall publish the details of its decision on the website and shall share such details with other stock exchanges.

(xii) Stock exchange shall also provide a mechanism to request a review of its decision.

Request for Public Comments

Public comments are invited on the above proposals. The comments may be emailed on or before October 31, 2013 to maninderc@sebi.gov.in or sent by post to:-

Ms. Maninder Cheema
Deputy General Manager,
Market Regulation Department - Division of Policy,
Securities & Exchange Board of India,
SEBI Bhavan, Plot No. C4-A, "G" Block,
Bandra Kurla Complex, Bandra (East),
Mumbai, India - 400 051.

Annexure 1

Policy on annulment of trades in Indian securities market

1. **NSE**

- The trading systems of Capital Market, Equity derivatives and Currency derivatives of the exchange provides a facility to a member to initiate a trade cancellation request in electronic form whereupon the member on the other side of the trade receives the details of the trade cancellation request in an anonymous manner.

- Upon receiving trade cancellation requests from both the buying and selling members, such requests are scrutinized and processed by the exchange based on the guidelines laid down by the exchange.

- Where the request is not accepted by the member on the other side of the trade: No further processing is done and the request stands ipso facto rejected.

- Where the request is accepted by the member on the other side of the trade: The details of such trades are scrutinized by the Exchange and based on various details of the relevant trade, the trade cancellation request is further examined and evaluated by the Exchange, if the request is found to be eligible. The following criteria are applied to ascertain eligibility of a request:

  (a) The initiation of the trade cancellation request and acceptance by the member on the other side of the trade should take place within fifteen minutes after the close of normal market.

  (b) Members will be required to fax their trade cancellation requests as per the format specified.

  (c) Where the initiating member and the member on the other side of the trade for a trade cancellation request is the same, such request shall not be entertained by the Exchange and shall consequently be not processed by the Exchange.

  (d) The Exchange may seek additional information from such members for further scrutiny, if found necessary. This information may relate to use of the facilities extended by the Exchange as safety measure such as order limits, market price protection etc. Accordingly, members are advised to make prudent use of the said features to minimize the possibility of errors.

- If a request made by a member is found to be ineligible on any of the above accounts, then the request is ipso facto rejected. If the request made by the member is found to be eligible, i.e. meeting the criteria laid down above, it is dealt with in accordance with the evaluation policy of the Exchange.

2. **BSE**

- <u>Byelaw 193 of Cash Segment</u>:

  (a) The Governing Board may, on its own motion or pursuant to an application by any person, annul a bargain or several bargains falling within any particular class of bargains if the Governing Board is satisfied that there exists sufficient cause to do so. Such annulment shall be final and shall come into force forthwith.

  (b) The expression “sufficient cause” in clause (a) above shall, without prejudice to the generality of the expression, include fraud, wilful misrepresentation or material mistake.

  (c) The Governing Board may, subject to such terms, conditions, limitations and procedures as it may prescribe, delegate all or some of its powers under this bye-law to the Executive Director or committee(s) as headed by the Executive Director as the Governing Board thinks fit and proper.

- <u>Byelaw of 1.46 of Derivatives segment</u>:

  (a) The Governing Council and/or the Chief Executive Officer and/or any committee empowered by the Governing Council in this behalf may, on its own motion or pursuant to an application by any person, annul a trade or several trades falling within any particular class of trades if the Governing Council, the Chief Executive Officer or such committee is satisfied that there exists sufficient cause to do so. Such annulment shall be final and shall come into force forthwith.

  (b) The expression "sufficient cause" in clause (a) above shall, without prejudice to the generality of the expression, include fraud, wilful misrepresentation or material mistake.

  (c) The Derivatives Segment shall make Regulations relating to annulment of trades. Such Regulations shall specify the parameters for defining a class of trades.

3. **MCX-SX**

- The trading system of the Exchange has a facility to initiate a trade cancellation request by members in electronic form whereupon the counterparty member on the other side of the trade receives the details of the trade cancellation request in an anonymous manner. Upon receiving trade cancellation requests from both the buying and selling members, such requests are scrutinized and processed by the Exchange based on guidelines laid down by the stock exchange.

- Regulation 3.4.7 of Currency Derivatives Segment is reproduced below:

  "3.4.7. Where a trade cancellation is permitted and Trading Member wishes to cancel a trade, it may be done only with the approval of the CD Segment of the Exchange and in the following manner:

(a) The Trading Member wishing to cancel the trade shall initiate a cancellation request to the CD Segment of the Exchange. The counter Trading Member to the trade, too, shall have to put in his cancellation request separately.

(b) Where a Trading Member initiates such request the onus shall be on the Trading Member to ensure that he receives a written request from the constituent.

(c) Where a trade cancellation request comes to CD Segment of the Exchange from only one party to trade and is pending with the CD Segment of the Exchange as a result of it being not confirmed by the counter party to such trade till such time as may be notified by the CD Segment of the Exchange, such request may be cancelled at the discretion of the CD Segment of the Exchange.

