
MiFID II and Fixed-Income Price Transparency: Panacea or Problem?



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GROUP

Rebecca Healey | V10:027 | July 2012 | www.tabbgroup.com

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Executive Summary

In light of the ongoing review of the Markets in Financial Instruments Directive (MiFID II), this latest research from TABB Group investigates the potential impact of the review's pre-trade transparency proposals on the fixed-income market, its participants and the real economy.

TABB Group's research on fixed-income markets illustrates an industry struggling under the weight of the current economic climate, a decline in risk appetite and concerns over impending regulation. This sentiment comes not only from banks and dealers, but also from institutional investors frustrated at their inability to find liquidity, companies frozen out of the debt markets, and sovereign issuers that are progressively becoming reliant on domestic investors as international financiers retreat.

TABB Group, which was founded in 2003, is a global financial market research firm that conducts research based upon an interview-driven methodology. Our research for this report is gathered from comprehensive interviews with market participants covering a wide spectrum of investors (both institutional and retail), trading venues, market makers, as well as company and government issuers. In addition to the interviews conducted for this report, TABB has also drawn on other surveys conducted during the past six months regarding similar regulatory issues for the fixed-income market, which include a further 100-plus interviews. The majority of market participants interviewed expressed their concerns about the proposed regulation further hampering liquidity, increasing trading costs, and ultimately making it more difficult for issuers to raise capital and for investors to achieve the necessary yields over time.

For this report, TABB Group examines the current structure of the debt markets and the increasingly important role they play in the wider economy. The study explains why debt markets are distinct and cannot be viewed in the same light as equity markets, and why they require different investment, distribution and trading structures. We then investigate the various types of debt trading structures, the notion that fixed-income markets are primarily institutional, the role of primary versus secondary market activity, and how the secondary market operates in relation to indicative pricing, firm quotes and actionable orders. The final section of the study looks at the regulatory changes proposed in MiFID II and the effects they will have on pricing, disclosure, order execution and the ability to raise capital.

The Role of MiFID

MiFID was developed to create a more efficient and integrated European financial market by harmonising the regulatory structure, promoting transparency and driving competition. While MiFID was proposed for all asset classes, its main focus to date has been on equities.

Under the MiFID II proposals, regulators are considering the extension of MiFID to encompass the balance of asset classes, including fixed income. The regulators' objectives are to encourage all organised trading on to regulated trading venues, enforce stricter

governance of trade-matching venues and broker responsibility, and mandate a consistent level of pre- and post-trade transparency for all clients.

An appropriate level of transparency is beneficial. However, forcing full transparency irrespective of the asset class traded, the order type or the market conditions, is likely to come at a cost.

The real economy revolves around investment. Private investors, companies, institutions, and governments use financial markets to make investments in the real economy that provide services, fund employment, build infrastructure, develop factories and bring new ideas to market. In return, investors seek a return on their capital, be it interest on money borrowed, dividends on ownership rights or appreciation in equity.

For current market arrangements to operate effectively, providers (investors), users (issuers) and intermediaries (banks/market makers) of capital are required. Capital is provided through two basic structures: equity (ownership) and debt (borrowing). Fixed-income capital markets financing is employed to diversify funding sources between bank and non-bank sources when projects become too large for banks to directly fund, when banks' lending policies diverge too greatly from companies' needs (for example, in terms of size, maturity or interest rate), or when greater lending flexibility is required.

While equity is predominantly traded on exchanges, most fixed-income instruments currently trade over-the-counter (OTC)—that is, bilaterally between a client and a market maker. While a company may issue only one or two classes of equity, a company's debt can have various characteristics and liquidity profiles. For example, Daimler has one equity share versus 130 corporate bonds with different maturity dates, interest rates and payment features.¹ As these bonds are spread across a range of products, most or all of which are rarely traded, it becomes challenging to find continuous liquidity for all these instruments.

A recent study of European corporate bonds illustrated that while the average equity stock listed on the London Stock Exchange traded between 450–650 times per day, euro-denominated corporate bonds traded an average of only four times a day across Europe.² High-yield bonds trade even less frequently, with 60–70 per cent of such bonds having only traded 50 or fewer times during the past two years.³

Unlike a single class of shares, each fixed-income security is dissimilar in terms of maturity, coupon, interest rate, liquidity and rating. This creates imbalances in the number of buy and sell orders placed by investors for a bond at any one time. Such unmatched flows cause two problems: one is that an instrument's price may change abruptly, even if there has been no shift in either supply or demand for the bond.

¹ Bloomberg

² CFA Institute: "An Examination of Transparency in European Bond Markets"

³ <http://www.cfainstitute.org/learning/products/publications/ccb/Pages/ccb.v2011.n5.1.aspx>

Second is that either buyers have to pay more, or sellers have to accept lower prices, if they want to make their trade immediately.⁴

To allow investors to trade bonds and restructure their debt portfolios in illiquid fixed-income markets, market makers provide on-request liquidity through a process where clients, either electronically or by phone, request a quote, or if suitable, trade against it. The market maker then uses its distribution network to find the other side of the trade, or if unable to locate a buyer, will take the debt into inventory pending the location of a willing buyer.

Reduction in Liquidity and Efficiency

This paper finds that MiFID II's proposal for pre-trade price transparency, which includes greater quote dissemination and the equal access of actionable quotes to all clients (regardless of settlement risk, market liquidity and each market maker's particular risk limits) will harm current fixed-income market efficiency and liquidity.

The existing market making model is already under stress due to the current economic conditions. If market makers are forced to increase their transaction costs, restrict their client base or pull away from the market entirely in an attempt to avoid risk, this will have a negative impact on trading activity and overall market liquidity.

Execution risk will shift from market makers to investors, pushing banks to behave as order takers rather than risk absorbers. This agency model will concentrate trading in liquid debt only, where an active buyer or seller can be easily found (for example, certain sovereign entities and larger companies issuing shorter-term debt).

While liquid debt is likely to continue to trade efficiently, less-liquid issuances that stray away from more standard offerings will become increasingly harder to sell. Market makers will be forced to price adversely, as they will have to drop to a price where a buyer is enticed, making it more expensive to trade and provide the necessary capital requirement to cover exposures. This adverse pricing will create a negative loop of decreasing trading activity and subsequent market liquidity, which will lead to increased market volatility. As markets become more volatile there is less appetite for investors to be involved, as the risk/reward ratio ceases to be attractive (see Industry Commentary 1), thereby forcing market makers to price adversely once more.

Industry Commentary 1

"There is just no incentive for me to trade bonds at this level of volatility—I may as well buy gold, which has a higher yield, or find the next Apple in the equities market."

(Asset Manager covering European Institutional and Retail Clients)

For investors mandated to hold bonds as part of their investment strategy, the tendency will be to invest predominantly in only sufficiently liquid bonds, to minimise market impact and

⁴ Fabozzi J, *The Handbook of Fixed Income Securities*, Seventh edition

trading costs. Many investment mandates are already restricted to a limited universe of the strongest sovereigns and the largest corporates. This adverse market activity will only further reduce the ability of investment managers to diversify their portfolios.

The Negative Impact on SMEs and Sovereign Issuers

The adverse effects of MIFID II on illiquid debt will not only hamper pensioners and investors, it will impede the ability of issuers, especially small and medium enterprises (SMEs), as well as specific infrastructure projects, to access financing, making it difficult for these organisations to raise capital, fund their activities, grow and employ staff.

Companies are not the only issuers who will feel the burden. Currently, lower liquidity is hindering some governments' ability to finance their debt. Thus, without careful management of the particular features of fixed-income markets, the risk remains that there will be a depletion of differentiated structures; only the largest and most robust companies and governments will be able to raise the requisite public capital. Project finance, regional governments, SMEs and small and mid-sized countries will be relegated to the sidelines, to the detriment of investors, pensioners and the wider economy as a whole.

Methodology

For the purposes of researching this study, interviews were conducted with the following market participants:

- Seven buy-side firms, with combined assets under management of €4 trillion offering a wide range of investment services, from retail to institutional;
- Issuers, including three sovereign debt management offices covering countries with GDP growth rates between -2 to 1 per cent, government debt-to-GDP ratios ranging from 38 to 108 per cent, and where 10-year government bond yields range from 1 to nearly 12 per cent;
- Two European corporate issuers—one of public sector and real estate finance represented in a dozen national and international locations across Europe, the other, a major European blue-chip company;
- Three global investment banks providing full dealer services in fixed-income products;
- Four vendor/service providers specialising in fixed-income markets;
- TABB has also drawn on other surveys conducted during the past six months regarding similar regulatory issues for the fixed-income market, which include a further 100-plus interviews.

Interviewees have been carefully selected to ensure a full illustration of the issues currently facing fixed-income market participants, thereby offering a clear 'voice of the market', with one-on-one detailed conversations covering the salient points relating to:

- Key and current features of the bond market, including—the type of investors and products used to access capital markets, how secondary markets tie into primary issuance, what determines liquidity in fixed-income markets, and how current trading models facilitate stable and efficient markets;
- Pricing models, including—the advantages/disadvantages of current models, what factors are considered in pricing models and why, and the differences between pre- and post-trade pricing models;
- Execution trading models, including—the role of different market participants in the execution process, preferred methods of execution and why, and what challenges and limitations exist with current execution methods; and
- Effects of proposed regulation, including—the impact on maintaining market liquidity and stability, the objectives of the proposed regulation and whether the current proposals will achieve these goals, plus the impact on the fixed-income markets and the wider economy.

TABB Group is purely focused on developing financial markets' research. This focus has enabled TABB to gain access to high-level professionals in all sectors of the industry, from investors to intermediaries and vendors. We employ a proprietary six-step methodology to gather intelligence, in which industry-experienced TABB analysts interview senior financial markets industry representatives, providing instant credibility and value to the industry

professionals. Interviews are then followed up by sharing aggregated research results with those who have participated, acting as a further incentive for senior market participants to make a valuable contribution.

The experience gained from having thousands of these discussions across geographies and asset classes provides TABB with a comprehensive 360-degree analytical perspective of the global capital markets, and this is reflected in our in-depth interview-based studies and vision notes.

About TABB Group

TABB Group interviews over 800 industry professionals annually on various financial markets topics to provide our clients—including banks, brokers, investment managers, hedge funds, exchanges, depositories, custodians, regulators and the technology vendors that support them—a truer understanding of the intricacies of the financial markets. We provide industry research across a range of global asset classes, including equities, fixed income and exchange-traded derivatives.

For the purposes of this research study, Xtrakter, Bloomberg, Thomson Reuters and INSEAD OEE Data Services (IODS) have been used as a valuable source of information on fixed-income data. Furthermore, an exchange rate of USD/EUR 0.800613/1.24920 was used.

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Why Debt Capital Markets?

Debt capital markets provide a valuable mechanism for the long-term funding of both public and private expenditure, especially as in many cases, the size of the investment required is typically far larger than an individual bank would be able to support, either on its own or through bank-syndicated consortia. Bond issuance also provides greater market stability by enabling risk to be shared across many participants, minimising the potential overall market impact.

The debt capital markets are used to fund a variety of projects, from development of new medicines by pharmaceutical companies to oil and gas exploration. These projects create jobs in the manufacturing and construction sectors, in service industries such as advertising, and in the research and development arena. Employment is also created for manufacturers, logistical firms and support personnel serving the entities raising capital. For example, a UK social housing initiative issued £1.35 billion of bonds, part of which will fund a £750 million development plan aiming to deliver more than 5,000 new affordable homes in the UK. This investment not only supports the construction industry, but also service and manufacturing industries supplying furnishings and white goods.

