



Banc Ceannais na hÉireann  
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# Liquidity Analysis of Bond and Money Market Funds

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This presentation reflects a paper developed by the presenter with Naoise Metadger MRA SMSD. The views expressed are solely the views of the author(s) and are not necessarily those held by the Central Bank of Ireland or the European System of Central Banks (ESCB).

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## Main Finding

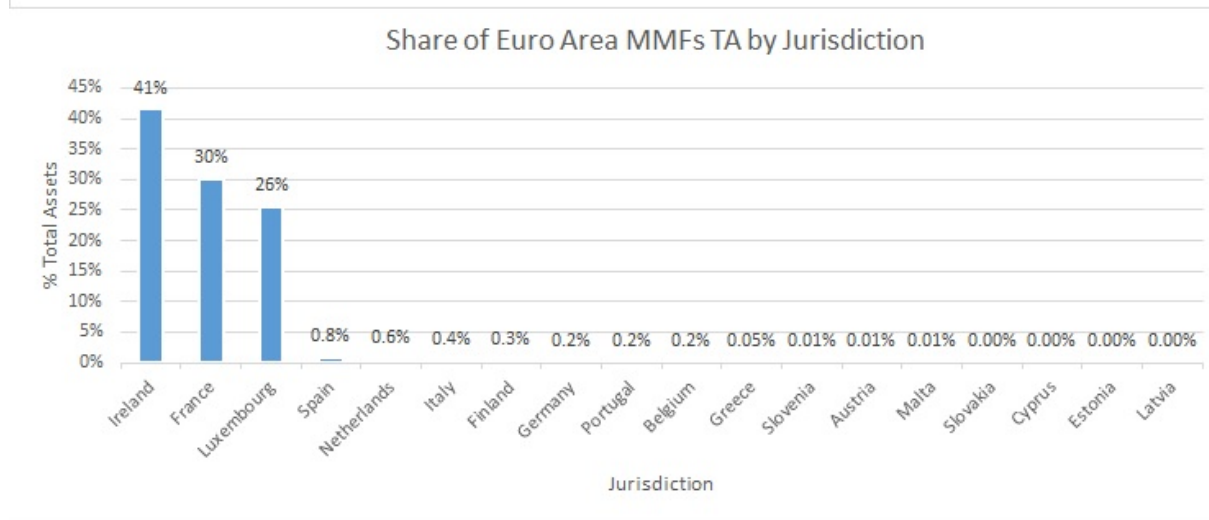
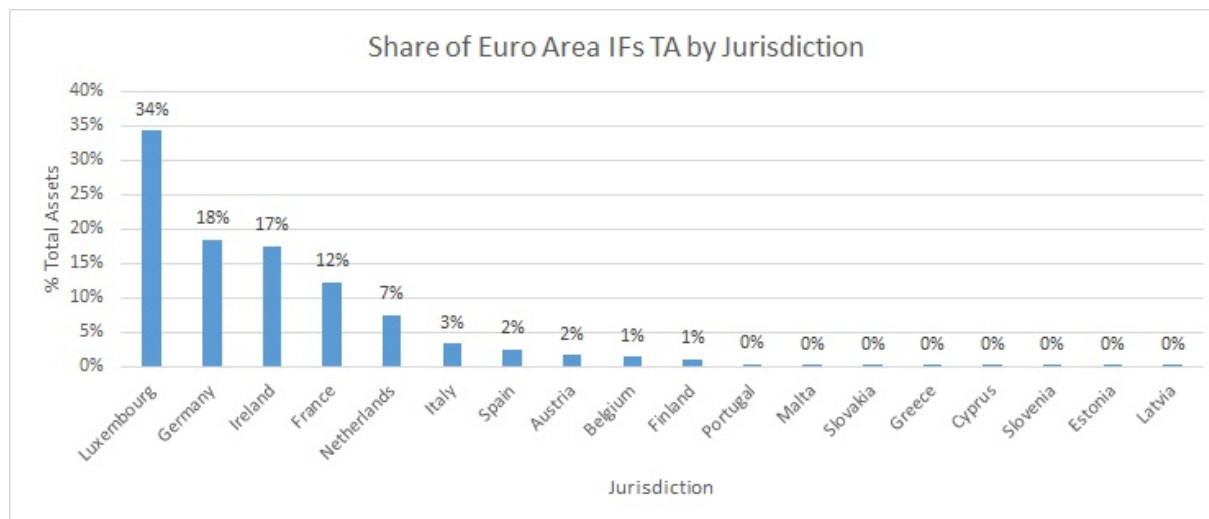
- Applying HQLA and LCR approach to investment funds has mixed results: It appears useful for MMFs and Advanced Sovereign Funds but not so useful for Advanced Financial and High Yield Funds.
- The ratings and haircuts approach to estimating liquidity may not be the most appropriate method for these entities.



