

MAINTENANCE OF AN ORDERLY MARKET WHEN EXECUTING INDEX ARBITRAGE ORDERS

<p>The purpose of this Guidance Note</p>	<ul style="list-style-type: none"> To assist participants undertaking index arbitrage activities on the ASX market to understand their obligation not to do anything which results in a disorderly market
<p>The main points it covers</p>	<ul style="list-style-type: none"> What is index arbitrage The obligation of trading participants to exercise due care and skill to avoid causing a disorderly market when they enter, amend or cancel orders for index arbitrage transactions The range of factors ASX takes into consideration in determining whether a participant undertaking index arbitrage activities on the ASX market has complied with its obligation under the ASX Operating Rules not to do anything which results in a market for a product not being both fair and orderly and also in assessing the penalty for any breach of that obligation
<p>Related materials you should read</p>	<ul style="list-style-type: none"> ASIC Regulatory Guide 241 <i>Electronic Trading</i>

History: Guidance Note 14 introduced 31/03/15. Previous versions of this Guidance Note were issued as Guidance Note 32 under the ASX Market Rules in 11/05, 01/06 and 01/08.

Important notice: ASX has published this Guidance Note to assist participants to understand and comply with their obligations under the ASX Operating Rules. It sets out ASX's interpretation of the ASX Operating Rules and how ASX is likely to enforce those rules. Nothing in this Guidance Note necessarily binds ASX in the application of the ASX Operating Rules in a particular case. In issuing this Guidance Note, ASX is not providing legal advice and applicants/participants should obtain their own advice from a qualified professional person in respect of their obligations. ASX may withdraw or replace this Guidance Note at any time without further notice to any person.

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1. Introduction

This Guidance Note is published by ASX Limited (ASX) to assist participants undertaking index arbitrage activities on the ASX market to understand their obligation not to do anything which results in a disorderly market.

2. What is index arbitrage?

Index arbitrage is a trading strategy that seeks to profit from differences between the option price or futures price of a particular stock index and its spot (or cash) price.¹ If the option price or futures price is considered high relative to the spot price, the index option or futures contract is sold and the stocks making up the index are bought. If the option price or futures price is considered low relative to the spot price, the index option or futures contract is bought and the stocks making up the index are sold.

In either of these scenarios, the arbitrageur will have a hedge against upward or downward movements in the value of the index because of the bought or sold position it has in the underlying stock.

Profits are made on an index arbitrage position when the spread between the index option or futures contract and its spot price returns to its normal or expected value and the arbitrageur closes out its position. This may occur:

- prior to the expiry date of the relevant index option or futures contract by the arbitrageur entering into equal and opposite buy-sell transactions in the relevant index option or futures contract and also in the stocks making up the index; or
- at the expiry of the relevant index option or futures contract by the arbitrageur allowing that position to expire, taking or making the settlement payment due on expiry and then unwinding its position in the stocks making up the index (that is, selling the stocks it originally bought or buying the stocks it originally sold).²

In the latter case, the arbitrageur will typically try to unwind its stock position at a time when the spot price equates as closely as possible to the settlement price of the index option or futures contract being arbitrated to preserve the integrity of its hedge.

¹ Index arbitrage can also be performed using exchange traded funds that invest in the relevant index.

² The arbitrageur does not necessarily have to close out an index arbitrage position at the expiry date of the relevant index option or futures contract. It can roll the position into another index option or futures contract expiry: (a) ahead of expiry by entering into an equal and opposite transaction in the index option or futures contract it currently holds to close out that position and then buying or selling an index option or futures contract with the desired expiry; or (b) at expiry, by allowing the index option or futures contract it currently holds to expire, taking or making the settlement payment due at expiry, and then buying or selling an index option or futures contract with the desired expiry. Where the position is rolled in this way, the arbitrageur typically would retain the existing stock portfolio, although it may need to rebalance the portfolio to reflect any changes in the composition of the relevant index in the meantime.

In the case of ASX and ASX 24 index options and futures contracts, their settlement price is generally determined by reference to the opening price of the stocks in the relevant index on the date of expiry of the index options or futures contract. Hence, arbitrageurs seeking to close out an index arbitrage position on an ASX or ASX 24 index option or futures contract at expiry will generally seek to do so in the opening auction on the day of expiry. Consequently, they will be entering (and possibly also amending and cancelling) significant orders to sell or buy their entire underlying stock position in the pre-open on the day of expiry.

In undertaking this exercise, the arbitrageur will generally be focussed on selling all of its holding in each stock in the index at its opening price on the day of expiry, whatever that may be, rather than on the level of the opening price itself. In that sense, the arbitrageur is volume and time sensitive but price insensitive.

Sometimes an arbitrageur will need to re-weight its stock position to reflect movements of stocks into or out of an index, or in the relative weightings of the various stocks in the index, so as to maintain the integrity of its hedge position. Depending on the circumstances, the arbitrageur may also be insensitive to the price at which the re-weighting occurs, as long as it is representative of the price at which the stock came into or out of, or was re-balanced at, in the index.

