VIEWPOINT

ADDRESSING MARKET LIQUIDITY:
A broader perspective on today's Euro corporate bond market

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BLACKROCK®

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In February 2016, BlackRock published a *ViewPoint* entitled Addressing Market Liquidity: A Broader Perspective on Today's Bond Markets. We noted that over the past few years, many of the concerns relating to market liquidity reflect an ongoing evolution of global bond markets, as market participants adapt to structural changes. However most of the discussions do not consider the broad and diverse range of bond market participants or innovations that are supplementing traditional means of obtaining market liquidity.

When it comes to developing this global dialogue regarding liquidity of European fixed income markets, much of the perceived wisdom that shapes market participants decisions, as well as to an extent policy initiatives, is based on what is known from US bond markets. It is often argued, for example, that market liquidity is a function of market size, turnover and the availability of information, and that the US market should therefore be more liquid than the European market. While some of the comparative data cited in those discussions between the two regions is factually correct, in our view it is important to evaluate European corporate bond market liquidity in the context of the European market structure, as well as consider who the main owners of debt in the euro area are; a subject that is little investigated to date. Further, markets participants ought to have a better appreciation of what is driving innovation and change on the ground.

This *ViewPoint* is a continuation of previous BlackRock publications addressing market liquidity and the ownership of the world's financial assets, focusing specifically on euro denominated debt, including corporate bonds. Building on previous reports, this paper integrates European data around trading and ownership of debt alongside some of the well-established US data sources. While some of the data sources in Europe come with caveats around completeness and comparability with the US, they are still particularly useful when viewed together, as they provide a more comprehensive picture of the European ecosystem.

We begin by sizing the Euro corporate bond market and move on to discuss secondary market liquidity. We then look at ownership of euro area debt, as well as evaluate the implications of the European Central Bank's (ECB) corporate bond buying programme on euro corporate bond ownership and liquidity. We also discuss the rise of bond Exchange Traded Funds (ETFs) in Europe as a source of bond market liquidity, and the scope for future development of this market segment. Lastly we make a number of policy recommendations to further stimulate sustainable growth of the Euro corporate bond market, in light of the European Commission's ongoing focus on developing a Capital Markets Union (CMU) and to stimulate market finance more generally.

In this *ViewPoint*

The opinions expressed are as of August 2016 and may change as subsequent conditions vary.

KEY OBSERVATIONS

Notable differences exist between the world's second largest corporate bond market (Euro denominated) and the largest market (USD denominated). In particular:

Euro corporates are still a relatively small market…

Non-financial corporate bonds make up less than 10% of Euro area GDP versus 30% of GDP for the equivalent market in the US (Figure 1.6).

…with a narrow investor base

While ownership of euro area debt is well diversified at an aggregate level, corporate bonds make up only a small part of the most investors' asset allocation. For example, non-financial euro corporates make up less than 3% of insurance corporations and pension funds (ICPFs) assets (Figure 3.12), while even bond funds invest only around 7% (Figure 3.15).

Less transparency and limited data

Lack of consistent and reliable trade reporting data may underestimate secondary market trading in Europe. Until the Markets in Financial Instruments Directive II (MiFID II) takes effect in January 2018, reporting of public transactions in Europe is not compulsory as per the US, where the Trade Reporting And Compliance Engine (TRACE) was introduced in 2002.

ECB continues its Quantitative Easing (QE) and adds corporate bonds to the mix

While the US Federal Reserve is on a path of normalising its monetary policy, the ECB has extended its asset purchase programme (APP) with the introduction of the new corporate sector purchase programme (CSPP). Assuming this lasts until March 2017, the ECB may end up holding around 7% of the euro area issued euro non-financial corporate bond market.

Crowding out due to ECB QE

Despite ECB only starting QE in early 2015, there is evidence of private investors shifting their investments abroad and in particular to US corporates and other higher yielding US denominated assets.

European banks ongoing deleveraging

While most of the deleveraging in the US banking sector has already taken place, European banks are still de-risking their balance sheets at a higher pace.

While differences exist, many of the same themes we have identified in previous *ViewPoint*s are observable and relevant in Europe:

Corporate bond markets are fragmented

Both US and Euro corporate bonds are spread across thousands of securities, while only a small fraction of them are eligible in broad based indices, which typically track the largest and most liquid securities.

Increasing variable costs of trading

Low and stable bid-ask spreads should not be considered in isolation. In fact, bid ask spreads have become less sensitive to changes in credit risk. Variable costs such as trading in size, timing it takes to execute and ability to do the trade are also part of the overall cost of executing

Market participants are adapting to structural and cyclical changes

The trading landscape and transparency in EU capital markets is evolving. Among the most noteworthy changes are the rising popularity of alternative credit vehicles such as bond ETFs, and greater adoption of electronic trading in fixed income, including trading venue and protocols.

Growing adoption of ETFs

European domiciled ETFs are the second biggest ETF market globally and the fastest growing segment of the global exchange traded product (ETP) industry. Similar to the US, corporate bond ETFs are driving growth both in terms of flows and increasing trading volumes, despite sluggish growth in Over The Counter (OTC) bond liquidity (Figure 4.1 and 4.2).

Liquidity risk management is key - market liquidity is not the same as fund redemption risk

The regulatory focus of raising the bar for liquidity risk management across the mutual fund industry is a global agenda. We recommend the use of objective measures, over subjective judgment, for the classification of assets, particularly when information is disclosed to the public. We also advise against mandating short-term liquidity minimums, as these may be pro-cyclical and are not sufficient to ascertain that liquidity risk is being managed appropriately. Instead, we recommend a holistic approach that considers a number of factors that reflect the diversity of mutual funds.

Protecting bondholder rights key to investor confidence

Investor capital must be treated fairly and efficiently throughout the market - not just at the point of sale but as it moves throughout the financial system. Specifically, and in light of a number of recent high profile events where bondholder rights have not been adequately protected in bail-in, lawmakers must ensure that bailing-in failing banks involving individual government action must be on terms that are fair and predictable for those investors that have assumed bail-in risk.

Public debt markets at the heart of the CMU

Growing the public debt markets as an important source of financing for European companies is at the heart of the European Commission's CMU. This initiative should encourage a wider investor base in corporate bonds as well as harmonise debt issuance regimes across Europe.

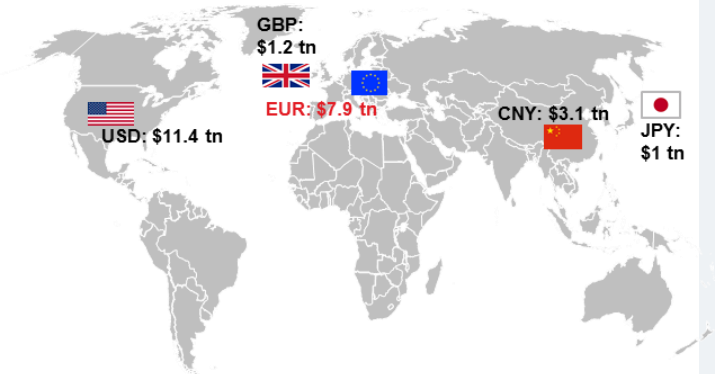
Sizing the Euro corporate bond market

How big is the Euro corporate bond market? The answer to this question depends upon the universe of bonds under consideration. As outlined below, we looked at two sets of data in an effort to define the size of the Euro denominated corporate bond market. The first dataset captures all bonds available outstanding. This method captures the maximum pool of bonds in existence and includes small issues, floating rate bonds, unrated securities and private placements. The second dataset comprises those bonds that are eligible for broad based corporate bond indices. Broad based fixed income benchmarks, typically track publicly issued corporate bonds that are rated by at least one credit rating agency and exclude floating rate bonds and money market instruments. Indices tend to have a liquidity bias as they set relatively high minimum amount outstanding requirements. This means they tend to skew towards the more liquid bonds in a given sector. We also use index eligible bonds for assessing the secondary market liquidity of the Euro corporate bond market. Additionally, we look at the size of European corporate bond market alongside other securities including government bonds for context.

> *"The euro corporate bond market is the second biggest globally."*

We estimate the size of the corporate bond market globally is USD 28.4 trillion based on currency of issue. USD, EUR and CNY denominated corporate bonds make up more than 80% of the global market (Figure 1.1). USD corporates are the largest global corporate bond market with USD 11.4 trillion amount outstanding, followed by Europe with nearly USD 7.9 trillion. At first glance, EUR corporates are spread across 94,000 individual securities compared with 56,000 in the US, with the vast majority being financial securities. However, a significant number of those financial securities both in EUR and in USD are issued for purposes other than raising finance.

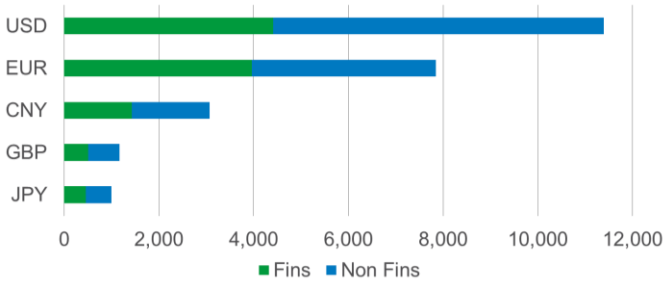
Figure 1.1: TOP 5 LARGEST CORPORATE BOND MARKETS USD TRILLION



Source: Bloomberg, BlackRock. As of end of June 2016. Market size based on amounts outstanding.