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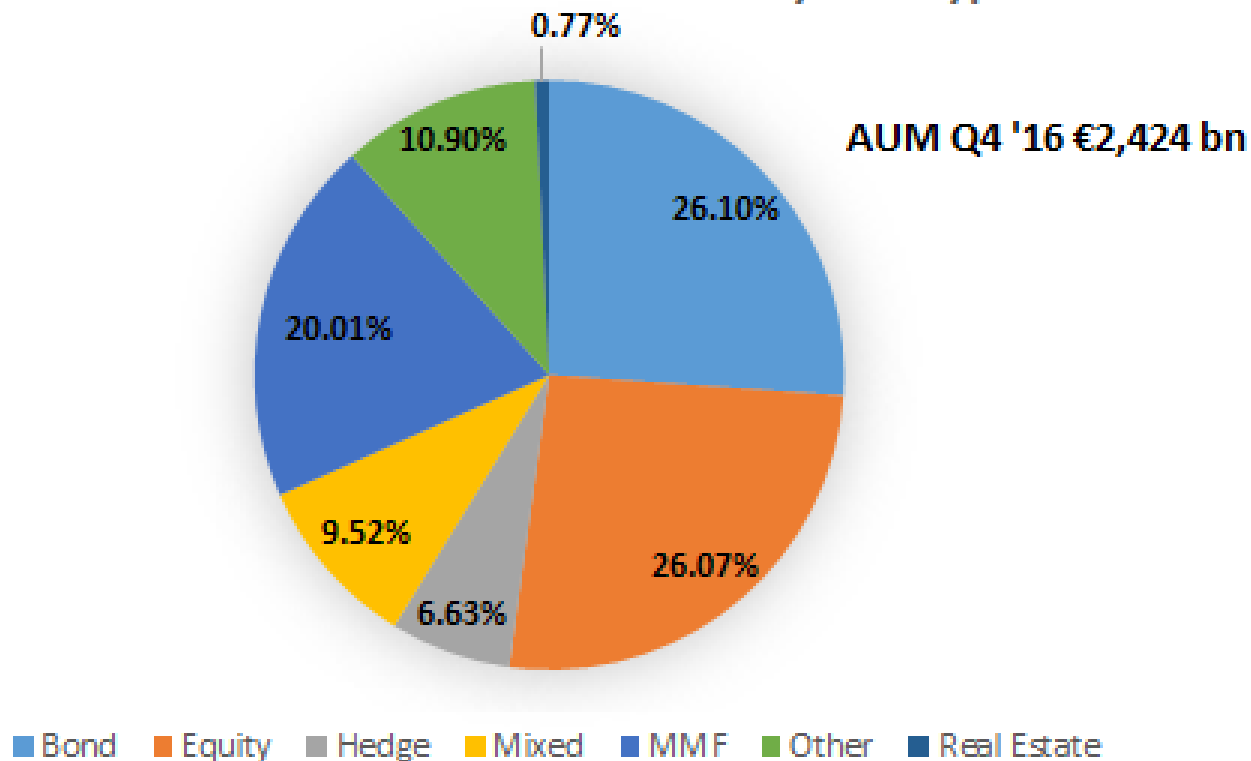
## Shadow banking: Bond and money market funds

