Implications of e-trading in fixed income markets

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Abstract The following paper discusses the orgins of the electronic trading platforms, the substantial benefits that they offer but at the same the shortfalls that the current generation of systems suffer from. A potential solution is put forward, which if widely adopted, could have far reaching implications for the future of the Fixed Income markets (FIX) and the way that they are trading.

Keywords: *: electronic platforms; Internet; liquidity; centralisation; FIX protocol; straight through processing; price dissemination; connectivity*

Introduction

Possibly the most significant technology topic in the world of fixed income securities today is electronic trading, its pitfalls, advantages and its implications for the future in the way trading in the markets is conducted. The adoption of electronic trading systems transformed the landscape of equity trading in the mid to late 1990s, and it is rapidly proving to be a force for change now in the fixed income markets. Reflecting the relative ease with which business can be executed in these markets, the technology has now made the transition into bonds. Here electronic platforms are increasingly replacing the telephone as a primary trading tool, and while the trend began in the USA, Europe is now playing host to a number of initiatives.

The fact that electronic trading in the fixed income markets has developed at a slower pace than in the equity markets is largely reflective of the distinct differences between the two product types. Fixed income products are far less homogenous, with many more separate and individually less liquid issues than equities, making it technically more difficult and more expensive to introduce automated systems. *The Economist* (March 2000) calculated that the number of fixed income securities on issue in the USA alone was in excess of four million (varying in coupon, maturity, frequency of interest payments, etc) compared with a few thousand listed shares.

For this reason the early fixed income platforms concentrated on commoditised products like the highly liquid Government bond and agency markets. The additional liquidity provided by these systems has enhanced the effectiveness of the market overall, reducing costs by narrowing spreads and giving depth and transparency such that

prices are less affected by particular trades. The ability of market makers to stream prices at both wholesale and retail size to clients, exchanges and the like has created a pool of liquidity and price visibility that simply did not exist prior to electronic trading. This is coming at a time when market players are constantly looking at ways to minimise cost, so one can see why the issue of e-trading is regarded unquestionably as the future of trading.

This paper considers some of the issues of e-trading and describes salient features of some of the systems.

Current systems and implications

Generally, observers believe that the focus on Government and Treasury markets will decline as electronic systems transform into more intricate and sophisticated platforms, better able to accommodate the trading of less liquid issues, in areas such as emerging markets, corporate bonds and lower grade credit issues.

An important development for the fixed income market has been the expansion of technology through to the primary (issuance) and retail (small – odd lot) markets. The initial wave of systems such as TradeWeb, Brokertec and PrimeTrade developed with the focus on providing liquidity to the wholesale secondary bonds markets. This has now spilled over into the primary markets, with several electronic book-building, and syndication applications being developed such as Dresdner's 'e-bookbuilding'. Indeed 2000 saw a number of issues marketed and issued over the web; World Bank launched the first ever fully integrated global electronic bond offering via the Internet in January. The $3bn five-year global notes surpassed expectations with the fact that by the following morning the order book already exceeded $5bn. Of that, as much as 35 per cent of the orders came through the Internet. Afsaneh Mashayekhi Beschloss, vice president and treasurer of the World Bank said, 'For investors, the Internet bond is quite revolutionary, in that for the first time, the mid-size and retail investors get access to the kind of market information and type of product that was only available to the institutional investors.' June 2000 witnessed the first corporate bond issue to use this new technology for trading in the secondary market with Daimler Chrysler's $2bn global e-bond. The transaction employed electronic new-issue features such as electronic dissemination of issue information and electronic submission of indications of interest. Over 40 per cent of indications of interest received by Goldman Sachs, the lead manager, were submitted over the Internet. After the issue was priced, it began trading electronically in the secondary market. Institutional investors were able to buy or sell bonds through Goldman Sachs's proprietary secondary trading system called Web.ET. This ability to trade corporate securities electronically, in addition to the traditional trading channels, enhances not only price transparency but should also enhance liquidity in the secondary market. Electronic new issuance and trading provide this transparency for investors and issuers alike. For the latter in terms of its ability to see 'the book being built' in real time and the former for the obvious reasons such as achieving the best possible transaction terms. These prominent successes have paved the way for larger offerings in the coming years.

