



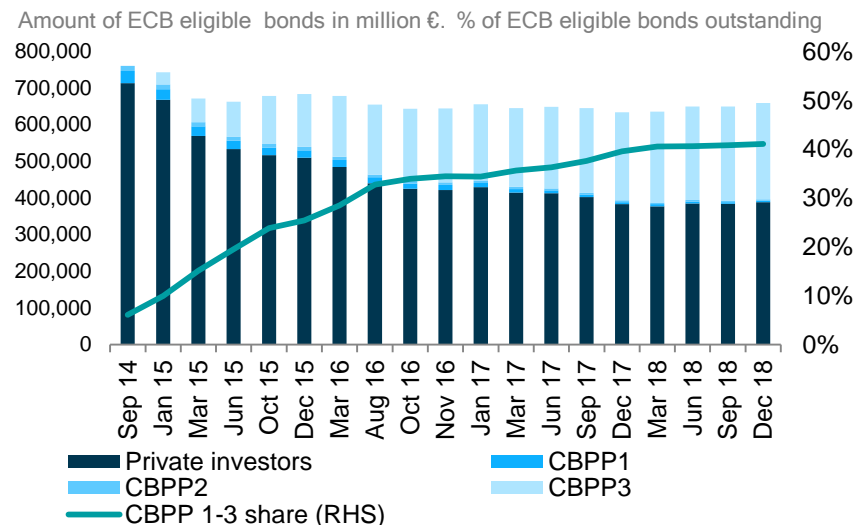
LIQUIDITY IN EURO AREA BOND MARKETS AND THE MARKET IMPACT OF THE END OF NET PURCHASES OF THE APP ECB BMCG, 12th February 2019

Oliver Eichmann (DWS)

LIQUIDITY IN EURO AREA BOND MARKETS AND THE MARKET IMPACT OF THE END OF NET PURCHASES OF THE APP

Euro Covered Bonds - Market Structure Developments

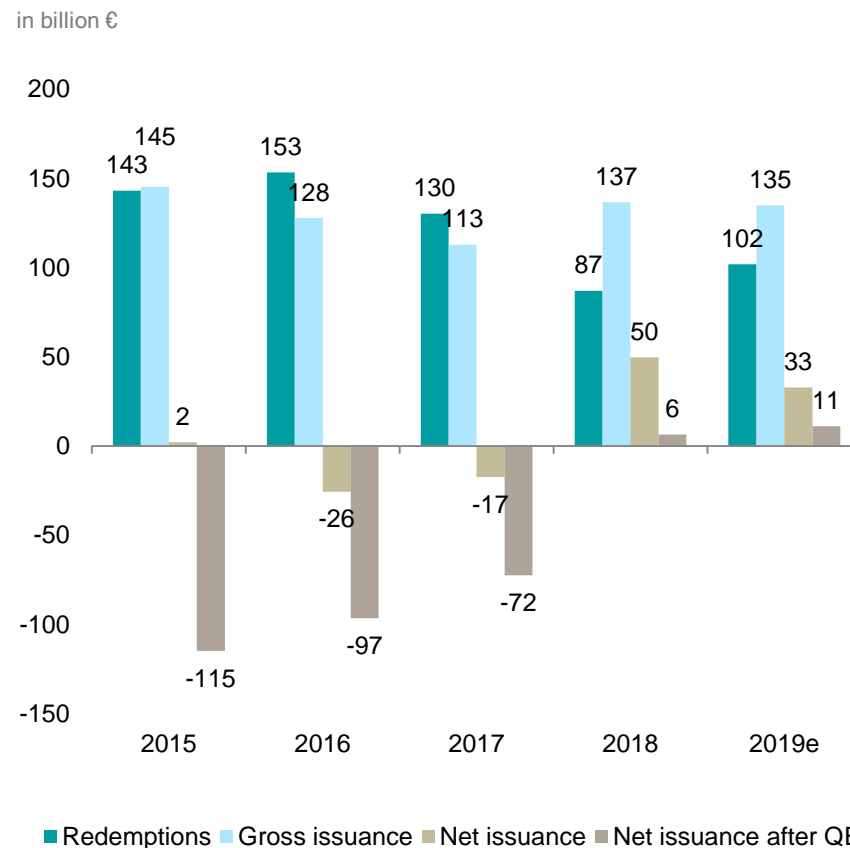
COVERED BOND INVESTOR BASE AND ESCB'S MARKET SHARE



Source: Credit Agricole, as of January 2019

- _ Covered Bond market structure has changed since the start of CBPPs.
- _ The ESCB has become the dominant buyer. The investor base in this market segment changed over time
- _ With a market share of around 40% and the persistent presence of central banks in these markets the bargaining power of sellers relative to buyers has significantly changed

