FINAL REPORT

POLICIES ON ERROR TRADES

TECHNICAL COMMITTEE
OF THE
INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS

OCTOBER 2005

I. Introduction

At its meeting in Madrid, Spain in February 2004, the Technical Committee of the International Organization of Securities Commissions (IOSCO) approved a project specification on error trades submitted by its Standing Committee on the Regulation of Secondary Markets (SC2). The Technical Committee instructed SC2, in coordination with the IOSCO SRO Consultative Committee, to examine the policies of organized, regulated securities and derivatives exchanges that require regulatory authorization (exchanges or markets), and of their regulators, concerning the resolution of transactions that are executed in error either due to the actions of a market user or through malfunction of a trading system (error trades).

This inquiry was not prompted by concerns about the effectiveness of electronic systems. On the contrary, electronic trading technology offers many advantages to both fully automated trading exchanges as well as to non-automated "open outcry" exchanges that use supporting electronic technology: expediting transactions in securities and derivatives by enhancing the capacity, accuracy and speed of order transmission and execution; facilitating linkages with clearing houses, back-office systems, and automated routing systems, quotation systems and other electronic trading systems; linking traders in remote locations and facilitating the extension of trading hours in different time zones; enhancing the ability of market authorities to conduct surveillance and develop transaction audit trails; facilitating the real-time disclosure of transaction-related information on the system as well as through linked trading and quotation systems; and enhancing opportunities to reduce and monitor risk through the ability to program trading limits.[1]

This inquiry was prompted, however, by the recognition that error trade policy, and in particular the process by which trades are cancelled, can affect market integrity and users' confidence in the markets. In addition, the surveillance of erroneous trades and their resolution is material to detecting and deterring market abuse.

The IOSCO *Objectives and Principles of Securities Regulation* (2003 revision) (*Principles*) and the *Methodology for Assessing Implementation of the IOSCO Objectives and Principles of Securities Regulation* (2003 *Methodology*) provide the general framework within which to analyze error trade policies.

The *Principles* state that the three core objectives of securities regulation are: (1) the protection of investors, (2) ensuring that markets are fair, efficient and transparent, and (3) the reduction of systemic risk.[2] Among other things, the *Principles* make clear that "regulation should also promote market practices that ensure fair treatment of orders and a price formation process that is reliable."[3] In particular, the *Principles for Secondary Markets* provide that, among other matters:[4]

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[1] *See, e.g., Screen-Based Trading Systems for Derivative Products* (IOSCO 1990).

[2] *Principles* ¶ 4.1 and related discussion of the Objectives at ¶¶ 4.2.1, 4.2.2 and 4.2.3.

[3] *Principles* ¶ 4.2.2.

- The establishment of trading systems including securities exchanges should be subject to regulatory authorization and oversight;

- There should be ongoing regulatory supervision of exchanges and trading systems which should aim to ensure that the integrity of trading is maintained through fair and equitable rules that strike a balance between the demands of different market users;

- Regulation should promote transparency of trading;

- Regulation should be designed to detect and deter manipulation and other unfair trading practices; and

- Regulation should aim to ensure the proper management of … market disruption.

The *Principles* and *Methodology* also make it clear that "there is often no single correct approach to a regulatory issue." [5] Moreover, in drafting the *Principles*, IOSCO concluded that it should avoid being overly prescriptive in its requirements while, at the same time, providing sufficient guidance as to the core elements of an essential regulatory framework for securities activities.[6]

Within this broad framework, SC2 (1) examined areas of difference and similarity in exchanges' approaches to error trade policy, (2) examined those policies within the context of achieving market integrity, transparency, fairness and adequate supervision as reflected in the *Principles*, and (3) attempted to discern whether there are common approaches that markets and regulators should be encouraged to consider in achieving those broad objectives.

This Report adopts for purposes of discussion the following broad, inclusive definition of "error trades": "transactions that are executed in error either due to the actions of a market user or through malfunction of a trading system." This broad definition reflects the Survey results, which disclose that many exchanges consider both user and system errors under error trade policies, while others limit the policies to human errors. Still other exchanges invoke their error trade policies to address situations that cause order imbalances (*e.g.*, cascading stops). Although the implications of a system-wide malfunction could be of greater magnitude than an erroneous trade resulting from user error, this Report makes no recommendations as to the appropriate scope of error trade policies. This is because, in part, error trade rules cannot be viewed in isolation from the operation of other exchange policies that are intended to address similar market integrity objectives (*e.g.*, emergency procedures). More fundamentally, the IOSCO

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[4] *Principles* 25, 26, 27 and 29 at ¶¶ 13.4.

[5] *Principles* ¶ 2.

[6] *Methodology Introduction*, section B.

Principles and *Methodology* do not restrict the techniques by which regulatory goals (*i.e.*, market integrity) can be attained.

In order to provide guidance to exchanges and regulators, and allow exchanges to assess and develop their practices, this Report articulates several recommendations with respect to the design of error trade policies. These recommendations have been derived from reviewing the existing practices of exchanges, which disclose much similarity with respect to the broad concerns that their error trade policies are intended to address but also show disparity with regard to the specific approaches to implementation. The Technical Committee hopes that publication of this Report will encourage all exchanges to consider the potential benefits of the various approaches discussed in the Report.

While this Report encourages the adoption of error trade policies, it is not intended to mandate a particular application of trade cancellation policies. The adoption of error trade policies will not necessarily lead to trades being cancelled in every case. For example, some exchanges may favor the approach that trades in the market should ordinarily be allowed to stand, even if they are in error, in the interests of market certainty. Exchanges may also want to encourage appropriate levels of care by market users, by refusing to cancel trades simply because they are error trades. In these cases, the market user is likely to be required to accept the responsibility for and consequences of the error trade. Moreover, different policies may be adopted and appropriate for equity and derivative markets. A variety of approaches is consistent with IOSCO's pragmatic and flexible approach to securities regulation.

Consultation

This project has been materially assisted by the efforts of the IOSCO SRO Consultative Committee, which is comprised of fifty nine IOSCO affiliate members representing securities and derivatives markets as well as other self-regulatory organizations. Twenty-eight responses to a survey (Survey) that was prepared by SC2 were submitted by SRO Consultative Committee members[7]. A summary of the responses to the Survey (Survey Responses) is included as Appendix A. In addition, the members of SC2 responded to a survey on regulatory approaches to error trades, a summary of which is included as Appendix B.

During its January 2005 meeting the Technical Committee authorized the release of a consultation draft of the report entitled *Policies on Error Trades*, which was made available for

[7] Submissions were received from the following members of the IOSCO SRO Consultative Committee: Amman Stock Exchange, Australian Stock Exchange Limited, Board of Trade of the City of Chicago, Inc. ("CBOT®"), Bolsa de Mercadorias & Futuros, Borsa Italiana, BOVESPA, Bursa Malaysia Berhad, Chicago Mercantile Exchange, EuroNext Paris (Cash Markets), FWB Frankfurter Wertpapierbörse / Xetra, Hong Kong Exchanges and Clearing Limited (Derivatives Products), Hong Kong Exchanges and Clearing Limited (Cash Products), Istanbul Stock Exchange, Jasdaq Securities Market Inc., Madrid Securities Exchange, MATIF/MONEP, Mexico Stock Exchange, Montreal Exchange, NASDAQ, New York Stock Exchange, SGX – Derivatives, SGX – Securities, SWX Swiss Exchange, Sydney Futures Exchange, Taiwan Stock Exchange, Tokyo Stock Exchange, Inc., Toronto Stock Exchange, National Futures Association. Since NFA does not operate a market, NFA's response was limited to one question addressing the review of error trade policies.

public comment on the IOSCO web-site.[8] A Feedback Statement summarizing and discussing the comments received from the international financial community is presented in Appendix C. During its 2 and 3 October 2005 meeting the Technical Committee approved the present report and authorized its public release.

[8] *See* IOSCO Public Documents (February 2005).

Recommendations for the Design of Error Trade Policies

1. 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.*

2. Comprehensiveness

- *Exchange error trade policies should be comprehensive in order to promote the predictability, fairness and consistency of actions taken under the policy.*

3. Predictability and Timeliness

- *Policies concerning the resolution of error trades should be designed to provide a predictable and timely process.*

4. 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.*

5. Cooperation with other markets

- *Exchanges should be prepared to share information with other markets when possible concerning the cancellation of trades.*

6. Prevention

- *Exchanges should evaluate the need for measures to prevent error trades.*

7. Role of the Market Supervisor

- *Market supervisors* [9] *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.*

[9] This Report uses the term "market supervisor" broadly to include the market itself as well as the market's regulator.

II. Recommendations for the Design of Error Trade Policies

1. 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.*

Discussion

- *Adoption of error trade policy*

Accurate information in respect of market volumes and prices of completed trades is central to both the fairness and efficiency of a market, and in particular to its liquidity and quality of price-formation. Information in relation to volumes and prices of completed trades enables market users not only to take into account the most recent information, but also to monitor the quality of executions they have obtained compared with other market users. In general, where trading information is comprehensive and widely available, the price discovery process is more efficient and the public's confidence in the market is greater.[10]

However, the availability of trading information, particularly when combined with the speed of electronic trading technology and the increased linkages among markets, both within the market's jurisdiction and in other jurisdictions where traders or information providers have access to the market, can also exacerbate the market consequences of transactions that are executed in error either due to the actions of a market user or through malfunction of a trading system. Incidents that involved the application of error trade policies illustrate the degree to which erroneous trades can rapidly affect the market and have widespread consequences for market users.[11]

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[10] *See Transparency and Market Fragmentation* (IOSCO 2001), and *Transparency on Secondary Markets: A Synthesis of the IOSCO Debate* (IOSCO 1992).