When raising capital, companies can obtain bank or private funding, and issue equity (stock or shares) or bonds.⁵

- Equity issuance, since it comes with no principal repayment promise, is generally more risky for investors than debt but it comes with fewer restrictions. However, equity funding dilutes corporate ownership, which is a very significant shareholder concern. Debt interest payments are typically deductible for tax purposes, thereby lowering the cost for issuers as compared to equity.
- Bank and private funding may be cheaper than capital markets financing, but bank funding comes with significant restrictive covenants designed to protect the bank's interest and limit a corporation's flexibility. Debt covenants can restrict companies from issuing further debt, acquiring other entities or participating in share offerings.

The Importance of the Bond Market

Increasingly, the health of the European economy is directly related to the health of the European capital markets.⁶ Aligning investors to companies and governmental initiatives is crucial to jumpstarting the economy, creating employment and driving growth amidst an increasingly challenging economic climate.⁷

European employment prospects are deteriorating; businesses are restructuring and the share of long-term unemployed is increasing, while an ageing population is accelerating the

⁵ See "Differentiating Debt from Equity, MiFID II Fixed-Income Price Transparency: Panacea or Problem?" – Rebecca Healey, page 11

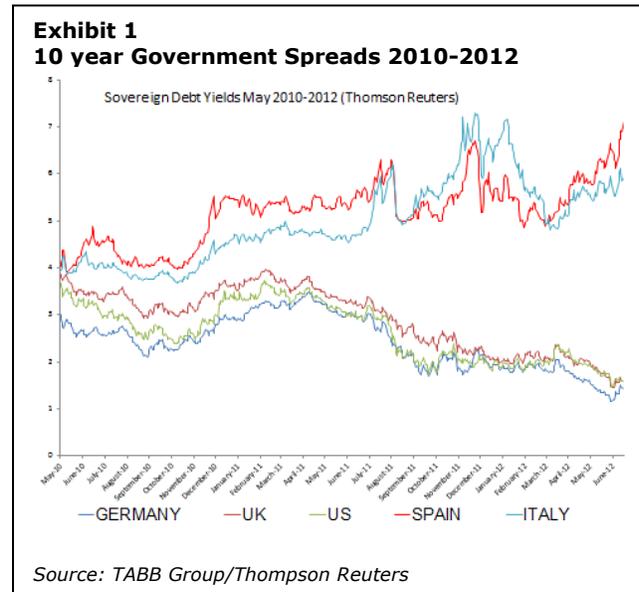
⁶ *Annual Growth Survey 2012*, European Commission

⁷ *Ibid.*

withdrawal of experienced workers and contributing to a diminishing working population.⁸ The creation of jobs in Europe has decreased since 2008, while the number of unfilled vacancies is increasing.⁹ The results of this growing unemployment are increasingly impacting company performance as the demand for goods and services dries up. European companies such as Danone SA are issuing profit warnings, citing a significant drop in consumption in southern Europe: Danone SA said that deterioration in the region was “fast” and “significantly stronger than expected” during Q2 2012.¹⁰

The deterioration of company profits is impacting the appetite for private investment. As Europe falls behind internationally there is a growing need for public funds to incentivise business creation, particularly for the 18–25 age group and in sectors with the highest future employment potential (such as renewable energy).¹¹

The ability of governments to raise financing has been especially prescient during the current sovereign debt crisis. Spanish and Italian 10-year bond yields, for example, are now trading significantly higher than government debt from Germany, the UK and the US (see Exhibit



1), with Spain breaching the critical 7 per cent in June 2012, the level that triggered bailouts for Greece, Ireland and Portugal over the past two years.¹² In addition, the Spanish two-year bond yield also rose sharply above 5 per cent, which severely constrains a government’s ability to meet immediate short-term funding requirements. By comparison, the UK government recently auctioned long-term inflation-linked gilts maturing in 2062 and priced at their lowest-ever yield of 0.04 per cent, 6 basis points below the previous gilt sale in January 2011, with record international investor¹³ participation levels.

Recent trading activity in government bonds offers a clear example of market behaviour during stress. Investor confidence in the ability of governments to repay their loans dictates whether they take flight to quality or demand higher premiums as their risk increases, whether that risk is due to an underlying credit risk, liquidity risk or an inability to trade. Market makers who commit capital and are able to buy back customers’ debt enable clients to ‘trade out’ of a risk in an efficient manner without incurring undue market impact,

⁸ *Annual Growth Survey 2012*, European Commission

⁹ *Ibid.*

¹⁰ *Wall Street Journal* – <http://online.wsj.com/article/SB10001424052702303836404577475850014375534.html>

¹¹ *Ibid.*

¹² *Financial Times* – <http://www.ft.com/cms/s/0/d1e4f3b0-b9ee-11e1-937b-00144feabdc0.html#axzz1yEEccJFK>

¹³ UK Debt Management Office <http://www.dmo.gov.uk/documentview.aspx?docName=/gilts/press/pr290512.pdf>

thereby improving market stability. This is a different value chain from trading a single stock or share.

The liquidity of government bond markets can be quickly drained, as has been witnessed over the past year. Sovereign issuers otherwise known as Debt Management Offices (DMOs) have seen a shift from international investors to greater reliance on domestic uptake due to the prolonged European debt crisis (see Industry Commentary 2). As deleveraging and the sovereign debt crisis have yet to be fully played out, this increasingly leaves companies in the unenviable position of filling the funding gap; which some European firms are finding increasingly hard to do. In June 2012, the world's oldest bank, Italy-based Monte dei Paschi di Siena, was forced to seek a European bailout after new capital requirements of 9 per cent created a shortfall of €3.3 billion. The bank admitted it had been "impossible" to find private investors due to the "currently highly volatile market conditions".¹⁴

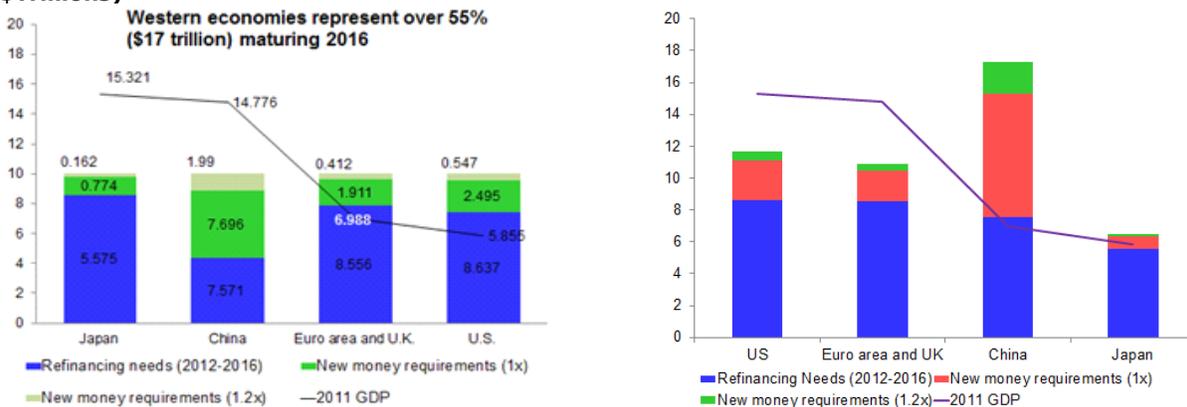
Industry Commentary 2

"There is a shift in investors due to the euro crisis. International investors are leaving the market. We are increasingly seeing domestic investors becoming involved but only if the rate is higher than other alternative investments."

(European DMO)

A recent study by Standard & Poor's on the European corporate sector estimates there will be a global funding shortage of €34.5-36.8 trillion over the next five years, €24 trillion of which is due to refinancing alone and a quarter being required by Europe¹⁵ (see Exhibit 2).

**Exhibits 2 and 3
Estimated Corporate Borrowing Requirements relative to GDP/2016 Projected Debt Levels by Region (\$Trillions)**



Source: TABB Group/Standard & Poor's

¹⁴ *The Telegraph* – "Italy in €2bn bail out for world's oldest bank", <http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/9357779/Italy-in-2bn-bail-out-for-worlds-oldest-bank.html>

¹⁵ Standard & Poor's – "The Credit Overhang: Is a \$46 Trillion Perfect Storm Brewing?"

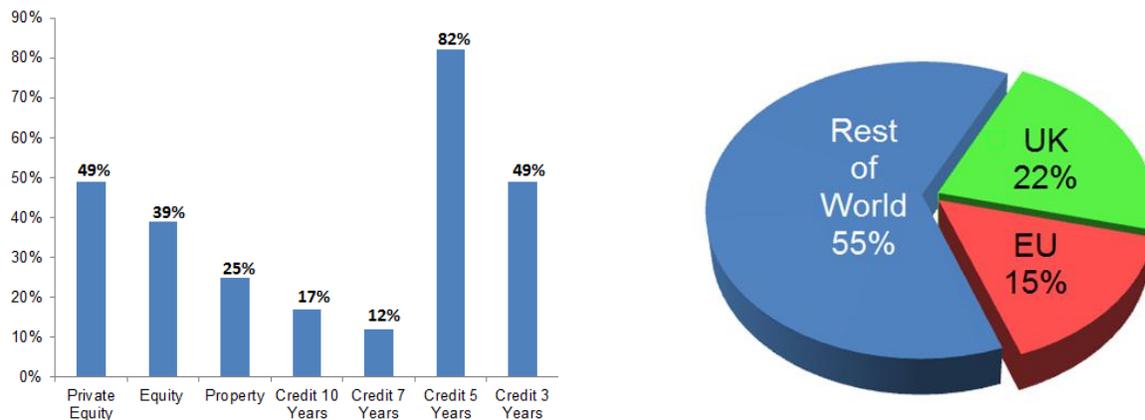
Debt is Increasingly Important

The scale of the problem becomes more evident when looking at corporate funding requirements relative to GDP. Europe's overall funding requirement is low relative to China and Asia. However, the proportion relative to GDP illustrates the challenges ahead. In addition, whereas only 10 per cent of US corporate borrowing is accessed via banks, in Europe the figure is closer to 70 per cent.¹⁶ At €2.2 trillion, the eurobond corporate securities market is currently approximately half the size of the US market of €4.5 trillion¹⁷ (see Exhibit 3).

With the European sovereign debt crisis and Capital Requirement Directive (CRD) IV/Basel III forcing European banks to reduce leverage, the S&P study estimates that companies will have to go to the bond market for €9.13 trillion in corporate debt, of which only 15 per cent is currently bond-financed.¹⁸ The report also anticipates that companies will need to increase their bond issuance by 50 per cent over the next five years to meet the €168 billion–208 billion shortfall from bank lending, which is predominantly expected within short-term issuance (see Exhibit 4). Net new Eurozone issuance has only exceeded €80 billion twice in the past decade; while this offers a growth opportunity for the European debt markets, it highlights the significant challenges ahead in terms of whether the investor base in Europe is sufficiently developed to absorb this additional financing supply. Of the top-10 corporate bonds issued in Q1 2012, only two were European—Enel SpA (Italy) and Volkswagen International Finance NV (Germany)—with a combined deal value of €5,859 million and a total issuance of €37,806 million (see Exhibit 5).¹⁹

Exhibits 4 and 5

Capital Requirements for Lending By Asset Classes under Basel III and Solvency II / Top-10 Global Corporate Bond Issuances Q1 2012



Source: Morgan Stanley Insurance "Solvency II, Quantitative & Strategic Impact: The Tide is Going Out", September 2010 / TABB Group/Dealogic

¹⁶ Standard & Poor's – <http://www.argusdelassurance.com/mediatheque/9/6/2/000011269.pdf>

¹⁷ Standard & Poor's – "Why Basel III and Solvency II Will Hurt Corporate Borrowing in Europe More than in the US"

¹⁸ Standard & Poor's – "The Credit Overhang: Is a \$46 Trillion Perfect Storm Brewing?"