NET NEW ISSUE DEVELOPMENTS & INFLUENCE OF THE ESCB

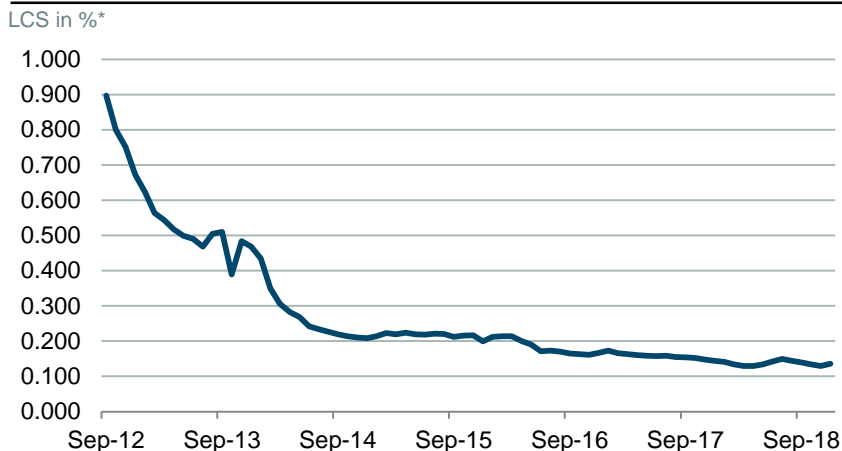


Source: Credit Agricole, as of January 2019

LIQUIDITY IN EURO AREA BOND MARKETS AND THE MARKET IMPACT OF THE END OF NET PURCHASES OF THE APP

Euro Covered Bonds – Transaction Costs in a Changed Market Structure

LIQUIDITY COST INDICATOR® - DECLINING TRANSACTION COSTS

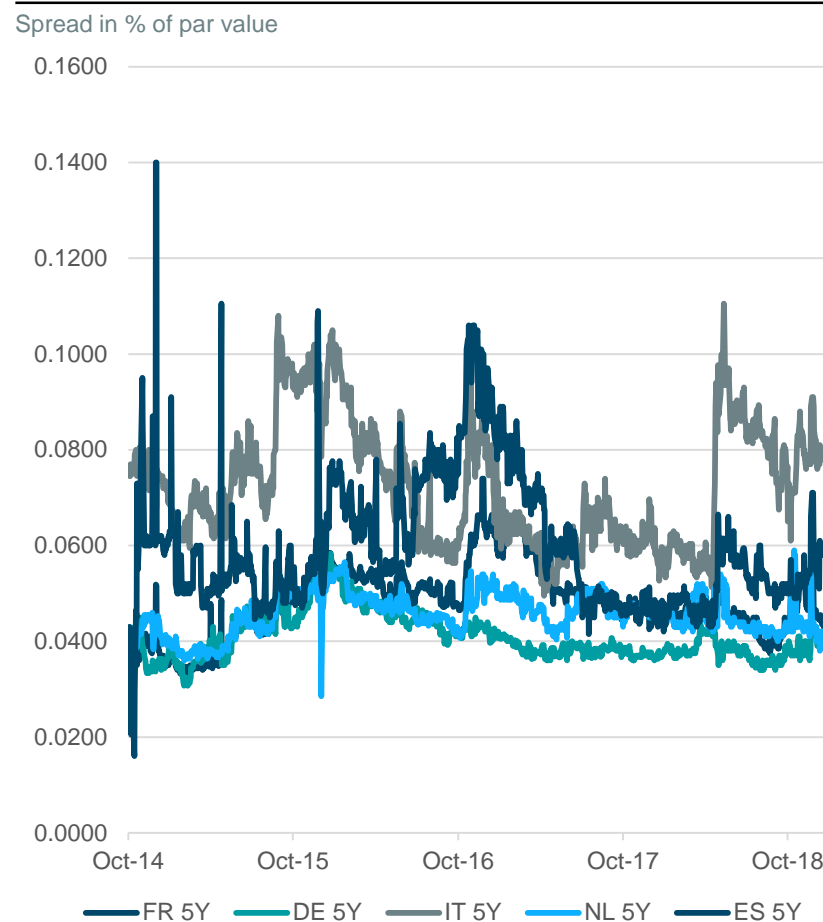


LCS=(Ask price –Bid price)/ Bid-price — LCS Euro Covered

Source: Barclays Bank, as of January 2019

- _ Transaction cost measures such as Bid-Ask spreads and liquidity cost scores signal no deterioration in the overall liquidity situation, rather the opposite