- Brunnermeier and Pedersen (2009), feedback loops
- Chen, Goldstein and Jiang (2010), fire sales of assets
- Ansidei et al (2012) MMFs are a contagion channel, amplifying systemic risk
- IMF FSAP (2016) Monitoring of liquidity in MMFs and IFs
- FSB (2017): risks include liquidity transformation, maturity transformation, leverage, improper credit risk transfer and interconnectedness





### Breakdown Irish domiciled funds by fund type







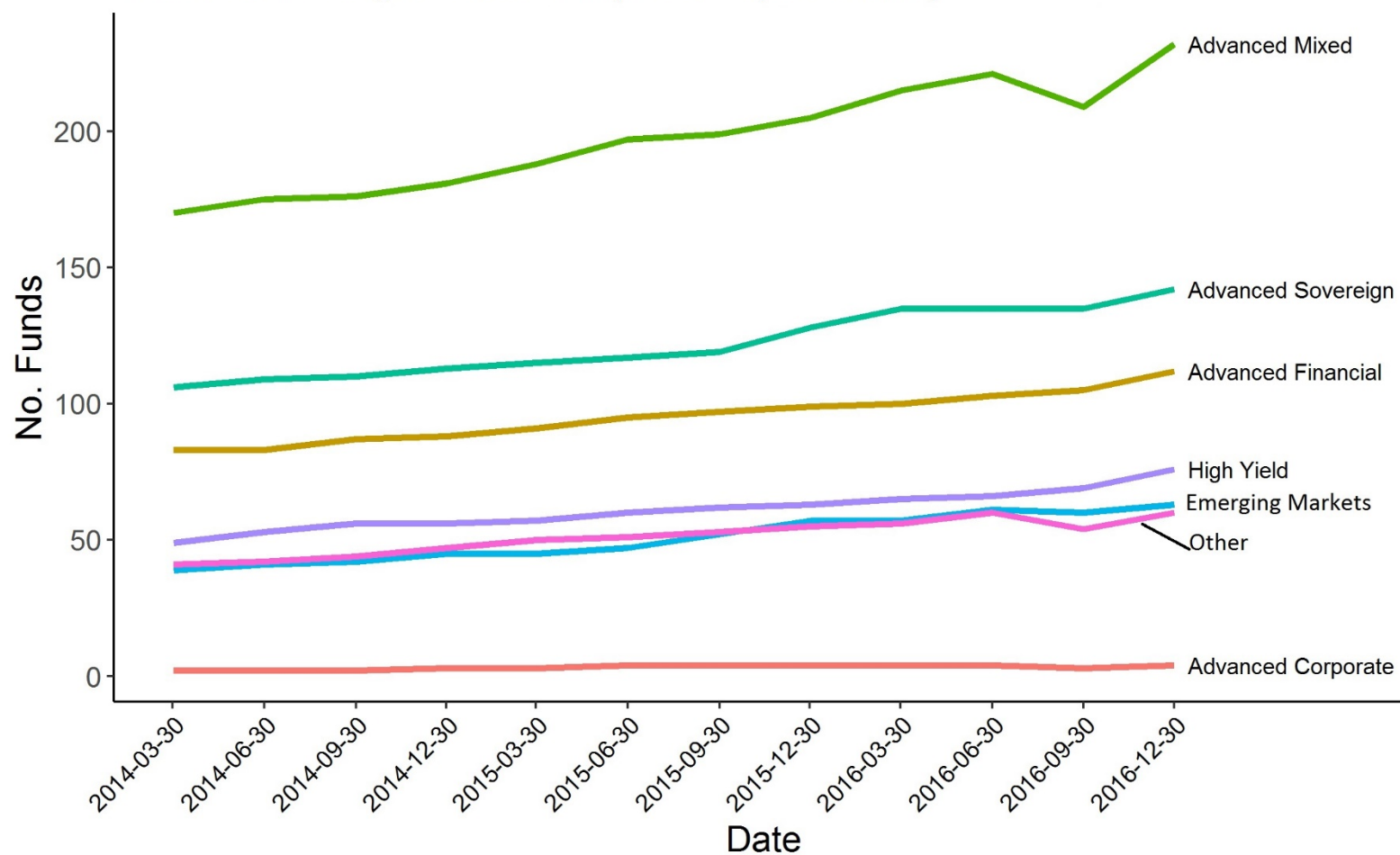
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## 7 categories of funds (> 70 % in that category)