¹⁹ Dealogic – "DCM Review First Quarter 2012 Final Results", April 2012

Recent data from Dealogic estimates that €6 billion was raised on one day alone by non-financial corporates after recent European Central Bank intervention in the Spanish markets, with €309 billion raised year-to-date, surpassing the same period in 2009, when companies rushed to issue debt after fallout from Lehman gridlocked the bond markets.²⁰ However, the reality is that issuance is very sporadic and sentiment can sour very quickly²¹, impacting how issuance is priced (see Industry Commentary 3). An interview with one global fixed-income head illustrated that as banks are no longer lending, companies have to go straight to the markets—therefore, in order to complete transactions and avoid execution risk, issuances are being priced adversely.

A further separate interview with a large European corporate issuer described a two-tier market whereby large well-known companies with good credit ratings were able to achieve clear access to both bond and syndicated loan markets. However, the situation differed substantially for SMEs, which are seeing funding options slashed dramatically (see Industry Commentary 3).

Liquidity in the €6.41 trillion corporate bond market is at its lowest level in years as banks are forced to reduce their holdings of bonds. Capital constraints from Basel III and the proposed Volcker rule, combined with the severe economic downturn, are making it prohibitively expensive for banks to hold an 'inventory' of corporate bonds on their books. This inability to hold 'bond stock' creates a lack of fluidity in the market. Dealers are less willing to engage with the market for fear of not being able to off-load existing bonds and possibly breaching capital constraints.

The resulting reduction in liquidity is impacting the buy side's ability to execute; they are losing flexibility when trading, which is influencing the underlying costs faced by funds and ultimately affecting individuals' pensions.

Overall, European supranational, senior unsecured and covered debt versus total

Industry Commentary 3

"Flexibility within the banks to buy and hold bonds even for a short period of time is becoming increasingly limited and this is affecting the initial margin required—this is impacting some companies more than others, hurting SMEs in particular. The support given to banks has to be passed onto SMEs—this is very, very important. There has to be a way for mid-cap companies in particular to access the bond markets going forward."

(European Blue Chip Corporate Issuer)

Industry Commentary 4

"The situation is particularly exacerbated in Europe when the funding window can suddenly close—the US markets never shut. Since the crisis, more issuers have to secure their funding requirements from a one-year horizon to two, even three years ahead."

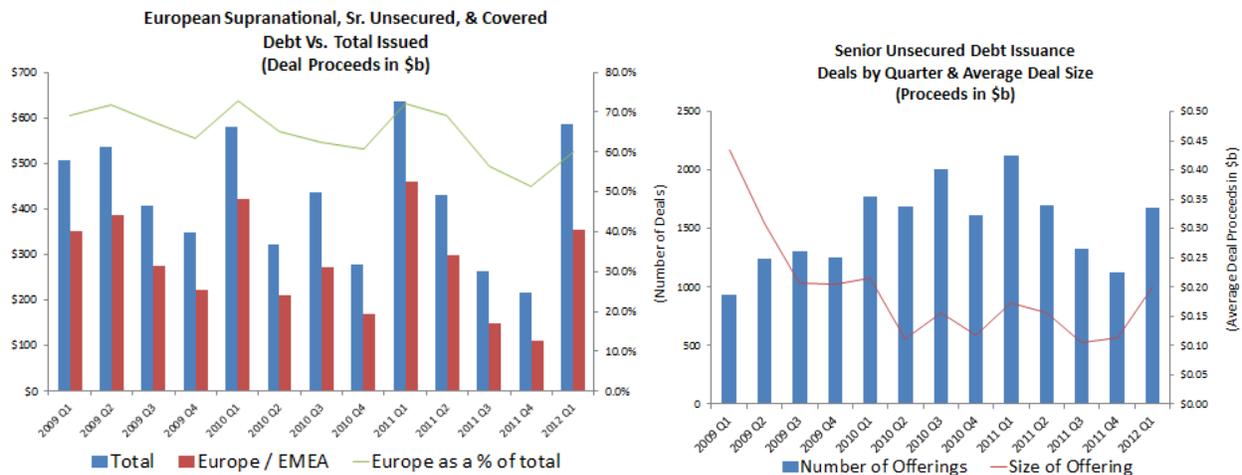
(European Blue Chip Corporate Issuer)

²⁰ *Financial Times* – <http://www.ft.com/cms/s/0/dcb02972-b3d1-11e1-8b03-00144feabdc0.html#axzz1xTXRbHJX>

²¹ *Ibid.*

issued debt showed a steep decline from 2009, outlining the difficulties faced by both companies and governments in issuing European debt (see Exhibit 6). The Dealogic report²² illustrates the continued reduction in senior unsecured debt issuance, which fell 27 per cent to €126.5 billion in Q1 2012, down from €173.3 billion the previous year and the slowest start to a year since 2008 (see Exhibit 7).

Exhibits 6 and 7 European Supranational, Senior Unsecured & Covered Debt vs. Total Issued, Senior Unsecured Debt Issuance Deals by Quarter & Average Deal Size



Source: TABB Group/Dealogic

Key Facts:

- *The ability for governments to raise financing is sharply deviating. The UK government auctioned 50-year inflation-linked gilts at their lowest-ever yield of 0.04 per cent, compared to the Spanish government's 10-year bond yields, which have reached levels of 7 per cent, the highest level since Spain's entry into the Eurozone.*
- *There will be a global funding shortage of €34.5 trillion–36.8 trillion over the next five years, €9.13 trillion of which is European corporate debt; only 15 per cent of this shortfall is currently financed by bonds.*
- *10 per cent of US corporate borrowing is currently accessed via banks versus 70 per cent in Europe. This funding option will be limited due to new capital balance sheet requirements under Basel III and Solvency II/CRD IV.*

²² Dealogic – “DCM Review First Quarter 2012 Final Results”, April 2012

- *There has been a continued reduction in European senior unsecured debt issuance, which fell 27 per cent to €126.5 billion in Q1 2012, down from €173.3 billion the previous year, making it the slowest start to a year since 2008.*
- *SMEs in particular will be impacted at this crucial economic juncture, with bond issuance becoming both expensive and sporadic.*

Differentiating Debt from Equity

Almost all shares have a common characteristic—they represent a fractional ownership interest in a company, with no guaranteed periodic payment, principal amount or maturity date. On the other hand, bonds are not at all homogenous. Bonds are segmented by: issuer, such as government, sub-sovereign and corporate bonds; backing, such as collateralised, asset-backed or general obligation; their construction, such as inflation protected, discount, coupon and zero-coupon securities; and their tax status, such as taxable, tax-exempt and capital gains exempt.

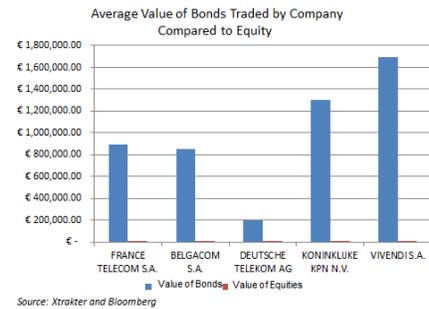
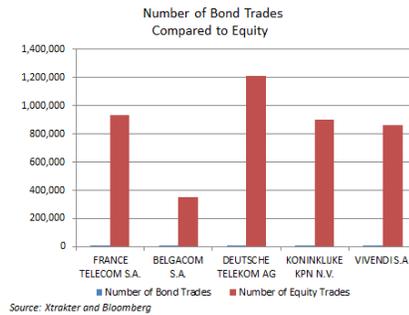
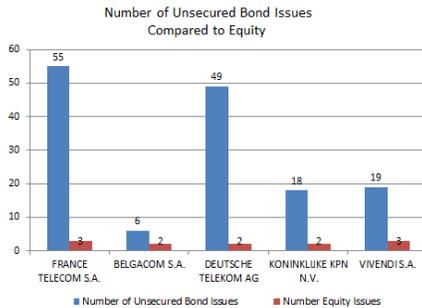
While one equity share is exactly the same as another (within its voting class), bonds issued by one entity are not necessarily all the same. Even bonds issued by the same entity can have very different features, such as issue and maturity dates, coupon rates, call and put features (if the bond can be redeemed early), and whether payment is secured by an individual or pool of assets. Some bonds—securitisations, which have demonstrated strong credit performance in Europe—are backed solely by a pool of assets. Without a market-making model to provide and absorb debt liquidity, trading will only concentrate within large mainstream companies, hindering the ability of all but household-name companies to access capital markets and depriving many from much-needed investment.

To demonstrate the difference between debt and equity trading activity, TABB has studied Xtrakter data²³ by examining a representative slice of European debt traded during Q4 2011 and Q1 2012. We examined five of the most frequently traded European companies: France Telecom SA, Belgacom SA, Deutsche Telekom AG, Koninklijke KPN NV and Vivendi SA. An equity investor would have two or three choices in the common stock of any one of these (because all of these companies had issued equity in more than one denomination). However, between the five firms, investors had the choice of a significantly greater number of fixed-income products.

- A total of 147 corporate bonds existed.
- One firm had issued six corporate bonds (Belagcom SA), while France Telecom SA had 55 bonds to choose from.
- The total number of fixed-income debt alternatives amounted to 207 products to choose from.
- The number of equity trades during the same data period dwarfed the debt transactions by 167 to 1.
- Deutsche Telekom executed almost 3,500 equity trades for each corporate bond trade.
- The size of the average debt transaction was 845 times larger than the average equity order.
- The average size of Belgacom's debt trades was almost 2,600 times larger than their equity trades.

²³ Xtrakter is a Euroclear company and a leading provider of capital markets data, operational risk management, trade matching and transaction reporting services to the global securities market.

Exhibits 8, 9 and 10 Five European Firms Debt Compared to Equity



Source: Xtrakter, Bloomberg & TABB Group

With these firms' core equity listings (in their country of origin) trading, on average, in excess of 848,000 times a month or more than 40,000 times a day, it is much easier for a buyer to find a seller than it is for the debt. Between these five firms, debt is split between 147 issues and trades on average only 1.7 times a day, at an average trade size of €987,000, with the largest average trade size (Vivendi) valued at €1.69 million (see Exhibits 8–10).

Fixed Income is an Institutional Market

Bonds are typically held by institutions. While businesses invest in short-term debt to help manage their cash, the largest holders of longer-term fixed-income instruments are pension funds, insurance companies and central banks.²⁴

Pension fund mandates are bound to long-term investment contracts in predominantly low-risk, long-term fixed-income investments that offer yields over a period of time.

Insurers, due to their long-term liabilities, are also large investors in the fixed-income markets. While a portion of funds is set aside so that firms can respond quickly to urgent claims, the majority remains in a reserve that is invested in predominantly low-risk, long-term fixed-income investments, often in the form of government bonds. By making this investment, the insurance company is able to offset claim costs and maintain low premiums.