- _ The length and size for the CBPP programs suggest that the covered bond market has become a „sellers market“
- _ Anecdotal evidence suggests that while the overall liquidity premiums have been reduced it became more difficult for potential investors to source bonds (at least without increasing market prices significantly)

BID-ASK SPREADS FOR 5 YEAR COVERED BONDS



Source Credit Agricole, as of January 2019

LIQUIDITY IN EURO AREA BOND MARKETS AND THE MARKET IMPACT OF THE END OF NET PURCHASES OF THE APP



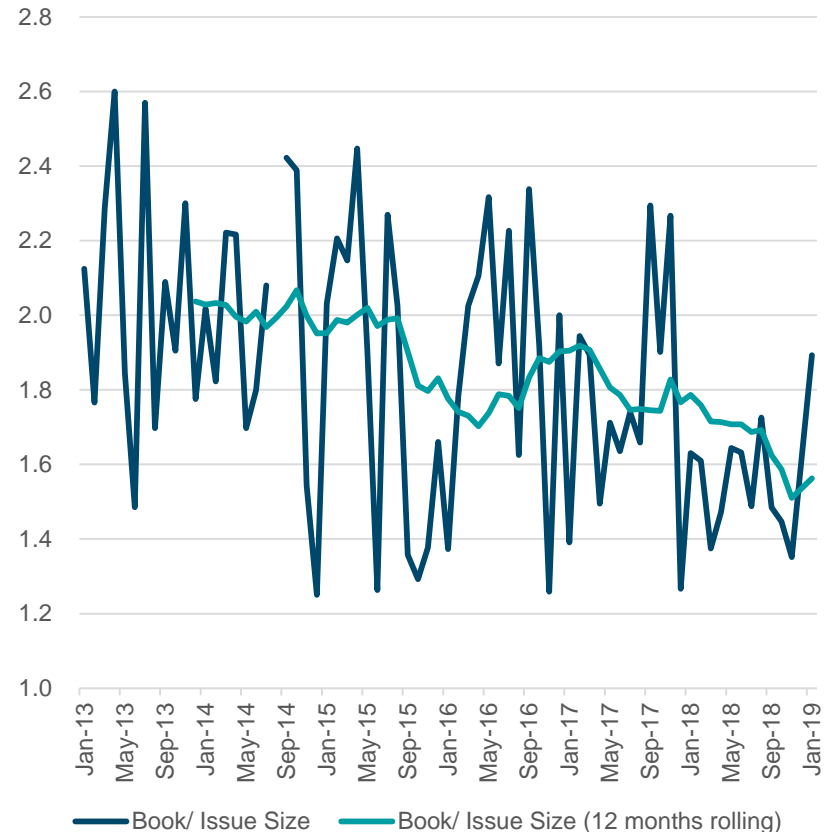
Euro Covered Bonds – Trading Volume in a Changed Market Structure