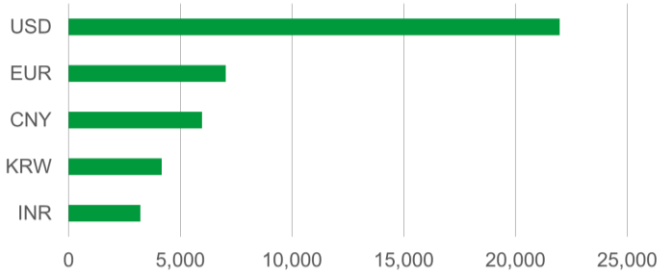
Those securities can take the form of interbank loans, structured products, and certificates of deposits or bonds that are issued to be repoed by the ECB, in the case of Europe, and retained on bank balance sheets.

Figure 1.2: TOP 5 CORPORATE BOND MARKETS GLOBALLY BY MARKET SIZE, USD BILLION



Source: Bloomberg, BlackRock. As of end of June 2016. Amount outstanding based on amount issued

Figure 1.3: NON FINANCIAL CORPORATE BONDS, NUMBER OF SECURITIES OUTSTANDING



Source: Bloomberg, BlackRock. As of end of June 2016

Non-financial corporate bonds are a more defined universe under the common definition of a public or private corporate debt instrument that is available to end investors. The US still has the biggest market with USD 7 trillion, followed by Europe with USD 3.9 trillion (Figure 1.2). Looking at the number of securities issued by non-financial companies across the two regions, the US appears more fragmented than Europe. US non-financials are spread across almost four times more securities, while the market size is less than twice as big.

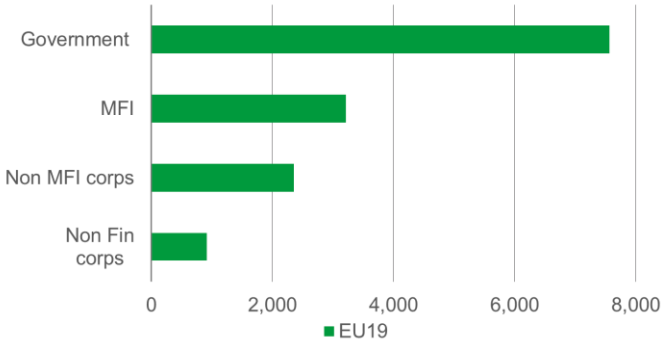
> *"Only one third of non-financial corporate bonds are index eligible across both regions."*

Of USD 11.4 trillion of USD corporate bonds, roughly 60% is index eligible. In Europe, this number is significantly lower with only USD 2.5 trillion EUR denominated corporate bonds being index eligible, out of USD 7.9 trillion outstanding. Looking at the number of securities that are index eligible, the difference is even more pronounced with only 3% of EUR corporates being index eligible, versus 17% for USD corporates. If we take index inclusion as reliable proxy for liquidity, these numbers are important. Once again,

retained financial issuance is responsible for such low percentages for the overall market. Even after excluding financials, only about one third of the number of non-financial corporate bonds are index-eligible across both regions[1] . This means there is a large tail of typically smaller issues that would almost automatically be classified as less liquid given that they do not fall within most investors' field of vision.

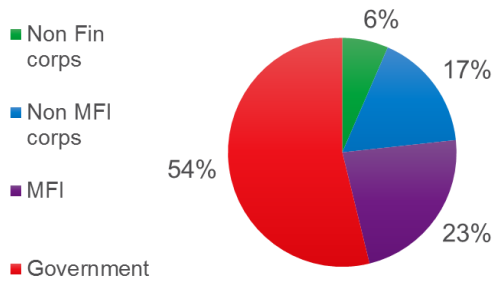
Another way to assess the size of Euro corporate bond market is to present it alongside other debt markets, including government bonds for context. The ECB classifies debt according to country of issue. Hence, euro denominated debt issued by euro area issuers (EU19) is valued at EUR 14 trillion, as at end of Q1 2016. Government bonds make up more than half the market with EUR 7.6 trillion, followed by monetary financial institutions (MFI) and non-MFI financial institutions, which make up 23% and 17% respectively. Non-financial corporate bonds are just 6% of the broader euro debt market.

Figure 1.4: EURO DENOMINATED DEBT BY EURO AREA ISSUERS (EU19). EUR BILLION



Source: ECB. Data as of end of March 2016. Amount outstanding in nominal values

Figure 1.5: EURO DENOMINATED DEBT SECTOR BREAKDOWN. EUR BILLION

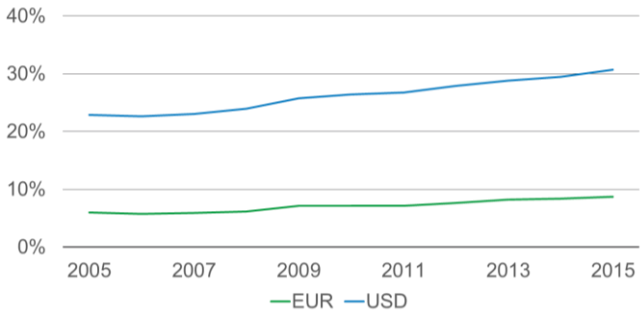


Source: ECB. Data as of end of March 2016. Amount outstanding in nominal values.

> *"Non-financial corporate bonds represent just 6% of the broader euro debt market."*

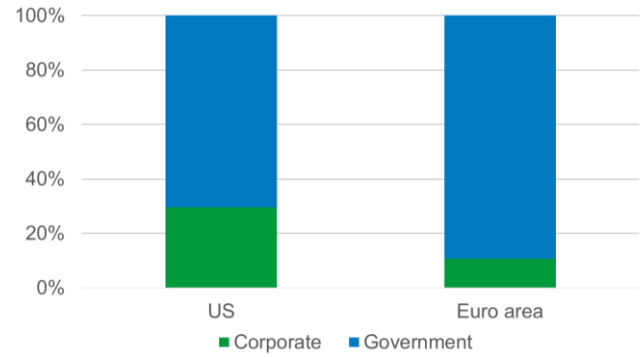
The US bond market is valued at around USD 40 trillion. Similar to Euro area sovereigns, US treasuries are the largest US fixed income market by size. However, in the US the ratio of treasuries to corporates is less than 3:1, while in Europe it is much higher - closer to 8:1. In terms of growth, US corporate bonds currently make around 30% of US GDP. In stark contrast, euro area corporates issued in euro are substantially smaller; amounting to less than 10% of GDP at the end of 2015 (Figure 1.6).

Figure 1.6: CORPORATE BONDS OUTSTANDING AS A PERCENTAGE OF GDP



Source: Federal Reserve, ECB. Data as of Q1 2016. Corporate bond market size include only non financial corporate bonds.

Figure 1.7: GOVERNMENT TO CORPORATE BONDS RATIO

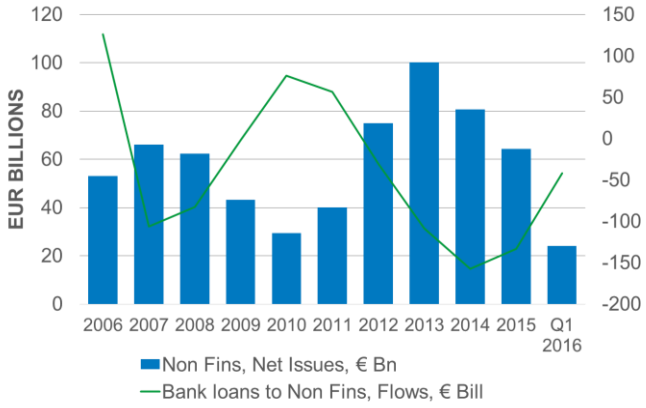


Source: SIFMA, ECB. Data as of Q1 2016. Corporate bond market size include only non financial corporate bonds.

"Gradual shift from loans to bonds in euro area."

Nonetheless, comparing outstanding corporate bond sizes may ignore some important changes and trends. Looking at issuance data vis-a-vis bank loan flows to non-financial corporates points to a more structural shift in favour of public debt markets in Europe. Between 2012 and Q1 2016, EUR 344 billion net issuance by non-financial companies appears to have largely compensated a reduction of EUR 471 billion in bank loans (Figure 1.8), which is fairly reasonable considering the ongoing balance sheet restructuring on the banking sector and therefore the reduced capacity of banks to provide financing to the rest of the economy. Consequently, a substitution effect between bank lending and debt capital market instruments appears evident. The increased role of bond financing is probably beneficial for non-financial corporations and banks alike, as corporates can diversify their funding structure, and banks can act as underwriters earning revenue without adding pressure on their balance sheets or taking on more risks. That said, firms must be large enough to afford the fixed costs of issuing debt. In other words, firms that have trouble accessing bank credit (i.e. traditional SMEs) are not necessarily those that can borrow on the bond market.

Figure 1.8: BOND ISSUANCE VIS A VIS BANK LOANS, EUR BILLION



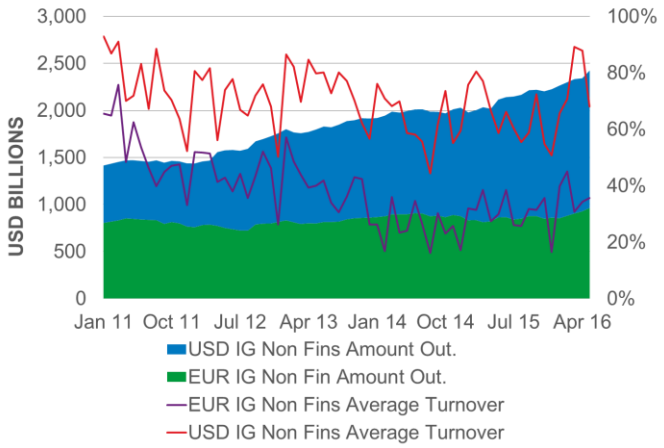
Source: ECB. Data as of Q1 2016.