Direct retail investor participation is currently less than 5 per cent of the European bond issuance market²⁵ (see Exhibit 11), although this does differ from country to country. Italy is one notable exception, as Italian individual investors hold 32.1 per cent of their total financial assets in bonds.²⁶ London Stock Exchange Group's Italian MOT market is the

²⁴ "Fixed Income Strategies of Insurance Companies and Pension Funds" – (July 2011), Committee on the Global Financial System

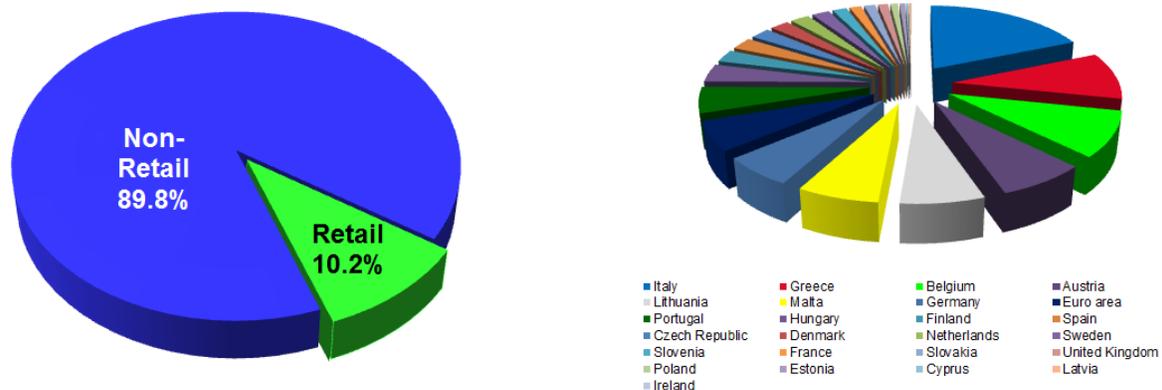
²⁵ AFME Bond Markets & Prices: Bond Markets Defined

²⁶ Eurostat

biggest retail bond market in Europe, with over 3.5 million trades in 2009.²⁷ Other countries, such as Sweden, have been unable to generate significant retail interest in bonds for historic reasons and a lack of investor appetite for fixed-income products. The situation is similar in the UK, with retail participants representing only 2 per cent of market share.²⁸ Overall, European retail investment in bond holdings amounts to 10.2 per cent²⁹ (see Exhibit 11), with the majority of European households showing a percentage of less than 10 per cent (see Exhibit 12).

Exhibits 11 and 12

European Retail Investment in Bond Holdings versus Institutional Investment/Breakdown per Country



Source: TABB Group/ INSEAD OEE Data Services (IODS)

Recent successes in the German retail market have led to a new 'Mittelstandsmarkt', which has been mooted as a possible future model for European bond markets. Both large household names such as Air Berlin and smaller companies are able to issue retail-sized tranches online rather than a conventional institutional-sized bond. However, the market has been severely tested due to the first default—steel and power supplier SIAG Schaff Industrie AG has filed for insolvency less than a year after issuing a bond on the Frankfurt Stock Exchange, highlighting one of the challenges in moving away from the institutional model.³⁰

European fixed-income markets are therefore heavily reliant on the fully functioning institutional model in order to meet growing long-term funding requirements.

Primary versus Secondary Markets

The long-term stability of interest payments, together with the plethora and complexity of issuances, relatively low turnover in certain sectors, the large trade size and the institutional nature of bondholders point towards a market that centres on long-term investment. Interviews conducted with both issuers and dealers highlighted that trading in fixed-income

²⁷ Pietro Poletto, Head of Fixed Income, LSEG, WFE – World Federation of Exchanges, <http://www.world-exchanges.org/news-views/views/retail-bond-market-uk-investors>

²⁸ AFME Bond Markets & Prices: Bond Markets Defined

²⁹ IEM Finance, 2012

³⁰ <http://www.euroweek.com/Article/3006430/German-retail-bond-market-faces-test-of-character-after-default.html?ArticleID=3006430&single=true>

markets tends to be tightly linked to primary issuance, unlike the equities market, where the amount of secondary trading overwhelms the capital flowing directly to issuers.

This link between primary and secondary markets is pivotal to fixed-income markets. While primary markets funnel investor cash to issuers, investors raise this capital by selling bonds that no longer suit their investment mandate within the secondary market. Without a vibrant secondary market, it is much harder for issuers to place new debt in the primary market.

An example of the critical relationship between the primary and secondary markets is the government bond markets, where issuers rely on market makers to provide a continuous market. Interdealer markets allow market makers to transfer products between themselves. Just as car dealers often trade inventory, enabling clients to find their perfect model, without switching dealers or brands, interdealer markets enable bond market makers to trade inventory, which other market makers can then distribute in turn. This leads to better risk management and tighter pricing. To facilitate this process, the majority of Eurozone sovereign issuers require their primary dealer market makers to quote two-way prices within a certain spread and for a significant fraction of the trading day to qualify as primary dealers. These pricing obligations serve as important benchmarks not only for sovereign issuances—they also act as benchmarks upon which many corporate, supranational and corporate bonds are priced. While quoting obligations layer on a cost to primary dealers, issuers typically provide incentives, such as auction access, syndicate consideration and/or the possibility to compete for other business in return.³¹

Key Facts:

- *Shares represent a fractional ownership interest in a company, whereas bonds are segmented by issuer, backing or tax status. Even bonds issued by the same entity can have different issue and maturity dates, coupon rates, or call and put features.*
- *During the period from Q3 2011 to Q4 2012, five different European companies would have offered two or three stocks to choose from; by contrast, there were more than 147 corporate bonds and 207 fixed-income debt structures issued by the same companies.*
- *In a study of Xtrakter data³² representing five frequently traded equity names between Q4 2011 and Q1 2012, trading patterns between the equity and fixed-income products differed widely, with the number of equity trades versus debt transactions greater by 167 to 1.*

³¹ AFME PD Handbook, page 10 <http://www.afme.eu/dynamic.aspx?id=1992>

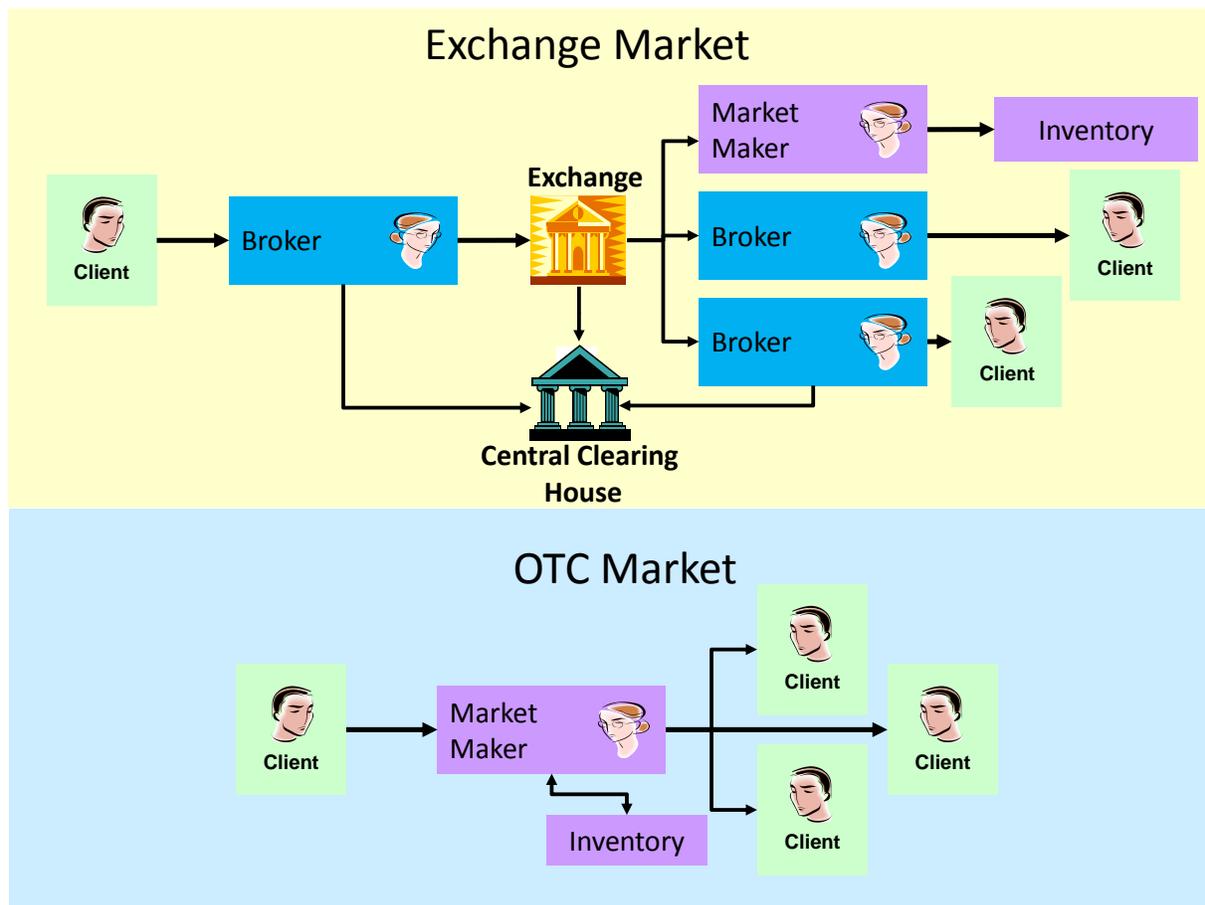
³² Xtrakter is a Euroclear company and a leading provider of capital markets data, operational risk management, trade matching and transaction reporting services to the global securities market

- *The average debt transaction size was 845 times larger than the average equity order.*
- *The largest holders of longer-term fixed-income instruments are pension funds, insurance companies and central banks, which are linked to long-term investment strategies, utilising yields to fund investment performance.*
- *Direct retail investor participation is typically less than 5 per cent of the total European bond issuance market, varying from 30.7 per cent in Italy to only 2 per cent in the UK.*
- *The plethora and complexity of issuances, relatively low turnover, large trade sizes and the institutional nature of bondholders illustrate a market centred on long-term investment and tightly linked to primary issuance.*
- *Primary markets funnel investor cash to issuers; investors raise this cash by selling bonds that no longer suit their investment mandate in the secondary market.*
- *If the secondary market becomes illiquid, it is harder for issuers to place new debt within the primary market.*

Fixed-Income Market Structure

The equity markets primarily employ a continuous exchange-based, order-driven market where brokers route orders to exchanges for matching. Fixed-income markets are mainly OTC bilateral markets where the dealer or market maker (bank or non-bank) is a party to each trade (see Exhibit 13). Investors query market makers for prices and pick the one that provides the best package of product, settlement risk, price and operational support. Dealers and clients can be matched directly or through an intermediary. This intermediary can be a voice broker or an electronic trading venue.

Exhibit 13
Difference Between Exchange-based Market and OTC Market



Source: TABB Group

How the Secondary Bond Market Operates

The majority of bond trading occurs between banks and their clients. Trading bonds on the secondary market is akin to finding a needle in a haystack. Finding two clients requiring the same bond at the same size and time is rare given the abundant number of issuances, their lack of liquidity, and different structures and credit qualities. During our interviews, market participants outlined some of their key concerns, such as the market risk that will remain if

buyers and sellers of a product are simply matched in terms of price, without also matching quantity. For example, if a €1 million buyer and a €5 million seller transact, the seller still has €4 million left to sell and therefore remains at risk.

To manage this inventory market risk, market makers employ two key tools: a sales force and capital. The sales force is employed to find investors, while dealer capital is employed to hold inventory until a buyer can be found.

If the dealer cannot find two parties that want to trade the exact product, the dealer has the choice of declining the business, or taking on the risk position and trading out of this over time. Depending on the nature of the risk, trading out of this position requires a capital commitment, time, accepting market risk or finding a suitable hedge. Alternatively, the market maker could discount the bond inventory to make it more attractive, or show the position to more customers. While employing greater discounts reduces the market maker's willingness to take risks with little return, so does electronically displaying the inventory to more clients, as too much transparency may cause problems as well (see section titled Transparency and Risk: The Winner's Curse on page 30).