[11] (a) On May 14, 2001, a dealer at a member firm of the London Stock Exchange entered orders in a basket of index stocks with a value approaching £300m when he apparently intended to enter orders totaling approximately £3m. The orders, which resulted in several thousand trades, were entered near to the end of that day's closing auction, during the course of which the FTSE 100 index fell by almost 2.5%.

(b) On July 3, 2003, at the Chicago Board of Trade (CBOT) the mini-sized Dow futures experienced a sudden major market movement in the September and December contracts, falling from 9058 to 8474, or 584 points, which is approximately 2/3 of the 10% Circuit Breaker Limit for the U.S. equity futures and securities markets. There was also a 506-point disparity between the low prices of the CBOT's $10 Dow^{SM} Futures contract during this time. The CBOT disallowed trades executed at levels below the 40-point range in both the September and December mini-sized Dow contracts. For the time between 9:38:00 a.m. to 9:40:04 a.m., trades below 9018 in the September contract and trades below 8986 in the December contract were deemed invalid.

(c) On July 14, 2003 the Chicago Mercantile Exchange's (CME) E-Mini Standard & Poor's 500 futures contract dropped briefly, but sharply, in afternoon trading, prompting the exchange to void some 600 transactions. The trading problem at the CME was triggered by an "order imbalance" that led to a "cascading effect" when a number of stop orders were executed in the automated trading system. In August 2003 the CME introduced "stop logic

Once an error trade is executed, the erroneous trade data will be disseminated and other traders will act on such information.[12] For example, orders for securities or derivatives[13] that are executed erroneously at prices substantially away from the existing trading range and in large volumes could cause other traders to take actions based on reports of such trades, not only in the same security but also in derivative or cash-related markets. Erroneous executed trades also could automatically trigger the execution of contingent trades (*e.g.*, "stop" or "limit" orders). The longer it takes for a trader to report and the exchange to resolve an allegedly erroneous trade, the longer such "inaccurate" trading information could have an effect on price formation.

Moreover, the extent to which third parties (*e.g.*, program buyers or sellers) are able to receive compensation, or rescind a transaction, as a result of error trades (or cancelled error trades) is unclear. The difficulties in determining potential accountability affect the ability of firms to appropriately price and manage related risks and to assess appropriately the costs of doing business on various exchanges.

There may also be particular concerns with regard to the resolution of errors made in connection with cross-border trades. Traders have an interest in understanding the applicable rules at exchanges outside their jurisdictions before committing to trade on those markets. There may be different and/or conflicting rules, standards and processes for error trade resolution in the various jurisdictions. In this regard, any lack of transparency and certainty concerning the explicit conditions under which a trade may be cancelled and how cancelled trades are treated is a source of operational risk.[14] If the policies concerning trade cancellation are not known with certainty, then traders may act in a manner that adds to volatility during periods when "erroneous trading" is affecting market prices. This could exacerbate instability in electronic markets that are used by globally active traders and intermediaries.

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enhancement" that was designed to prevent market spikes that can occur due to the continuous triggering, election and trading of stop orders.

(d) On December 5, 2003, the NASDAQ Stock Market (NASDAQ) halted trading in Corinthian Colleges Inc. (COCO) from 10:58 a.m. to 11:55 a.m. due to extraordinary market activity that resulted from multiple orders being caught in a systemic loop and routed to multiple market centres and electronic communications networks (ECNs) by a single customer of a market participant. NASDAQ also determined that all trades reported to NASDAQ in COCO that were executed from 10:46 a.m. to 10:58 a.m. would be cancelled as clearly erroneous. Other markets also cancelled trades in COCO that occurred during this period. See NASDAQ Head Trader Alert #2003-164 (December 5, 2003).

[12] Erroneous prices may have wider effects, such as affecting mutual fund pricing, triggering margin calls, etc.

[13] Certain derivatives (*e.g.*, options) also may be considered securities.

[14] Operational risk is "the risk that deficiencies in information systems or internal controls, human errors or management failures will result in unexpected losses." *Recommendations for Central Counterparties* (IOSCO/CPSS November 2004). Operational risk is often addressed in part by the adoption of exchange or regulatory rules that are designed to control the execution, clearing and settlement phases of exchange trading and to address the consequences of a deficiency.

These considerations suggest that the adoption of error trade policies will facilitate a market's ability to address the effects of error trades and maintain market integrity and enhance the ability of market users to price and manage risks.

- *Need for Flexibility*

The goal of preserving market integrity includes a concern with the need to avoid and correct the transmission of erroneous price information to the market and its effect on the price formation process. However, this goal also includes a sometimes conflicting concern with the need to preserve trade certainty. As a result, the design of error trade policies necessarily involves a *judgment* as to how an exchange philosophically perceives or assigns a "utility" to these two concerns, which in turn will influence the exchange's *judgment* as to how it will weigh those concerns within its error trade policy. As noted in the Introduction to this Report, these considerations may result in an exchange adopting the approach that trades in a market should ordinarily be allowed to stand.

This Report recognizes that a market's judgments with respect to its approach to error trades reflects legitimate policy determinations, which in turn will be expressed in different error trade policies.

For example, most futures exchanges have established a range of prices above and below the prevailing price within which erroneous trades may not be cancelled under error trade policies ("no-bust" ranges). By establishing such ranges in advance an exchange decides which transaction prices will be considered to have been executed at "valid" prices and provides a measure of predictability and consistency of treatment. [15] Other exchanges have not adopted no-bust ranges. However, both the decision by an exchange to adopt a no-bust range and, if so, the range chosen, may be influenced, in part, by the degree to which a market is committed as a matter of "trading philosophy" or "business doctrine" to maintaining trades, the volatility characteristics of the traded product (*e.g.,* futures versus equity securities), the perceived need for such no-bust ranges or the presence of other measures.[16] These decisions are appropriately within the discretion of the exchange.

As the above illustrates, there is no one approach to error trade policy. Accordingly, markets should have, and regulators should take into account a market's need for, flexibility in the design of error trade policies.

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[15] There are a variety of methodologies to establish "no-bust" ranges described in the Survey and this Report is not intended to mandate the use of "no bust" ranges or, if used, any particular methodology to construct such ranges.

[16] Error trade rules may be just one component of an exchange's approach to addressing trade certainty (*e.g.,* price limits, filters programmed into an electronic system's trading algorithm that limit permissible execution prices). *See* for example IOSCO's *Report on Trading Halts and Circuit Breakers* (2002). An exchange could determine that its adoption of price limits and trading halt criteria effectively address erroneous trade scenarios that could have a material effect on the price formation process.

2. Comprehensiveness

- *Exchange error trade policies should be comprehensive in order to promote the predictability, fairness and consistency of actions taken under the policy.*

Discussion

The IOSCO *Principles* contemplate that exchange rules will be applied consistently and fairly and that no market user should be favored over others.[17] A comprehensive policy that eliminates ambiguities and contemplates in advance the necessary processes and probable consequences of invoking and canceling a trade helps to achieve these goals by allowing market users to understand in advance the circumstances under which a trade may be cancelled, the type of trades that may be cancelled, the parties who may challenge the trade and the scope of all exchange actions once the policy is invoked.

The predictability of actions that results from a comprehensive policy enhances a sense of fairness by allowing market users to understand and evaluate in advance the risks and costs to which they may be exposed should error trade policies be invoked – whether they have caused the error or their trades have been affected by the error - and to take appropriate actions.

In order to develop a comprehensive error trade policy the designers are encouraged to review the summary of *Survey Responses* included in this Report and consider the advantages, if any, of the approaches disclosed in that summary.[18] In this regard, a review of the *Survey Responses* discloses that exchanges have adopted rules that address the following general topics:

- **Scope of application, definitions, who may invoke the policy and procedures to invoke the policy –** What constitutes an error trade; the systems to which the policies apply; the specific circumstances under which they may be invoked (*e.g.*, for errors in trade price or quantity or system errors); specifically identified categories of person who may invoke the policy (*e.g.*, exchange participants who are parties to the trade, non-parties to the trade, clearing participants, the exchange unilaterally or other third parties); including the rights of third parties to invoke the rules; the type of trades that may be subject to cancellation (*e.g.*, contingent trades); and the procedure to invoke the policy.

- **Combination trades and third party contingent trades[19] –** The treatment of combination trades entered into by the parties and the ability of third parties whose trades were affected by an error trade to invoke the policy, either

[17] *Principles* ¶ 4.2.2.

[18] This suggestion is not intended to prescribe any particular approach. The application of a cost benefit analysis may be appropriate and helpful in determining whether or how to implement a particular provision.

[19] Combination trades pair orders - for example, the purchase of a security and the sale of an option on a security; contingent trades are submitted subject to certain defined criteria such as a minimum sale price or maximum purchasing price.

contingent trades or non-contingent trades. The specific identification of the types of trades that can be challenged under the policy allows market users to assess their own use of the market and the need to take protective action (*e.g.*, intermediaries may decide to charge additional fees to address uncertainty as to trade finality).[20]

- **No-bust ranges** - For exchanges that adopt no-bust ranges, the range, methodology used to determine the range, whether the exchange can cancel a trade within the no-bust range (*e.g.*, to avoid an unfair result such as a trade caused by system errors or where the parties agree), whether the exchange retains the flexibility and discretion not to cancel a trade (*e.g.*, if it has a reasonable basis to conclude that the invocation of the error trade policy was part of a manipulation or otherwise was an attempt to "game" the system.) [21]

- **Process to determine whether to cancel a trade, notification and right to appeal decision** - Which exchange official or office decides, the written criteria for deciding whether to cancel and/or not cancel a trade, whether consent of the parties is required, timeframes, who must be notified of the decision, and rights to appeal the decision.