1. Advanced Sovereign
2. Advanced Financial
3. Advanced Corporate
4. Advanced Mixed
5. Emerging Markets
6. High Yield
7. Other



Bond Fund Categorisation Sample Size (No. Funds)





## Proto type 101: HQLA\* based liquidity test

- **Level 1 : 0% haircut:**
  - Cash and cash equivalents, debt securities maturing within the stress period and debt securities issued or guaranteed by sovereigns, central banks, the BIS, the IMF, multilateral development banks and the European Community with a credit rating of at least AA-
- **Level 2a : 15% haircut:**
  - Debt securities issued by or guaranteed by sovereigns, central banks, the BIS, the IMF, multilateral development banks and the European Community with a credit rating between A+ and A- and corporate debt securities **not issued by financial institutions**. Includes commercial paper and covered bonds with credit rating of at least AA-
- **Level 2b : 50% haircut:**
  - Corporate debt securities not issued by financial institutions. Includes commercial paper and covered bonds with credit rating between A+ and BBB- and common equity shares in advanced economies which are **not issued by financial institutions**.
- \*The above HQLA levels are adapted from the BCBS (2013) definition.





## Liquidity Coverage Ratio

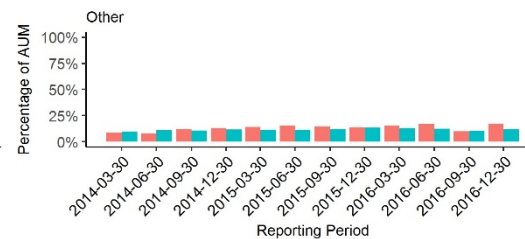
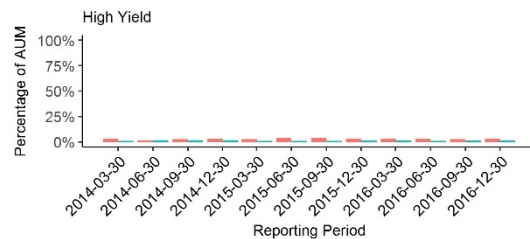
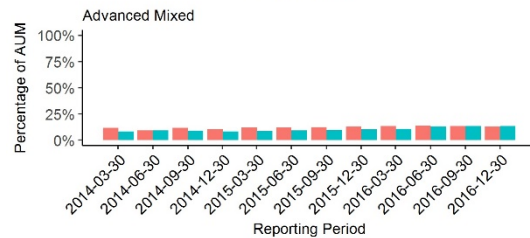
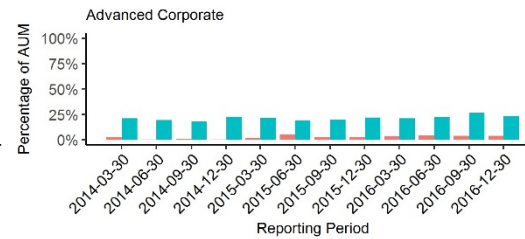
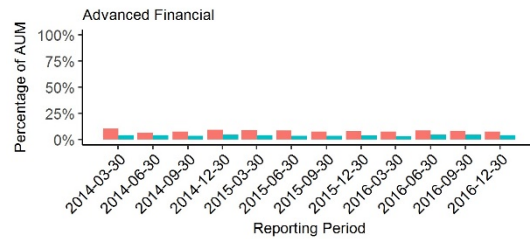
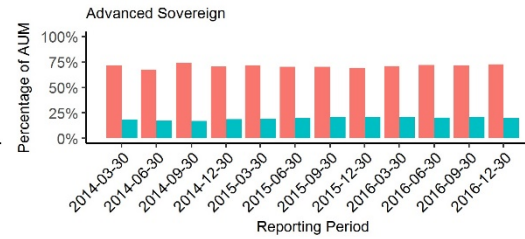
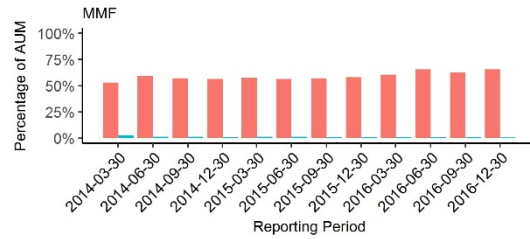
- $$\text{LCR} = \frac{\text{High Quality Liquid Assets}}{\text{Expected Monthly Stressed Outflows}}$$
- LCR < 1 could be a flag for supervisors?
- Note : assumes waterfall rather than pro rata approach – this may not be realistic