Indicative versus Firm Quotes

Bond market pricing comes in two mechanisms: indicative and firm. An indicative price is just that—an indication, not a price that can be dealt against. Indicative prices are transmitted to a wide array of clients via streaming quote providers or electronic trading platforms. Once an investor wants to trade, they contact the market maker either by phone or electronically. The dealer provides a tailored firm quote that the investor can either accept or reject.

This is in comparison to exchange-traded markets such as equities and exchange-traded derivatives markets, where displayed prices are firm.

Why Indicative Pricing?

Indicative prices are needed in a market where there are an extensive number of products, product diversity is high, temporary capital is needed to bridge liquidity and multiple factors are used to determine price. With each fixed-income trade, the dealer buys the product from the customer, places that product into inventory while subsequently looking for another customer that may need it. Additional factors such as the market makers' positions, the size of the trade, settlement risk, cost of a hedge and market conditions can impact how the trade is priced. Therefore, speed of acceptance of a quote dictates pricing. The greater the time lapse, the more likely the indicative price and the firm quote will be significantly different.

In addition, the remaining **time to maturity** of a bond 'decays', or ages, which complicates its pricing. One day after a five-year note is issued, its maturity declines by one day. This time decay creates pricing challenges; the bonds within a benchmark change, as the most recent five-year bond will soon be replaced with a newer five-year bond. As bonds

move away from being benchmark securities and become 'off-the-run', their value generally declines and their pricing models change compared to the newer 'on-the-run' issues.

While indicative prices are not tradable, dealers are expected to stand behind their quotes whenever investors accept them immediately. There is a commercial incentive to ensure dealers are willing to execute within the bid-offer spread, as they would face reputational issues from clients if their indicative and firm quotes were continually far apart—customers would begin not to trust those quotes and go elsewhere.³³

Capital usage is also a significant contributing factor in bond pricing. Unlike an exchange-based model where there is an abundant supply of active buyers and sellers for each 'commoditised' product (for example, a share of common equity), with over 150,000 European corporate bonds³⁴ and tens of thousands of sovereign and sovereign agency issues, finding an active buyer for each seller is not easy. Market makers need to provide capital to bridge the time between buying the bond from one investors and selling it to another. This process is capital intensive, as intermediaries (dealer banks) may hold significant inventory while they find the appropriate client for that asset. The holding period can be risky, as asset prices can move while market makers warehouse inventory for days, weeks and sometimes months.³⁵

The next two sections explain how investors currently access prices and how transparency has evolved in line with the needs of users.

Between inventory risk, poor liquidity and the complexity of the quote process, it is challenging for market makers to provide a consistent stream of two-sided firm quotes on many bonds except for certain liquid sovereign issuances. The complexity of pricing hundreds of thousands of bonds in real-time, coupled with the risk of being 'picked off' by a competing dealer or investor, disincentivises market makers from providing firm and tight two-sided quotes on less liquid products.

Obtaining Actionable Prices

Obtaining fixed-income actionable prices has traditionally been achieved by simultaneously polling multiple counterparties and comparing quotes. Interviews conducted with institutional investors indicated that at least three dealer prices would be compared before executing a trade, in order to comply with their best execution requirements.

While calling three market makers is time consuming, increasingly this process is becoming more automated. There are platforms to simultaneously request both firm and indicative quotes from multiple market makers. In addition to the prices provided on electronic platforms, investors can compare the prices that they receive via 'dealer runs'.

³³ AFME, BBA and ISDA Joint Response to Committee of European Securities Regulators (CESR) – Technical Advice to the European Commission in the Context of the MiFID Review: Non-Equity Markets Transparency, June 2010

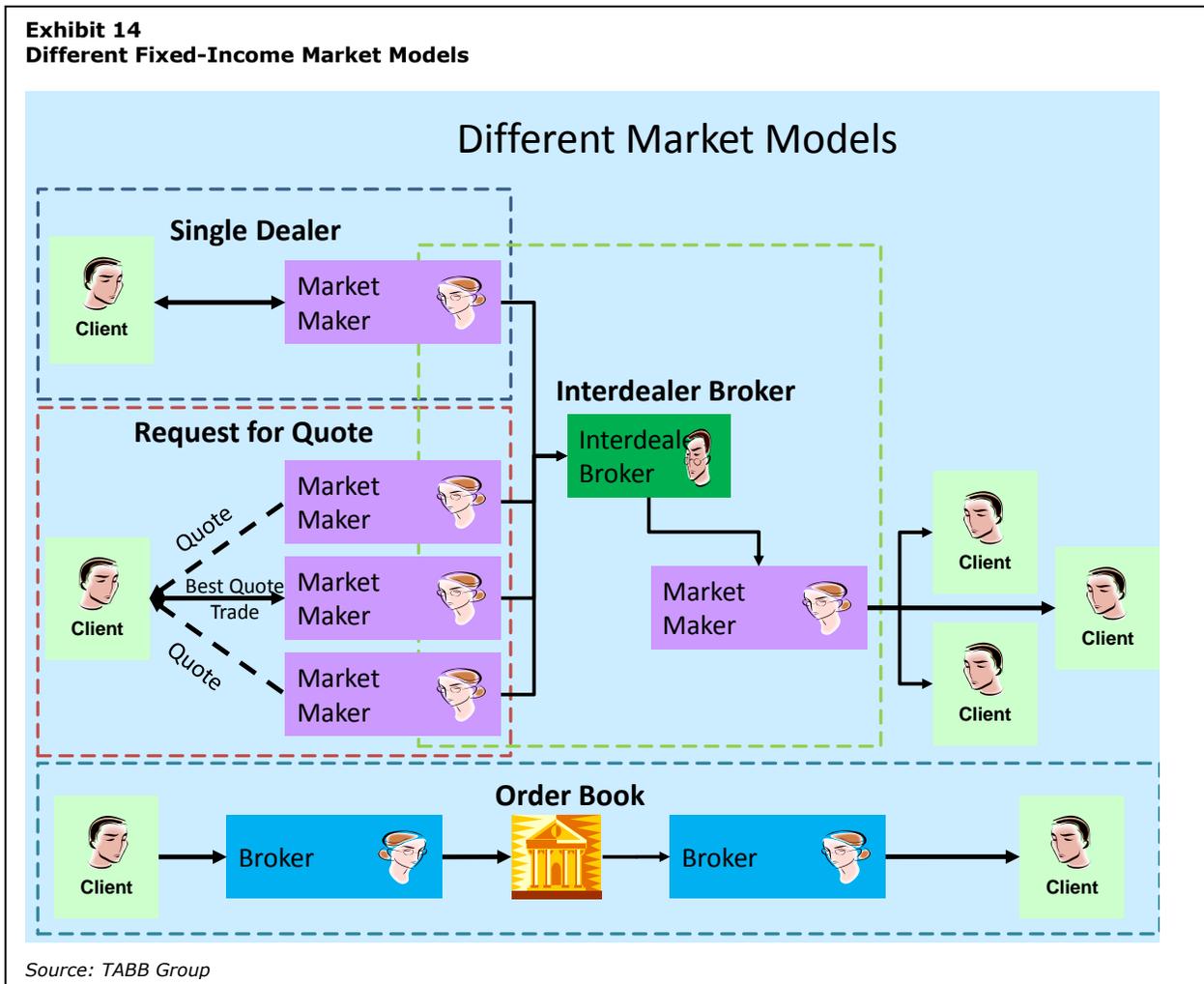
³⁴ TABB Research: "Corporate Bond Trading: Building Networks, Realising Liquidity", Will Rhode

³⁵ *Ibid.*

Market makers are also developing their own systems to stream live quotes to investors, and investors are increasingly obtaining pre-trade price transparency by building their own aggregated dealer-based proprietary streaming price systems. Once streaming prices are aggregated they can then be integrated by order or execution management systems (OMSs or EMSs). Once integrated, investors can programme their execution methodologies how they see fit, which could include determining the most reliable historic price contributors. Institutional investors interviewed for this study outlined new developments already being implemented by market participants, including indicative benchmarks and transaction-cost analytics to improve price formation for some of the more liquid products.

Order Execution

Traditional methods of order execution are increasingly becoming automated and execution methods have now expanded to offer market participants a variety of market models (see Exhibit 14), as outlined here:



- **Dealer to client model**, which is via voice or electronic using single-dealer platforms (SDPs) and client portals, or multi-dealer platforms (MDPs).
 - **Subcategory A: SDP and client portals (CPs):** These provide a mechanism for the dealers' clients to obtain research, analytics, analyse dealer inventory and trade electronically. These platforms are developed on a dealer-by-dealer basis and are only used by that single dealer's customers.
 - **CP:** Clients can access the dealers' prices via secured dealer pages on trade platforms such as Bloomberg, Tradeweb, BondVision and Reuters and/or via a bank's own website. Prices on SDPs are provided on request and can be either indicative or firm depending on the liquidity of the product.
 - **SDPs:** Are proprietary platforms where dealers can commit their own capital to match clients' orders (hence they can also provide firm prices on a small subset of liquid bonds). Price methodology is both click-and-trade and request for quotation (RFQ), depending on the liquidity of the product.
 - **Subcategory B: Multi-dealer RFQ platforms:** Market makers are contacted via RFQs to offer bid/offer spreads according to the order specifications, together with the individual client and settlement risk.
- **Dealer-to-dealer:** Utilises interdealer brokers (IDBs) and other intermediaries. Market makers trade with other market makers through IDBs, which can either employ voice or an electronic order book. The interdealer market enables market makers to offload positions after liquidity has been provided to the client. This allows the position to be hedged and contributes to the overall liquidity of the market. This function is particularly crucial in the bond market due to the limited availability of hedging instruments. For example, there is no liquid futures contract for non-German government debt. IDBs are more prevalent for products such as sovereign debt, rather than individual corporate bond issuance.
- **Order book:** An electronic order book (similar to equities) is less prevalent in the dealer-to-customer market as very few fixed-income instruments have suitable liquidity profiles for real-time electronic matching. Many IDB platforms, however, revolve around order book functionality.

In order to find the other side of the trade, institutional investors are increasingly turning to electronic multilateral trading facilities (MTFs), which are able to offer access to a wider number of market participants and pricing. Electronic MTFs such as Tradeweb have seen

year-on-year percentage change increases in volumes from 9 per cent in European government bonds to 37 per cent in euro-denominated interest rate swaps.³⁶

Although trading volumes via electronic platforms are still very small in terms of overall volume, this also depends on the assets traded; estimates of dealer-to-client electronic volumes now stand at 50 per cent for European government bonds, 25 per cent for European credit and just 15 per cent for euro-denominated interest rate swaps. Electronic platforms also include an automation of the RFQ model rather than a complete electronic execution on an exchange as in the automated equity-trading model.

Electronic platforms have also achieved high success rates in the retail market. In Italy, a highly transparent exchange-based system has been in place since the introduction of MiFID in 2007, and only 5 per cent of trades are transacted by voice, averaging 15–20 per cent of the total value. However, this only works for the most liquid of names and typically in retail order sizes small enough not to incur market impact. Conversations with market participants involved in the Italian retail market described a market model very similar to the equity exchange-based model, which utilises smart order routers (SOR)³⁷ and venue analysis (see Industry Commentary 5).

Industry Commentary 5

“The technology in fixed income is just not there yet—you need SORs and venue analysis to trade size without incurring market impact for many market participants. This will be a huge challenge at a difficult time.”