TRADING VOLUME VERSUS OUTSTANDING DECLINED OVER TIME

BOOK TO ISSUE SIZE FELL DESPITE ESCB BUYING



Source: Commerzbank, TRAX as of January 2019



Source: Credit Agricole, as of January 2019

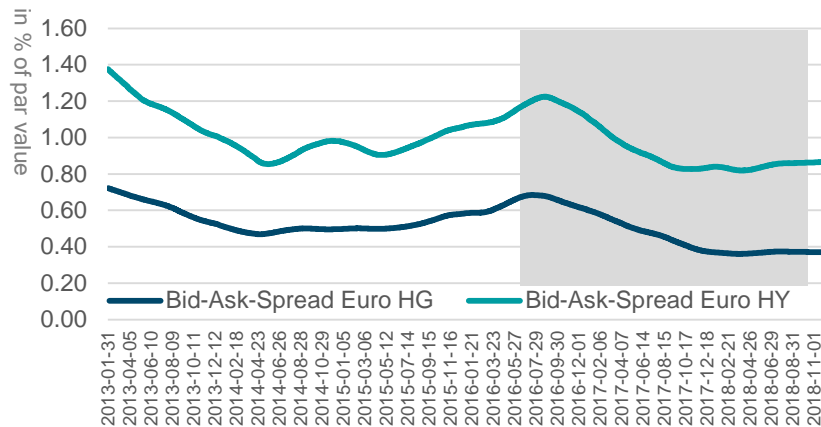
- _ Volume based measures such as trading volume and book/issue size suggest a reduction in liquidity
- _ This measure could also point to a „crowding-out“ of „typical“ covered bond investors that left the market as a result of a less attractive risk-return profile
- _ Evidence of strategic decisions by institutional investors to reduce covered bond holdings significantly should be taken into account when ending the CBBP program
- _ Studies provide evidence of negative effects on market functioning by reducing the amount for tradable securities in the context of Fed’s purchases of MBS **.

** Kandrak, J. & Schlusche, B. „Flow Effects of Large-Scale Asset Purchases“, Economic Letters, 2013

LIQUIDITY IN EURO AREA BOND MARKETS AND THE MARKET IMPACT OF THE END OF NET PURCHASES OF THE APP

Corporate Bonds – Liquidity & Spread Developments

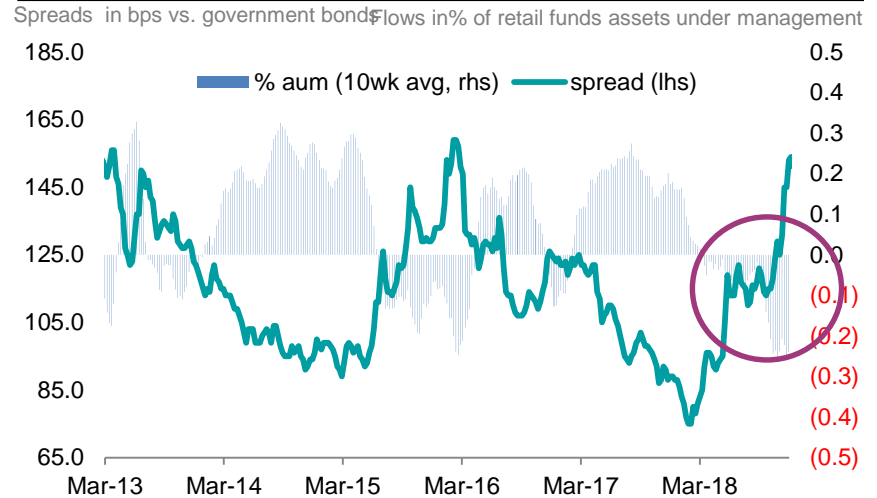
BID-ASK SPREAD EURO-CORPORATE BOND MARKET



Grey shaded area - ECB Corp Sector Purchase Program, net purchases ended December 31st 2018, Source: Market Access, 01.2019

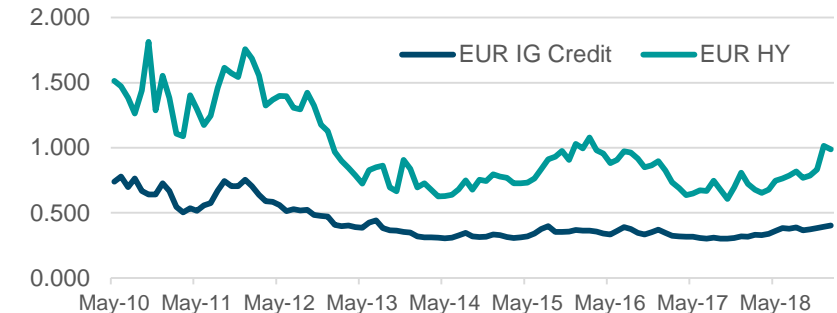
- Transaction cost indicators do not signal a material shift in corporate credit liquidity
- Spread widening in Q4 2018: Did spread widening trigger outflows? Anecdotal evidence suggest that secondary market depth in Euro IG was rather low during this phase with generous pick-ups in spreads of new issues versus outstanding bonds
- Re-balancing of fixed-income portfolios toward higher yielding assets might trigger outflows in a more volatile environment