- **Cancellation and voluntary actions by parties –** Actions taken by the exchange when it decides to cancel a trade, actions taken by an exchange that does not cancel trades but corrects the price, the ability of parties to maintain a busted trade but voluntarily adjust the price, the existence of other remedies if the trade is not cancelled, the ability of parties to reverse the transaction by other techniques (*e.g.*, prearranged offsetting transactions).

- **Notification –** Whether the exchange is required to provide notice that a trade has been submitted, accepted by the exchange for review and cancelled and if so, to whom notice must be provided, the mechanism for doing so, timeframes and special procedures to bring such notice to the attention of recipients.

- **Fees or penalties –** The existence of any fees or penalties for canceling a trade.

- **Dispute resolution mechanisms –** The existence of dispute resolution mechanisms, obligations to resolve disputes, allocation of losses, ability of parties to agree to financial adjustments to cover losses.

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[20] The speed of electronic reporting systems means that the execution of an erroneous trade can result in the instantaneous broadcast of erroneous price information to the market. Such price information may in turn immediately trigger various contingency orders and therefore could affect a large universe of market participants. For practical reasons, markets generally limit the universe of participants who may invoke the error trade policy.

[21] Market supervisors' surveillance and investigations should take into account such "gaming" of the system. *See* the discussion below regarding "role of the market supervisor."

- **Prevention –** Measures that are intended to minimize the possibility of error trades, such as price limits or functions programmed into the trading system algorithm that automatically limit the range of permissible buying or selling prices.

3. Predictability and Timeliness

- *Policies concerning the resolution of error trades should be designed to provide a predictable and timely process.*

Discussion

As previously noted, the predictable and timely application of error trade policy is an essential component of "fairness" and builds trust and confidence in a market. The establishment of explicit time frames for procedures to be invoked or decisions to be made under error trade policies fosters predictability and consistency of treatment. Such timeframes are particularly justified to promote market integrity and fairness given that an erroneous trade, as well as any subsequent cancellation of such trade, can have an almost instantaneous effect on other traders (either directly or by triggering contingency trades). Similarly, the decision to cancel a trade will have implications for other market users. Fairness to all parties will also be enhanced through the adoption of timeframes that govern the error trade processes and thereby permit market users to understand and take action should the error trade policy be invoked.

Accordingly, designers of error trade policies should consider adopting explicit timeframes for all procedural requirements of their error trade rules. In establishing timeframes, designers of error trade policies should take into consideration the need for trade certainty and procedural fairness, which would suggest a timeframe that allows for expeditious decision making and the finality of decisions. Consistent with the transparency considerations, timeframes should be made readily accessible to all market users.

4. Transparency [22]

- *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.*

[22] As used in this *Report*, the term "transparency" is used broadly to include the availability of a market's rules and procedures, as well as the availability of transaction-related information.

Discussion

Transparency of Policy - IOSCO views transparency as a core principle in market regulation, stating in the *Principles* that regulation should promote transparency of trading.[23] Transparency of a market's rules, procedures and important decisions is central to both fairness and efficiency of a market.[24] Accordingly, exchange error trade policies should be transparent and made readily accessible to market users. Ideally, markets should endeavor to make their error trade rules available through the Internet. In addition, any revision to these policies should be made readily accessible as soon as possible.

Transparency of Results - The availability and integrity of information on bids and offers is a central factor in ensuring price discovery and in strengthening users' confidence that they will be able to trade at fair prices. Similarly, the availability of information in respect to the volumes and prices of completed trades enables market users to take into account the most recent information and to monitor the quality of execution they have obtained. [25]

Because error trades can have an immediate effect on price formation (*e.g.,* through reliance by traders on such information or the triggering of contingency trades), knowledge that a trade has been *challenged* by a party and *taken under review* by an exchange and/or subsequently deemed to be a valid error trade and in fact *cancelled* could be, depending upon the circumstances, highly material to the accuracy of the price formation process and to the trading decisions of market users.

A review of the *Survey Responses* reveals a variety of approaches concerning the timing and scope of providing notice to the market with respect to requests to invoke the error trade policy, the decision by the exchange to take the challenged trade under consideration and the decision to cancel the trade.

In general, the principle of transparency disfavors situations of asymmetric access to information. However, as the Technical Committee previously has noted, "establishing market transparency standards is not straightforward" and that "regulators therefore need to assess the appropriate level of transparency in any particular product with considerable care."

In this regard, the Technical Committee recognizes that a market's approach to transparency and the degree of timeliness is a policy decision that must weigh competing interests.[26] For example, markets may choose not to provide notice to the market that a trade has been challenged out of a concern that such notice would prematurely interrupt the price

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[23] *Transparency and Market Fragmentation* (IOSCO 2001) at p. 4.

[24] *See, e.g.* Key Question 6 of the Secondary Markets section in IOSCO's *Assessment Methodology*, which asks whether "similarly situated market participants have equitable access to market rules and operating procedures."

[25] *Transparency and Market Fragmentation* (IOSCO 2001) at p. 4.

[26] See the Secondary Markets section in the *Methodology*.

discovery process or contribute to added volatility and have secondary consequences on contingent trades (*e.g.*, set off stop orders). Similarly, the market could determine that the trade in question, even if cancelled, would have a *de minimis* effect on trading, and determine that it would provide neither notice of the challenge nor the cancellation. Alternatively, depending upon the magnitude of the trade in question, another market may determine that the potential effect of canceling the trade in question requires that traders be provided notice of both the challenge and the cancellation in order to protect their interests.

Because the decision whether to provide notice under an exchange's error trade policies is a policy decision that must take into account competing interests, the Technical Committee does not believe that it is appropriate to mandate a particular approach. Accordingly, subject to the general considerations on transparency reflected in the Technical Committee's reports, *it is appropriate that exchanges should retain the flexibility to determine the circumstances under which and at what time they would provide notice to the market of actions taken under their error trade policies*.[27] In making their determinations, exchanges should take into account the likely impact of the disclosure of a possible cancellation, as potential cancellations of a certain magnitude will influence market users to take steps to protect their interests. This *notification* decision however in no way affects the need to ensure that all *trade reports* fully and accurately reflect any cancelled trades.

Highlighting of messages

Many markets have adopted procedures that are intended to help ensure that notices that a trade is subject to error trade procedures or notices of the decision whether to cancel a trade will be specifically highlighted or otherwise brought to the attention of the persons entitled to receive such notice. *Given the large volume of messages that may be transmitted by markets, some of which may be considered "noise" by the users, markets should be encouraged to develop and adopt measures to specifically identify or "highlight" error trade messages to markets and to market users.*

5. Cooperation with other markets

- Exchanges should be prepared to share information with other markets when possible concerning the cancellation of trades.

Discussion

The cancellation of a large trade in a security or security index product could affect prices in related products, such as options on the security that trade in another market. Because the price effects may be just as material to the price formation process in the related market,

[27] Such decisions could benefit from data showing what effect providing notice of a challenged trade to the market as a whole has on subsequent prices and price volatility (*e.g.*, whether providing notice of challenged trade increases volatility and, if so, what is the time period of such effects and whether the market reacts or appears to recognize that the trade "must" be in error.)

exchanges should be encouraged to take into account, when possible, the potential effect of cancelled trades (*i.e.*, of a certain magnitude) on related markets known to the exchange and be prepared to share information regarding the cancelled trade with the other markets. It is recognized, however, that there may be circumstances where this is difficult, impractical or in fact impossible. The important point is that the scope of information that potentially can be shared should be considered in advance of a request from another regulator.

6. Prevention

- *Exchanges should evaluate the need for measures to prevent error trades.*

Discussion

Nearly all markets that provided survey responses have adopted measures that are intended to reduce the possibility of error trades, for example, by including price limits[28] or technological modifications in the trading algorithm. Price limits can reduce error trades by automatically rejecting a submitted trade that falls outside of the price limit. Algorithm modifications include quantity and price filters, algorithms designed to detect conditions where the consecutive triggering of stop orders would result in trades in excess of the predetermined no-bust range, order quantity limitations, and various "alert" type messages that are triggered by unusual orders. A majority of markets have similarly adopted measures that require their participants to implement "technology or procedures" that are intended to avoid erroneous trades, such as filters, order confirmation alerts, credit controls, pre-execution checks, and error trade prevention alerts.

As exchange participants with direct access to the trading system are the first line of defense in preventing error trades, exchanges should, when designing rules applicable to their members, also take into account the role that intermediaries can play in preventing error trades (*e.g.*, by addressing the adequacy of capacity, training and oversight of persons with direct access to the exchange's trading system).[29]

The various measures described above are consistent with the approach contemplated by IOSCO's *Principles for Screen-Based Trading Systems for Derivative Products – Review and Additions* (October 2000) (Screen-Based Principles). In this regard, Screen-Based Principle No. 5, which addresses security and system vulnerability, capacity, access controls, and internal

[28] Exchanges adopt price limits for purposes other than limiting erroneous trades. For example, price limits constitute a mechanism for automatic trading interruptions and are set at levels generally intended to address large fluctuations in a security's price that are considered to jeopardize an orderly marketplace. The triggering of a price limit following any sharp price change limits the immediate extent of any price move and provides investors with the opportunity to evaluate and act on the information. See IOSCO's *Report on Trading Halts and Circuit Breakers* (2002), p. 12.

[29] The role of intermediaries is beyond the scope of this Report. However, exchanges should, in imposing requirements on their system participants, examine what actions the exchange could take to lessen the possibility of error trades that are submitted to the exchange by participants having direct access to the exchange.

controls[30] and Screen-Based Principle No. 6, which addresses competency, integrity and authority of system users, are particularly relevant.[31] Accordingly, exchanges are encouraged to apply the broad range of considerations suggested in the *Screen-Based Principles* when developing their error trade policies. Designers of error trade policies are also encouraged to evaluate and adopt where appropriate market mechanisms and participant trade supervision requirements to prevent the submission of error trades.