(Large Retail Asset Manager)

While electronic platforms may be appropriate for liquid products such as government debt, electronic price distribution is not suitable for all products or orders. Not all government debt products are equal. They trade with differing underlying credit risks and require different methods of execution. Even those bonds denominated in the same currency can have different underlying credit risk, which has been especially prescient during the current sovereign debt crisis. High turnover on the German Bund market has attracted many active investors that may benefit from electronic trading, but this is a unique product both in the volumes traded together with the number of German derivative products that can be used to mitigate risk. In the case of smaller markets, there are fewer risk mitigation options available.

Key Facts:

- *The fixed-income market structure is based on a quote-driven OTC bilateral system rather than an exchange-based equities model. Given the number of issuances, the*

³⁶ Tradeweb operates electronic OTC marketplaces for fixed-income products

³⁷ Smart order routers are electronic systems that facilitate the routing of algorithmic orders to different trading venues in order to source liquidity effectively

range of structures available and variability in credit qualities, it is challenging to match buyers and sellers, particularly at the same price and size.

- *To facilitate trading, market makers act as a conduit by offering indicative prices via streaming prices or electronic trading platforms. These prices are not always actionable but offer an indication of the prices and sizes available.*
- *The time to maturity of bonds, capital usage, settlement risk, hedging costs and market conditions can impact the price offered—therefore the speed of acceptance of quotes is critical.*
- *Capital usage will be significantly impacted by Basel III regulation, which will affect banks' appetite and ability to facilitate risk.*
- *Liquidity is subjective and can shift with underlying market conditions, thereby decreasing market makers' appetites for offering prices in any but the most liquid of products.*
- *Fixed-income markets have already started to automate this process by moving from RFQ on single dealer platforms to RFQ on MTFs for more liquid products.*
- *One MTF, Tradeweb, has seen a year-on-year percentage increase of volumes from 9 per cent in European government bonds to 37 per cent in euro-denominated interest rate swaps.*
- *Buy-side investors can obtain pre-trade transparency by aggregating streaming price systems that can then be integrated into order and execution management systems.*

The Regulatory Changes Ahead

Amid the current volatile economic climate, regulators are seeking to restructure the fixed-income markets by mandating full price discovery and formation across the market. To accomplish this, regulators want to promote greater transparency, transition the market from indicative to firm quotes and mandate fair access to firm quotes for all participants. While promoting a fair, transparent and egalitarian market is laudable, it is debatable as to whether the current proposals will enable the regulators to meet these objectives.

The recent advances in equity market automation offer a variety of trading venues via regulated markets, multilateral trading facilities (MTFs) and the proposed organised trading facilities (OTFs). However, the current fixed-income market-making model looks set to fall under the trading category of systematic internaliser (SI). This presents significant challenges for market makers, investors, issuers and the real economy alike.

Under Article 17 of MiFIR, the regulation for MiFID II, an SI must:

- Provide a firm quote to one individual client
 - (i) If the client requests a quote; and
 - (ii) The investment firm agrees to provide the quote.
- Must make any quote made to an investor available to other clients of the SI in anonymised form, irrespective of size/volume of the original quote.
- The SI is bound by this quote given to its other clients if the volume of the quote is below an as yet undefined threshold.
- Under current proposals, the SI may be able to restrict the number of transactions at a binding quote but this is as yet undetermined.
- The original quote must be made available to the general public if the volume is at or below an as yet undefined threshold.
- An investor can use an MTF to send an RFQ.

The Impact on Pricing & Disclosure

In essence, the proposed MiFIR pre-trade transparency requirements have two main imperatives: all requested quotes must be firm and once a firm quote is provided (below a certain size) to one client, it must be universally executable for all clients.

This requirement, however, will be problematic for market makers, and eventually investors, issuers and the real European economy (see Industry Commentary 6). Currently, fixed-income pricing depends on the ability to respond to multiple market, order and client conditions. The one-to-one RFQ model ensures that market makers can offer effective pricing for a particular product, order size and settlement risk in the market conditions at that time, also enabling the market maker to effectively hedge their subsequent risk.

Industry Commentary 6

“There would appear to be a misguided view that full transparency is good. Unfortunately the real risk is that participants will just stop trading, rather than risk costs incurred from greater transparency. This will lead to zero competition, a static market and, conversely, increased market volatility.”

*(European Asset Manager
Institutional and Retail Clients)*

The current pre-trade transparency proposals, will transition the market to openly accessible and executable firm quotes, and will force market participants to quote based on a worst-case scenario, unaware if the dealer will be hit for only a single specific order for multiple orders from different clients (see Industry Commentary 7).³⁸ If you know who your customer is and what they are looking for, market makers can provide tight, specific quotes depending upon the situation. If the dealer doesn't know who will 'hit' their bid or lift an offer, this uncertainty will force the dealer to either widen their quote or step away from the market entirely impacting all market participants (see Industry Commentary 8 and 9).

Industry Commentary 7

"The problem is the market as a whole; it is not just RFQ or any single issue, it is much more profound. Liquidity is challenged because the market is so difficult; volatility is high, volumes are less. If you ask for a quote, you may not be able to trade at the volume you want; dealers can't take on risk—you have winners curse in any case. Some transparency will be good, but it depends on the calibration."

(European DMO)

Industry Commentary 8

"We understand the market makers' concerns over making the same price available to all clients—it's a big concern for all of us from an operational and risk perspective."

*(Large Global Asset Manager
Head of Execution)*

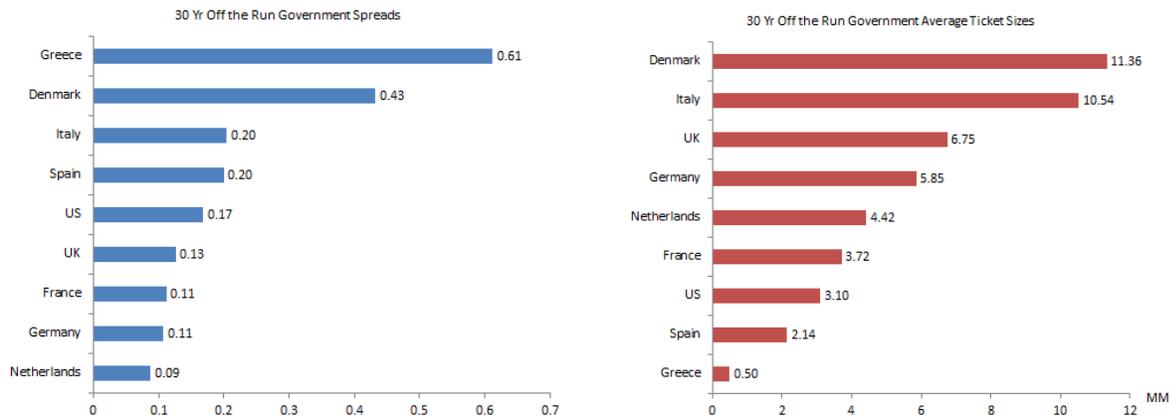
Industry Commentary 9

"Current proposals don't encourage effective balance sheet use by investment banks to support company issuance. Firms can't operate with 13 per cent of core capital and will disappear. I can understand the sell side's frustration; there is no incentive for them to offer price and size given the current constraints they are under."

(European Asset Manager)

Not knowing the amount of risk you will be accepting can be extremely problematic, especially in illiquid markets. The ability to trade out of a €1 million position may be very different than being able to trade out or hedge a €5 million or €10 million position. Bond prices, even in the most liquid names, can vary widely according to market conditions and volatility (see Exhibits 15 and 16).

³⁸ See Page 30 for a definition of the "Winner's Curse"

Exhibits 15 and 16**Bid/Offer Spreads on 30 Year Off the Run Government Bonds vs. Average Ticket Sizes**

Source: Xtrakter/TABB Group

When market makers increase their quoted spreads to absorb this risk, the inherent impact will cascade up the value chain, reducing investors' (pension fund and insurance products) fixed-income investment yields and pushing up the cost to borrow for all issuers of public debt. This situation is highlighted during times of market stress. Issuers are forced to come to the market offering a larger initial premium over the secondary paper in order to execute. In stressed markets the secondary paper may also be trading at wider spreads due to market volatility, therefore the absolute premium can be significantly higher (see Industry Commentary 10).

Industry Commentary 10

“Generic new-issue premiums in stressed markets are moving from pre-crisis levels of 10–20bp to 50–70bp; but at the absolute premium level, the costs could be far higher, given the current lack of liquidity in secondary paper.”

*(Global Investment Bank,
Head of Fixed Income Trading)*

This in turn means investment opportunities that were viable at a lower yield are no longer economic once investors demand a higher yield to compensate for higher transaction costs, thereby stifling valuable investment that could have created jobs and contributed to growth of the economy.

Implementing firm pricing and non-discriminatory access will force market makers to reduce their client base to the same absolute core of their best 'real money' clients rather than offering all pricing to all clients irrespective of potential risks. Reducing the client base decreases market demand as well as the overall marketplace diversity, reducing effective competition and increasing volatility, especially during times of stress.

Transparency and Risk: The Winner's Curse

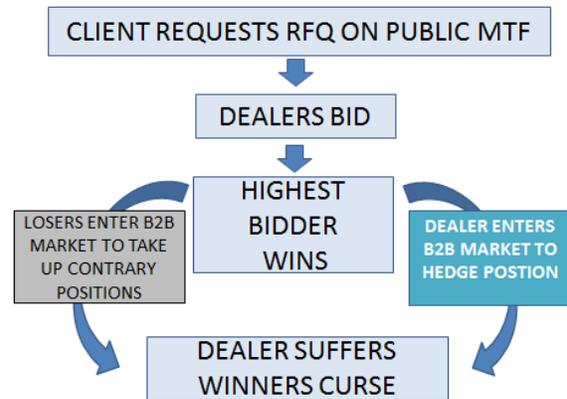
To effectively absorb risk, market makers require time to hedge their position without incurring market impact. Whereas an equity broker matches buyers and sellers in a two-way market, a fixed-income market maker will place its own capital 'at risk' with every trade they execute, hence the requirement for hedging (offsetting) individual transactions until they are able to locate the opposing trade and unwind their position. Any fluctuation in the market price between the original trade and the subsequent unwind (in an unhedged position) becomes an inventory risk that the market maker has to manage.

One of the challenges to adoption of a more transparent model can be easily explained by looking at the 'winner's curse' (see Exhibit 17).

An investor can use an MTF to send an RFQ; dealers are invited to bid and the highest bidder generally wins. Because the dealer has paid the highest price to win the bid, their ability to hedge that position has been compromised by the information leaked to the losing dealers, who are able to take up contrarian market positions.

Forcing full transparency, given the current market structure model, will increase information leakage and disincentives market makers to provide liquidity (see Industry Commentary 11). There will be little incentive to post in size and at favourable spreads if, after the publication of an RFQ, other dealers can predict hedging strategies and can benefit by taking contrary positions. This will increase the cost of hedging and that additional cost will be passed back to investors, which in turn will increase the borrowing costs incurred by governments and companies.

Exhibit 17
Winner's Curse in Fixed-Income Trading



Source: TABB Group

Industry Commentary 11

"We are in favour of greater transparency but have concerns over how that transparency will manifest itself. Everything is dependent on the correct calibration and what is deemed to be reasonable liquidity. Without a fundamental change in fixed-income market structure, the negative consequences of full transparency will be severe."