Likewise, in the retail market — small lot trading — stands to benefit from the linkages to the wholesale markets, and wider retail base, that result from the use of such new technology. The retail fixed income market now has a tremendous

growth opportunity as more and more financial institutions of all sizes become connected, by not only the numerous electronic trading vehicles in place, but also by the web, as has been evident in the retail equity markets over the last decade.

Electronic trading systems dealing in the fixed income markets have been growing throughout the USA and Europe in increasing numbers. Indeed, in 2000, new trading platforms were announced almost on a weekly basis. However, 2001 saw a significant decline in the number that were still in active existence as certain operations ceased trading entirely while other platforms have merged. Some of those that remain have curtailed their scope of operations. This consolidation is attributable to several factors. First and foremost was the overcapacity that occurred in 2000; there were quite simply too many systems launched for the volume of trading that was taking place at that particular time. Another factor was of course the overall contraction in the Internet economy. In the process somewhat of a dichotomy was created with a shift in the balance of development — a decline in the number of systems based in the USA versus an increase in European based platforms. Despite this, fixed income systems have proliferated in number — an annual survey by the Bond Market Association (2001) identified just under 90 or so e-trading systems operating in fixed income products, up from only 11 four years earlier.[1] These range from most of the exchanges to the individual trading houses and inter-dealer brokers (a full list of the types of systems involved is given).

As consolidation continues, and new systems develop, a key growth factor will be the use of a protocol that promotes connectivity between individual platforms, effectively allowing systems to talk to each other. Currently the majority of fixed income systems operate their own language for disseminating data, and the execution/settlement of trades. However, this necessity of having to work with a plethora of platforms can be a costly process in terms of the resources needed to create the communication links — Application Program Interfaces (APIs) — between the systems. Therefore the need for greater centralization and consolidation is paramount as there is a vast array of platforms out there competing for the liquidity on offer. Here we must learn from past mistakes.

The solution that is gaining rapid popularity in the fixed income world is the use of a protocol that currently dominates the equity markets — the Financial Information eXchange protocol (FIX). The beauty of FIX is that it speaks a universal language of trade execution, but also handles the settlement side of transactions, and permits price data dissemination as well.

The current platforms in existence today are largely just one step removed from the old screens of a decade or so, upon which market makers submitted indicative price quotes. The main difference being that nowadays the prices are 'live' and clients can access the screens to trade. The majority of these screens outside the inter-dealer systems only allow the clients to 'hit' or 'lift' the current prices shown. FIX provides the functionality to allow clients to enter market orders, switches or to conduct basis trades. It allows for multiple price quotes that can be easily compared and acted upon within the very heart of the clients' own trading systems. Furthermore, straight through processing (STP) allows for a streamlined trade process, from the very first 'click' right the way through to the actual settlement of the trade, and at the same time

eliminates the majority of manual work that currently occurs. FIX is already used by the Chicago Mercantile Exchange (CME) as its trading protocol, and with the equity markets firmly established as FIX driven, fixed income looks set to be the next market to benefit.

At this level electronic trading systems, and the development of FIX technology, have enhanced operational efficiency in the fixed income markets in two main ways. First, as the volumes traded by electronic systems have steadily grown, this in turn has reduced the average cost per transaction, creating a low marginal cost base to each trade. Secondly, they have enabled this integration of all processes from the front-office to the back-office to develop into a major cost-saving vehicle that encompasses order transmission, trade confirmation, position monitoring, and final settlement. Furthermore, this technology offers cost efficiencies to customers as well, by lowering search costs for the best price available at the time of placing orders.

While STP is still in its infancy, it is proving to be one of the major benefits to the fixed income industry, with good potential for improving overall industry efficiency, leaving time for traders, salespeople and investors to work larger orders. This also creates more time for effective risk management techniques to be employed.