## Table 1: Monthly Redemption Shock\* (% NAV)

Category	1 <sup>st</sup> Percentile (%)	5 <sup>th</sup> Percentile (%)
MMF	-9.2	-2.9
Advanced Sovereign	-3.2	-2.1
Advanced Financial	-5.4	-3.0
Advanced Corporate	-12.2	-4.3
Advanced Mixed	-6.1	-2.7
Emerging	-5.6	-2.5
High Yield	-8.4	-4.8
Other	-10.2	-2.9

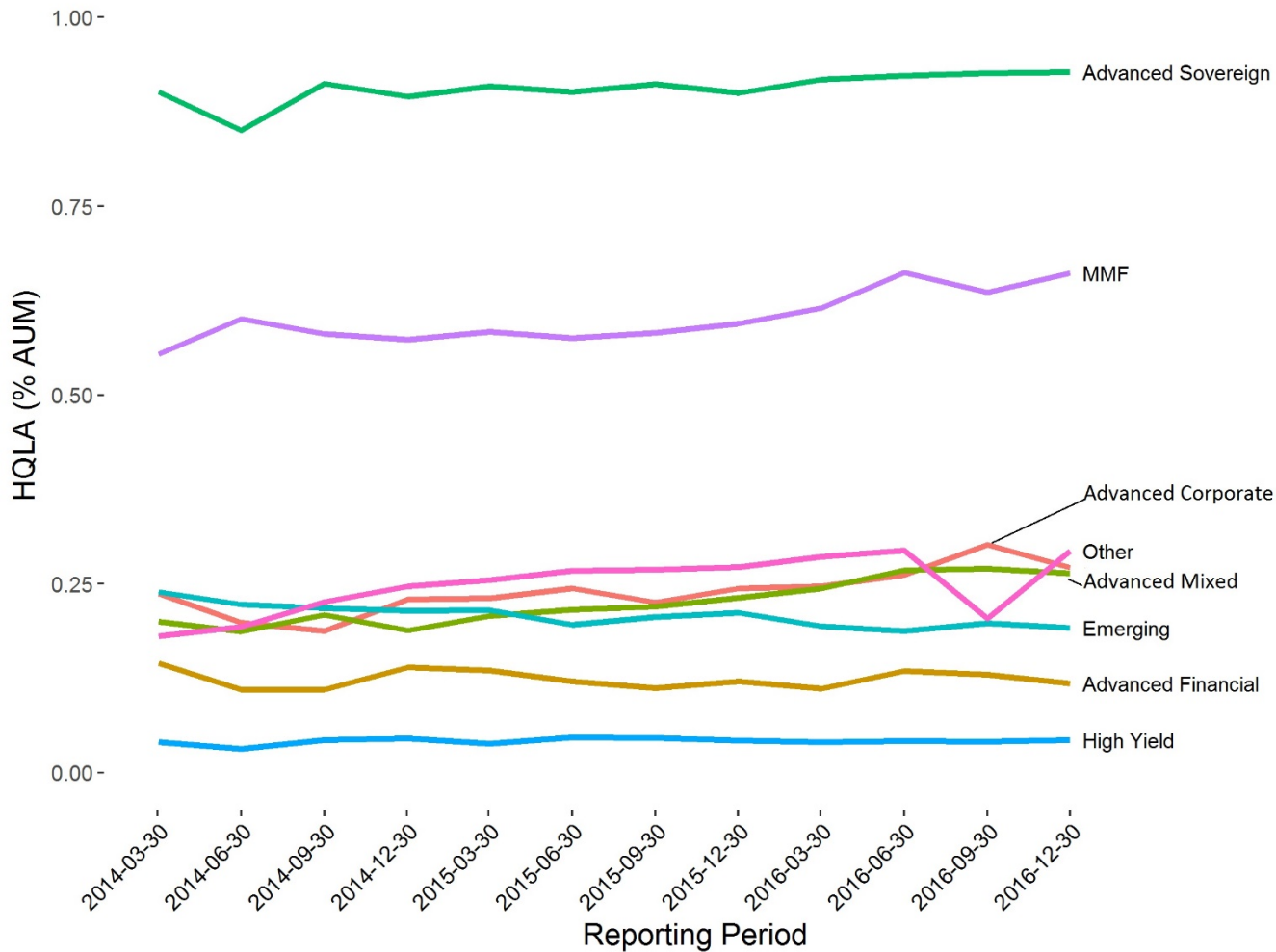
\* Weighted average monthly redemption from Jan 2007 to Dec 2016