7. Role of the Market Supervisor

- *Market supervisors [32] 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 the markets they supervise conduct adequate surveillance to detect whether error trades are related to problematic market activity.*

Discussion

The IOSCO *Principles* contemplate that market supervisors will take an active role to ensure that markets meet the criteria for authorization and that such requirements will continue to be met after authorization. [33] The IOSCO *Principles* make clear that issues of fair access, capacity and competency, fair treatment of orders, transparency of market rules and transaction information, and the reliability of the price formation process are matters that must be considered by a regulator. These broad objectives are relevant in the context of error trade policies. As discussed above, the *Screen-Based Principles* have particular relevancy to the supervisory considerations affecting error trade policies.

The *IOSCO Principles* require that there be ongoing regulatory supervision of exchanges and trading systems and that regulation should be designed to detect and deter manipulation and other unfair trading practices. [34] In the context of error trades, surveillance programs should

[30] Screen-Based Principle 5 states that: "Before implementation, and on [a] periodic basis thereafter, the system and system interfaces should be subject to an objective risk assessment to identify vulnerabilities (*e.g.,* the risk of unauthorized access, internal failures, human errors, attacks and natural catastrophes), which may exist in the system design, development or implementation."

[31] Screen-Based Principle 6 states that: "Procedures should be established to ensure the competence, integrity and authority of system users, to ensure that system users are adequately supervised and that access to the system is not arbitrarily [or] discriminatorily denied."

[32] As previously noted, this Report uses the term "market supervisor" broadly to include the market itself as well as the market's regulator.

[33] See *Principles* 25 and 26.

[34] See *Principles* 26 and 28.

recognize that a repeated pattern of error trades could be indicative of problematic market activity (*i.e.*, attempted manipulative or other abusive market activity), system inadequacies at the user or market level (*e.g.*, a defect in the trading system's algorithm or hardware) or oversight inadequacies at the user or market level (*e.g.*, lack of supervision that fails to detect the intentional overriding of trading limits or the use of error trades to hide otherwise improper trades).

For all these reasons, market supervisors should take affirmative steps to help ensure that the markets they supervise conduct adequate surveillance to detect whether error trades are related to problematic market activity.

Appendix A

Summary of Responses to Questionnaire on Exchange Error Trade Policies

Survey responses reflect policies as of October 2004. Twenty-eight survey responses were received from the SRO Consultative Committee. Readers are cautioned that survey responses may be subject to ambiguities of interpretation (either by the exchange completing the survey or the drafters of the Report). Negative responses should not necessarily be interpreted as meaning the exchange does not permit a particular action or follow a particular process, only that it does not have an explicit rule addressing the survey question at issue. Finally, rules are subject to change and readers should refer to the current exchange rule book and to the exchange itself for current rules and for definitive interpretations of those rules. A copy of the questionnaire that was submitted to the SRO Consultative Committee is integrated.

Existence of rules, transparency, purpose and scope
(Questions 5-17)

Existence of rules. The majority of exchanges have written error trade policies (only two exchanges indicated that they do not have written rules (Q5)) and make them available on their web-sites. One of the latter exchanges stated that notwithstanding the lack of written rules, the exchange did honor requests to cancel trades provided there was mutual agreement by the two sides of the trade.

Purpose. When mentioned, the policies speak in terms of protecting market integrity and fairness (Q9).

Definition of error trade. The majority of rules define what constitutes an error trade very broadly to address both system and human errors. Many exchanges' policies also explicitly include as errors trades that have an adverse effect on price formation (Q8). All of these types of trades appear to be treated similarly under the error trade policies without distinction as to the underlying cause. Thus exchange error trade policies function as a general grant of authority for the exchange to address in an orderly fashion system, human and aberrational market conditions.

There is much diversity regarding the universe of trades covered. Error trade policies extend to trades described variously as follows: result of entry errors (price, quantity, type of order (*e.g.*, entering a buy instead of a sell)), executed at a price greater than the "no-bust" range regardless of cause, as the result of an obvious material error and the requester stands to lose an amount of money that exceeds a threshold amount, trades not in line with market conditions (deviates from price parameters, out of the normal price range or fair market value), if fair and orderly trading is not guaranteed, extraordinary market conditions exist in which cancellation is necessary for the maintenance of a fair and orderly market, as the result of misconduct, system trouble, obvious errors in price, quantity or identification of the security. Thus, it appears that exchanges use the error trade policies as a source of authority to handle a range of anticipated issues such as entry errors or system, failures, and also trades that may have deleterious effects on price formation. *See* Qs 10-15.

Relevancy of time when invoked. Ten exchanges answered "yes" to the question "Is the time of day that the error occurs considered a factor in determining an appropriate response?" Q16. For example, one

exchange will not accept a request to cancel a trade after the market has closed, another limits the reference price used for determining the no-bust range during "side-by-side" trading (*i.e.*, on the open floor and on an electronic system), and several exchanges note that there may be differences in how a request to cancel a trade is processed depending upon the time when the request is received or upon the market "phase" (i.e., whether the order were entered during a call auction or during a continuous trading phase).

Who may invoke the policy?
Direct participants
(Qs 18-22)

Of the exchanges that have error trade policies, all allow exchange participants who are parties to a trade to invoke the policies (Q18). Significantly, sixteen exchanges permit the exchange itself to invoke the policy, a necessary authority that allows the exchange to address unusual market conditions (Q19). A majority of exchanges (19) do not permit a clearing participant to invoke the policy (Q20), although 8 do. Although a majority (22) do not permit non-parties to invoke the policy, a minority of 8 exchanges do allow third-parties to challenge a trade (Q21). Five exchanges state that they do permit third parties to invoke the error trade policies (Q22).

Who may invoke the policy?
Third party contingent trades and other systemic consequences triggered by the error trade (Questions 58-60)

Nine exchanges have rules that permit parties to a contingent trade that was triggered by the "erroneous" trade to invoke the error trade rules (Q58). None of the exchanges enumerate or otherwise list the type of contingency trade that may be cancelled (Q59). Seven exchanges indicate that their rules permit the exchange alone to decide whether to cancel such contingent trades (Q60).

Who may invoke the policy?
Third party trades based upon the erroneous trade
(Question 61)

Seven exchanges indicated that their rules permit parties to invoke the error trade rules if they have made trades (including trades in derivatives or options) based upon erroneous market information stemming from an error trade (Q61). These exchanges seem to treat such applications under their usual procedures and would require the same level of proof. For example, one exchange states that "*the party to a secondary trade would be required to make an independent demonstration that the secondary trade was itself clearly erroneous.*"

Third Party Objections
(Question 33)

Six exchanges permit a third party to object to a trade being cancelled, while twenty do not (Q33).

Procedures
(Questions 23-27)

Exchange responses disclose a variety of procedural requirements regarding the verification of parties and the procedures to invoke the error trade policies. One half the exchanges specify a named person at the exchange who is responsible for verifying the identity of all parties to a trade (Q23) and a majority require that traders seeking to invoke the policy notify specific persons (Q24). Although a majority requires that challenged trades be submitted within a definite time frame, seven exchanges stated that they did not have an explicit timeframe (Q25). Eleven exchanges had rules that provide a procedure to address trades that are submitted outside of the mandated timeframes (Q26). Exchanges are about evenly divided in whether they require a specific application form to invoke the error trade policies (Q27).

Notification Requirements
(Questions 28-34) and (Questions 47-50)

Notice requirements of challenge and taken under review. There is little uniformity among exchanges regarding notification requirements. In response to Survey question 28, which asked if the exchange is required to provide notice that a trade has been challenged *and* taken under review, 15 exchanges responded "yes" and 11 responded "no." These responses are ambiguous however (due to the nature of the question) as not all exchanges provide notice of a challenge but some do provide notice when they determine to accept a trade for consideration as a possible error trade. A "no" response also may reflect that the exchange does not have an explicit error trade rule that *requires* such notice but that other rules or policies results in such notice being provided (*See, e.g.* FWB Frankfurter Wertpapierborse – there is an internal rule that requires the Market Supervision department to notify the parties as well as all exchange participants). Six exchanges require notice to be provided within a defined timeframe, while 20 do not provide an explicit timeframe (Q31).

Notice regarding the decision whether to cancel. The responses to question 47 regarding whether there is a requirement to provide notice of a decision disclose that eighteen exchanges have rules that *require* notice of decision. Again, as noted above, these responses may reflect the objective state of having an explicit rule, but do not necessarily indicate that the exchange does not provide notice in fact or according to a different rule or policy. Of these exchanges, seven have instituted definite timeframes for providing notice of the decision (Q48) and eight state that they institute special messaging procedures to try to highlight the cancellation message (Q50).

Mechanism for notice. Approximately one half the exchanges responding mandate the mechanism for providing notice (Q30 and Q49)), typically by telephone to the parties, through the trading system message function, e-mail or by fax.

Special provisions to highlight messages. The exchanges also divide almost evenly in whether they take any special procedures to highlight in some fashion error trade notices. Eight exchanges state that they provide special mechanism for notifying parties and/or the market of the decision to cancel a trade (Q50)

Notice to regulator. There is uniformity with regard to notification of the regulator; no exchange has a rule requiring notification to its regulator of a challenge prior to correcting the trade (Q29). Exchanges that indicated they do institute special procedures refer briefly to special messaging functions and

individual attempts to telephone parties (Q32) but do not otherwise provide greater detail.

"No-Bust" Criteria
(Questions 35-37)

No-Bust range. Thirteen exchanges have adopted "no-bust" ranges (a defined range of prices that are presumed to be normal and not subject to cancellation); fourteen exchanges have not adopted such ranges. (Q35).

