

## How has FIX changed the portfolio trading business?

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### **Why trade orders in groups?**

**Why do buy-sides use portfolio, programme or basket trading? All of these terms refer to a group of orders that need to be bought, sold or a mixture of both. The commission charged for these styles of trading is historically much less than that charged for trading each of the orders individually, i.e. as a set of independent block trades.**

## How did the pre-FIX portfolio trading business operate?

The pre-FIX portfolio trading business typically operated as follows:

- Buy-side decides whether the portfolio should be traded on an agency or a risk (principal) basis. Agency trades offer the advantage of transparency to any buy-side regulator because the sell-side satisfies the order by executing in the market. The sell-side needs to cover the effort spent executing this business by charging a commission and this effort will vary according to the size and liquidity of the orders in the portfolio.

Risk (principal) trading has the advantage of a guaranteed price for the buy-side with settlement against the sell-side without the risk of illiquid orders having to be traded over many days. The trading price of the orders is typically the mid-price at a future time such as the market close. The sell-side charges commission based upon their assessment of the risk of taking this portfolio onto their books. The sell-side will charge a low commission if it believes the position will complement its existing position and a higher commission if not. The sell-side can choose when and how it flattens the position incurred by this portfolio, i.e. this is no longer the buy-side's business.

- Once the buy-side has decided how to trade the portfolio, a phone conversation takes place with sell-side firms. These conversations solicit a set of commission rate bids based upon the buy-side imparting as little information as possible to the sell-side. Typically this information would consist of the number of orders, total value of the orders and an assessment of liquidity by sector and country. Most buy-sides appear to follow a bidding process for risk portfolios but fewer buy-sides do for agency business. The agency business is often allocated to sell-sides at pre-agreed commission rates.
- The buy-side sends the portfolio to the selected sell-side. Typically this would be a spreadsheet or text that has been encrypted and sent via FTP, e-mail or a modem-to-modem link.

- The sell-side executes the portfolio according to the agreed instructions. After the close of the last market or at a pre-agreed time, whichever comes first, the sell-side sends an execution report and other added value reports such as market impact. The minimal execution report contains the executed quantity and average price for every order. For agency orders additional reports are usually sent to indicate the market impact by comparing each order's average price with (Volume Weighted Average Price (VWAP)).
- The account allocation instructions are often provided with the original order so that the sell-side can perform post-trade allocation as each order is filled. This prevents a very large group of account allocations being processed as a batch after the market close. Large allocation batches processed in a short interval are likely to result in system capacity problems and are therefore generally avoided. Some buy-side firms have a single account per portfolio and thereby avoid complex post-trade allocation.

## How does the FIX specification support the portfolio business?

The FIX specification prior to FIX 4.2 contained the definition of some list messages that contained a number of orders. These messages were not widely implemented due to ambiguity of their correct usage.

The FIX 4.2 specification contained a number of enhancements to the list aspects of FIX :

- List bidding messages for the disclosed and non-disclosed bid models.

The disclosed bidding model provides details of the orders in the list whereas the non-disclosed bidding model provides liquidity, sector and country information but no order details. The disclosed model is used in Asia and the non-disclosed model is used outside of Asia.

- Enhancements to the List Status message Changes to allow this message to be used as an acknowledge message and to provide status for the overall list and the individual orders.

- Enhancements to the New Order List message Changes to allow pre-account allocation of orders to more than one account. The ability to specify the frequency that the sell-side should provide the list status updates to the buy-side.
- Scenarios in Appendix N to illustrate the message semantics

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## How is portfolio trading being conducted now?