Trends in European secondary market liquidity

In our July 2015 *Viewpoint* "Addressing Market Liquidity", we defined market liquidity as the market's ability to facilitate the purchase and or sale of an asset without causing a change in the asset's price (i.e. market impact). Market liquidity matters greatly to end-investors or asset owners, such as Europe's taxpaying savers and pensioners, who have increasingly "reached for yield" in the current low rate environment. As a result, there is debate about the extent to which liquidity risk premia, or the cost of liquidity, is properly priced in to bond prices. In this section we turn our attention to secondary market liquidity for Euro corporate bonds, looking at annual turnover and quality of execution in parallel.

Looking at the turnover patterns in investment grade corporate bonds (Figure 2.1), similarities and differences are evident across regions. Over the last 5 years, both in US and Euro investment grade corporates, we have seen a slight reduction in turnover around 2014/2015, followed by a mild pick up in recent months. However, the long-term ratio of annual secondary market turnover as a function of debt outstanding seems to be twice the level for US versus Euro investment grade corporates.

Figure 2.1: ANNUAL TURNOVER VERSUS AMOUNT OUTSTANDING GROWTH, USD BILLION



Source: BlackRock, TRAX, TRACE, SIFMA as of May 2016

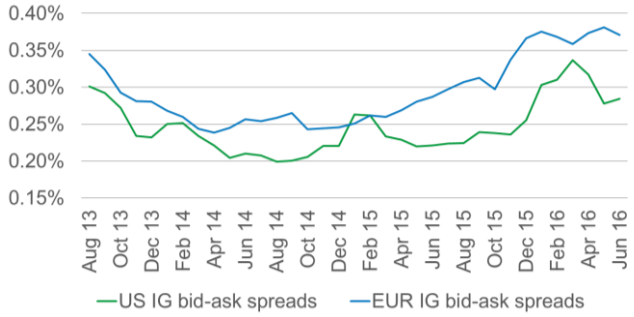
An important caveat when referencing the above statistics is the fact that in Europe, there is currently no consolidated tape for fixed income - at least until the re-cast Markets in Financial Instruments Directive (MiFID II) and the Markets in Financial Instruments Regulation (MiFIR) take effect in January 2018. Consequently, the lack of consistent and transparent trading volume data results in an incomplete picture of liquidity in Europe, while it also poses several other challenges for market participants when it comes to risk or transaction cost analysis, reporting and best execution. For the purposes of this *ViewPoint,* we use trading volume data from Trax - a subsidiary of MarketAxess, a global electronic bond trading platform. Trax processes approximately 65% of all fixed income transactions in Europe through its post-trade services, constituting the closest equivalent to FINRA's public trade tape in the US - Trade Reporting and Compliance Engine (TRACE) - available today[2].

Recognising these factors we will focus on how liquidity, in the context of market impact, has evolved through time.

Bid-offer spreads are often cited as a transaction cost metric for market liquidity. However, care should be taken in interpreting bid-ask spread data, as they are based on indicative levels to trade small size, rather than reflecting the transaction costs of trading larger orders.

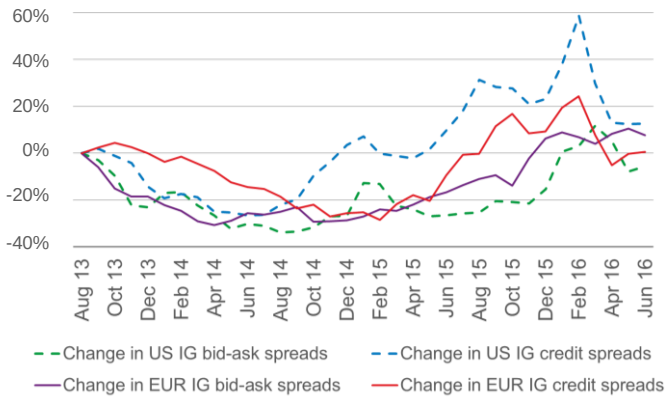
Figure 2.2 shows bid-ask spreads for US and euro investment grade corporate segments have risen recently, although they seem normal compared to pre-crisis 2008 peaks. Additionally, over the last few years bid-ask spreads have become less sensitive to changes in credit risk. As credit spreads rise, bid-ask spreads rise more slowly (Figure 2.3). One explanation for less level-sensitive bid-ask spreads, is the shift away from a principal only trading model in fixed income towards a hybrid model, meaning part agency and part principal. Increased agency trading may be resulting in tighter bid-ask spreads, however this data does not account for trade size nor time horizon to complete trading.

Figure 2.2: EVOLUTION OF BID-ASK SPREADS FOR US AND EURO IG CORPORATES



Source: Data as of June 2016. US high grade spreads are calculated by tracking the daily spread between bids and offers in certain US high grade segments using BondTicker market data. European BASI is calculated using quoted price information available through an end-of-day pricing feed from TRAX

Figure 2.3: CHANGE IN BID-ASK SPREADS VERSUS CHANGE IN CREDIT SPREADS

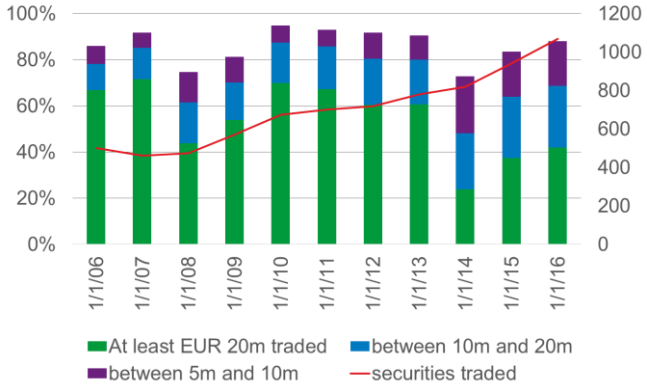


Source: See Source for Figure 2.2

Another point of discussion is often is how many bonds actually trade, and in what sizes. Figure 2.4 shows the number of index constituents for euro investment corporates that traded each month over the past few years, as well as the percentage of constituents that traded over EUR 20 million, between EUR 10 million and EUR 20 million or less than EUR 10 million. It is evident that while almost every bond in the index trades every month, trade sizes appear to decline. This supports the anecdotal evidence that trading larger size orders continues to be challenged.

Figure 2.4: % OF INDEX MEMBERS TRADING AND TRADING SIZE BUCKETS IN EUR MILLION

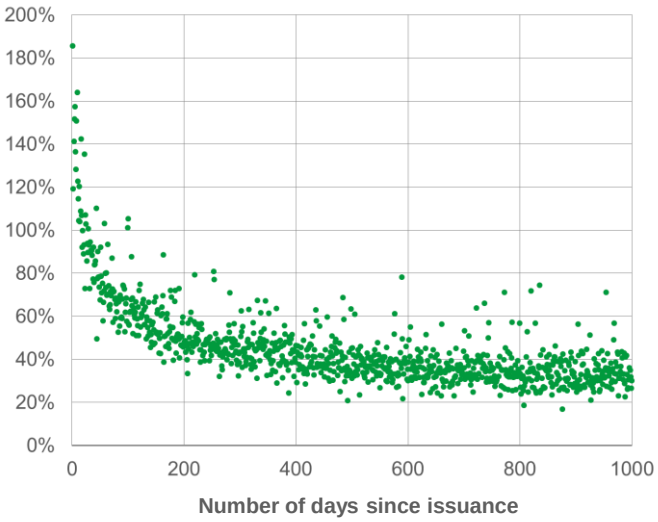
No. of securities and % of index members trading



Source: TRAX data as of June 2016, based on Barclays Euro Corporate Bond Index constituents

With regards to concentration of liquidity, it is broadly understood that newly issued bonds change hands frequently at first, but trading activity then drops off rapidly. Figure 2.5 represents this picture for euro investment grade corporates and the effect is similar in other markets such as the US.

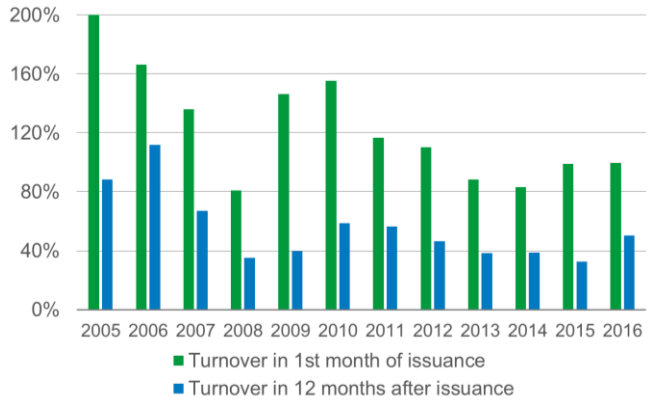
Figure 2.5: EURO NON-FINANCIAL IG CORPORATE BONDS ANNUALISED TURNOVER BY AGE



Source: TRAX data as of June 2016, based on Barclays Euro Corporate Bond Index constituents excluding financials. Annualised turnover days since inception

Looking at how this relationship evolved over time, there is no evidence that liquidity concentration has deteriorated further. Figure 2.6 shows the annual turnover ratio in the first month of issuance and then the turnover ratio after twelve months. If the effect were becoming more prominent over time, the difference between the two bars would have increased, which according to the data doesn't appear to be the case.

Figure 2.6: MEDIAN TURNOVER FOR NEW AND SEASONED EUR IG NON FINANCIAL BONDS



Source: TRAX data as of June 2016, based on Barclays Euro Corporate Bond Index constituents. Annualised turnover

Implicit to the above observations are also signs that the overall trading ecosystem in Europe is evolving. The combined impact of regulatory change and technology is changing the practices and behaviour of European bond market trading and the toolkit to operate within. Among the most noteworthy changes have been the rising popularity of alternative credit vehicles including bond ETFs and CDS indices, such as iTraxx Xover or iTraxx Europe, as well as greater adoption of electronic trading in fixed income, including trading venue and protocols.