Given the large numbers of stocks involved in an index arbitrage transaction and the time sensitivities around execution, index arbitrage is typically undertaken either using program trading techniques or through the bulk entry of orders, without the arbitrageur assessing the impact of each individual order on the price of the individual stock involved.

In the case of program trading, computer systems monitor the difference between the spot price of a stock index (such as the ASX 200) and its related index option or futures contract. When the difference moves through pre-programmed thresholds, these computer systems will execute simultaneous buy/sell orders for the relevant index options or futures contracts and sell/buy orders for the underlying stocks.

The computer systems will continue to monitor the difference between the spot price of the stock index and the related index option or futures contract and, if they detect an opportunity to exit the index arbitrage position at an acceptable profit, they will close out the position by executing simultaneous sell/buy orders for the relevant index options or futures contracts and buy/sell orders for the underlying stocks.

At expiry, these computer systems will also execute the necessary buy/sell orders to unwind the arbitrageur's stock position.

Typically, all of this order activity will take place with limited human intervention.

3. Maintenance of an orderly market

Index arbitrageurs play an important role in maintaining orderly financial markets by helping to keep the option price or futures price of a stock index and its spot price in alignment. Whenever those prices are misaligned by a material amount, the activities of arbitrageurs will act to bring them back into alignment.

Index arbitrage transactions, however, also pose some risks and challenges to maintaining orderly markets due to the following features:

- they often involve large aggregate exposures,
- they require the simultaneous execution of buy/sell orders in all of the stocks in the relevant index on the entry, close-out or expiry of a position; and
- typically those orders are executed with limited human intervention and without any specific regard to the impact they may have on the price of the individual stocks involved, either using program trading techniques or through the bulk entry of orders.

Participants have a fundamental obligation under ASX Operating Rules and the ASIC Market Integrity Rules (ASX Market) 2010³ not to do anything which results in a market for a product not being both fair and orderly.⁴

Consequently, participants need to exercise due care and skill to avoid causing a disorderly market when they enter, amend or cancel orders for index arbitrage transactions.⁵

Where that is done programmatically, they additionally need to ensure that the computer programs concerned have been designed and operate to avoid interfering with the efficiency and integrity of the ASX market.⁶

Participants also need to be cognisant of their legal obligation not to engage in market manipulation, particularly (but not only) if they are executing orders in a price-insensitive manner.⁷

4. ASX's measures to reduce volatility at option/futures expiry

The ASX market has a number of structural design features which help to reduce the volatility spikes often associated with the expiry of index options and futures contracts and related market activity. These include:

- contract specifications for ASX and ASX 24 index options and futures contracts that use opening prices rather than closing prices for calculating the settlement amount at expiry⁸ and that expire in the third week of the month rather than the last business day of the month;⁹
- the opening auction algorithm, which allows supply and demand to converge into a single price for each stock quoted on the ASX market at which the highest volume of that stock will trade; and
- the dissemination of an indicative auction price and surplus volume indicator during the market pre-open phase so that participants have clear visibility of supply and demand during that phase.

Notwithstanding these market design features, it is still possible that index arbitrage orders could have a significant market impact if they are not executed with appropriate care and skill.

5. Relevant considerations

ASX takes a range of factors into consideration in determining whether a participant undertaking index arbitrage activities on the ASX market has complied with its obligation under the ASX Operating Rules not to do anything which results in a market for a product not being both fair and orderly and also in assessing the penalty for any breach of that obligation.¹⁰

³ Referred to in this Guidance Note as the ASIC Market Integrity Rules.

⁴ ASX Operating Rule 3101 and ASIC Market Integrity Rule 5.9.1.

⁵ A participant's trading systems will typically have filters applied that assist in ensuring that new orders or amended orders do not cause a disorderly market. However, few (if any) filters are typically applied to the cancellation of an order. Where this is the case, the potential impact on the orderliness of the ASX market of cancelling a large index arbitrage order will need to be carefully considered by the participant.

⁶ ASIC Market Integrity Rule 5.6.1(1)(b)(i). See also ASIC Regulatory Guide 241 *Electronic Trading*.

⁷ ASIC Market Integrity Rule 5.7.1 and sections 1041A and 1041B of the Corporations Act 2001 (Cth) (referred to in this Guidance Note as the Corporations Act).

⁸ Higher volumes tend to be transacted in the opening auction than at other parts of the trading day, meaning that there is likely to be more buyers and sellers available to take the other side of the arbitrageur's stock leg. These higher volumes also make it more difficult for someone to manipulate the opening price of the stocks in the relevant index and, through that, the settlement price of the related index option or futures contract.

⁹ Having index options and futures contracts expire in the third week of the month, rather than at the end of the month, ensures that any price volatility that accompanies index option and futures expiry does not distort end of month stock prices.

¹⁰ ASIC may also take action against a participant who fails to comply with its obligation not to do anything which results in a market for a product not being both fair and orderly under ASIC Market Integrity Rule 5.9.1. ASX and ASIC have entered into a protocol that establishes a framework for determining whether ASX or ASIC should take action against a participant for conduct that breaches both an ASX Operating Rule and an ASIC Market Integrity Rule or the Corporations Act.