Another area that underlines the impact of the electronic age, on the fixed income markets, is the range of systems currently in use today. The following categories cover the majority of systems currently in use:

— *Auction systems*. Auction systems enable participants to conduct electronic auctions of securities offerings. Buyers submit bids for the securities on offer and the offering is awarded to the bidder that offers the highest price/lowest yield. In some cases, the identities of the bidders and the amounts of the bids are kept anonymous; while in others the identities and/or bid amounts are viewable by all participants providing greater market transparency.
— *Cross-matching systems*. Cross-matching systems generally bring both dealers and institutional investors together in electronic trading networks that provide real-time or periodic cross-matching sessions. Customers are able to enter anonymous buy and sell orders with multiple counterparties that are automatically executed when contra side orders are entered at the same price or when the posted prices are 'hit' or 'lifted'. These types of systems typically allow users to execute complex portfolio strategies that incorporate multiple orders in different securities.
— *Inter-dealer systems*. The inter-dealer systems allow dealers to execute transactions electronically with other dealers through the fully anonymous services of brokers. All the major inter-dealer brokers in the US Treasury securities market currently offer or expect to offer their customers access to electronic brokering and this is fast becoming the norm within European markets as well.
— *Multi-dealer systems*. Multi-dealer systems provide customers with consolidated orders from two or more dealers and offer them the ability to execute from among a multiple of quotes. Often, multi-dealer systems display the best bid or offer for a given security among all the prices posted by participating dealers. Participating dealers tend, as a rule, to act as principals in these transactions.
— *Single-dealer systems*. Single-dealer systems allow investors to execute

transactions directly with a specific dealer-of-choice, with the dealer acting as principal in each transaction. The dealer offers access through a combination of third-party providers, proprietary networks (Bloomberg, Reuters etc) and of course the Internet.

Single-dealer systems are viewed as the next major growth area in fixed income development. An example of the technological advances made in this field is evident in the system set created at Van Der Moolen Bonds in London. Van Der Moolen offers a specialist market making service in odd lots, (smaller than wholesale size) positions in US and European bond markets, to a wide range of financial institutions.[2] This allows cost-effective balance sheet management for larger organisations and wholesale market prices in retail size trades for the smaller institutions. This is only made possible by the cost structure of the company, which is tailored to this niche, as well as the expectation of a high trade volume turnover. Van Der Moolen have developed a system based on the proprietary pricing engine developed by Speedwell Associates. Speedwell produces bond pricing, value analysis and price dissemination systems based on the FIX protocol, for a number of clients in Europe and the USA. The system allows Van Der Moolen to publish live tradable prices on a variety of platforms, predominately the Bloomberg Trading system (page VDMB<GO>) as well the Internet.

Clients can deal in any quantity up to the maximum size shown on the screen, in real time, at the screen-advertised price. Dealing is not dependent on finding a matching interest, but simply a process of highlighting the bid, or offer, of the desired bond, and clicking to trade. Being a live system, the Van Der Moolen screen is frequently used as a source of pricing and price comparison, thus providing two of the key components of successful e-trading systems liquidity and price transparency. Those clients using the Bloomberg front end trading system have the added benefit of utilising straight through processing for their dealing — once the trade has been accepted, the instruction is electronically fed through to the Van Der Moolen settlement system, which in turn generates electronic instructions to the relevant clearing agents.

Figure 1 shows the Bloomberg menu page for Van Der Moolen, while Figures 2 and 3 show the German government price page and a customer dealing ticket screen respectively. Figure 4 shows the Internet page for the Van Der Moolen dealing system.

Conclusion

The consensus view in the fixed income market is that systems such as those described above have and will continue to create substantial benefits to those who conduct their business electronically. The wider use of electronic trading systems will enable customers to directly access a larger number of markets, removing geographical constraints on market access and allowing continuous multilateral interaction (whereas telephone trading allows only the former, and floor trading only the latter). This in turn blurs the distinctions between inter-dealer markets and dealer-customer markets. Customers will enjoy benefits of price transparency, as the prices quoted across electronic platforms move nearer to those quoted in the inter-dealer markets.