In November 2004 I questioned a number of top-tier buy-side, sell-side and buy-side order management system vendors (OMS, this is the software that enables orders to be sent for execution to a number of sell-sides). My findings are as follows:

- **Buy-side firms...**  
All said they had an OMS that was developed in-house or vendor supplied. All appeared to be running active programmes to ensure that their OMS is being continually upgraded. Simon Thompson (Managing Director, Head of Equity Trading (Europe), Barclays Global Investors) observed that "It must be incredibly difficult for any institutional investment manager to justify avoiding the incorporation of FIX technology into their trading process. The days of blue tickets for buys and pink tickets for sells are long gone." Ary Khatchikian (President and Chief Technology Officer, Portware LLC) observed that "One of the biggest challenges facing the buy-side institutional trader is managing multiple trading systems that route orders to only one destination. This forces the trader to use multiple screens which all require valuable desktop real estate, i.e. the "swivel-chair" effect where the user has to switch between several proprietary broker systems. A FIX enabled order management system can eliminate this effect by offering buy-side

institutions the ability to manage all of their trading destinations from a single interface."

All said that their system was capable of routing lists of orders to sell-sides using New Order Single messages or New Order List. The use of the New Order Single messages was particularly common amongst the early adopters of FIX using FIX 4.0 and 4.1.

All said that they want to receive real-time feedback on the status of their list orders. This is being achieved via the Execution Report message. No one reported network bandwidth or system capacity issues when providing real-time feedback on large lists. However, one-sell side mentioned that their buy-side clients had requested batched execution reports on particularly large portfolios such as a Russell 2000 rebalance. It is not clear whether the buy-side make decisions based upon the real-time information received from the sell-side or whether this is a matter of demanding the best possible information regardless of whether it is going to be used.

Some large buy-side firms have created a central trading desk through-which all of their trading flows. The firm must believe the cost of investment in in-house traders and systems can be recouped from reduced sell-side commissions without a reduction in the quality of execution. The desk is responsible for amalgamating and splitting the business such that orders are executed in the most appropriate way. For example,

- Orders in liquid securities are managed directly by them and routed for execution on sell-side's direct market access (DMA) services. Most sell-side DMA services typically offer sub-second latency from a client-side FIX interface to an external market under the exchange-membership of the sell-side. The buy-side trading desk is responsible for the execution of the DMA order, for example, changing the limit price as the market moves.
- Large orders in relatively liquid orders are routed to algorithmic FIX sell-side interfaces such as those offering VWAP algorithms.
- Orders in illiquid securities, in non-electronic markets and those in non-overlapping time zones are sent for

execution by one or more sell-sides. These orders may be sent to the sell-side as unconnected orders (New Order Single) or a list (New Order List). The majority of buy-sides want real-time feedback on the status of the orders.

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No buy-side firms said that they send multiple account allocation splits with their list orders. Those that do multiple account splits on lists said that this information is sent to the sell-side after market close or at a pre-agreed time. Typically FTP, e-mail and modem-to-modem links are used to send the post-trade allocation information to the sell-side. One buy-side mentioned that they support post-trade allocation via FIX for their block trading but not for their list trading.

One buy-side firm said that they are in the early stages of replacing an in-house written OMS with a vendor OMS. The old one offers FIX 4.0 list capability and the new one offers FIX 4.2 list capability. The modem-to-modem old-style spreadsheet transfer mechanism will be decommissioned in favour of a FIX only mechanism.

Buy-side firms said that they use the phone bidding model for risk business and the largest of their agency business. The smaller agency business is generally traded based upon pre-agreed commissions on a round-robin basis amongst a set of sell-sides. One buy-side said that they use a well-known broker package to generate the risk, liquidity, and statistical profile and that it is e-mailed to the sell-sides for bidding. This buy-side doubted that the sell-sides would trust the same statistical information from a proprietary buy-side algorithm.

- **Sell-side firms...**

One sell-side observed more than half of their US portfolio business is transferred via FIX compared with around 20% of their EU business. It may be the case US buy-sides are bigger users of FIX for portfolio trading than EU based buy-sides (no information available about Asian buy-sides).

Most firms claim to support lists provided as a New Order List message and also as a sequence of New Order Single messages. Typically the portfolio business is routed to a portfolio/programme trading desk and the New Order Single messages are routed to a block trading desk. This may mean that FIX functions supported by one desk are not supported by the other. For example, at one sell-side, the block business provides a real-time Execution Report whereas the portfolio business does not. A list transferred as a series of New Order Single messages does not allow the sell-side to verify that all of the orders in the list have been received, unless non-standard FIX fields have been bilaterally agreed for this purpose.