However, this is just the beginning of the process as we foresee a staged approach to how protocols and platforms evolve in the coming years. Equally, we do not expect a single model or platform to be suited to all types of trades. One thing that is clear though is that a flexible and scalable model is emerging, one that allows participants to choose a strategy and venue based on the characteristics of the trade.

In summary, the current liquidity debate is one of size, timing and ability to action the trade, rather than the cost of execution measured by bid-ask spreads. Some key factors contributing to this reality are;

1. **Hybrid trading model favours agency:** Agency trading may result in tighter bid-ask spreads, but often comes at the expense of speed of execution and trading larger sizes.
2. **Longer trading times**: This has negative connotations, but is actually representative of investors evolving their behaviour to trade in smaller size, move towards index investing and being willing to act as price-maker in addition to price-taker.
3. **Rising popularity of alternative credit vehicles** such as bond ETFs and Credit Default Swap (CDS) indices, which enable investors to express views in more liquid and standardised instruments.
4. **Increasing diversity of market participant balances the reduction of intermediation**: Less intermediation would naturally be negative for market liquidity and increase cost, but a higher number of market participants would counter-balances this.

THE RISE OF ELECTRONIC PLATFORM TRADING

Despite Europe having a less liquid bond market than the US, electronic trading (eTrading) of corporate bonds is estimated to be around 50% of the secondary market compared with an estimated 20% for investment grade bonds in the US[3] . The effect is even more pronounced in high yield, where an estimated 19% of bonds trade electronically in Europe compared with an estimated 4% in the US.

The greater utilisation of eTrading in Europe is in part due to the large retail and private banking client base trading corporate bonds, and a need for dealers to efficiently provide liquidity to them. In addition, the broader set of European liquidity providers, comprising global and European regional banks, has motivated the industry to integrate the third party trading platforms into their inventory management systems via earlier than in the US.

The main eTrading platforms in Europe are primarily request for quote (RFQ) based, but do have some differentiating features. For example, Tradeweb focuses on integration with traditional bank liquidity providers and has a single name CDS offering to complement the corporate bond offering. MarketAxess focuses on open trading, which is an all-to-all protocol allowing non-traditional dealers and buy side participants to receive and respond to RFQs and trade with each other[4].

Numerous alternative eTrading venues and systems have entered the market in attempt to gain traction away from the RFQ trading protocol. For example, Liquidnet globally, and Electronifie and TruMid in the US, have launched crossing systems ('dark pools') that seek to match buy and sell orders anonymously. Some Central Limit Order Books (CLOB) have also launched, such as UBS Bond Port, MTS BondsPro, and the Liquidnet lit book, although these platforms currently have a small overall market share as a fraction of all eTrading both in Europe and abroad.

INTERMEDIATION IN EURO BOND MARKETS

Despite the much discussed balance sheet constraints due in part to the regulatory environment putting pressure on market making activities, the breadth of European counterparties remains strong. The landscape for secondary liquidity provision in euro corporate bond trading can be described as follows:

Global investment banks: These are mostly US banks providing balance sheet on a global basis.

National champions: Typically large universal banks with close ties to their country of headquarters.

Regional banks: Banks specializing in regional liquidity.

Agency brokers: Brokers that match end-users without committing balance sheet. These can service both the buy side and sell side.

Principle trading firms: Proprietary trading firms that commit capital to making principal markets, typically by providing liquidity to eTrading venues.

Given the relevance of eTrading to the European credit markets, most of the intermediaries mentioned above have a dedicated effort to eTrading. Most principle trading firms are heavily reliant on eTrading, while many agency brokers have no eTrading capability at all. Many of the larger investment banks have committed substantial investment towards electronic integration of RFQ platforms directly into their market making inventory systems, with the goal to automatically respond to RFQs for small risk as they do in liquid interest rate products.

There has been a trend of secondary trading market share concentration since the financial crisis, as the majority of investment banks have continued to de-lever their balance sheets. This concentration has been more pronounced in US credit than in Euro credit. A survey of the buy side has shown the top three investment banks making up 40% of market share for investment grade credit in the US, compared with 20% in Europe[5].

In terms of issuance, the landscape resembles secondary liquidity provision. Underwriting services are provided essentially by global investment banks with an advisory franchise, and by corporate banks that provide loans to issuers. The latter is an efficient means for issuers to reward loan-providing institutions. Lastly, some banks provide issuers with regional loans. These institutions are typically regional banks, Japanese banks or Australian banks that are unlikely to offer services such as secondary market liquidity, research and M&A advisory.

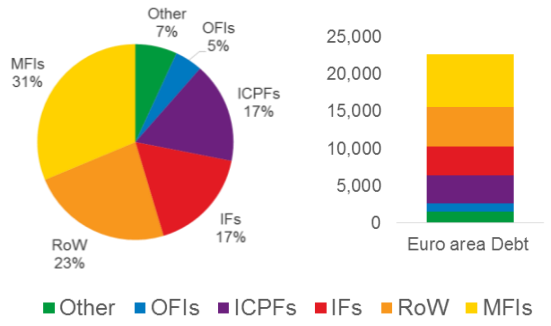
European debt ownership and the impact of ECB buying corporates

Compared to the US, there is no equivalent to Fed's Flow of Funds (Fed Z.1)[6] in order to understand who owns European debt or how the different holders are allocated or changed over time. However, digging deeper into ECB's Statistical Warehouse[7], a breadth of information is available. Until recently, most of the official statistics could only provide aggregated information on the securities exposures of market participants, mainly at a balance sheet level. More recently, the European System of Central Banks (ESCB) has created a new statistical dataset, the Securities Holdings Statistics Database (SHSDB)[8]. This project was launched in 2014 aiming to pool securities holdings data compiled on a security-by-security level.

The SHSDB itself consists of the SHS Sector and the SHS Group module, which differ mainly in the granularity of information on the holder's side. For the remainder of this section, we focus on SHS Sector module, which contains aggregated holdings by investors belonging to the same institutional sector. It includes information on (i) holdings of securities by investors resident in the euro area and (ii) holdings by non-resident investors of euro area securities which they hold with euro area custodians, as well as (iii) non euro area investors reported by some non euro area EU countries. In addition to the SHS data we complemented some of the sector holding information with balance sheet information compiled by the ECB. Lastly, as the latest SHS data reports available are as at end of Q1 2016, they do not take into consideration the start of the ECB's Corporate Sector Purchase Programme (CSPP) in June 2016. Given the focus of this report on corporate bond liquidity we have incorporated the most recent information on corporate bond purchases by the Eurosystem in order to estimate how much could the ECB potentially own of the euro non-financial corporate bond market.

At the aggregate level, ownership of European debt seems well diversified across the different holder sectors. Added together, insurance corporations and pensions funds (ICPFs) plus investment funds hold about one third of the debt universe under scope. Monetary financial institutions (MFIs including the Eurosystem) and external investors (RoW) follow with 31% and 23% respectively. Households (HH), general government (GG) and non financial corporates - mainly corporate treasurers - are amongst the smaller holders of debt. Rest of the world (RoW) includes holders of debt resident in EU member states outside the euro area, as well as international holder's non-resident of EU such as US and Japan.

Figure 3.1: % EURO AREA DEBT SECURITIES BY HOLDER SECTOR



Source: ECB. "Who-to-whom detail, Short term & Long-term debt securities by counterpart sector" reports. As of March 2016. MFIs=monetary financial institutions, OFIs=other financial institutions, ICPFs=Insurance corporations and pension funds, IFs= Investment funds (excludes money market funds). Other includes; GG=general government, HHs=households and NFCs=non-financial corporations

In absolute terms, according to the latest SHS Sector module report, euro area investors held around EUR 23 trillion in debt securities as of March 2016, far more than equity holdings, which came up to EUR 8.5 trillion. Looking at individual asset classes within Euro area debt there are several noticeable

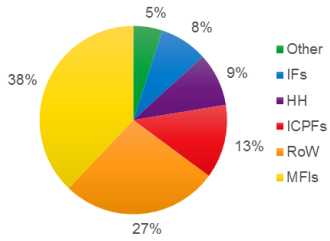
> *"ECB may end up holding around 7% of the euro area non-financial issued market"*

variations (see graphs below). We make the following observations:

- Not surprisingly, bonds issued by MFIs and other financial institutions are largely owned by banks themselves. That reflects mainly cross-ownership, retained securitisations and covered bonds used to access ECB liquidity.
- Euro area investment funds are the largest holder of international securities issued by non-euro area issuers.
- Investment funds plus insurers and pension funds (ICPFs) are the largest holders of non-financial corporate bonds with EUR 650 billion combined. This is 70% of non-financial corporate bond market from euro area issuers (approx. EUR 916 billion).
- As the ECB started to buy corporate bonds since June 2016 via the Eurosystem, MFIs holdings of non-financial corporate bonds will increase going forward. The Eurosystem is part of MFIs and is comprised of the ECB and national central banks, who are currently responsible for purchasing bonds on behalf of the ECB's corporate bond purchase programme (CSPP) programme.