FLOW MOMENTUM TURNED NEGATIVE IN 2018



Source: DWS Investment, Bank of America, as of January 2019

LIQUIDITY COST SCORE® – EUR IG & EUR HY



Source: Barclays Bank PLC, as of January 2019

LIQUIDITY IN EURO AREA BOND MARKETS AND THE MARKET IMPACT OF THE END OF NET PURCHASES OF THE APP



Price Based Measures – Liquidity Premiums & QE – Empirical Findings

US-TIPS & INFLATION SWAP MARKET* (2010/2011)

- _ Study on the Fed's second QE program (November 2010 to June 2011) for Treasury inflation protected securities (TIPS) and inflation swap contracts
- _ Study results suggest that TIPS purchases temporarily reduced liquidity premiums in the market for TIPS
- _ "Event study analysis demonstrates the purchases persistently depressed the liquidity-premium measure by an average of about 10 basis points for the duration of the QE program". This is a reduction of the liquidity premiums of almost 50% from pre QE2 levels
- _ Explanation: QE reduces price frictions in less liquid markets as the persistent presence of central banks increases bargaining power of sellers relative to buyers - this lowers liquidity premiums
- _ Liquidity premium effects dissipated towards the end of QE2 purchases. Does this imply that the end of the net asset purchases by the ESCB will lead to a similar rise in the liquidity premium of the relevant markets?

EURO-PERIPHERY SOVEREIGN DEBT MARKET (2010)***

- _ Study on the effects of the ECB's purchases of peripheral sovereign European debt through its Securities Markets Program
- _ Bonds relative liquidity premiums are measured by comparing prices for sovereign bonds and CDS written on those bonds
- _ "We find that an official purchase of 1% of sovereign bonds outstanding lowers liquidity premium by 32-40 bps on impact, 13-17 bps of which is lasting"
- _ If this finding can be transferred to the Public Sector Purchase Program it would imply that even after the end of net new purchases the liquidity premiums would be persistently lower compared to the status quo ante, especially as reinvestments continue and the stock of purchases is unchanged

*Christensen J.H.E. & Gillian, J.M. „Does Quantitative Easing Affect Market Liquidity?“, San Francisco Fed, September 2018

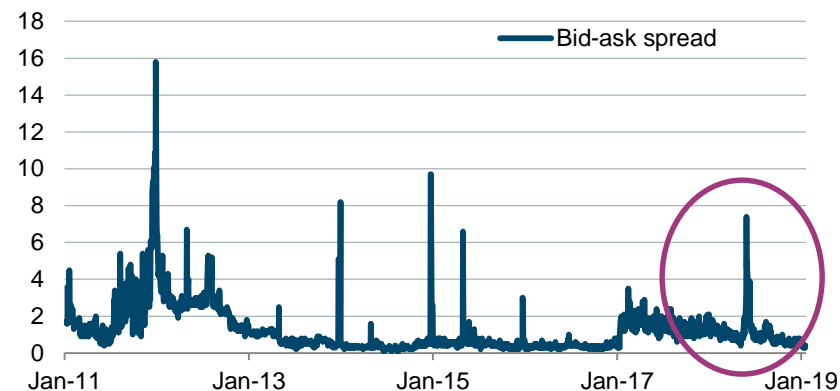
*** De Pooter, M., Martin, Robert, F.M., Pruitt, S., „The Liquidity Effects of Official Bond Market Intervention“, Journal of Financial and Quantitative Analysis, February 2018