In summary, electronic trading will, over time, change every aspect of the fixed income industry. It will ultimately contribute to more efficient price

Figure 1 Bloomberg menu page for Van Der Moolen

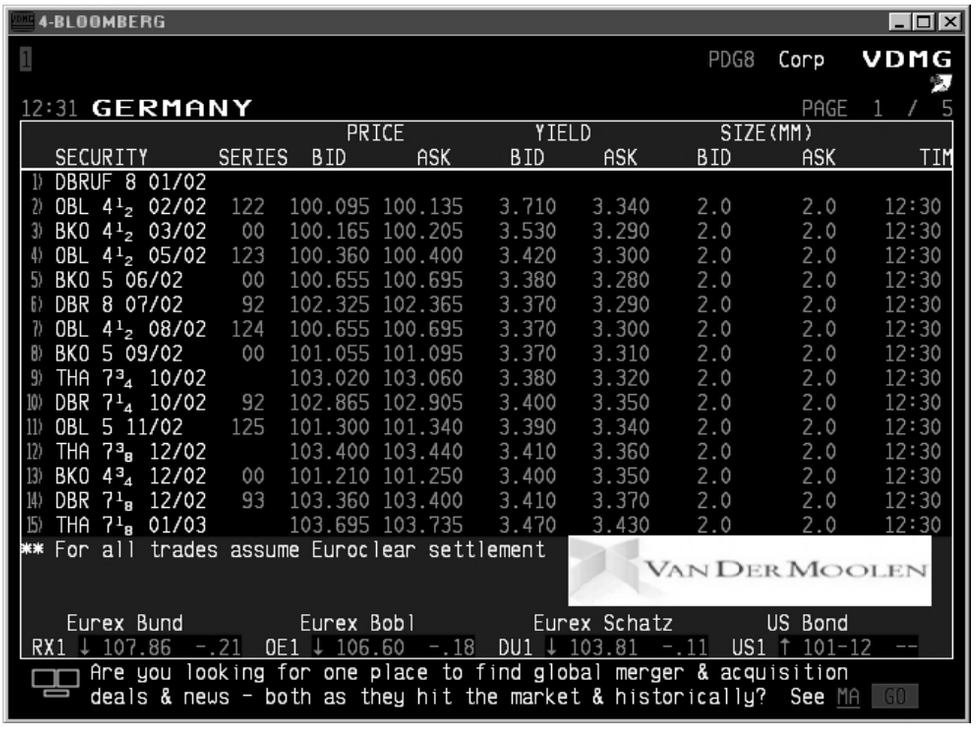

Figure 2 German government price page

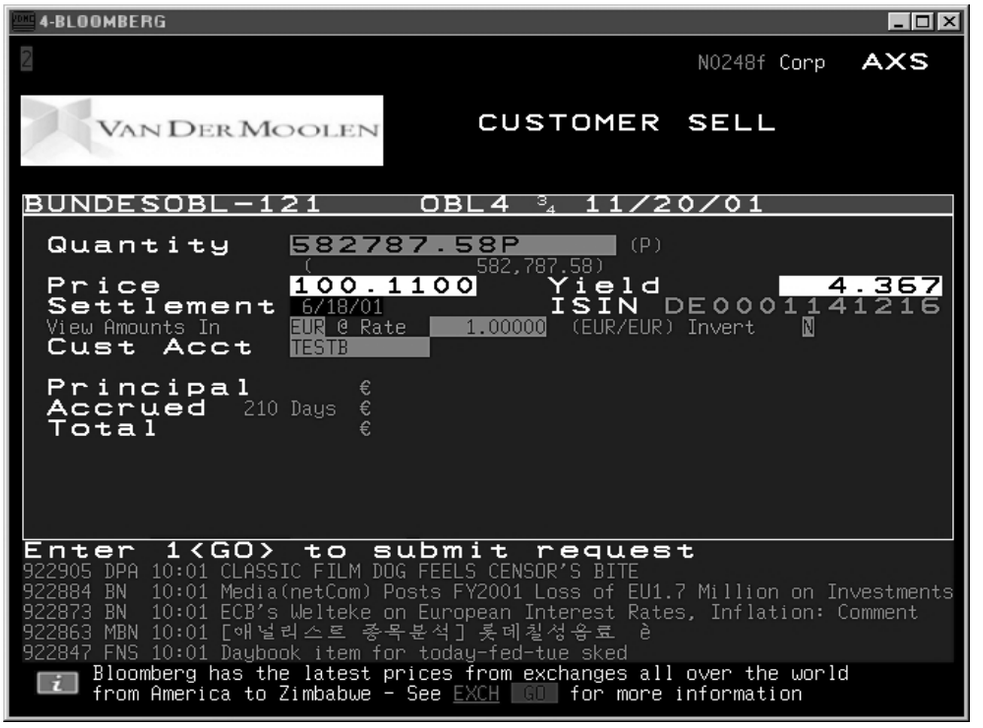

Figure 3 Customer dealing ticket screen

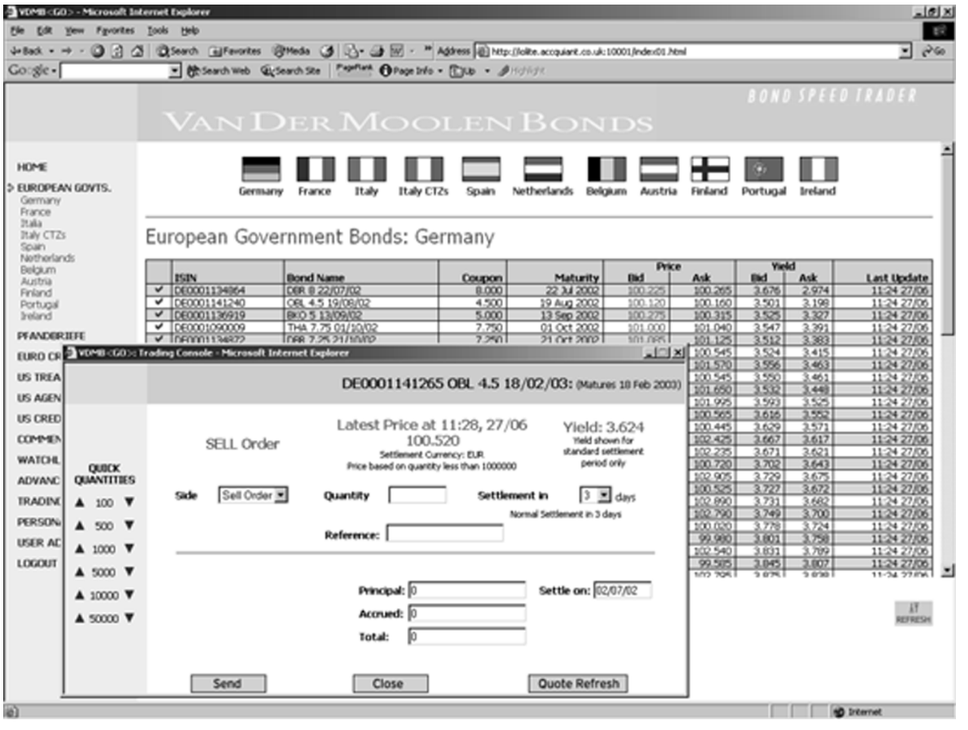

Figure 4 Internet page for the Van Der Moolen dealing system

discovery through enhanced transparency, accelerated transmission of information on trades, faster trade execution, and larger transaction volumes. In recent years electronic trading systems have become an increasingly favoured method of trading the more liquid bond issues, and the coming years look set to reinforce this position in other areas of the bond market. Electronic trading systems may also positively influence financial stability by providing access to a global pool of liquidity to a much wider range of players, through the massive connectivity available in this new electronic age.

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Notes

1 The Bond Market Association, *Review of Electronic Transaction Systems*, December 2001.
2 Typically, banks consider a nominal size of under €2m to be an 'odd lot'.