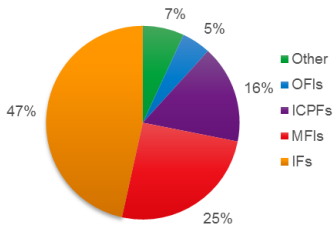
Figure 3.2-3.7: OWNERSHIP DISTRIBUTION OF EURO AREA DEBT BY TYPE OF ISSUER, EUR BILLION

MFI issued bonds, ownership distribution (%)



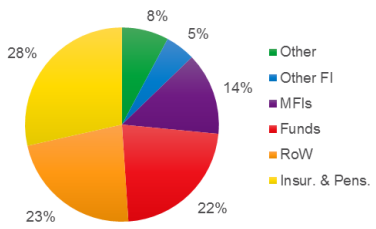
Other include: OFIs, NFCs, GG

Non eurozone issued (RoW) bonds, ownership distribution (%)



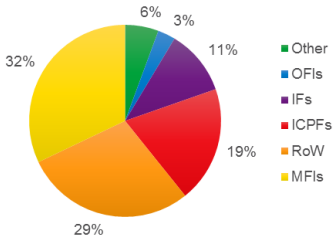
Other include: HHs, NFCs, GG

Non financial corporate (NFCs) issued bonds, ownership distribution (%)



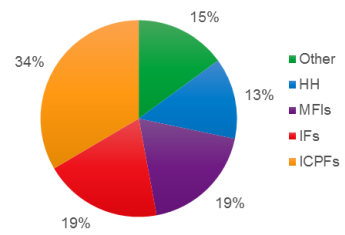
Other include: HHs, NFCs, GG

Government issued bonds, ownership distribution (%)



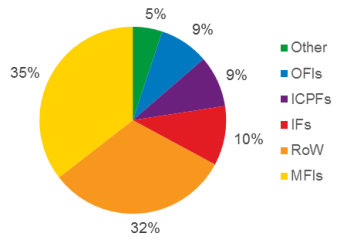
Other include: GG, HH, NFCs

Insurance corporations and pensions funds (ICPFs) issued bonds, ownership distribution (%)



Other include: OFIs, GG, NFCs

Other financial institutions (OFIs), ownership distribution (%)



Other include: HHs, NFCs, GG

Source: ECB. Long term and Short Term "Whom to Whom" reports. As of March 2016. MFIs=monetary financial institutions, OFIs=other financial institutions, ICPFs=Insurance corporations and pension funds, IFs= Investment funds (excludes money market funds), GG=general government, HHs=households and NFCs=non-financial corporations

CSPP IN THE CONTEXT OF EUROPEAN DEBT OWNERSHIP

The Eurosystem began buying corporate bonds on the 8 June 2016 under the framework of the CSPP[9]. As at end of July 2016, the ECB had purchased EUR 13.2 billion worth of debt almost entirely through the secondary market.

Assuming that the programme lasts until March 2017, and continues to buy at the current pace of around EUR 6.5-7 billion per month or approximately EUR 250 million per day, the ECB could end up holding between EUR 65 to 70 billion worth of debt. The size of euro non-financial corporate debt market issued by euro area issuers was EUR 945 billion as of June 2016, meaning that the ECB is likely to hold around 7% of that.

In terms of trading volumes, euro non financial corporate bonds trade approximately EUR 1 billion per day. The ECB is therefore currently around a quarter of the entire volume printed. However, as noted earlier, given there is no compulsory trade reporting in Europe, or an equivalent to TRACE, trading volumes reported in Europe are only a subset of what trades. Anecdotally there has been a marked impact of the ECB's activity on price action and ongoing liquidity in eligible bonds. Dealer's willingness and ability to make two way markets and in particular short the securities to clients is significantly impaired. At time of writing, the ECB programme to provide this liquidity back to the market via repo trading will be critical to maintaining orderly and well-functioning markets.

> *"Banks exposure to non financial corporates is minimal"*

Split differently, the same data provides a picture of the investor asset allocation in Europe. Again, the breakdown reveals some striking differences.

MFIs are mainly holders of financial bonds and government debt (approx. 80%) (Figure 3.8). MFI debt holdings can be split in two categories. First, euro area banks (MFIs excluding Eurosystem) and the Eurosystem, which reflects debt holdings by the ECB. Over the past couple of years European banks have been reducing their exposure to fixed income, while the ECB has embarked on a number of asset purchasing programmes that are currently responsible for the large government bond holdings (Figure 3.9). Relatively speaking, banks are among the smallest holders of non-Eurozone bonds, with minimal exposure to non-financial corporate bonds.

ECB ASSET PURCHASE PROGRAMMES

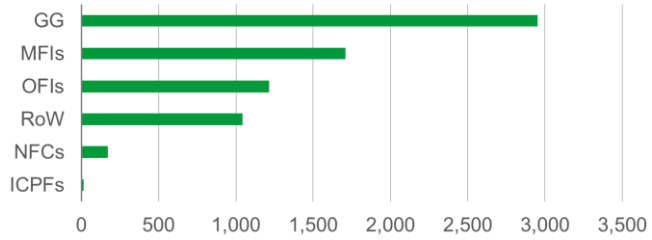
The expanded ECB asset purchase programme (APP) includes all purchase programmes under which private sector securities and public sector securities are purchased to address the risks of a too prolonged period of low inflation. It consists of the

- Third covered bond purchase programme (CBPP3)
- Asset-backed securities purchase programme (ABSPP)
- Public sector purchase programme (PSPP)
- Corporate sector purchase programme (CSPP)

Monthly purchases in public and private sector securities amount to EUR 80 billion on average (from March 2015 until March 2016 this average monthly figure was EUR 60 billion).

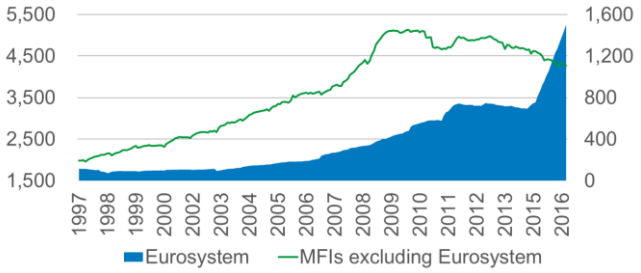
Source: ECB

Figure 3.8: MFIs BOND HOLDINGS BY ISSUER TYPE, EUR BILLION



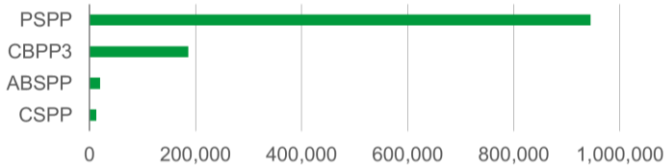
Source: ECB. Long term and Short Term "Whom to Whom" reports. As at March 2016. NFCs=non-financial corporations, MFIs=monetary financial institutions, OFIs=other financial institutions, ICPFs=Insurance corporations and pension funds, GG=general government, RoW= rest of the world

Figure 3.9: MFI VERSUS EUROSYSTEM DEBT HOLDINGS, EUR BILLION



Source: ECB. Statistical Warehouse. Data as at April 2016

Figure 3.10: ECB ASSET PURCHASE PROGRAMME (APP) HOLDINGS BREAKDOWN



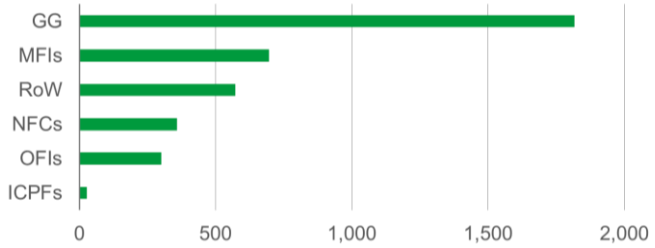
Source: ECB. Holdings as at end of July 2016 at amortised cost.
http://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html
PSPP=Public Sector Purchase Programme, CBPP3=3rd Covered Bond Purchase Programme, ABSPP=Asset-backed Securities Purchase Programme, CSPP=Corporate Sector Purchase Programme

> *"Insurers are by far the largest institutional investor in Europe and heavily weighted towards Eurozone governmnet debt"*

Insurance corporations and pension funds are the biggest owners of debt in Europe, while their holdings have increased significantly since 2008 from EUR 2.3 trillion to EUR 3.9 trillion at the end of Q1 2016. ICPFs are more in need of predictable and long-term cash flows which largely explains their bias towards bonds and in particular eurozone sovereigns (Figure 3.11 and 3.12). This is also due to the tight restrictions on credit ratings, which assign a greater role to sovereign bonds within the bond landscape. Non financial corporate bonds from euro issuers make up less than 3% of their overall assets, while their direct bond allocation is well above the total supply of euro area non financial corporates. Not surprisingly ICPFs have the smallest allocation to stocks amongst all investors groups, around 10% of their aggregate balance sheet.

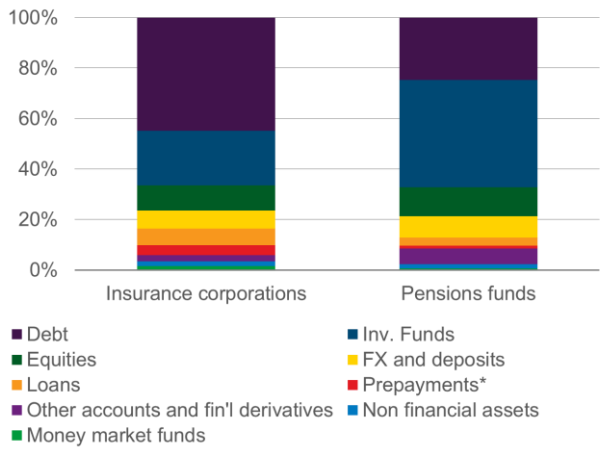
Insurers are by far the largest institutional investor in Europe with EUR 7.2 trillion in assets and more than three times the size of pension funds assets. Insurers are mainly invested in bonds directly, as opposed to pension funds who are predominately invested through mutual funds. Combined together insurers and pension funds currently invest EUR 2.5 trillion in investment funds which is double what they had in 2008 (Figure 3.13).