LIQUIDITY IN EURO AREA BOND MARKETS AND THE MARKET IMPACT OF THE END OF NET PURCHASES OF THE APP

Focussing on Tails Events – Liquidity in Market Stress Phases

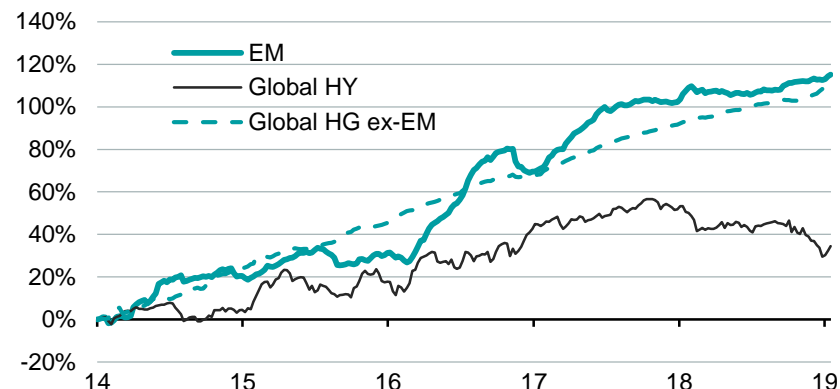
- _ Flow momentum in “riskier” parts of fixed-income is positive since several years
- _ This is probably partly due to negative risk-free rates and central bank forward guidance (portfolio rebalancing channel)
- _ Additionally the ESCB is an increasingly dominant market participant in several market segments under the asset purchase programs
- _ A less experienced and more homogeneous investor base might follow a similar behavior which could potentially amplify a “sell-off” in times of market stress (“Herding”)
- _ Reduced dealers balance sheet and a higher proportion of e-trading might increase illiquidity in times of market stress further
- _ Example: “sell-off” in BTPs on the 29th / 30th of May 2018, especially shorter-dated bonds. Was the “sell-off” amplified by the fact that buying shorter-dated BTPs has been a “crowded-trade”?
- _ According to Tradeweb the ticket non-quote rate for the entire Tradeweb market for Italian government bonds was 47% (30th May 2018)

SPIKE IN BTP BID-ASK SPREAD END OF MAY 2018



Source: Citigroup, as of January 2019

STRONG FLOW MOMENTUM INTO FIXED INCOME ETF



Source: Citigroup, as of January 2019

LIQUIDITY IN EURO AREA BOND MARKETS AND THE MARKET IMPACT OF THE END OF NET PURCHASES OF THE APP



Topics to Discuss

- _ What is a proper measure of market liquidity especially in times of market stress?
- _ Will the change in market structure as a result of central bank purchases increase the risk of liquidity-shortfalls once the ESCB stops asset purchases (e.g. Euro covered bond market)?
- _ If central bank asset purchase programs help to lower the liquidity premiums in the respective markets? Does this mean the end of central bank purchases will revert this completely? Or is there a persistent effect due to changes in the market structure and investor behavior?
- _ Is there a change in the investor base in several market segments e.g. Euro corporate bonds as a result of the low yield environment and the ECB's forward guidance? If so, does this increase the risk of pro-cyclical behavior especially in times of stress?
- _ How do participants see the electronic trading in the context of liquidity?

IMPORTANT INFORMATION

Germany



This marketing communication is intended for professional clients only.

DWS is the brand name under which DWS Group GmbH & Co. KGaA and its subsidiaries operate their business activities. Clients will be provided DWS products or services by one or more legal entities that will be identified to clients pursuant to the contracts, agreements, offering materials or other documentation relevant to such products or services.

The information contained in this document does not constitute investment advice.

All statements of opinion reflect the current assessment of DWS Investment GmbH and are subject to change without notice.

Forecasts are not a reliable indicator of future performance. Forecasts are based on assumptions, estimates, opinions and hypothetical performance analysis, therefore actual results may vary, perhaps materially, from the results contained here.

Past performance, [actual or simulated], is not a reliable indication of future performance.

The information contained in this document does not constitute a financial analysis but qualifies as marketing communication. This marketing communication is neither subject to all legal provisions ensuring the impartiality of financial analysis nor to any prohibition on trading prior to the publication of financial analyses.

This document and the information contained herein may only be distributed and published in jurisdictions in which such distribution and publication is permissible in accordance with applicable law in those jurisdictions. Direct or indirect distribution of this document is prohibited in the USA as well as to or for the account of US persons and persons residing in the USA.

DWS Investment GmbH as of 1/18/19