(d) The CD Segment of the Exchange shall not consider any request for a Trade Cancellation after such period after the market close on a trading day as may be notified from time to time.

(e) The CD Segment of the Exchange shall not give the reasons for rejection or approval of any such trade cancellation request.

(f) The CD Segment of the Exchange may cancel a trade suo-moto without any request by either of the parties to the trade at any time without giving any reason thereof which cancellation shall be final and binding up on the parties to the trade. In the event of such cancellation, Trading Member shall be entitled to cancel relative contract(s) with his constituents."

- If the counterparty trading member does not accept the trade cancellation request, no further processing will be done and the trade cancellation request stands rejected. In case the counter party accepts the trade cancellation request, details of such trades will be scrutinized by the Exchange based on following criteria:

- The initiation of the trade cancellation request and acceptance by the counter party member on the other side of the trade should take place within reasonable time (15 minutes) after the close of normal market

- Trade cancellation request is not self-trade (same member on both side)

- The initiating member will provide in writing that the erroneous trade is due to genuine punching error and will have to give evidence of the trade in the correct series along with the request, if such request for trade cancellation is due to trades in erroneous series.

- The Exchange may seek additional information from such members for further scrutiny, if found necessary. Such trade cancellation request will be further examined and evaluated by the Exchange. If the request is found to be eligible and based on the merits of the case such request may be considered for cancellation.

Annexure 2

Policy of the stock exchanges related to 'trade's annulment' in other jurisdictions

1. **<u>Singapore</u>**

   (i) <u>Cash Segment</u>:

   (a) Trading Member who makes the error must immediately contact the counterparty Trading Member and seek its agreement to cancel the trade. They must then inform SGX-ST of the error by both telephone (within 30 minutes of error occurred) and in writing (on the same day with details on the security name, price, volume, trade number, time of error trade and reasons for error).

   (b) SGX-ST may review the error trade if both Trading Members cannot agree to the cancellation of an error trade and the trade loss is more than S$5000.

   (ii) <u>Listed Futures and Options</u>:

   (a) In the event of an error trade, the Exchange will only exercise its discretion to

   - cancel an error trade partially or fully; or
   - adjust the trade price of the error trade partially or fully to the nearest limit of the error trade price range (if the trade price falls outside the error trade price range for the Contract for that day)

2. **<u>Taiwan</u>**

   (i) There is no trade cancellation mechanism in Taiwan.

   (ii) The only exception is trading in incorrect accounts, where brokers can just cancel and correct the trading accounts.

   (iii) For other errors, brokers can only book to its error account and unwind from the market.

3. **<u>Japan</u>**

   (i) Where a transaction is affected because of an erroneous order, if it is extremely difficult to conduct the settlement and the Exchange deems that the market is likely to be confused, the Exchange may cancel the transaction specified by the Exchange as prescribed by the Exchange.

   (ii) Where transaction records in the Exchange's systems are lost due to unavoidable reasons including act of providence, if the Exchange deems it difficult to restore all the lost records, the Exchange may cancel transactions which it designates on a case by case basis.

   (iii) Where the Exchange cancels a transaction, such transaction shall be deemed as if it were never affected at all.

(iv) Even where a trading participant suffers damage because the Exchange cancels a transaction, the trading participant shall be unable to claim for compensation for the damage against the trading participant which has placed an erroneous order; provided, however, that the same shall not apply to cases where deliberate action or gross negligence is deemed to have been seen in a trading participant.

(v) Where a trading participant suffers damage because the Exchange cancels a transaction, the trading participant shall be unable to claim for compensation for the damage against the Exchange; provided, however, that the same shall not apply to cases where deliberate action or gross negligence is deemed to have been seen in the Exchange.

4. **UK (London)**

(i) Where an erroneous order is executed, the member firm may submit a request to contra i.e. cancel the trade, however, the other side of the trade is under no obligation to agree to the contra. As the trading on Exchange is anonymous this process is intermediated by the Exchange.

(ii) Exchange enforced cancellations -This may occur in two scenarios (a) where the parties don't agree to a contra, a member firm can request an enforced cancellation; or (b) where the Exchange acts on its own volition. In considering a cancellation, the Exchange has regard to the following:

- only considers requests relating to on order book executions;

-requests must be made within 30 minutes;

-trades must be manifestly erroneous and have impact on the market;

-the potential loss must be at least £100,000 for a single stock and at least £200,000 for more than one stock.

(iii) Some of the MTFs have much simpler rules where, for example, trades are automatically bust if they are executed at more than a fixed percentage (e.g. 5%) away from the reference price.

5. **NYSE ARCA**

(i) "Clearly Erroneous Executions": when there is an obvious error in any term, such as price, number of shares or other unit of trading, or identification of the security. A transaction made in clearly erroneous error and cancelled by both parties or determined by the Corporation to be clearly erroneous will be removed from the Consolidated Tape.