(Larae European Asset Manager)

Industry Commentary 12

"Price transparency under a certain small amount can work. From the moment dealers showed price transparency in zero coupons, other people starting selling the product even though they weren't specialists. They could see there was a market: there was always the possibility to return their positions."

(European DMO)

It is the correct calibration of transparency and the underlying fixed-income product that will ensure whether increased transparency will deliver the desired improvements in market liquidity. An interview with one European DMO described successful developments within the zero-coupon market. Previously an illiquid market, once the interdealer market introduced limited price transparency between dealers under a certain size, liquidity improved (see Industry Commentary 12).

The Costs for Investors

Wider price transparency will also increase costs for investors. If an RFQ is made known to the market maker's other clients, there is a risk that this information dissemination will lead to market impact and price deterioration. Alternatively, the current method of polling multiple market makers to obtain the most favourable quote could become compromised as other dealers would now be aware of the original quote, leading to the investor being offered poorer terms or no quote at all. Information leakage and subsequent market impact concerns will lead to a reduction in average trade sizes, which will drive up absolute costs (implicit versus explicit costs of trading), even if liquidity can be sourced (see Industry Commentary 13).

Industry Commentary 13

"Whereas previously my portfolio manager would trade order sizes of 10 million that I could execute in two hours, liquidity is so poor that we will trade only 2 million and sit on the rest—it's just not worth the market impact risk and increased cost of trading."

*(Large Global Asset Manager
Head of Fixed Income Dealing)*

Without market makers to facilitate the process, investment yields will go down for investors, borrowing costs will increase for governments and corporates, and the impact of the whole programme may inadvertently be in direct opposition to the regulatory objective.

The Costs for Issuers

The increased costs of issuing government debt provide a clear demonstration of this impact (see Industry Commentary 14). Interviews with sovereign issuers have been unanimous in pointing out the detrimental effect increased pre-trade transparency proposals could have on price formation and market stability.

In Sweden, eight market makers can access primary issuances in exchange for an obligation to quote prices in the secondary market. This limited number of market participants is replicated within the secondary market, with approximately just 100 investors globally. The Swedish limited model is restricted further still by the lack of interest from the retail market and is dominated by professional investors who are prepared to accept market confidentially in exchange for the good liquidity provided by market makers via deferred transaction reporting. In times of

Industry Commentary 14

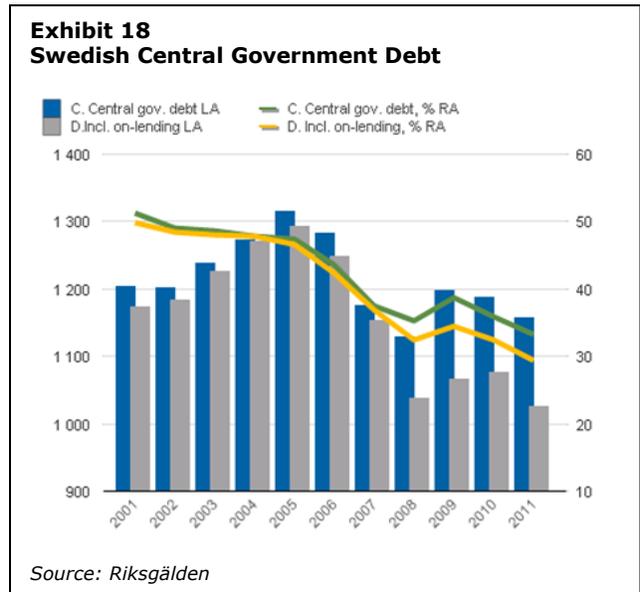
"Market activity is a tenth of what it was before the crisis—we are really struggling to raise necessary funds in the open market. There is less transparency, higher volatility and less interest from investors, which is having a direct impact on our ability to raise capital. This is leading us to greater standard issuance; the more standard the product, the greater the interest as the easier it is to trade"

(European DMO)

market stress, the traditional market-making model is challenged as market participants retreat and volatility increases (see Industry Commentary 14).

One sovereign issuer stated that enforced transparency in this environment would create disincentives for market makers to provide liquidity at tight spreads. Whereas the current market-making model has enabled the Riksgälden to successfully issue and trade government debt, which has contributed to the overall reduction in the debt costs for the Swedish government (see Exhibit 18).

Other sovereign issuers have highlighted their growing dependence on domestic investment given the lack of risk appetite by international investors in the European markets. One sovereign issuer interviewed has seen an increase in retail buyers, however this is dependent on the yield relative to alternative banking products available. The lack of secondary market activity is impacting the variety of products issued and the reduction of participation in primary issuances. Any further restrictions on market makers' abilities to hedge their positions will impact liquidity, reduce appetite for primary issuance still further, driving up the cost of financing the real economy.



Post-Trade Transparency

As opposed to pre-trade transparency, a cross section of market participants interviewed believed regulators could achieve their aims through post-trade transparency by using appropriate delays or the masking of trade sizes (see Industry Commentary 15).

A properly calibrated regime incorporating reporting time delays based on size/volume, transaction type, and liquidity of the instrument with changing asset or market conditions will sufficiently fulfil the regulators' objectives. Without this calibration, market makers will be forced to facilitate investor demands at the risk of incurring market impact, leading to higher transaction costs and ultimately higher trading cost for investors and borrowing costs for issuers.

Ultimately, liquidity is the most important parameter for determining delay; the more liquid a bond, the quicker it can be hedged or moved on, and the sooner the trade data can be

Industry Commentary 15

"It's the pre-trade proposals that I have a problem with. Post-trade transparency with the proper calibrations could provide the transparency the market is looking for and bring much needed liquidity to the market, by providing an accurate reference price."

*(Large Global Asset Manager
Head of Fixed Income Dealing)*

revealed without incurring negative impact. Liquidity can be approximated by parameters such as issuance size, (average) number of tickets traded and (average) volume traded.

The Cost for Corporates

The sovereign debt crisis and CRD IV have converged dramatically, changing the demand for debt as well as the composition of fixed-income investor portfolios. Despite recent European long-term refinancing operations, SMEs remain frozen out of the market. While there has been a spate of recent corporate bond offerings, this new debt has been focused on the most liquid names and relatively short of maturities (see Industry Commentary 16). CRD IV will incentivise banks to reallocate capital to AAA-rated bonds with shorter-term maturities.

As the interest in warehousing corporate bonds to facilitate secondary market liquidity is waning due to a combination of legislative and economic conditions³⁹, the ability to draw out latent investor liquidity will become even more critical. Electronic undertakings, such as the so-called Cassiopeia initiative, BlackRock's Aladdin, UBS's Price Improvement Network-Fixed Income (PIN-FI) and Goldman Sachs's Gsession are gathering interest but this has yet to translate into any significant trading volumes. Participants believe that liquidity can be sourced from natural holders of large dormant bond inventories rather than relying solely on the market-making model. However, significant challenges remain in the interim due to the variety of bond issuances and their terms (see Industry Comment 17). These platforms are being created almost as a regulatory hedge. If the regulatory proposals will inhibit the market-making model, then liquidity may begin to form on alternative venues. However, this will not work for all products; many corporate bonds including high-yield distressed bonds are almost exclusively traded over the phone and by their very nature will need to remain so. The risk here is that once more, only the most liquid of names will trade.

Industry Commentary 16

"This is going to shrink availability of funds for corporates. My portfolio manager will look at bond characteristics and trade vanilla liquid options only—going for Tesco rather than a smaller retail—and that's not going to help underlying companies trying to get funding."

(Global Asset Manager)

Industry Commentary 17

"The chance of finding an agency cross in a fixed-income instrument in one of these systems is massively diminished. It will be very welcome when it's found but without a fundamental overhaul of market structure, the model just won't work".

*(Large Global Asset Manager
Head of Execution)*

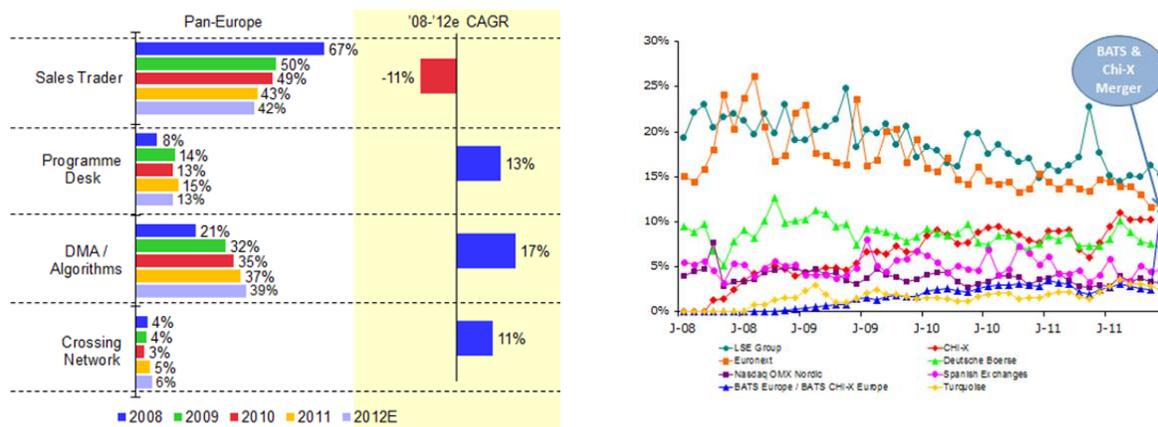
³⁹ *Financial Times* – <http://www.ft.com/cms/s/0/26a7d180-ab6f-11e1-b675-00144feabdc0.html#axzz1wR2BZF08>

Will Equity Trading Provide the Solutions?

The switch to automation in equities markets (see Exhibit 19) has led to an increasingly fragmented market (see Exhibit 20). This fragmentation may offer the confidentiality market participants seek but the challenge then becomes the ability to find liquidity. Ask any trader at an institutional investment house about the challenges of finding price and size anywhere other than the most liquid stocks and the issues become abundantly clear.

Exhibits 19 and 20

Development of Automation in Equities Markets and Subsequent Fragmentation of Liquidity



Source TABB Group

High-frequency trading (HFT) now accounts for 38 per cent of order flow currently in Europe.⁴⁰ HFT is based on high-speed algorithmic trading arbitraging market activity rather than having an underlying order to buy or sell a specific stock. Real-money order flows are now substantially lower; the greater transparency achieved in equities markets has not always delivered the anticipated results (see Industry Commentary 18).

Increased fragmentation has created difficulties in trading orders over a reasonable percentage of average daily volume (ADV). This has led to an increased technological arms race in terms of algorithmic development, SORs⁴¹, venue analysis and sophisticated liquidity seeking algorithms; all of which are now considered requisite tools needed to trade effectively in and out of dark pools, with all the additional

Industry Commentary 18

“With real-money flows now at only 15 per cent in the equities market, you have to look carefully at what monster you may be creating—if you look at the equities world, it’s not such a great evolution.”

(Large Global Asset Manager
Head of Fixed Income Dealing)

⁴⁰ TABB Group

⁴¹ See Page 17 for definition of SOR (Smart Order Router)

ramifications that this incurs.⁴² However, even with this level of fragmented liquidity, pools of equity liquidity still form, which in the current fixed-income market structure would be impossible to replicate to the same degree.

Difficulties in trading fixed-income markets have been exacerbated by the Eurozone crisis. A large portion of the fixed-income market remains OTC and in times of market stress, OTC market makers are forced to retreat; dramatically widening bid/offer spreads (see Industry Commentary 19). There is currently disagreement among the buy side as to the longer-term effectiveness of the RFQ model in the current economic environment. Some believe that this model has already ceased to function in stressed markets, while others believe that there is currently no credible alternative.