Figure 3.11: ICPFS, BOND HOLDINGS BY TYPE VERSUS EUROSYSTEM DEBT HOLDINGS, EUR BN



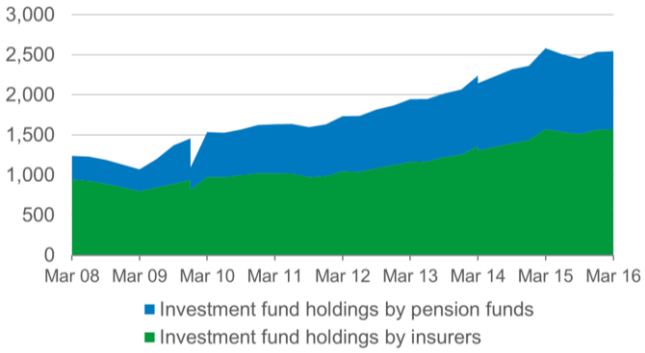
Source: ECB. Long term and Short Term "Whom to Whom" reports. As at March 2016. NFCs=non-financial corporations, MFIs=monetary financial institutions, OFIs=other financial institutions, ICPFs=Insurance corporations and pension funds, GG=general government, RoW=Rest of World

Figure 3.12: ICPFS ASSET ALLOCATION, % BREAKDOWN



Source: ECB. Insurance corporations and pension funds online aggregate balance sheet report. As at March 2016. *prepayments of insurance premiums and reserves for outstanding claims.
http://sdw.ecb.europa.eu/reports.do?node=1000004038

Figure 3.13: ICPFS INVESTMENT FUND HOLDINGS GROWTH, EUR BILLION



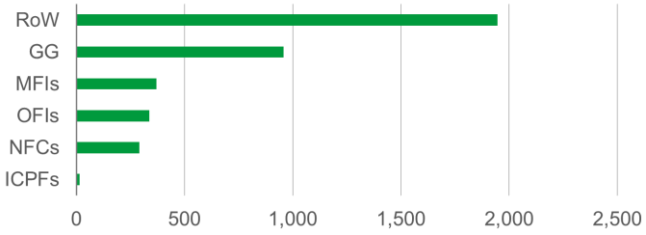
Source: ECB Statistical warehouse. As at March 2016.

Euro area investment funds have roughly EUR 10.2 trillion worth of assets, out of which almost EUR 4 trillion is invested in debt securities. In contrast to ICPFs, investment funds have a more balanced distribution between bonds and stocks, split between 38% in bonds and 28% in stocks (Figure 3.15). Investment funds are currently invested mostly in bonds issued outside Eurozone, reflecting the evolution and adaptation of various types of investors and investment strategies. In particular, since the ECB embarked on its quantitative easing programme for the first time in early 2015 and the focus of those programmes is still on high quality asset purchases, many investors have shifted allocations from ECB eligible eurozone sovereigns and corporates to international securities, as the opportunity set for investments in the former asset classes has declined.

Bond funds are the largest category within euro area investment funds with EUR 3.2 trillion in assets, followed by mixed funds with EUR 2.8 trillion. Bond funds hold only a small amount of euro non-financial corporates, making up roughly 7% of their assets. This is interesting to consider regarding the impact they could have when market sentiment changes.

Looking at flows, bonds investors are currently fleeing European negative interest rates at record pace and mainly going into other developed markets, with US fixed income representing the largest share. This is similar to Japan where negative rates have pushed private holdings into US bonds, mainly Treasuries. We expect this trend to continue in Europe

Figure 3.14: INVESTMENT FUNDS BOND HOLDINGS BY ISSUER TYPE, EUR BILLION



Source: ECB. Long term and Short Term "Whom to Whom" reports. As at March 2016. NFCs=non-financial corporations, MFIs=monetary financial institutions, OFIs=other financial institutions, ICPFs=Insurance corporations and pension funds, GG=general government, RoW=Rest of World

REINFORCING BONDHOLDER RIGHTS

Given the diverse ownership of bonds and bond funds in the EU, it is important to turn our attention to bondholder rights. Investor confidence is a pre-requisite for liquid and robust capital markets. Investor confidence coupled with the stability and predictability of law, particularly in respect of rights of ownership, underpins market growth.

Investor capital must be treated fairly and efficiently throughout the market - not just at the point of sale but as it moves throughout the financial system. Specifically, and in light of a number of recent high profile events where bondholder rights have not been adequately protected in bail-in, lawmakers must ensure that bailing-in failing banks involving individual government action is on terms that are fair and predictable for those investors that have assumed bail-in risk. A failure to protect bondholder rights will ultimately erode market confidence and undermine broader efforts, such as the CMU, to encourage greater individual investor participation in European bond markets.

A number of principles are important in this regard:

First - no discrimination between institutional and retail investors

It is misleading and concerning from an investor protection perspective to draw a clear bright line distinction between institutional and retail investors in bail-in. Institutional investors own bonds because they typically run mutual funds, whose shares are owned by retail investors, and by pension plans, whose beneficiaries are individuals. Bailing-in institutional investors before retail investors amounts to discrimination against mutual fund investors and pension plan beneficiaries.

Second – respect pari passu

Pari passu - on an equal footing - is a fundamental principle of protection for all. It ensures equal claimants share equally in what is properly available to any one of them. Its influence runs through all financial markets. Governments must be clear: there is no deserving scapegoat among creditors - retail or institutional - which is precisely why it is vital that the principle of pari passu be respected.

Third – consider that no creditor worse off limits States' ability to appropriate property

No creditor worse off (NCWO) - a term derived from the European Convention on Human Rights - acknowledges that the appropriation of property can be justified where it is in the public interest, but it ensures that there is a limit to the extent that property available to satisfy the claim of a creditor can be appropriated otherwise than by a court of law. The existence of NCWO is emphatically not a justification to disregard pari passu. It is first and foremost a limit to the rights of sovereign states to appropriate property for the wider good. The appropriation of the property of just some members of a wider set of equally ranking creditors breaches the pari passu principle. It always requires justification and may require state compensation, commonly assessed by asking what a creditor would have received had the debtor been allowed to collapse without protective action.

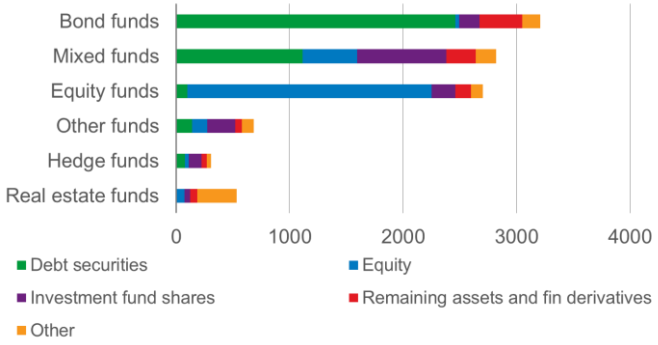
Fourth – take into account the market impact of bondholder right breaches

Central bank actions, where one group of equally ranking creditors is favoured over another in bail-in, can have notable chilling effects on markets for bank securities. The January 2016 mini-crisis in European banking stocks was, in part, a response to the uncertainty created by the Bank of Portugal's action towards creditors of Novo Banco. As an example, Banco Comercial Português, the second largest bank in Portugal, saw the secondary market yield on its senior bank debt widen by 500 basis points in the three weeks following the Bank of Portugal's decision.

and in particular see further cross boarder flows into US corporates out of Europe, as one in four dollars paid out in investment grade corporates is currently paid to investors in the US investment grade market.

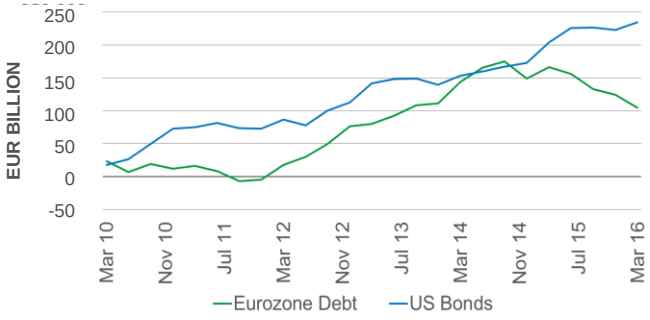
> *"Bond investors are fleeing European negative interest rates at record pace."*

Figure 3.15: INVESTMENT FUNDS BY INVESTMENT POLICY AND TYPE OF HOLDINGS, EUR BILLION



Source: ECB. Investment funds online aggregate balance report. Data as at March 2016. Other include non financial assets and FX and deposits. http://sdw.ecb.europa.eu/reports.do?node=1000004034

Figure 3.16: EUROZONE VERSUS US DEBT FLOWS WITHIN BOND FUNDS, EUR BILLION



Source: ECB Statistical Warehouse. As at March 2016. Aggregate Balance sheet. http://sdw.ecb.europa.eu/reports.do?node=1000004034

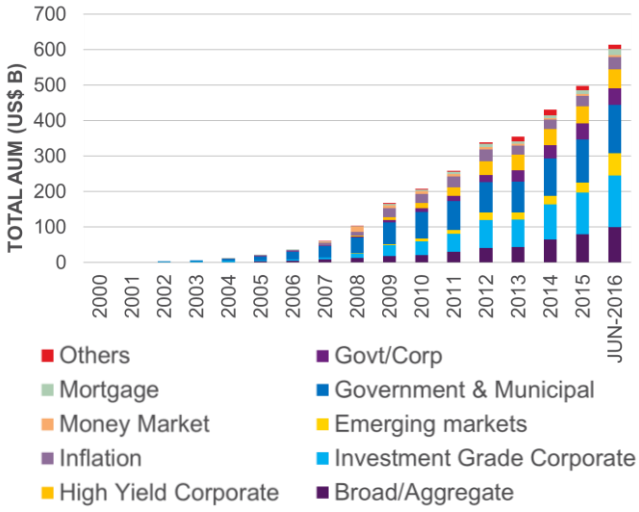
Bond ETFs and their future scope in Europe

In our July 2015 *ViewPoint*, Bond ETFs: Benefits, Challenges, Opportunities we outlined the benefits of bond ETFs to bond market liquidity, noting that ETF trading offers a vision of the future state of the bond market, exhibiting low cost, transparent, electronic trading in a standardised, diversified product. The conclusions from that *ViewPoint* include:

- ETFs can help enhance price discovery, provide investors with low execution costs to establish a diversified portfolio, and increase bond market liquidity and transparency.
- ETF liquidity is incremental to the underlying bond market liquidity because buyers and sellers can offset each other's transactions without necessarily having to trade in the underlying market.
- Even during periods of market stress, ETF shares are at least as liquid as the underlying portfolio securities.

