



# ASX 3 and 10 Year Treasury Bond Futures Quarterly Roll

## Consultation Paper

20 August 2012

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## Invitation to comment

ASX is seeking submissions on the issues canvassed in this paper by Friday 28 September. Submissions should be sent to: [futures@asx.com.au](mailto:futures@asx.com.au)

ASX prefers to receive submissions in electronic form.

If you would like your submission, or any part of it, to be treated as 'confidential', please indicate this clearly in your submission.

Submissions not marked as 'confidential' will be made publicly available on ASX's website. ASX may be required to table responses with the regulator as part of the regulator review process.

Where possible, ASX will be undertaking a series of consultation meetings or conference calls. If you, or your company, would like the opportunity to discuss with ASX this paper in greater detail, please contact ASX to arrange.

## Background information

### Introduction

ASX's 3 and 10 Year Treasury Bond Futures contracts are benchmark futures contracts characterised by strong liquidity and turnover. Both the 3 and 10 Year contracts are among the top 10 most traded bond futures contracts in the world in terms of volume, and attract a diverse range of domestic and international customers, including real money accounts, institutional banks and proprietary firms.

Trading during the life of a contract occurs in the spot month only, up until two weeks prior to expiry. The quarterly expiry period culminates in the five day roll process with customers trading out of the spot month and establishing positions in the next contract. Historically most positions are rolled into the next contract month rather than taken to cash settlement. Because of this the quarterly roll is an important period for both the end customers and the intermediaries. With this concentration of activity in the five-day period, the quarterly roll attracts arbitrageurs and proprietary traders who contribute liquidity to the roll market to facilitate position transfer at the fair value price.

Under the price-time priority matching algorithm, gaining good position in the queue has always been an important aspect of the roll market, particularly at times where there is relatively little volatility in the price of the roll. In a static roll price environment entering an order on the open becomes increasingly important to ensure a higher probability of executing a trade without having to cross the bid-offer spread. Under these circumstances, there is the potential for order proliferation to occur as market participants seek to gain queue position.

ASIC recently provided guidance in their Market Supervision Update to market participants on their obligations regarding appropriate risk management and entering multiple orders to gain favourable queue position.

### Aim of this paper

ASX has received a number of requests from market participants to examine the roll market structure and to identify the likely impacts of suggested changes. Market participants have raised a number of potential changes with ASX, including changes to the matching algorithm; introduction of 'Good 'Til Cancelled' (GTC) spread orders and permitting block trading of spreads over the roll period.

The consultation paper and discussions on potential changes to the bond roll structure seek to address both the ASX's and participants' mutual objectives of ensuring liquidity and efficiency in the roll process.

The aim of this paper is to examine potential changes to the market structure of the 3 and 10 Year Treasury Bond Futures roll. The second part of this document outlines potential changes and examines the likely impact of market behaviour for industry review, consideration, discussion and feedback.

### International comparisons

In preparing the consultation paper, ASX undertook analysis of select international exchanges and the market structure of their respective bond futures markets. ASX investigated the application of block trade facilities, matching algorithms, implied pricing, interaction between outright and implied markets, and the minimum price increments.

The exchanges analysed included CBOT, Eurex, Korea Exchange, Montreal Exchange, NYSE Liffe, NYSE Liffe US and the Tokyo Stock Exchange.

The analysis indicated that there were some similarities across exchanges. All these exchanges used a 'First In, First Out' (FIFO) matching algorithm for bond futures, with the exception of CBOT's 2 and 3 Year Treasury Notes, which are matched on a FIFO/ pro-rata hybrid algorithm. All these exchanges provide a block trade facility, some with restrictions around days out from expiry (NYSE Liffe and NYSE Liffe US) or prohibition on calendar spreads (CBOT). Other exchanges, such as Eurex and Montreal, have no restrictions on block trading calendar spreads.

In terms of tick size and associated dollar value, all these exchanges had contracts with minimum price increments with a smaller dollar value. Most exchanges provided implied pricing and integration between the outright and spread markets.

