



Monitoring and assessment of bond market depth and liquidity

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Liquidity: Recent developments

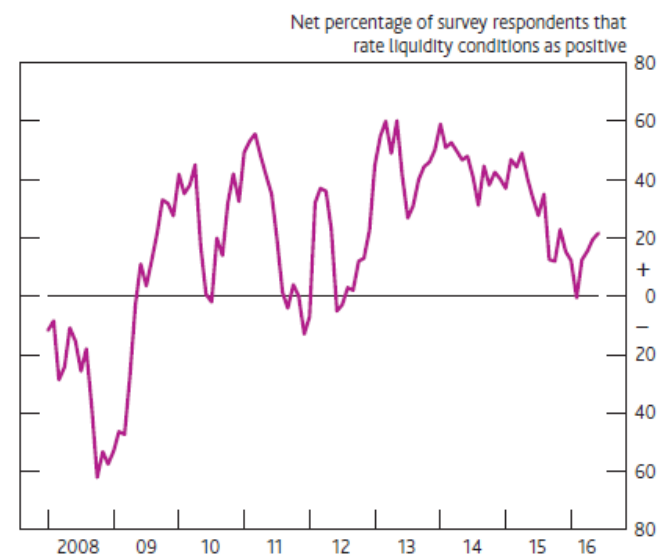
Barclays LCS Report – September 2016

Non-credit LCS, %

| Index | Current Month | -1m | -3m | -6m | -12m | -24m |
|--------------------------|---------------|-------|-------|-------|-------|-------|
| USD Treasury | 0.028 | 0.029 | 0.031 | 0.034 | 0.033 | 0.030 |
| USD TIPS | 0.207 | 0.214 | 0.315 | 0.295 | 0.219 | 0.167 |
| USD MBS | 0.109 | 0.118 | 0.131 | 0.117 | 0.115 | 0.111 |
| EUR Treasury | 0.095 | 0.097 | 0.119 | 0.113 | 0.109 | 0.080 |
| UK inflation-linked | 0.231 | 0.249 | 0.289 | 0.242 | 0.224 | 0.309 |
| Germany inflation-linked | 0.239 | 0.245 | 0.446 | 0.247 | 0.260 | 0.260 |
| France inflation-linked | 0.269 | 0.257 | 0.462 | 0.272 | 0.304 | 0.361 |
| Italy inflation-linked | 0.461 | 0.433 | 0.588 | 0.514 | 0.486 | 0.346 |
| Asia Pacific Treasury | 0.207 | 0.154 | 0.138 | 0.132 | 0.116 | 0.161 |

A bond's Liquidity Cost Score (LCS) represents the cost of immediately executing a round trip transaction for a standard institutional trade

BofA Merrill Lynch survey (liquidity conditions)

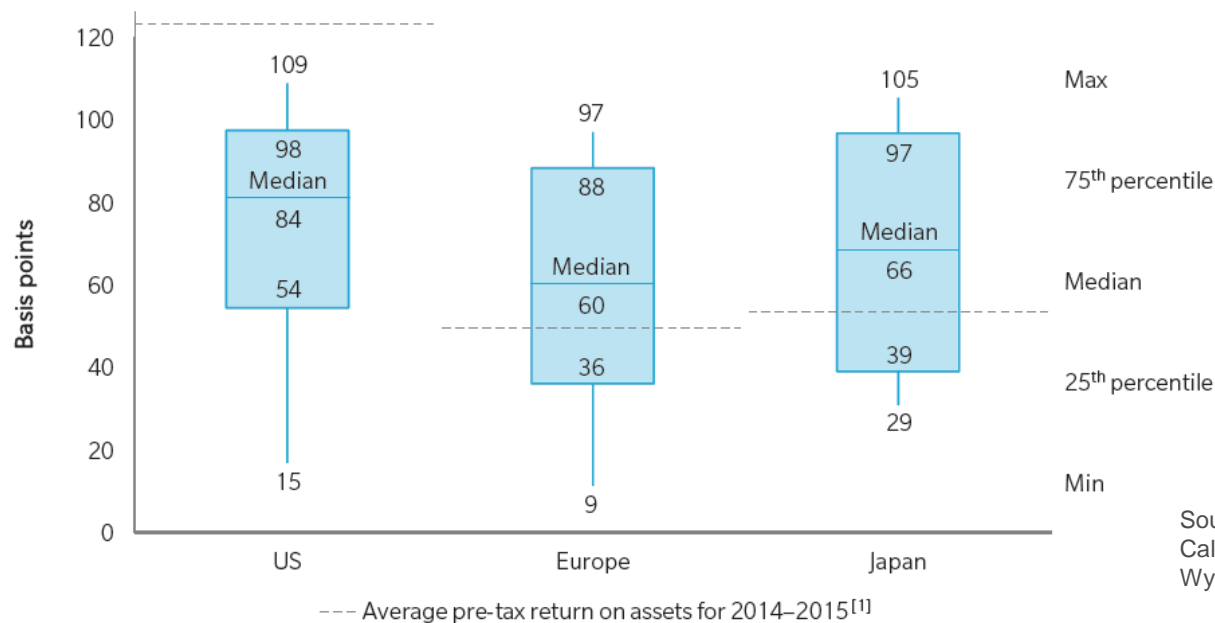


Source: BofA Merrill Lynch Global Fund Manager Survey.