Globally, fixed income ETFs have surpassed USD 600 billion in AUM. ETFs domiciled in the US make up the majority with USD 427 billion AUM, followed by those domiciled in Europe with USD 145 billion AUM (approx. EUR 131 billion). This is 27% of the global bond ETF industry and 4% of euro area bond funds assets. European domiciled bond ETFs are currently the fastest growing segment of the Global Exchange Traded Product (ETP) industry.

Figure 4.1 GLOBAL BOND ETF ASSETS GROWTH

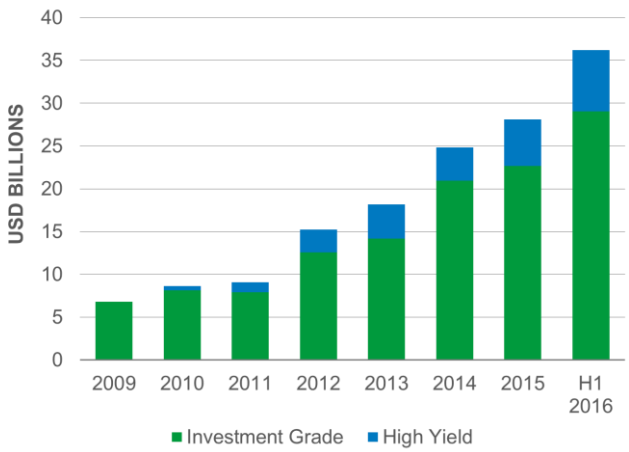


Source: BlackRock and ETP Landscape as of June 30, 2016

Corporate bond ETFs are the biggest driver of growth and increasing trading volumes, despite sluggish growth in OTC bond liquidity. European domiciled ETFs hold roughly EUR 38 billion in EUR corporate bonds both from euro area and international issuers, split between EUR 31 billion of investment grade and EUR 6.4 Billion of high yield focused ETFs (Figure 4.2). To put that in context this is less than direct household investments in euro non financial corporate bonds coming from countries with high saving rates, such as Germany and Italy and with a culture of holding individual securities such as Belgium, Italy and Spain.

> *"Bond ETFs hold less euro corporate bonds than households in Europe."*

Figure 4.2: EURO CORPORATE BOND ETF AUM



Source: BlackRock and ETP Landscape as of June 30, 2016

As the ETF market ecosystem continues to develop alongside the bond trading ecosystem in Europe, the future scope of these products will see a more diversified client base and further utilisation of bond ETFs as financial instruments. Trade reporting and post trade transparency under MiFID II is one obvious development that will enhance the perception of liquidity in European domiciled ETFs as more OTC trades will be visible. Other key drivers of growth for this market will likely to include standardised risk and trading metrics, larger lending pools of ETFs, the development of derivatives on ETFs, as well as increased acceptance as collateral in OTC transactions.

Standardised risk and trading metrics

One issue that has held back institutional adoption of bond ETFs has been the ability to translate an ETF share price into intra-day fixed income metrics such as yield, spread and duration through a standard methodology allowing for a market accepted way to value, quote and trade them. Historically, ETF providers have calculated end-of-day yield and duration metrics based on a weighted average methodology, making intra-day analytics almost impossible given the requirement to price every bond in the portfolio at any one time. In order to address these issues, an advisory group consisting of BlackRock, State Street Global Advisors and Bloomberg developed a new standard, the Aggregated Cash Flow (ACF) methodology[11]. The convention simplifies the treatment of the fixed income ETF from a portfolio of hundreds or thousands of bonds into a single stream of defined of cash flows calculated on T-1 holdings. Calculating and aggregating these cash flows is at the heart of the proposed methodology.

Borrow market and lending

Historically, lending in ETFs has focused on generating additional revenue for the ETF by lending out underlying bonds. However, over the last couple of years the development of the lending market for the ETF units themselves has grown significantly, especially in high yield and investment grade ETFs. This development has allowed holders to generate further incremental returns while developing a more efficient market place. Whilst still at an early stage of development, compared to US domiciled ETFs, borrowing and lending of ETF units in Europe is becoming more common. According to Markit there was USD 4.1 billion of European domiciled Bond ETFs available to borrow as at year end 2015.

Options market

As the lending market in European domiciled ETFs continues to develop and fees continue to align with the underlying asset classes we expect to see the same development of the listed options market in Europe as we have seen in the US. The expectation is as investors become more aware of asymmetries and opportunities in the lending market, borrow availability and financing rates should improve, enhancing the ability of fixed income ETF option market makers to make tighter and deeper two way markets. Fixed income ETF options represent a potentially valuable risk management tool for investors.

ETFs as acceptable collateral

Investors who utilise unfunded instruments within their investment portfolios are typically required to post collateral on an ongoing basis, to futures clearing venues for futures contracts and investment banks for OTC swap transactions. ETFs' role as collateral in such transactions is currently nascent, however, there are now market standards in place to assist investors in more efficiently using their ETF holdings in such pledging transactions. The historical challenge for ETFs is the broad classification of the product and the inability to systematically assess the risk characterisation of the asset. This made ETFs particularly onerous for risk departments to evaluate when updating counterparty collateral schedules and to use by collateral managers. One recent development that aims to address these challenges has been Markit's launch of two ETF collateral lists, one for Equity and one for fixed income, comprising of ETFs that track assets which are already widely accepted as securities lending collateral.

Building a Capital Markets Union – policy measures to support the growth of Euro corporate bond markets

Policy making context

Enhancing the efficiency of public markets offers the greatest potential return in terms of funding opportunities for European companies. Ensuring that markets are structured in a way that provides liquidity – especially in fixed income – will be critical in establishing a firm foundation for a CMU in the EU, creating greater funding opportunities and maintaining the confidence of a broader range of investors in capital markets.

Beyond the accessibility of a constructive means to invest, the CMU framework must restore investor confidence that their capital will be treated fairly. It is imperative to ensure that investor protection is not just a point of sale principle, but that investor capital is protected as it moves through the market. Specifically, lawmakers must ensure that the bailing-in of ailing banks involving individual government action is on terms that are fair and predictable for those investors that have assumed bail-in risk. A failure to protect bondholder rights will ultimately erode market confidence and undermine broader efforts, such as the CMU, to encourage individual investor participation in bond markets.

While considerable reform has been agreed for equity markets (but must be secured fully in implementation), fixed income markets are in need of greater scrutiny. We welcome the European Commission's recently announced review of the functioning of corporate bond markets in the EU as part of the CMU framework. An overarching element of the CMU agenda that also supports the development of the Euro corporate bond market in parallel is the ongoing assessment of the cumulative impact of regulation. The cumulative impact of permanent shifts in regulation impacting banks and market structure, combined with temporary macro-economic factors, have been attributed to reduced secondary market liquidity in global corporate bond markets in recent years.

We view the consequences of bank reform as but one piece of the puzzle of fixed income market liquidity. While reforms have indeed reduced dealer inventories, low interest rates have given rise to record issuance, which has resulted in vast numbers of bonds, further fragmenting liquidity. As banks curtail their market making activities, execution risk is shifting from banks (where they no longer act as principal) and is increasingly borne by end-investors (where the market evolves towards an agency model). These end-investors are the same pensioners and savers who we are asking to commit more capital to markets through the Capital Markets Union initiative – making the efficient functioning of fixed income markets of paramount importance.

Arguably, today there isn't such a thing as a single European corporate bond market. Fragmented and typically bilateral trading presents material barriers to integration, and the inevitable complexity and inefficiency arising from this could manifest itself as a cost to European companies and investors. New issue practices have contributed to a market structure that is inherently illiquid. Companies have tended to issue bonds whenever financing needs arise or opportunities present themselves. As a result, although we observe a generally stable liquidity situation for Euro corporate bonds over recent years, trading and liquidity remains sub-optimally fragmented across thousands of bonds of varying maturities. Delivering MiFID II and MiFIR and ensuring that the provisions relating to post-trade infrastructure connectivity are fully implemented – and where necessary enforced – will go some way to address this situation. But further work will be necessary from both industry and policymakers to ensure that European bond markets can play the role they need to in helping to provide finance.

The current low interest rate, low volatility environment – which has spurred considerable demand for bonds – has masked underlying issues in the corporate bond market in recent years. We have seen decreased secondary market liquidity and a shift from a principal market to an agency market. This means that execution risk has shifted from bank to end-investor. Fragmented liquidity in secondary markets for corporate bonds harms issuers and investor confidence alike.

Developing the Euro corporate bond market

The surge in issuance volumes underscores the major change which bond markets have been undergoing in recent years. Bond funding in many cases has become a notable alternative to the reduction in bank loans. Over time, outstanding debt market volumes in the euro area will probably grow further as the markets take on a bigger role and bank lending a somewhat smaller one. Nevertheless, several factors are impeding this process as well as the further development of corporate bond markets in Europe. These could be addressed with a concerted policy making focus on the following issues:

- **Encourage a larger institutional investor base for corporate bonds.** Recent trends show that euro area corporations tap into debt capital markets as long as investor appetite creates favourable conditions for issuers. To preserve these dynamics, the CMU helps to introduce measures to gradually increase institutional allocations into corporate bonds.