It should be noted that offshore exchange bond futures contracts differ from the ASX offering in two significant areas: (1) all other exchanges trade bond futures on a capital price basis, which offers more tradeable price points than the equivalent move in yield; and (2) with the exception of the Korean bond futures contracts, all offshore bond futures are deliverable.

## ASX market structure changes - concepts for discussion

### Pro-rata matching algorithm

Proposal	Implement pro-rata matching algorithm for 3 and 10 Year Bond Futures calendar spread market.
Rationale	<p>ASX currently employs a FIFO or price – time priority matching algorithm across all futures and option contracts during open trading. A significant implication of the FIFO structure is that an entity that enters orders early into the trade execution system will have priority in potentially obtaining a fill on that order at that price. Entities that are slower at entering orders will be queued behind the earlier orders (on the basis of time) and therefore have a lower probability of a fill at that price. Where there is relatively little volatility in the price of the roll, entering an order early becomes increasingly important to ensure a higher probability of executing a trade without having to cross the bid-offer spread. Under these circumstances, there is the potential for order proliferation to occur as market participants seek to gain queue position.</p> <p><u>Benefits of pro-rata:</u></p> <p>With a pro – rata matching algorithm, trade volume is allocated to all orders in the queue. The size of the fill allocated to an order is relative to the total order volume. Larger individual orders receive a larger portion of the transacted volume. In its purest form, all orders in the central order book, irrespective of the time an order is entered, receive a portion of volume from the incoming order. Variations on the pro-rata algorithm, such as top order priority, can be used to reward orders that improve the market.</p> <p><u>Drawbacks of pro-rata:</u></p> <p>A pro-rata matching algorithm may encourage traders to place multiple individual orders of a larger magnitude in order to gain faster fills. Queue sizes in terms of total volume available and length could also be significantly larger.</p> <p>Pro-rata matching algorithms, all other things being equal, are likely to result in a substantive increase in order confirmation messages, smaller individual fills per order, and an increase in middle and back office system traffic.</p>
Considerations	<ol style="list-style-type: none"> <li>1. The potential for a pro-rata matching algorithm to exacerbate larger queues in terms of total volume and number of orders.</li> <li>2. The downstream impact on middle and back office systems resulting from a substantive increase in messages and trade registration.</li> <li>3. Introduction of a pro-rata matching algorithm would require development of ASX Trade24 functionality. Capacity testing of ASX Trade24, Secur, and vendor systems would be required and may result in the need to develop systems to cope with the increased traffic.</li> </ol>

## GTC spread orders

Proposal	Permit GTC orders for calendar spreads
Rationale	<p>Current ASX Trade24 functionality permits GTC orders in outright markets. GTC orders cannot be placed in the spread markets. Under existing functionality, roll orders are automatically purged at the end of each trading session. Unfilled and partially filled client orders must be re-entered at the start of each trading session.</p> <p>The GTC order type allows customer orders to remain in the ASX Trade24 order book over multiple trading sessions.</p> <p><u>Benefits of GTC orders:</u></p> <p>Permitting GTC spread orders may reduce the order entry activity at the start of each trading session.</p> <p><u>Drawbacks of GTC orders:</u></p> <p>Conversely, a GTC spread order type is likely to encourage an earlier buildup of the roll queue, particularly during periods where the roll price is expected to remain stable. The introduction of GTC spreads may not reduce the degree of order proliferation but may result in it occurring at a single point in time and earlier than currently seen. GTC spreads may also increase the risk of erroneous trades should the fair value of the roll change.</p>
Considerations	<ol style="list-style-type: none"> <li>1. GTC spread order type may reward customers entering roll orders earlier.</li> <li>2. The potential for order proliferation is likely to remain, occurring earlier in the contracts life cycle.</li> <li>3. The potential for order entry errors to occur may reduce but the risk of trades occurring away from fair value may increase.</li> <li>4. The introduction of GTC spread order type would require development of ASX Trade24 functionality.</li> </ol>