Survey question asked: 'How would you rate liquidity conditions (eg depth of markets narrowness of bid-offer spreads, ease of execution, etc.) at this time?'

Capital & Liquidity Regulation: impact on Real Economy via Market Liquidity & other channels

Gross impact of Regulatory Reforms on Bank Funding Costs (summary of academic studies)



Source: **Oliver Wyman** (Interaction, Coherence and Overall Calibration of post crisis Basel reforms, 2016), SNL, Oliver Wyman analysis

- Increase in Transaction Costs, reduced ability of end users to hedge market risks without time lag and/or market impact.
- More risk passed on to end users (Liquidity Gap)
- Higher liquidity premia for most issuers.
- Lending Channel: increased price of credit from banks raising capital and TLAC levels (assuming pass-through of funding costs).

The Liquidity Gap Infographic I - More risk may be passed on to investors



Barclays Research Insights on The Liquidity Gap

The decline of fixed income liquidity in 2015 can be seen as a gap between supply and demand. Banks are supplying less liquidity, yet investors are still demanding more of it. The result? Potentially severe losses in fixed income.



LIQUIDITY:

The ease of trading a financial security quickly, efficiently and at a reasonable price.

The liquidity gap creates a transfer of risk.

After the 2008 financial crisis, new global bank regulations were passed.

Regulations, such as the Supplemental Leverage Ratio (SLR), were implemented to improve stability in the financial markets. These have addressed many safety issues, but they have also changed the way banks operate.



The repo market shrinks.

Regulators are concerned that banks are too reliant on short-term funding, such as repo (repurchase agreements). The Supplemental Leverage Ratio makes repo more expensive.



Source: Barclays Research



The Liquidity Gap Infographic II - More risk may be passed on to investors

Investors want more safe, short-term assets.

But the traditional sources are increasingly unavailable. Instead, investors turn to investments that offer daily liquidity.

Since 2009, there has been **\$1.2 TRILLION** in inflows into fixed income mutual funds.

Source: Lipper

What are the potential risks?

Open-ended mutual funds depend on the liquidity of underlying fixed income assets, which has declined due to pressure on the repo market.

1 Poor liquidity in the underlying bond market.

2 Sustained outflows lead to price decline.

3 Severe losses in fixed income.



More risk may be passed on to investors.

Investments in mutual funds involve added risk, where such funds hold underlying investments in potentially illiquid fixed income assets, such as corporate bonds.



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Source: "The decline in financial market liquidity," prepared by Jeff Meli, Co-Head of Barclays Research Department.

* See The Liquidity Gap Glossary on barclays.com/IB for full definition.

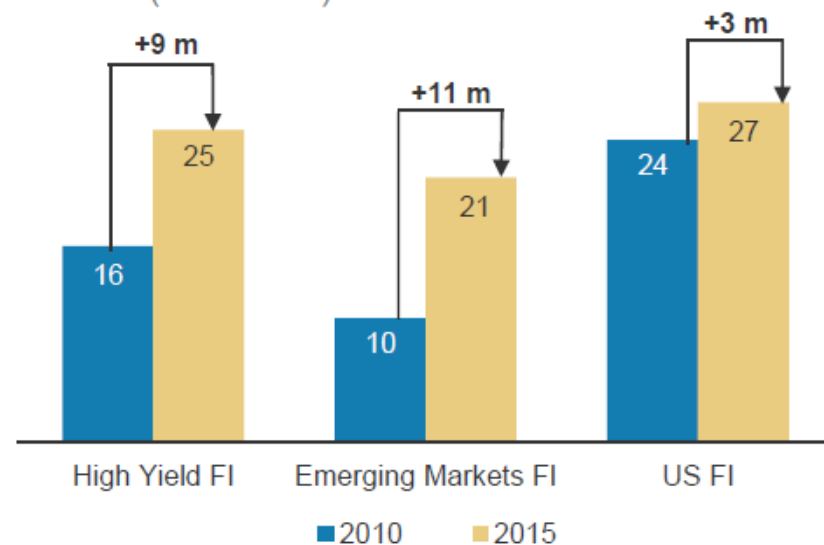
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Source: Barclays Research

Real money investors adapting to liquidity conditions

- Asset Manager holding period has increased – a reaction to (1) trade sizes decreasing and (2) market impact of trades increasing?
- QE: reduced impact on volatility around market events?
- QE: back-stop also leading investor comfort with risk, and longer holding periods?
- Increased end user focus on market structure:
 - MiFID II: high impact on buy-side (especially relative to other recent regulatory changes)
 - Asset manager focus on technology and/or new ECNs as a source of liquidity
 - Order Management Systems (OMS) development
- Extension of regulatory framework & calibration issues

Asset manager average asset holding period, 2010-2015
(# months)



1. Holding period is calculated as $1 / \text{turnover-ratio}$, and the average is absolute for all of the funds in the asset class that have been open from 2010 to 2015.

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