- **Further reduce reliance on credit ratings for insurers where they prohibit a larger allocation to corporate bonds.** For institutional investors such as insurance corporations, this leads to bias towards risk free assets. This is due to current regulatory rules that assign an excessive role to ratings hence forcing institutional investors to hold only government or investment grade corporate debt. The CMU could help institutional investors to widen their corporate bond portfolios by reducing a mechanistic reliance on ratings and by introducing more flexible measures. In addition, by increasing investor demand, these measures should lower the cost of issuing bonds in the long run and would make bond issuance a more robust alternative to bank lending.
- **Harmonise disclosure regimes.** Current inconsistencies in ownership disclosure regimes are an impediment to bond issuance. This issue merits further study under the framework of the CMU. At the moment, disclosure requirements in Europe are governed by different sets of legislation (including Prospectus Directive, Market Abuse Directive and Transparency Directive) which are not well aligned and vary, at times significantly, in their implementation at Member State level. This situation leads to administrative inefficiencies and introduces additional costs for firms that seek bond funding, which may be particularly significant for smaller firms.

Stimulating secondary market liquidity in Euro corporate bonds

Regulation in the form of bank capital and liquidity requirements has strengthened banks – and we believe the impact on market liquidity attributable to new regulation was largely an intended consequence. Furthermore we believe this is only part of the reason for a larger evolution (and indeed that there are great benefits to a resilient banking system). However, we do believe that policymakers need to be aware of the structural evolution of fixed income markets and respond appropriately.

In the short term, we believe that careful calibration of new trading rules, such as MiFID II / MiFIR rules and the forthcoming detailed Central Securities Depositary Regulation (CSDR) rule making on settlement discipline, should at least 'do no harm' to secondary market liquidity. Better still, an investor-centric CMU provides the lens through which to calibrate the new rules to enhance liquidity across asset classes and in particular fixed income.

We also believe that, moving forward, the European Commission has an important role to play to coordinate and monitor steps that the private sector can take collectively to address the liquidity challenge. These steps could include:

- The development and widespread adoption of new and existing products that help market participants address challenges associated with changes in fixed income markets.
- A greater use and acceptance of all-to-all trading venues, where multiple parties, from both the buy side and the sell side, can come together to transact to provide opportunities to increase liquidity.
- The buy side should be encouraged to adapt trading behaviours: to not just be a price taker but also a price maker where it helps end-investors obtain more market liquidity at a better price.
- While liquid (or benchmark) bond issues are less applicable for smaller issuers or those that do not issue bonds frequently, the market would benefit from larger issuers incorporating a greater use of benchmark issues into their capital structures. This could be brought about by large and frequent issuers migrating to more standardised features over time, thereby concentrating liquidity in fewer and less distinct bonds.

Conclusion

To date, the dialogue around bond market liquidity has been focused on dealer inventories, bond issuance, the growth of open-end mutual fund holdings of corporate bonds and hitherto has been focused on an analysis of US TRACE data. As discussed in this *ViewPoint*, while the current dialogue points to factual data, this dialogue does not provide a complete picture of the structure of today's Euro corporate bond markets.

Often the data presented are followed by speculation about one-sided markets developing, fueled by selling from open-end mutual funds and buying from a range of institutions, most notably today the ECB. The context within which today's Euro bond markets are developing is a key consideration. Ongoing deleveraging across the system, to historically low (in some cases negative) interest rates, to fundamental regulatory changes to OTC derivatives markets, to greater use of bond ETFs are all key features that make it necessary to look at additional data to understand what dynamics are developing and to determine appropriate policy responses. This *ViewPoint* highlights several aspects of the Euro corporate bond market that have been missing from the dialogue including:

- The diversity of asset owners, each with unrelated objectives and constraints that result in different investment behaviours in response to changing market conditions.
- Built-in demand for bonds as Central Banks, insurers, and some pension funds must reinvest dividends and principal to keep balance sheet assets invested, in addition to potential demand from insurers and pension funds seeking higher yields when interest rates rise.
- Gradual shift from loans to bonds in euro area compensates for the reduced capacity of banks to provide financing.

- Recognition that some of the record bond issuance is opportunistic, and as the cost of money rises, issuance is likely to decline.
- Meaningful ways that market participants are adapting to structural changes in bond market liquidity, including trading strategies and technology, construction of portfolios, and enhanced liquidity risk management.
- Innovations such as technology that will likely facilitate further development of electronic trading platforms.
- Factors that combine to suppress bond turnover statistics, including the large amount of bonds held by central banks and the increasing appeal of index strategies.
- Important shifts in the holders of euro area mutual funds, such as the growth of institutional investor base, whose assets shift towards greater allocations of fixed income over time and rebalance counter-cyclically based on pre-determined glide path allocations.
- The growing adoption of bond ETFs, which supplement traditional forms of obtaining bond market liquidity through trading of bond ETF shares on equity exchanges.

The Euro corporate bond market plays a central role in financing growth of European companies whilst creating buying opportunities for end-investors globally in an increasingly yield-challenged environment. We believe there is a potential for growing the Euro corporate bond market further, both in terms of the primary and secondary market. We suggest the observations highlighted in this *ViewPoint* could inform the European Commission's work on corporate bond market liquidity and underpin the critically important project of developing a Capital Markets Union in Europe.

Notes

1. Source: Bloomberg, BlackRock. Indices based on BoAML indices: BoAML Euro Corporate Index (EUR investment grade) , BoAML US High Yield Index, BoAML US Corp Master (USD investment grade)
2. Note that TRAX collects transaction reporting data whereas TRACE is a trade reporting engine, the former not giving visibility to blocks traded, just allocations posted. TRAX collecting data at the allocation level could also underestimate actual trade sizes.
3. Greenwich Associates, Greenwich Report Q1 2015: *European Fixed Income: E-Trading Growth Continues*
4. Both MarketAxess and Bloomberg have "dark-pool" trading protocols, through "Private Axes" and "BBX" respectively, both with limited traction.
5. Greenwich Associates, Greenwich Report Q1 2015: *European Fixed Income: E-Trading Growth Continues*.
6. See: https://www.federalreserve.gov/releases/z1/
7. See: http://sdw.ecb.europa.eu/home.do
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11. Setting standards for fixed income ETFs: The fixed income ETF metrics convention. July 2015 https://www.ishares.com/uk/institutional/en/literature/whitepaper/setting-standards-for-fi-etfs-en-emea-pc-whitepaper.pdf
12. See: http://ec.europa.eu/finance/market-liquidity/index_en.htm
13. See: http://ec.europa.eu/finance/consultations/2015/financial-regulatory-framework-review/index_en.htm
14. For more detail on bond market standardisation in the context of a Capital Markets Union see: https://www.blackrock.com/corporate/en-at/literature/whitepaper/viewpoint-cmu-investor-perspective-february-2015.pdf

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APPENDIX: DEFINITIONS

- **European Central Bank (ECB)**: The ECB is one of the EU institutions and is responsible for managing the euro, framing and implementing EU economic and monetary policy. The ECB works with the national central banks of all EU countries. Together they form the European System of Central Banks. It leads cooperation between central banks in the Eurozone. This is referred to as the Eurosystem.
- **European System of Central Banks (ESCB)**: The ESCB comprises the ECB and the national central banks (NCBs) of all EU Member States whether they have adopted the euro or not.
- **Eurosystem**: The Eurosystem comprises the ECB and the NCBs of those countries that have adopted the euro. The Eurosystem and the ESCB will co-exist as long as there are EU Member States outside the euro area
- **Euro area**: The euro area consists of the EU countries that have adopted the euro
- Other **EU institutions** include the European Parliament, European Council, European Council and Council of the European Union. Full list of EU institutions: http://europa.eu/about-eu/institutions-bodies/
- **Monetary Financial Institutions (MFIs)** are credit institutions and other financial institutions whose business is to receive deposits, grant credits and/or make investments in securities. MFIs belong to any of the following sectors: Central Banks: i.e. national central banks of the EU Member States and the European Central Bank (ECB), credit institutions, other deposit taking corporations and Money market Funds (MMFs)
- **Insurance corporations and pension funds (ICPFs)**. Insurance corporations comprise both insurance (life and non-life) and reinsurance types of business. Pension funds consist only of those pension funds that are institutional units separate from the units that create them. Social security schemes are not included in this definition. The reporting population comprises all ICPFs located in the euro area, including ICPFs which are foreign-owned subsidiaries or branches of foreign entities. Branches and subsidiaries abroad of domestically owned entities are not included.
- **Investment funds** are collective investment undertakings that invest in financial and non financial assets. Investment funds include open ended and closed ended funds. Not included in the definition of investment funds are pension funds and money market funds (which come under the MFIs).
- **US Federal Reserve**: The Federal Reserve System, also known as the Federal Reserve or simply the Fed is the central banking system of the United States.
- **Market liquidity**: Generally refers to the degree to which an asset can be bought or sold in the market without affecting the asset's price.
- **Over the Counter (OTC) market**: A decentralized market, without a central physical location, where market participants trade with one another through various communication modes such as the telephone, email and proprietary electronic trading systems
- **Quantitative Easing (QE):** An unconventional form of monetary policy where a central bank introduces new money into the money supply through a series of financial assets purchases (asset purchase programmes), mainly government bonds. This process aims to directly increase private sector spending in the economy and return inflation to target
- **Bail-in risk**: To avoid publicly financed rescues for big banks that that come close to failure, regulators globally have drawn up rules that would dictate when and how bank investors would absorb losses. Some bondholders would be "bailed in," meaning banks would be helped by, for example, writing off those bonds.
- **Credit Default Swaps (CDS) index**: This is a credit derivative used to hedge credit risk or to take a position on a basket of single name credit entities. Unlike a credit default swap, which is an over the counter credit derivative, a credit default swap index is a standardised credit security and may therefore be more liquid.
- **Repo**: Repo is a generic name for repurchase agreements. In a repo, one party sells an asset (usually fixed income securities) to another party at one price at the start of the transaction and commits to repurchase the fungible assets from the second party at a different price at a future date. If the seller defaults during the life of the repo, the buyer (as the new owner) can sell the asset to a third party to offset his loss. The asset therefore acts as collateral and mitigates the credit risk that the buyer has on the seller.

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