## Block Trade spread orders during the roll

Proposal	Permit Block Trades for calendar spreads in the five business days leading up to expiry
Rationale	<p>Block Trade rules apply to both the 3 and 10 Year Treasury Bond Futures contracts. Block Trades are only permitted during the night trading session reflecting lower levels of participation and liquidity in that session relative to the day trading session. Block trades (night session) in the spot month contract are currently not permitted for the five business days prior to the Last Trading Day.</p> <p>The Block Trade Facility allow brokers to match large customer orders, providing greater certainty of a total order fill with reduced price slippage. Block trades may also reduce the price impact of a relatively large order on the central order book. Block Trades are arranged and executed off-market, reported to ASX and registered with ASX Clear (Futures).</p> <p>Block Trades do not affect open/high/low/close/volume information in the ASX Trade24 market. However, Block Trade volumes are included in all exchange market data reporting. Block Trades are typically reported to the market on a delayed basis.</p> <p><u>Benefits of Block Trades:</u></p> <p>Permitting Block Trades for roll business facilitates efficient movement of large positions into the</p>

	<p>new contract month. Customers are able to determine when positions are rolled, minimising price slippage and time spent managing the roll process.</p> <p><u>Drawbacks of Block Trades:</u></p> <p>Block Trade functionality applied in a liquid market environment is likely to fragment the market, potentially creating one market for large customers and their facilitating brokers, and another for smaller customers and their brokers. There could be an overall decline in liquidity provision into the central order book and the market is likely to become less transparent and less timely with information flow.</p> <p>Should block trading be allowed, a key consideration is setting an appropriate minimum volume threshold. Setting the threshold too low may have a negative impact on the liquidity and bid offer spread in the central order book. For customers rolling smaller positions and traders of the roll, taking too large a slice of the roll business out of the central order book may cause bid offer spreads to widen and the overall cost of rolling positions would increase.</p>
Considerations	<ol style="list-style-type: none"> <li>1. A Block Trade Facility for roll business will reduce market transparency.</li> <li>2. Delayed reporting of rolls conducted through the block trade facility could create asymmetric information dissemination at a crucial time for all market participants.</li> <li>3. If Block Trades were permitted during the roll period setting the appropriate minimum volume threshold is a key factor to maintaining liquidity in the central order book.</li> <li>4. Block Trade for roll requires no system development.</li> </ol>

## Centre Point Order type

Proposal	<b>Introduce a Centre Point Block order type</b>
Rationale	<p>ASX introduced Centre Point Block order type in June 2012 on ASX Trade. Centre Point Block provides a centralised matching facility on the trading platform, which is accessible by all market participants including liquidity providers.</p> <p>Centre Point Block order type allows market participants to place and match volume contingent orders. An order is placed for the total amount to be traded as well as the Minimum Acceptable Quantity (MAQ). The block trade will not occur until an opposing order at the specified price that meets the MAQ level or higher is placed into the system. Once an order has been partially filled, it remains in the order book, with the assigned MAQ level in place. The order will not trade until another opposing order is entered that meets the MAQ volume level.</p> <p>Centre Point order trades can only occur at the midpoint of the best bid and offer in the central order book.</p> <p><u>Benefits of Centre Point Block:</u></p> <p>Centre Point order functionality allows large volume orders to occur in a more transparent manner than standard block trade functionality – traded volume and price is visible to the entire market. In addition, there is open access to such orders for all brokers and their underlying clients so fragmentation of the market should be moderated.</p> <p><u>Drawbacks of Centre Point Block:</u></p> <p>For both the 3 and 10 Year Treasury Bond Futures contracts, both the roll and outright markets trade at the minimum tick increment. To support a Centre Point Block order type, the minimum price increment would need to be narrower than that traded in the central limit order book.</p>