A lack of secondary market liquidity can have a direct impact on yields and subsequent debt issuance. As liquidity evaporates and capital providers are constrained, fewer market participants will be able to operate efficiently, leading to reduced competition. It will then fall to the buy side to provide that liquidity and they will require a greater incentive.

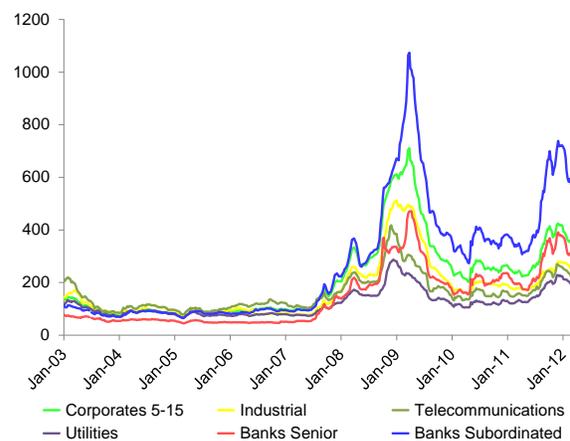
Corporate yields are typically higher than sovereign yields (see Exhibit 21), as companies have traditionally been perceived as having higher credit and default risks, as well as an underlying lack of liquidity. Market participants believe the recent reduction in dealer inventory levels creates further volatility within the market due to shrinking liquidity. As inventories are capital constrained, volatility increases, which increases overall value-at-risk, forcing traders to minimise inventory further, creating further liquidity constraints and increased volatility, and so the cycle continues.

Industry Commentary 19

“In any period of stress, the RFQ model is already broken; just like 2009, you can’t get anything done. I can try eight counterparties and they will all pass.”

(Global Asset Manager)

Exhibit 21 Corporate Bond Spreads over the UK Benchmark Government Yield 2003–2012



Source: IBOXX

⁴² TABB Research – “European Algorithms: The Evolution”, Rebecca Healey

The Positives

As technological advances are made, the fixed-income markets will inevitably change. The existing market structure is already challenged in times of market stress and with balance sheets now at a premium, alternatives to current trading models will need to be found in the future.

The development of electronic order books could in certain specific circumstances help increase transparency and enable inventory to move more freely from investor to investor, reducing execution costs in a similar manner to equities. However, fixed-income instruments rarely have two-way pricing, therefore an exchange-driven order book will only work for a very limited subset of bonds (see Industry Commentary 21). For example, certain very liquid government bonds could potentially operate in a very similar structure to an equities-style central limit order book, but this is directly correlated to their liquidity. If illiquid fixed-income products are subject to an on-exchange-based model, the subsequent liquidity dearth will limit competition and increase both the cost of trading and eventually primary issuance.

The maintenance of all market-making operations will remain essential for the orderly functioning of fixed-income markets going forward.

Key Facts:

- *Mandating full transparency will not necessarily improve price formation for all fixed-income products.*
- *If market makers are obliged to provide firm quotes to all clients and make this quote public (under systematic internaliser obligations) this is likely to lead to market making activities in certain fixed-income instruments becoming restricted, which will reduce competition and lead to increased market volatility.*
- *Market conditions are already challenging the traditional RFQ model with some participants claiming the model has already ceased to function both in stressed markets and for illiquid instruments.*

Industry Commentary 20

“An exchange driven order book for the most liquid bonds would take the noise out of the market and we would be in favour of this. But you need the element of choice; this would not work for all bonds or all markets ... The bottom line is the positives of change in fixed-income markets outweigh the negatives, so long as the element of choice is maintained.”

(Head of Fixed Income Execution)

Industry Commentary 21

“Maybe you can trade some ‘govies’ electronically but anything else, you struggle with today’s liquidity. In asset-backed securities, I can respond to five dealers and none of the prices will work, I have to execute these trades entirely over the phone.”

(European Asset Manager)

- *This is impacting the primary issuance market with new premiums in stressed markets moving from pre-crisis levels of 10-20bps to 50-70bps. Costs can be higher at the absolute level given secondary paper may also be trading at wider spreads due to market volatility, impacting the cost to borrow and investors' investment yields.*
- *Additional legislation under CRD IV will constrain inventories, which will also increase volatility and overall value-at-risk. Traders will minimise inventory further, creating further liquidity constraints and increased volatility. Only the most standard of products will trade, impacting SMEs and longer-term products, diluting product diversity and increasing overall market volatility.*
- *Greater transparency can be provided either through more efficient post-trade transparency or correct calibration to ensure market makers can absorb risk.*
- *Posting price transparency in smaller sizes will enable liquidity to develop in this exchange-based model but this will lead to a reduction in average trade sizes, an increase in market fragmentation and drive up absolute costs.*
- *Maintenance of market-making operations will remain essential for the overall orderly functioning of the market.*

Appendix: Market Participants

- **Investors:** Individuals, companies, or governments that provide capital for others to employ in more productive ways. Investors can manage their money themselves or delegate the management of their money to trained professionals, such as money managers, asset managers, hedge funds and other professional managers.
- **Market makers/dealers:** Financial intermediaries who employ their capital to facilitate their clients' trading. Currently, the majority of fixed-income trades are executed through market makers on a bilateral basis. Market makers are not paid a commission—profit is based upon the spread earned from buying and selling inventory.
- **Brokers:** Agents of the client engaged to facilitate their clients' trading strategies. Brokers are paid a commission and do not employ the firm's capital.
- **Trading venues:** Regulated exchanges (RMs) and multilateral trading facilities (MTFs) are places where buyers and sellers meet. Pre- and post-trade market data from trading venues is typically widely disseminated. These venues can operate in the interdealer market or in the deal-to-customer market.
- **Interdealer broker (IDB):** Serve an exchange-like function for over-the-counter markets by matching up market makers' trading interests. IDBs typically only trade with market makers. While a number of products are now electronically traded, the majority of IDB products are voice or phone-traded.
- **Systematic internalisers (SI):** An investment firm, which, on an organised, frequent and systematic basis, deals on its own account by executing customer order flow outside a RM or MTF. According to current proposals, below a certain size, a quote provided by the SI must be made available for other clients to transact upon and be made public. All quotes, no matter the size, will need to be shared with the other clients of the SI. As current proposals stand an SI is proposed as a regulated market.
- **Sovereign Issuers or Debt Management Offices (DMO):** Debt Management Offices are agencies of national Treasury departments created to manage public borrowing. As well as minimising the cost of servicing the national debt through sovereign issuance, there can be wider objectives, such as the health of the retail market, transparency, and appropriate behaviour on the part of market participants.

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About

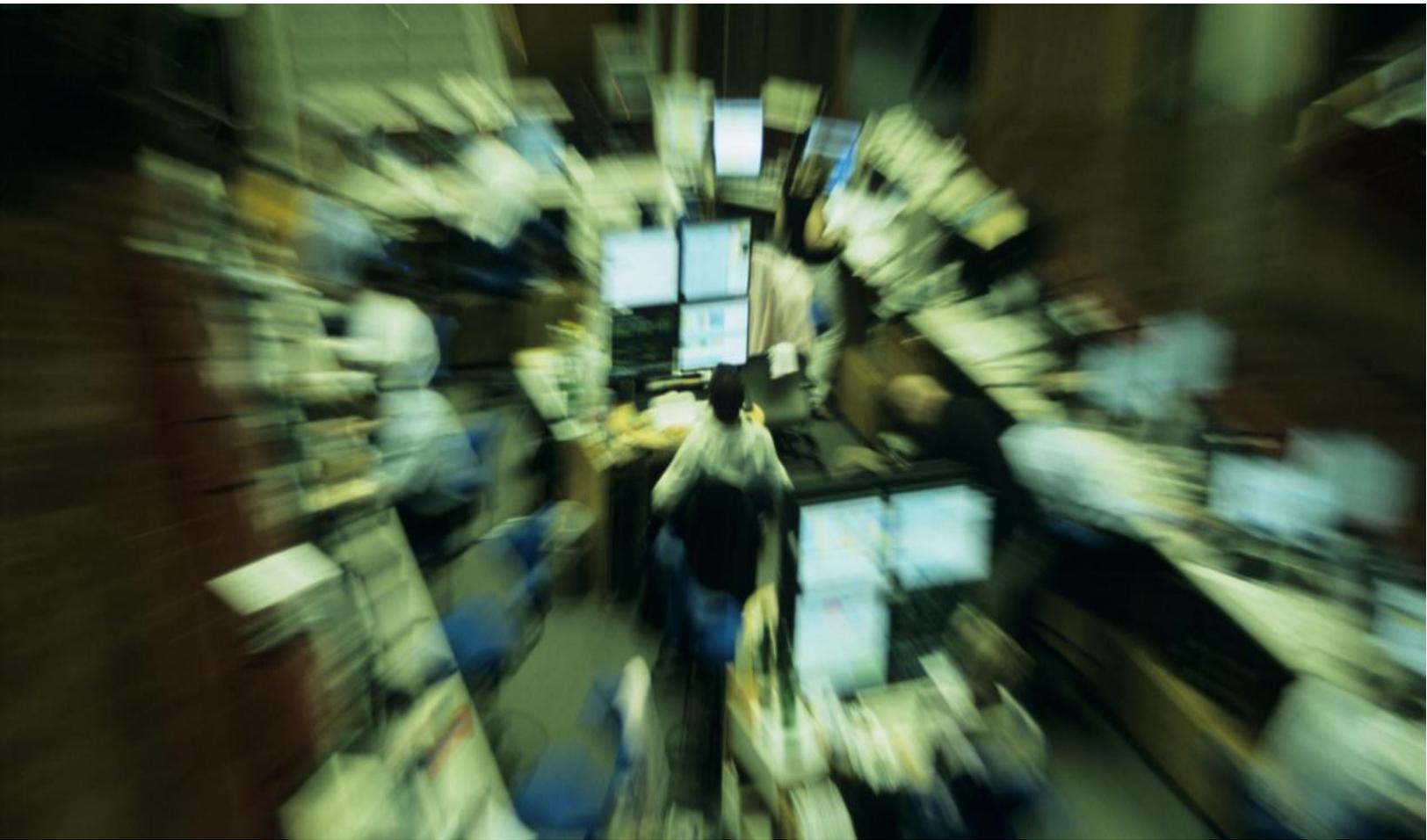
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The Author

Rebecca Healey

Rebecca joined TABB Group in March 2011, bringing more than 15 years' experience in e-trading and financial services. Rebecca has held various sales and trading positions with Bankers Trust, Goldman Sachs, and most recently Credit Suisse, where as Vice President she was instrumental in launching the successful AES product to hedge funds from its inception in 2002 until 2008. Prior to this she was the first electronic trader at Credit Suisse to be registered for all electronic European cash equity markets and covered sales trading into Asia and then Europe between 1997 and 2000. More recently, Rebecca was based in the Middle East from 2008 to 2010. There she was employed by the British Embassy in Bahrain where she successfully launched the UK Government's financial services strategy and set up the Bahrain Financial Services Roundtable, which remains a key source of information for the UK Government today, especially in relation to Islamic finance. Rebecca holds a Bachelor of Arts degree in Spanish & Latin American History & Politics from the University of London. At TABB Group, Rebecca has authored *Market Surveillance in Europe: Under Starter's Orders; European Equity Trading 2011/12: Looking for Allies in the Face of Adversity; European Algorithms: The Evolution; and Trading in the Middle East: the Road to Mecca*.



www.tabbgroup.com

New York
+ 1.646.722.7800

Westborough, MA
+ 1.508.836.2031

London
+ 44 203 207 9476