Cancellations within No-bust range permitted. Nine exchanges that have no-bust ranges provide authority for the exchange to bust a trade notwithstanding that the trade fell within the no-bust range (Q36). Reasons stated include where the trade was the result of error and the cancellation achieves a fair and orderly market outcome; if parties agree; if resulting from "multiple consecutive transactions" with the same market maker in a short time period; in case of system error; due to trading violations; to protect the financial integrity, reputation or interests of the exchange or if the trade may cause undue financial burden).

Cancellations with regard to the securities component of an index. Two exchanges prohibit or condition the cancellation of a security that is a component of an underlying index (Q37). (No further explanation provided.)

Exchange procedures to determine whether to cancel a trade
(Questions 38-46)

Survey responses to the procedural questions disclose a variety of approaches:

- Timeframe (Q38): Is there a mandatory time frame for the exchange to render a decision? 12 yes/15 no.
- (Q39) Is there a rule that states that, in the absence of the notification of the decision within a specified timeframe, the trade is maintained? 5 yes/21 no.
- Who decides (Q40): Do the rules state which official decides whether to cancel a trade? 18 yes/9 no.
- Criteria for Deciding (Q41): Do written criteria exist that guide the decision making process? 20 yes/7 no.
- (Q42): Do the rules provide for the circumstances under which a trade is not cancelled? 15 yes/12 no.
- Appeal (Q43): Do the rules permit the parties to an error trade to appeal the exchange's decision? 9 yes/17 no.
- (Q44): Do the rules permit a third party to appeal the exchange's decision? If "yes", please describe the appeal process. 3 yes/23 no.

- Consent of the parties (Q45): Is the consent of the parties to the trade required by the exchange? 11 yes/16 no.

- Consent of the parties (Q46): Assuming that consent of both parties is required: do exchange rules permit the exchange to make a decision in the absence of both parties' agreement? 8 yes/18 no.

Cancellation
(Questions 51-55)

Mechanics of "cancellation" (Q51): See Survey Responses for specific details. Actions include: reverse the trade, transfer positions between market participants, cash adjustments, price adjustments, trade cancellation.

Voluntary adjustments of price (Q52): Seven exchanges state that if a trade is subject to cancellation, the parties to the trade may keep the trade but voluntarily agree to adjust the price. Twenty exchanges stated that they did not allow such voluntary adjustments. Of the exchanges that permit voluntary adjustments, only one mandates a certain timeframe for reporting the adjustment to the clearinghouse (Q53).

Other actions if trade is not cancelled
(Questions 54-55)

Other remedies in addition to cancellation (Q54): Eleven exchanges indicated that their rules permit remedies other than cancellation, including allowing the parties to agree to cash settlement, rebooking price, and cash adjustments, or to negotiate an offsetting trade or adjust the size of the trade.

Other remedies if a trade is not cancelled (Q55): Nine exchanges have rules that regulate attempts by parties to reverse a trade that the exchange has not determined could be cancelled. Of these, some do not permit voluntary reversals (and suggest that such conduct may be actionable under disciplinary procedures), while others consider such decisions as business decisions that may be left to the parties.

Reporting of corrective actions
(Question 56)

Eleven exchanges indicate that their error trade rules mandate how any action taken in response to an error trade must be reported and to whom (Q56). Reports typically go to exchange or clearing house operations centers.

Treatment of parties to a trade that are involved in a combination trade
(Question 57)

Question 57 asked whether "the rules address what happens when a party to an error trade is involved in a combination trade (*e.g.*, party that caused an error trade entered into a spread position)?" In response,

twenty exchanges stated that their rules did not address such situations. Five exchanges responded that they did have such rules. For example, at one exchange *"the party who enters an outright order that causes an error trade on an auto-legged spread will be deemed to be the counterparty to the good leg of the spread. Parties to the transaction will reverse and claim the transactions as indicated through the applicable clearing house procedures."* Another exchange states that the error trade rule *"is applied on a leg-by-leg basis as if it was the combination of different trades."*

Fees
(Question 62)

Responding exchanges divided evenly as to whether they charge fees or assess penalties for a cancelled trade (Q32).

Dispute Resolution
(Questions 63-67)

Voluntary adjustments to cover losses (Q63). Seven exchanges stated that their rules permit the parties to the cancelled trade to agree to financial adjustments to cover any losses.

Dispute resolution mechanism (Q64). Eleven of the responding exchanges stated that their rules provide a dispute resolution mechanism in the event the parties disagree as to financial liability (Q64). Sixteen stated that they do not have such a mechanism.

Affirmative duties to resolve disputed trades (Q65). Eight exchanges indicated that their rules imposed affirmative duties on parties to resolve disputed trades.

Allocation of losses (Q66). Three exchanges rules' allocate losses that result from a trade.

Measures to minimize erroneous trades
(Questions 68-70)

The majority of exchanges attempt to minimize the occurrence of error trades in the following ways:

Price limits (Q68). Nineteen exchanges indicate that they set price limits for the purpose of minimizing error trades.

Technology (Q69). Nineteen exchanges state that they have instituted technological mechanisms or improvements to their trading systems that are intended to minimize error trades. Examples include "filters" and "price validation functionality" programs that issue warning and error messages to the entering participant and request confirmation of the trade. The exchange that has such programs notes that "participants, in many cases, have the ability to override warnings and push the order into the market." Another exchange designed a program that detects conditions where the consecutive triggering of stop orders would result in trades in excess of the no-bust range.

Requirements on participants (Q70). Seventeen exchanges indicate that the exchange imposes a requirement that its participants institute technology or procedures for the purpose of minimizing error trades. Examples include filters, warning messages and order confirmation procedures built into the electronic system.

Surveillance and examination
(Questions 71-72)

Surveillance specific for error trades (Q71). Twenty-three exchanges indicated that they conduct surveillance to identify error trades. Of the three exchanges that responded "no", one did not have any error trade rules, one did not explain its response and the other's answer suggested that surveillance did in fact take place but that it did not specifically target error trades. These responses may be the result of an overly restrictive reading of the question.

Role of regulator (Q72). Twenty-three exchanges indicated that the regulator or self-regulatory organization examined the exchange for error trade policies and procedures.

Other material provisions
(Question 73)

Examples include: one exchange has a broad reaching "fair and orderly market" obligation that allows it to use its discretion to select any course of action to re-establish a fair and orderly market. Another exchange mentions a rule that obligates parties to a transaction to correct transaction records by T+1.

Appendix B

Summary of Survey Responses Provided by Regulators

(A) Do you have any rules that specifically address error trades?

Jurisdictions	Responses
Australia	Subject to statutory requirements (see B below) the trading rules of Australia's licensed financial markets are substantially determined, supervised and enforced by the licensees. Australia's principal licensed markets, Australian Stock Exchange Limited (ASX) and Sydney Futures Exchange Limited (SFE) have rules providing for the cancellation of error trades.
Brazil	There are no particular CVM rules addressing error trades, but the general rules concerning trading in the secondary markets are applicable. For example, Section 1 of CVM Instruction #168 states that exchanges must establish special trading procedures (e.g., auctions) to trades that represent abnormal prices or quantities of securities.
Ontario and Quebec (Canada)	Neither the *Autorité des marchés financiers* (AMF) nor the Ontario Securities Commission (OSC) have rules that specifically address error trades. In Canada, rules that specifically address error trades are either adopted by the exchange or by its market regulator and incorporated into the exchange's or the market regulator's Rule Book.
France	Error trades are addressed in the rules of the exchange, Euronext. The error trade policy set out in the Euronext RuleBook is supplemented by more detail procedures set out in the Euronext Trading Manual. There is no specific rule established by the Autorité des Marchés Financiers (AMF) dealing with error trades. This issue would be dealt with under the more high level principles set out in the AMF Regulations concerning Regulated markets and exchanges.
Germany	Rules that specifically address error trade policies and procedures are adopted by stock exchanges and incorporated in their Rule Books. In this respect, please refer to stock exchanges' responses to the questionnaire.
Hong Kong	Error trade policies and procedures are set out in rules of exchanges including the Stock Exchange of Hong Kong and Hong Kong Futures Exchange. The exchanges also issued circulars to participants to explain arrangements for handling error trades. There is no other rule established by the Securities and Futures Commission to deal with error trades.
Italy	Rules that specifically address error trade policies and procedures are adopted by stock exchanges (Borsa Italiana SpA, TLX SpA and MTS SpA) and incorporated in their Rule Books. In this respect, please refer to stock exchanges responses to the questionnaire.
Japan	or trade policies and procedures are set out in rules of securities exchanges. The exchanges also publish those rules on their website. There is no other rule established by the Financial Services Agency to deal with error trades.