Considerations	<ol style="list-style-type: none"> <li>1. A Centre Point Block order type provides an alternative to broker sponsored block markets.</li> <li>2. Centre Point Block order type allows market participants to control their fill size.</li> <li>3. All market participants can partake in the Centre Point order facility.</li> <li>4. If Centre Point Block order type was introduced setting the appropriate minimum volume threshold would be a key factor.</li> <li>5. To facilitate trading at the midpoint, the tick increment for Centre Point Block orders would need to be narrower than allowed in the calendar spread market. This has implications for downstream reporting and position management.</li> </ol>
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## Quarter the tick size in the 10 Year Bond Futures contract

<b>Proposal</b>	<b>Introduce quarter tick sizes for the 10 Year Bond Futures contract during the roll period</b>
Rationale	<p>A smaller tick size increment for the 10 Year Bond Futures contract (currently approximately A\$40) would reduce the cost associated with rolling positions.</p> <p><u>Benefits of a reduced tick size:</u></p> <p>The introduction of a quarter tick increment would reduce this cost to approximately A\$20. The lower cost of crossing the spread, may reduce the number of orders in the queue and encourage hedgers to cross the spread more often.</p> <p><u>Drawbacks of a reduced tick size:</u></p> <p>A smaller tick value does remove some of the attraction of trading the 10 Year Treasury Bond roll on the part of liquidity providers. This could result in less liquidity in the roll market and wider bid-offer spreads.</p>
Considerations	<ol style="list-style-type: none"> <li>1. Halving the cost of crossing the spread may reduce the incentive to queue orders and encourage customers to cross the spread.</li> <li>2. The tick value for a quarter tick increment may disenfranchise liquidity providers in the 10 Year Bond roll.</li> <li>3. Introducing a quarter tick increment would require significant operational effort to implement and may require system development.</li> </ol>

## Improve real time pre-trade risk management

<b>Proposal</b>	<b>Provide real time pre-trade risk management tools to ASX 24 Clearing Participants</b>
Rationale	<p>ASX provides pre-trade order limit management at the ASX 24 gateway level. This limit allows Clearing Participants to define the volume that can be submitted per order through the specified gateway. The default limit level is 9,999 lots.</p> <p>During the roll period, customers can potentially place multiple orders with a number of brokers in an attempt to gain favourable queue position but still seek to clear through one Clearing Participant. In such a situation, the Clearing Participant is unable to identify the potential exposure a customer has to open orders in the market. The degree of order proliferation in the roll market may be reduced if Clearing Participants are better able to monitor client order activity on a real time basis.</p>

	<p><u>Benefits of real-time risk management tool:</u></p> <p>Real-time risk management tools can provide Clearing Participants with the ability to preset trading limits at a customer level. Irrespective of the broker through which the orders are placed, a pre-trade risk control system checks the order against preset limits before sending the order to the trading engine.</p> <p><u>Drawbacks of a real-time risk management tool:</u></p> <p>ASX does not perceive any drawbacks with the introduction of a pre-trade risk management tool.</p>
Considerations	<ol style="list-style-type: none"> <li>1. Real-time risk management systems allow Clearing Participants to ensure clients are not placing orders beyond agreed levels.</li> <li>2. Pre-trade risk controls would ensure clients are not placing orders in the roll market that they cannot fund.</li> </ol>

## Invitation to comment and make a submission

ASX invites submissions from market users on the proposals contained in this paper or any alternative approaches respondents may wish to raise. Your views are important in assisting ASX to best meet the requirements of all stakeholders. Where possible, ASX will also be arranging a series of consultation meetings. If you, or your company, would like to discuss this topic further please contact ASX.

ASX is seeking market views on the six broad alternative approaches (listed above) to enhance the efficiency of the bond roll process, or on any alternative approaches respondents may wish to raise. It may be that a single approach is preferred or a combination of approaches may provide the best solution.

We are interested in hearing your views on the preferred process for dealing with such scenarios, and identifying the impact of particular options on the broad range of affected stakeholders. This would include the direct system costs and other costs of particular choices for participants and their customers.