Most firms implement the aspects of the FIX specification that their clients have requested and to a lesser degree those aspects that allow the sell-side to operate more effectively. Brian Lees (application development, The Capital Group Companies, Inc) recently observed "At the outset of the project, support for program trading via FIX 4.2 New Order List message was not widely available from the sell-side. By partnering with our brokers and discussing what could be achieved within our desired timeframe, we were able to create a mutually beneficial plan for incrementally transitioning from a static spreadsheet-based method of communication to a more efficient, real-time FIX solution." This indicates that support for FIX 4.2 lists is perhaps not particularly widespread amongst the sell-side.

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Few firms have implemented the List Status message. Most sell-side firms say that they send the Execution Reports in real-time. One sell-side said that they have implemented batching of Execution Reports that can be enabled at buy-side request on a particular list. This has been requested on particularly large lists to prevent the buy-side OMS being swamped. One possible reason for favouring individual Executions Reports over the List Status

message is that the buy-side are able to capture the detail of how the orders were executed to satisfy regulators.

## **Few firms support the list bidding messages and no firms said that they are being used by their clients.**

Only one sell-side said that they support multiple pre-account allocations on FIX 4.2 New Order List messages. One sell-side said that one of their clients supports pre-account allocation by sending multiple New Order Single orders for the same security, direction and list but each with a different account such that the sell-side amalgamates these orders for trading and uses the original order quantities for post-trade allocation.

- **Buy-side OMS vendors ...**

Most of the vendors claim to offer full support for the list trading messages added at FIX 4.2, i.e. New Order List, List Status, List Cancel and a subset support Bid Request and Bid Response.

**No OMS vendor knew of a buy-side that makes use of the FIX bid messages despite their being supported by their system**

No OMS vendor knew of a buy-side that makes use of the FIX bid messages despite their being supported by their system. One OMS vendor said that their system allows the buy-side firm to automate the way that they manage portfolio bidding. A buy-side OMS system could generate a disclosed or non-disclosed FIX Bid Request based upon a set of orders if the OMS system has liquidity, sector and country data for the constituent securities. Due to the lack of sell-side adoption for the FIX bid request message the particular vendor has implemented the Bid Request concept as an e-mail. Bid automation could allow the buy-side to widen the number of brokers that provide bids for the portfolio, as a single automated Bid Request message could be sent simultaneously to a number of brokers. This could replace the current phone based bidding described earlier. Robin Strong (Principal Technical Architect, Charles River London) observed "The buy-side firms are placing increasing emphasis on measuring both internal and external trading performance. Transaction Cost Analysis

(TCA) tools can measure broker execution performance, but, from a management perspective, the buy-side needs to measure broker bid performance and consistency, and determine the cost/benefits of portfolio trades versus single order execution".

The single biggest barrier to adoption of the FIX list bidding is probably the lack of momentum, i.e. buy-sides are not pushing the sell-side and therefore the sell-side don't need to implement a feature that offers the sell-side little benefit.

Some buy-side OMS vendors said that they support pre-account allocation on the orders in a New Order List, but, they said that they didn't believe the functionality is being used. The lack of general support for FIX pre-allocation may be seen as a retrograde step for portfolio trading when compared with old spreadsheet mechanism that did support this feature.

## **My opinion of the impact of FIX on portfolio trading**

In my opinion portfolio trading has become fragmented with buy-side, sell-side and buy-side OMS vendors at different levels of evolution. One of the problems may be that with so many different ways to trade electronically (FIX New Order Single, FIX New Order List, FIX DMA, FIX algorithmic trading and via spreadsheet) no single way will be universally adopted and this is likely to lead to unnecessary incompatibilities between new trading partners. The result is that sell-sides will need to support many different ways of trading.

The universal trend is toward electronic execution systems and away from paper and phone. Furthermore, it is clear that buy-side and sell-side companies are increasingly adopting FIX for portfolio trading; in particular new firms are using the FIX 4.2 New Order List message. **FIX**

### **Any thoughts on this or other articles?**

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