Malaysia	Error trade policies and procedures are set out in the rules of the exchanges as well as member's circulars which are directives issued to participants pursuant to the Articles of Association of the Exchange. There are no other rules established by the SC to deal with error trades.
Mexico	A) The BMV regulation doesn't specify the trading errors, nevertheless in case of atypical movements in price, trading in the security will be halted until it is clarified if the movement was caused by mistake or not. B) The CNBV Circular 10-237 defines a trading error when the operator makes a mistake during the input process.
Singapore	Error trade policies are set out in the Singapore Exchange (SGX) Securities Trading Rules and Derivatives Trading Rules, for the securities and futures markets respectively. The MAS does not have rules that specifically address error trades.
Spain	Circular 1/2001 of the SIBE (Spanish Electronic Market), about the operating rules of this market, includes the possibility of canceling a trade. In this sense, the rule 2 states that "exceptionally, an operation may be cancelled with the consent of the contracting parties always provided the appropriate authorization has been granted by the Supervision Department or the Trading and Control Committee". The usual practice to cancel error trades is to introduce an order by the same market members in the system with the same price and volume and contrary sign to that to be cancelled. So the net position of each member does not vary. vever, MEFF (the derivatives market) has specific rules. The Circular 23/02 of MEFF regulates the procedure to correct those trades considered erroneous. NAF (an electronic platform for Spanish Public Debt) has a specific rule, the Instrucción Operativa 3/2002 about the orders handling. The point 5 of this rule deals with the trade errors and other incidences. MTS Spain (an electronic market for Spanish government bonds) has another specific rule, the Instrucción Operativa nº 6 that regulates the cancellation of contracts and extraordinary market incidences.
Switzerland	The Directive No. 15 "Handling of Mistrades" of the SWX Swiss Exchange (see www.swx.com/swx/w15-300e.pdf). Art. 26 of the Rules about Trading in Stock of the BX berne exchange.
United Kingdom	UK regulations for Recognised Investment Exchanges ('RIE') do not address error trades specifically. However, the Recognition Requirements for exchanges have a number of requirements (supplemented by FSA guidance) of relevance to the issue of error trades. 1. An RIE must ensure that business conducted by means of their facilities is conducted in an orderly manner and so as to provide proper protection to investors. In assessing an exchange's compliance with this requirement, the FSA may have regard, in particular, to the extent to which an exchange's rules, procedures and arrangements for monitoring and overseeing the use of its facilities provide appropriate safeguards for investors against fraud or misconduct, recklessness, negligence or incompetence by users of its facilities. (FSA Handbook, Recognised Investment Exchanges and Recognised Clearing Houses ('REC') 2.6). 2. An RIE must ensure that access to its facilities is subject to criteria designed to protect the orderly functioning of the market and the interests of

	investors. FSA guidance here addresses the issue of the technical competence of persons with access to the facilities and the controls on input instructions by third parties. (REC 2.7) The following Recognition Requirements may also be relevant if error trades involve a breach of exchange rules or lead to disputes or complaints. 1. An RIE must have effective arrangements for monitoring and enforcing compliance with its rules and investigating and resolving complaints about persons using the exchange's facilities (REC 2.15). 2. An RIE must have effective arrangements for the investigation and resolution of complaints arising in connection with the performance of or failure to perform its regulatory functions (REC 2.16)
US SEC	Rules that address error trades are promulgated by SROs, not the SEC. Please refer to the SRO answers to the questionnaire.
US CFTC	NO.

(B) Do you approve or review error trade rules?

Jurisdictions	Responses
Australia	Under the applicable law (the Corporations Act 2001) a federal government minister (the Minister) has the power to disallow any amendments made to the operating rules of a licensed financial market. The Minister must consider whether the changes are consistent with the obligations the licensee has under the law and in particular the obligation to ensure that the market is a fair, orderly and transparent market. ASIC provides advice to the Minister on each occasion that the rules are amended, including whether in ASIC's view the Minister should disallow the amendments (in which case if disallowed the amendments will cease to be of effect). In this context ASIC has reviewed and approved the error trade rules adopted by ASX and SFE. An applicant licensee must also have its rules approved by the Minister before the Minister is able to grant the applicant an Australian market licence. This process also involves the provision of advice to the Minister by ASIC.
Brazil	Yes. Accordingly to the current exchanges regulation (Monetary Council Resolution #2.690), previously to implementation all relevant exchange rules must be reviewed and approved by CVM, what includes error trades policies.
Ontario and Quebec (Canada)	The AMF and the OSC would review and approve error trade rules, and any amendment to them, for the exchanges for which they are the lead regulator[35]. Both commissions would also review and approve rules, and any

[35] There is a "lead regulator" model for the oversight of the Canadian exchanges (Bourse de Montréal, TSX and TSX Venture). This means that one regulator is responsible for establishing and conducting the oversight program of each of these exchanges. There may be one or more exempting regulators of each exchange that rely on the oversight of the lead regulator. The AMF is the lead regulator of Bourse de Montréal, the Alberta and British

	amendments to them, submitted by the market regulator that an exchange may have contracted with to perform its market regulation. Rules may be submitted to the OSC by the exchange for which it is the lead regulator (TSX), by the exchange recognized in Ontario (CNQ) or by the market regulator. Similarly, rules are submitted to the AMF directly by the exchange for which it is the lead regulator (Bourse de Montréal) or by the market regulator. Currently, there is one Canadian equity market regulator, Market Regulation Services Inc. (RS) [36], with which three exchanges (TSX, TSX Venture and CNQ) and one alternative trading system have contracted with to perform their market regulation. Rules developed by RS are reviewed and adopted by both the AMF and by the OSC, as well as by the other commissions that have recognized it as an SRO (Alberta, British Columbia and Manitoba Securities Commissions). Both TSX and CNQ have contracted with RS to perform their market regulation function. The Bourse de Montréal has not contracted with RS to perform its market regulation. This exchange performs this function internally. The joint lead regulators of TSX Venture would also review and approve error trade rules, and any amendments to them, developed by this exchange or submitted by RS.
France	Yes, as the Rules of a Regulated market, and any change to those Rules, are subject to the prior approval of the AMF . The Trading Manual is reviewed at AMF staff level.
Germany	The rules of every exchange in Germany comprise error trade rules. The competent State – as opposed to a Federal - Ministry (incorporating the Exchange Supervisory Authority) approves or reviews the exchange rules – and all amendments of it – materially and may ask for changes. The competent Exchange Supervisory Authority conducts insofar supervision of the self-governing exchange. The Supervision by the Exchange Supervisory Authority of the organisational structure of the exchange as well as of all trading and settlement rules and practices conducted on the exchange serves the legal goal of maintaining and upholding market integrity, market transparency and investor protection.
Hong Kong	Yes. Rules of the exchanges should be reviewed and approved by the Securities and Futures Commission before they come into operation.
Italy	Consob approves the Rules adopted by stock exchanges, as part of the authorisation procedure, and any modification to the above Rules to verify that they are in conformity with Community law and sufficient to ensure the transparency of the market, the orderly conduct of trading and the protection of investors.
Japan	Yes. Rules of the exchanges should be reviewed and approved by the Financial Services Agency before they come into operation.

Columbia Securities Commissions are the joint lead regulators of the TSX Venture and the OSC is the lead regulator of TSX.

[36] There is a "principal regulator" model for the oversight of RS. This means that each of the Commissions in Canada that have recognized RS participate in the oversight of RS but one jurisdiction (the OSC) is the principal regulator responsible for coordinating the oversight program with the other jurisdictions.

Malaysia	Yes. The SC reviews and approves rules, including error trade rules, before they come into operation. When the Exchange issues directives/member's circulars, the SC may also be consulted or notified by the Exchange, depending on the issues involved.
Mexico	The CNBV has the capability to approve or review trading rules concerning the stock market. Nowadays, Circular 10-237 defines a trading error when the operator makes a mistake during the input process.
Singapore	Yes. MAS reviews and approves all rules, including error trade rules, before they come into operation. In addition, the MAS may initiate a review of the exchanges' rules if such a review is necessary for the protection of investors or to ensure fair dealing in a securities or futures market.
Spain	All the rules, including the error trade rules, that the markets approve, as part of their functions of organising, running, regulating and supervising the market, require the authorisation of the CNMV. So, the CNMV may suspend or annul the abovementioned rules if it considers that they infringe the legislation of the Securities markets or impair the correction and transparency of the price formation process or the interest of investors.
Switzerland	The SWX Swiss Exchange is authorized by the Swiss Federal Banking Commission (SFBC) but is also a self regulatory authority. Its Trading Rules have to be approved by the SFBC. Basically issues directives about trading without the formal approval of its supervisory authority. In fact, the SWX always consults the SFBC before it puts the rules into force. The BX Berne exchange is authorized by the SFBC and has no self regulatory status. Therefore the Rules about trading in stock has to be approved by the SFBC.
United Kingdom	In the UK, the onus is on the exchange to ensure that its rules comply with the recognition requirements for exchanges (and any supplementary guidance given by the FSA). The FSA does not formally approve exchange rules, but exchanges generally pre-consult with the FSA in respect of proposed rule changes. Additionally, the FSA may independently review an exchange's rules (and related procedures), most usually if it has a cause for concern or is conducting a thematic review. (See answer below)
US SEC	Yes. As part of our routine approval procedures for proposed SRO rules.
US CFTC	Yes. Under Commodity Exchange Act (CEA) section 5c(c) and CFTC rule 40.6, designated contract markets or registered derivatives clearing organizations may, subject to certain exceptions for agricultural commodities, if it has filed copies of the rule with the CFTC and certifies that the rule complies with the Commodity Exchange Act. This procedure allows the CFTC staff to determine whether the rule violates any of the CEA's "core principles" and if so, under section 5c(d) of the CEA, the CFTC is authorized to order changes in the rule. See examples of error trade rule submissions at: http://www.cftc.gov/submissions/subdcms0104.htm [e.g., 01/15/2004 CME] and http://www.cftc.gov/submissions/subdcms0903.htm [e.g. 09/09/2003 and 09/04/2003 CME]. Alternatively, a rule may be submitted with a request for explicit CFTC approval.

(C) Do you conduct surveillance over the exchange/clearing house that examines error trade procedures or abuse?