5.1. Factor 1 – impact on market price and traded volumes

First and foremost, ASX will consider the impact that the entry, amendment or cancellation of orders by a participant undertaking index arbitrage transactions had on the market for the stocks in the relevant index. If it appears to ASX that the way in which the participant has managed its orders has caused a material and disorderly movement (upwards or downwards) in the price or volume traded of some of the stocks in the index, ASX is likely to take action against the participant for failing to comply with its obligations under the ASX Operating Rules. The likelihood of such action will increase with the size of that movement and the number of stocks affected.

5.2. Factor 2 – time of entry of orders before market open or close

A participant that seeks to create, re-balance or close-out an index arbitrage position during the opening or closing auction on the ASX market needs to be especially careful that it does not cause a disorderly market on the open or close.

In this regard, sizable orders that are entered just prior to the conclusion of the pre-open or pre-CSPA phase do not allow the market sufficient time to react to the change in supply or demand and therefore run a greater risk of causing a disorderly market.

As a basic proposition, therefore, a participant seeking to create, re-balance or close-out an index arbitrage position in the opening or closing auction should be entering its orders a reasonable period before the end of the pre-open or pre-CSPA phase (as the case may be) to allow the market sufficient time to react to the orders.

The larger the index arbitrage position, the earlier the participant should be entering its orders.

If it appears to ASX that the participant unreasonably delayed the entry of its orders, ASX will regard that as evidence that the participant did not take reasonable steps to avoid a disorderly market. Further, if it appears to ASX that the participant has also priced its orders an unreasonable amount away from the existing equilibrium price in an attempt to guarantee execution, ASX will regard that as an aggravating factor warranting a larger penalty.

5.3. Factor 3 – time of any amendment or replacement of orders before market open or close

ASX recognises that the early entry of orders by a participant seeking to create, re-balance or close-out an index arbitrage position during the opening or closing auction on the ASX market may well lead to the participant being over-bid or under-offered by other participants, resulting in a need to amend, or cancel and replace, those orders.

Again, sizable orders that are amended or cancelled and replaced just prior to the conclusion of the pre-open or pre-CSPA phase do not allow the market sufficient time to react to the change in supply or demand and therefore run a greater risk of causing a disorderly market.

As a basic proposition, therefore, a participant seeking to create, re-balance or close-out an index arbitrage position in the opening or closing auction should be effecting any amendment or cancellation and replacement of orders at the earliest reasonable opportunity during the pre-open or pre-CSPA phase (as the case may be) to allow the market sufficient time to react to the change in orders.

If it appears to ASX that the participant unreasonably delayed the amendment or cancellation and replacement of its orders, ASX will regard that as evidence that the participant did not take reasonable steps to avoid a disorderly market. Further, if it appears to ASX that the participant has also priced its amended or replaced orders an unreasonable amount away from the existing equilibrium price in an attempt to guarantee execution, ASX will regard that as an aggravating factor warranting a larger penalty.

5.4. Factor 4 – time of any order cancellation before market open or close

ASX also recognises that the earlier a participant enters orders seeking to create, re-balance or close-out an index arbitrage position during the opening or closing auction on the ASX market, the greater the possibility that the participant may have to cancel those orders, if price movements in either the physical or derivatives markets eliminate the arbitrage opportunity.

Again, sizable orders that are cancelled just prior to the conclusion of the pre-open or pre-CSPA phase do not allow the market sufficient time to react to the reduction in supply or demand and therefore run a greater risk of causing a disorderly market.

As a basic proposition, therefore, a participant cancelling index arbitrage orders during the pre-open or pre-CSPA phase should be doing so at the earliest reasonable opportunity to allow the market sufficient time to react to the cancellation.

If it appears to ASX that the participant unreasonably delayed the cancellation of its orders, ASX will regard that as evidence that the participant did not take reasonable steps to avoid a disorderly market.

5.5. Factor 5 – efforts to verify availability of derivatives leg

ASX expects a participant who enters orders into the ASX market to create or close-out an index arbitrage position will first have undertaken reasonable steps to verify the availability of the derivatives leg of the transaction (ie, the relevant index option or futures contract it intends to buy or sell) before it places the orders for the stock leg of the transaction.

Among other things, this may avoid the need to cancel the orders for the stock leg if it transpires that the derivatives leg cannot be executed and any resulting impact that cancellation could have on the orderliness of the market (see factor 4 above). It may also lead to greater confidence that the stock leg can be executed without unduly affecting the orderliness of the market (for example, it is possible that the party taking the opposite side of the derivatives leg may also be in the market to take the opposite side of the stock leg).

If it appears to ASX that a participant has entered orders for the stock leg of an index arbitrage transaction without verifying the availability of the derivatives leg and consequently had to cancel the stock orders in a manner that resulted in a disorderly market, ASX will regard that as an aggravating factor warranting a larger penalty.