(ii) Requests for review must be received within thirty (30) minutes of execution time and shall include information concerning the time of the transaction(s), security symbol(s), number of shares, price(s), side (bought or sold), and factual basis for believing that the trade is clearly erroneous. Upon receipt of a timely filed request that satisfies the numerical guidelines of the Rule, the counterparty to the trade is notified by the

Corporation as soon as practicable, but generally within 30 minutes. An Officer may request additional supporting written information to aid in the resolution of the matter. If requested, each party to the transaction shall provide, within thirty (30) minutes of the request, any supporting written information. Either party to the disputed trade may request the supporting written information provided by the other party on the matter.

(iii) Other market centres will generally have an additional 30 minutes from receipt of their participant's timely filing, but no longer than 60 minutes from the time of the execution at issue, to file with the Exchange for review of transactions routed to the Exchange from that market centre and executed on the Exchange.

(iv) A transaction executed during the Core Trading Session or the Opening and Late Trading Session shall be found to be clearly erroneous if the price of the transaction to buy (sell) that is the subject of the complaint is greater than (less than) the Reference Price by an amount that equals or exceeds the Numerical Guidelines set forth below. The Reference Price will be equal to the consolidated last sale immediately prior to the execution(s) under review except for: (A) Multi-Stock Events involving twenty or more securities, (B) transactions not involving a Multi-Stock Event that trigger a trading and subsequent transactions in which case the Reference Price shall be determined in accordance with the defined rule; and (C) in other circumstances, such as, for example, relevant news impacting a security or securities, periods of extreme market volatility, sustained illiquidity, or widespread system issues, where use of a different Reference Price is necessary for the maintenance of a fair and orderly market and the protection of investors and the public interest.

Reference Price, Circumstance or Product:	**Core Trading Session Numerical Guidelines (Subject transaction's % difference from the Reference Price:**	**Opening and Late Trading Session Numerical Guidelines (Subject transaction's % difference from the Reference Price:**
Between $0.00 and $25.00	10%	20%
Between $25.01 and $50.00	5%	10%
Greater than $50.00	3%	6%
Multi-Stock Event - Filings involving five or more, but less than twenty, securities whose executions occurred within a period of five minutes or less	10%	10%
Multi-Stock Event - Filings involving twenty or more securities whose executions occurred within a period of five minutes or less	30%, subject to the certain conditions	30%, subject to the certain conditions
Leveraged ETF/ETN securities		Core Trading Session Numerical Guidelines multiplied by the leverage multiplier (i.e. 2x)

(v) Multi-Stock Events Involving Twenty or More Securities: During Multi-Stock Events involving twenty or more securities the number of affected transactions may be such that immediate finality is necessary to maintain a fair and orderly market and to protect investors and the public interest. In such circumstances, the Exchange may use a Reference Price other than consolidated last sale. With the exception of those securities under review that are subject to an individual security trading pause, and to ensure consistent application across market centres when this paragraph is invoked, the Exchange will promptly coordinate with the other market centres to determine the appropriate review period, which may be greater than the period of five minutes or less that triggered application of this paragraph, as well as select one or more specific points in time prior to the transactions in question and use transaction prices at or immediately prior to the one or more specific points in time selected as the Reference Price. The Exchange will nullify as clearly erroneous all transactions that are at prices equal to or greater than 30% away from the Reference Price in each affected security during the review period selected by the Exchange and other markets consistent with this paragraph.

(vi) Additional Factor: Except in the context of a Multi-Stock Event involving five or more securities, and individual security trading pauses below an Officer may also consider additional factors to determine whether an execution is clearly erroneous, including but not limited to, system malfunctions or disruptions, volume and volatility for the security, derivative securities products that correspond to greater than 100% in the direction of a tracking index, news released for the security, whether trading in the security was recently halted/resumed, whether the security is an IPO, whether the security was subject to a stock-split, reorganization, or other corporate action, overall market conditions, Opening and Late Session executions, validity of the consolidated tapes trades and quotes, consideration of primary market indications, and executions inconsistent with the trading pattern in the stock. Each additional factor shall be considered with a view toward maintaining a fair and orderly market and the protection of investors and the public interest.

6. **<u>CME</u>**

(i) CME in its absolute and sole discretion, may adjust trade prices or cancel any trade if it believes that allowing the trade(s) to stand as executed could have a material, adverse effect on the integrity of the market.

7. **<u>CFTC (Proposed Rule)</u>**

(i) Trading platforms must establish policies for adjusting the price of trades or breaking trades that have been executed due to an error.

(ii) Policies must favor price adjustments rather than trade cancellation.

(iii) To the extent possible, decisions by the trading platform to be made on the basis of readily available objective criteria in order to facilitate rapid or immediate decisions.

(iv) Market participants must report error trades to the trading platform within five minutes after the trades are executed.

(v) Trading platforms must notify market participants of a potential adjust-or-bust situation immediately.

(vi) Trading platforms must make a decision and notify market participants of that decision within a specified period of time.