Jurisdictions	Responses
Australia	A person who is licensed to operate a financial market has an obligation under the law to supervise the market. The operator of a clearing house (licensed in Australia as a clearing and settlement facility) has an obligation under the law to supervise the facility. This obligation requires licensees to monitor participant compliance with the rules and to ensure that the rules are enforced. ASIC is responsible for supervising ASX and its clearing and settlement facilities (Australian Clearing House Pty Limited and ASX Settlement and Transfer Corporation Pty Ltd) as well as SFE and SFE Clearing Corporation Pty Limited. In particular the law requires ASIC to undertake an assessment in relation to how licensed financial markets and clearing and settlement facilities have met their statutory obligation to supervise the market or facility (as applicable). This involves an examination of how well the licensee has supervised and enforced the rules. ASIC has not specifically assessed to date how effectively ASX supervises and enforces compliance with its trade error rules. The applicable ASX rules are relatively recent. They followed an assessment conducted by ASIC in 2002 which recommended that ASX's market rules should include the provision to cancel an error trade without the prerequisite of mutual counterparty consent, as was then the existing case. In 2003 ASIC assessed SFE's practices in relation to its cancellation rules and made recommendations about SFE's record keeping in regard to where it exercises discretion to cancel a trade.
Brazil	Yes. The surveillance routines include abnormal price and/or quantities detection, besides registering all trades canceled by the exchanges.
Ontario and Quebec (Canada)	The OSC is responsible for conducting oversight (and surveillance) of TSX and CNQ. The AMF is responsible for conducting the oversight (and surveillance) of Bourse de Montréal. Since the Bourse de Montréal wholly owns the clearing house for its products, the Canadian Derivatives Clearing Corporation (CDCC), the AMF is also responsible for its oversight. The AMF and the OSC are both responsible for the oversight of the Canadian Depository for Securities Limited (CDS) which has procedures for non-exchange traded broker-to-broker error trades. The OSC reviews any rules submitted by TSX or CNQ, conducts periodic examinations and reviews any information filed. The OSC has exempted TSX Venture Exchange and Bourse de Montréal from recognition as exchanges in Ontario and, although the OSC receives information about their oversight, it is not responsible for conducting the oversight program. The AMF reviews any rules submitted by Bourse de Montréal or CDCC, conducts periodic examinations and reviews any information filed. The AMF has exempted TSX and TSX Venture Exchange from recognition as an exchange in Québec and, although the AMF receives information about their oversight, it is not responsible for conducting the oversight program.

	The AMF and the OSC also conduct oversight of RS, the equity market regulator, which may examine error trades from a market integrity perspective.
France	Yes. The AMF has a statutory responsibility for supervising and monitoring the activities of regulated markets with a view to ensuring, among other things, that a regulated market properly enforces its own rules and procedures. The AFM also has a statutory responsibility for conducting market surveillance in order to detect potential market abuse, including market manipulation. Reviews to determine how the regulated market enforces its rules, including those dealing with error trades would be part of the AMF monitoring and supervision role . Although the AMF has not so far conducted any specific review dedicated to the implementation of its error trade policies by the exchange, the AMF may request the exchange to provide any further explanation and/or justification on an individual basis on a specific error trade and the way its has been dealt with, including for market surveillance or investigation purpose.
Germany	Every German exchange has to establish and maintain a Trading Surveillance Unit which is being equipped (with staff as well as financial and material resources) by the exchange. The Trading Surveillance Unit conducts public duties and constitutes insofar a public body exercising public rights. It monitors all transactions on the relevant exchange in order to review and safeguard their conformity with exchange rules and all relevant German capital market law, thus including surveillance of the compliance with error trade procedures. The State´s Exchange Supervisory Authority has the legal power to overrule and to direct the Trading Surveillance Unit in the course of its investigations and its other actions and proceedings. The competent Exchange Supervisory Authority may require exchanges, its trading participants and the issuers of listed securities to give information and to submit data including documents and records. It may also carry out inspections of the exchange and the aforementioned. Additionally, BaFin strives for investor protection, e.g. by supervising all trades by German or non-EU-financial services enterprises in securities listed on organized markets in Germany or the European Union or inside the European Economic Area. Insider dealings, market manipulations and other misdemeanours are being prosecuted by BaFin. The financial players themselves, as credit institutions, financial services institutions and other financial services enterprises (all being defined in the relevant German laws) are licensed and supervised by BaFin with respect not only to their solvency but also with respect to the rules of conduct and the prohibitions of the German Securities Trading Act and other legal provisions. Clearing Houses in Germany refrain from non-clearing business and do therefore not examine error trades as such.
Hong Kong	Yes. The Securities and Futures Commission has a statutory responsibility for supervising and monitoring the activities of exchanges. Those activities include the trading, clearing and settlement operations, market surveillance, regulation and risk management functions. In discharge of its statutory responsibility, the Securities and Futures Commission may carry out onsite review on operations of the exchanges. In relation to error trades, the Securities and Futures Commission does not

	conduct regular review to determine whether the exchanges enforce the rules concerning error trades properly. Nevertheless, if a situation warrants further investigation, the Securities and Futures Commission may request the exchanges to provide information (e.g., details of the error trade and how the error is resolved) on an individual basis.
Italy	The stock exchange provides the structures and services of the market, adopts all the measures required for the efficient operation of the market and verifies compliance with the rules. Stock exchanges are subject to supervision by Consob. In this respect, Consob checks that market rules are likely to ensure the aims referred before are effectively achieved and may require stock exchanges to amend market rules to eliminate any problems it finds. Consob may require stock exchanges to communicate data and information and to transmit documents and records on a periodic or other basis in the manner and within the time limits it shall establish. It may also carry out inspections of such companies and require the exhibition of documents and the adoption of measures it deems necessary. In cases of necessity and as a matter of urgency, Consob may adopt the measures required for the purposes of ensuring the transparency of the market, the orderly conduct of trading and the protection of investors, including its acting in the place of the stock exchange. *The entity (Monte Titoli SpA) providing netting, clearing and settlement and gross settlement for non-derivative financial instruments that are admitted to the centralized administration system adopts rules governing the organization and functioning of settlement systems. Monte Titoli manages the systems relating to the acquisition, matching, correction and routing of transactions to net settlement (RRG-Net) and to gross settlement (RRG-Rel). The transactions entered by participants in the RRG systems are processed by the systems during the following phases (which are detailed in the operating documents):* a) acquisition of the transactions undergoing the following processes: 1. validation, by type of transaction entered, which performs automated controls on the format and accuracy of the basic data of each transaction; 2. valuation, carried out only if there were no errors in the validation phase, which calculates the accounting value by transaction type; 3. correction of transactions, which allows the users to change or cancel transactions entered. Correction of transactions, if it involves changes, is again subject to validation and valuation; b) matching, for transactions that have successfully passed the acquisition phase, which verifies the correspondence of data indicated for the same contract by the contracting parties, according to specific matching keys for each type of transaction; c) automatic cancellation of unmatched transactions; d) automatic updates of transactions deriving from corporate actions carried out on the financial instruments being traded; e) routing and resubmission of transactions to net settlement (for the RRG-NET system) and gross settlement (for the RRG-REL system). The RRG system supplies the RRG participants with complete information

	on the status of their transactions. Such information will be provided automatically, in the cases specified in the operating documents, as well as upon request of the participants themselves. The supervision of clearing, settlement and guarantee system is carried out by the Bank of Italy and Consob. To this end, the Bank of Italy and Consob may require system managers, the company and market participants to provide information and records concerning the clearing and settlement of transactions and may carry out inspections.
Japan	Yes. The Financial Services Agency has a statutory responsibility for supervising and monitoring the activities of exchanges, and conducts general examination to exchanges occasionally. The Financial Services Agency also has authority to be submitted relevant record from exchanges when the need arises.
Malaysia	The SC performs regulatory oversight function over the Exchange which includes periodic review of its efficiency and effectiveness as an Exchange/Front Line Regulator. Potential abuses or any departures from procedures would be addressed through the review.
Mexico	Yes, the CNBV has an area in charge of analysing trading and atypical trading is reviewed.
Singapore	*As a regulator of its markets, SGX conducts market surveillance to detect unusual trading activities and violation of its trading rules or procedures.* MAS, as the statutory regulatory, carries out independent surveillance on a selective basis to monitor that SGX is performing effectively its regulatory responsibilities of maintaining a fair and orderly market. As part of its regulatory powers, MAS may also request the exchange to provide data and information relating to error trades should the need arise.
Spain	ny decision or action of the departments of surveillance of the markets in order to handle error trades must be communicated to the CNMV, which will approve or disapprove such decision or performance. he CNMV will condition the approval of the corporate by-laws, operating regulations and amendments of the markets subject to supervision by the CNMV to the necessary changes to guarantee the compliance with the rules governing the official secondary market and with the basic principles of the Securities Market Act (transparency of the market, the orderly conduct of trading and the protection of investors). he governing bodies of the markets shall oversee the transparent and orderly conduct of trading and price formation by complying with the trading rules. With this aim the governing bodies must be provided with the necessary means to carry out their activities of surveillance and supervision of the markets. ll the markets that are subject to supervision by the CNMV must immediately inform the CNMV of whatsoever matters or actions which may imply the violation of the regulations which must necessarily be complied with or a departure from the principles on which securities markets regulations are founded. he markets will assist the CNMV when this considers it necessary as a result of its activities of supervision, inspection and sanction. IBERCLEAR is the Spanish Central Securities Depository which is in charge of both the Register of Securities, held in book-entry form, and the Clearing

	& Settlement of all trades from the Spanish stock exchanges, the public debt market, the AIAF fixed income market. To achieve this, IBERCLEAR uses 2 Technical platforms - SCLV and CADE, which allows Participants to benefit from technical solutions, such as a high level of automated procedures and a high grade connection to IBERCLEAR. SCLV is under the supervision of the CNMV and CADE under the supervision of Bank of Spain. These platforms must provide their supervisors with all the information about the activities of registration, clearance and settlement that the supervisors require.
Switzerland	The SFBC conducts surveillance over the exchange SWX Swiss Exchange as well as over the clearing house x-clear Ltd.. The x-clear Ltd. is supervised by the department "banks and stock dealers" of the CSFB. Consequently it has to the SWX Swiss Exchange.
United Kingdom	Following a significant 'error trade' on the London Stock Exchange in May 2001, the FSA conducted a thematic review of error trade arrangements on UK exchanges. Although that review did not recommend rule changes, it did recommend that the FSA should give greater weight to reviewing exchange access controls as part of its annual risk review of individual exchanges.
US SEC	Yes. Our Office of Compliance, Inspections and Examinations (OCIE) conducts routine examinations of the SROs regarding their policies and procedures for addressing error trades. The SEC also examines broker-dealers based on risk factors regarding their policies and procedures for addressing error trades, and compliance with relevant SRO rules. However, it is the SROs that have routine responsibility for broker-dealer examinations in this area.
US CFTC	Yes. The CFTC maintains an ongoing oversight program that examines the adequacy of the exchanges' compliance programs with regard to those core principles that relate to market surveillance, trade practice surveillance, audit trail and recordkeeping requirements, disciplinary matters, and exchange governance. The importance of error trade surveillance was underscored by the collapse of Barings PLC in 1995, which involved significant use of a firm error account. In light of this case, the CFTC reviews each exchange's surveillance program for error trades to ensure that it is adequate to monitor for this type of abuse. http://www.cftc.gov/opa/press95/opabulrer.htm In addition, should market surveillance detect anomalous trading activity related to error trades, the CFTC staff would (and has) focused its attention on the matter. U.S. regulation of futures and option markets is governed by the Commodity Exchange Act (CEA or Act), as amended, 7 U.S.C. § 1 *et seq.*, and is administered by the Commodity Futures Trading Commission (CFTC or Commission). The Act establishes a framework that contemplates direct industry self-regulation for exchanges and intermediaries, under Commission oversight.[37] To maintain designation as a contract market (DCM), a DCM must comply with certain core principles. Primary responsibility for ensuring that an exchange is operating in compliance with the core principles belongs to the

[37] Section 3(b) of the Act states that one of the purposes of the Act is to serve the public interest "through a system of effective self-regulation of trading facilities, clearing systems, market participants and market professionals under the oversight of the Commission."

	exchange itself. The Commission's Division of Market Oversight (DMO) is responsible for overseeing the adequacy of the exchanges' compliance programs with regard to those core principles that relate to market surveillance, trade practice surveillance, audit trail and recordkeeping requirements, disciplinary matters, and exchange governance. DMO accomplishes this through periodic examinations known as rule enforcement reviews (RERs). [38] To comply with core principles, DCMs conduct routine compliance activities to monitor for possible trading abuses, such as trading ahead of customer orders, wash trading, and noncompetitive trading, for market manipulations and price distortions, and for violations of speculative position limit and position reporting rules. DCMs also maintain programs that include the authority and ability to discipline and limit, or suspend the activities of a member or market participant, as well as the authority and ability to terminate the activities of a member or participant pursuant to clear and fair standards. The efficacy of a DCM's routine compliance activities is analyzed during the course of an RER examination. To illustrate the comprehensiveness of the examinations conducted by DMO to ensure that exchanges are adequately enforcing their rules, examples of some of the areas that are reviewed are set forth below: <u>Market Surveillance</u> • Review programs for monitoring prices, volume, open interest, large trader positions and clearing member positions to detect possible manipulations and to ensure orderly contract liquidations. • Review programs for enforcing speculative position limits and large trader reporting requirements. • Examine samples of contract expiration files to verify that surveillance activities during the expiring month are properly carried out and adequately documented, paying particular attention to any problem expirations to determine how the exchange handled them. <u>Trade Practice Surveillance</u> • Analyze the quality of "hits" or "exceptions" that are generated by automated surveillance systems that are used to identify potential trading abuses for further investigation. Systems look for fraudulent activity such as front-running, wash trading, and noncompetitive trading, among others. • Examine all exchange investigations completed during the target period under review for thoroughness and timeliness. <u>Disciplinary Programs</u> • Examine all sanctions imposed on members during the target period for sufficiency. • Review the timeliness with which a matter moves through the disciplinary process from issuance of charges to final disposition. DMO conducts an RER of each exchange approximately once every two years. Each RER takes eight-to-nine months to complete, and findings and recommendations are included in a written report to the Commission.

[38] Under this structure, the exchange, acting as a self-regulatory organization (SRO), is viewed as the "primary" regulator, and the CFTC is viewed as an "oversight" regulator.

APPENDIX C

Feedback Statement on the Public Comments Received on the Technical Committee Consultation Report – Policies on Error Trades

Comments were received from the following organizations on the IOSCO Technical Committee *Consultation Report - Policies on Error Trades*:

1. Bolsas y Mercados Espanoles (BME)
2. Gruppo Borsa Italiana (Borsa Italiana)
3. Sao Paulo Stock Exchange (BOVESPA)
4. UBS Group (UBS)

The Technical Committee and its Standing Committee on the Regulation of Secondary markets (TCSC-2) took those comments into account in preparing the final report entitled *Policies on Error Trades*.

Overall Approach and Scope of Report

In general, all the comments received were very supportive of the consultation report and emphasized, as discussed in *Recommendation 1,* that explicit policies on handling erroneous trades were needed in recognition of the effect such trades may have on the price formation process and market integrity and the confidence of market participants.

All the bodies that provided comments agreed on the scope and overall framework of the report, which articulates broad high level, non-prescriptive principles that exchanges should address, but recognizes that each exchange must be permitted the flexibility to craft its error trade policies consistent with each exchange's unique trading philosophy. For example:

- "The Sao Paulo Stock Exchange agrees with the recommendations and arguments on error trades resulting from the survey conducted by IOSCO." BOVESPA

- "The report details successfully the main issues…. [its] approach is helpful as there is not a policy which is better than the others… and it will be the philosophy of each exchange as well as the consistency with its other rules [that] determines the error trade policy that better fits each exchange." (BME)

- "We are very supportive of the work that IOSCO and its technical and Standing Committees have conducted so far and we strongly share the open approach adopted. The design of error trade policies should be left to the exchanges' discretion in the framework of IOSCO's recommendations, in order to take account of the characteristics

of each market structure and to quickly and effectively manage emergency situations caused by error trades." Borsa Italiana

- "UBS welcomes the approach of IOSCO to provide a framework to exchanges and regulators for error trade policies that will support a consistent and transparent handling of error trades across the markets." UBS

UBS welcomed the flexibility and non prescriptive nature of the recommendations, but noted that "a consistent and reliable approach across the various markets in respect of handling error trades would be welcome." TCSC-2 had discussed this issue in its deliberations and concluded that a flexible non prescriptive approach was not only consistent with IOSCO's regulatory approach, but was necessary in order to reflect the variations in "trading philosophy" that exchanges may bring to the issue of deciding when to cancel a trade. *See* page 3 of the Report. The need to preserve exchange flexibility to craft error trade policies consistent with its trading philosophy similarly led the Standing Committee to reject explicitly favoring a harmonized approach as apparently suggested by UBS (""…. a consistent and reliable approach across the various markets in respect of handling error trades would be welcomed." *See* UBS 1. Adoption of policies). To some extent, TCSC-2 agrees that *in general* a harmonized approach across markets would be welcomed. Nonetheless, the Standing Committee recognized that such a goal should be achieved through voluntary market actions, spurred on perhaps through greater transparency (one of the Report's principles) and not by an imposed standard.

BME stated that "it is important that the error trades regulation allow the exchange to act on its own without waiting for the trader who made the error to call." The report's call for flexibility would certainly encompass this freedom of action.

Comprehensiveness

Both BME and UBS suggested items to be addressed in the "Comprehensiveness" section of the report.

For example, BME suggested that this section explicitly note "actions taken by the exchange that do not cancel but correct the price…" UBS suggested the inclusion of "measures for the situation in which the exchange itself is responsible for the error trades…. and "pre-published parameters that define error trades." The Standing Committee believes that the general admonition to include "what constitutes an error trade" would subsume BME's concerns. Similarly, UBS's concern would be addressed in the admonition to address "what constitutes an error trade." The Standing Committee also notes that the definition of error trade used in the report subsumes transactions that are executed in error either due to the actions of a market user or through malfunction of a trading system. *See* page 1 of the Report.

UBS's suggestion that "…it has to be insured that no customer related information need be disclosed…." is well taken but adequately covered by jurisdictions' existing privacy laws. Again, the approach taken was not to articulate specific content, as this would probably lead to a more prescriptive type of document.

Prevention

UBS agreed with the need for prevention but cautioned that "the implementation of such measures should be subject to a cost-benefit assessment taking into account possible consequences of the implementation of these measures for market participants." The suggestion is well taken and applicable to more than the consideration of prevention measures. Accordingly, a reference to the general benefits of engaging in a cost-benefit analysis when considering the adoption of any provision has been added under the "comprehensiveness" section of the Report.

BME stated that "the emphasis on prevention is not enough" and suggested that recommendation number 6 "… should be the first one." TCSC-2 had discussed placement of this recommendation, with some members favoring placement at the beginning of the report. In the end, this recommendation was placed as number 6, not because it was viewed as any less important than the error trade principles but because of an editing decision to address the main subject of the project specification – that is, *the development of high level principles for designing error trade policies* – first and then to address collateral issues – prevention and the role of the supervisor -- in subsequent sections. However, TCSC-2 shares the view that prevention should be a high priority.

Borsa Italiana "strongly shares IOSCO's concerns about the role of intermediaries as first line of defense in preventing error trades" and suggests "we would appreciate an IOSCO initiative on the role of intermediaries in preventing error trades." This comment has been relayed to the Technical Committee Standing Committee on the Regulation of Market Intermediaries (TCSC-3).