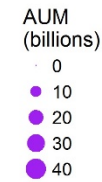
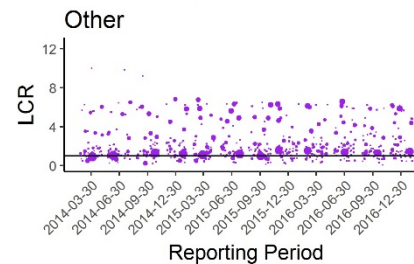
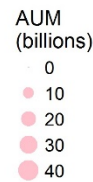
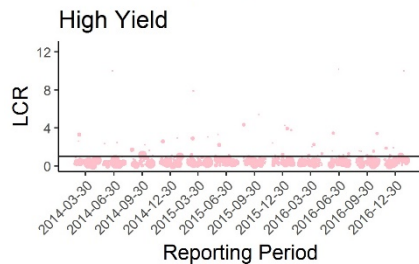
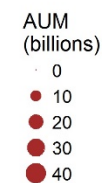
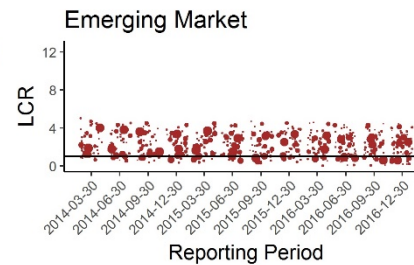
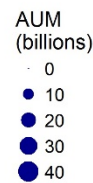
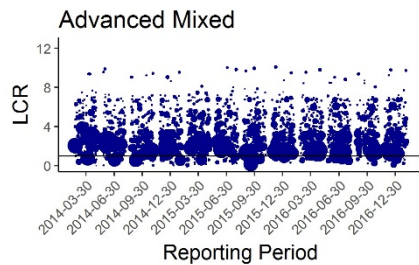
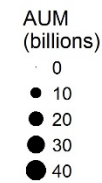
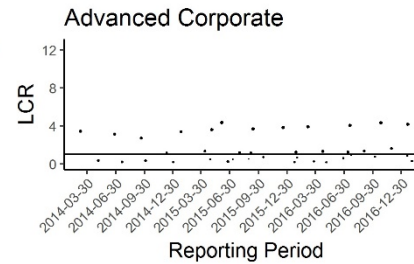
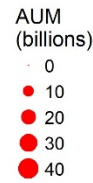
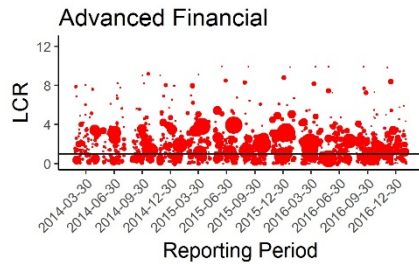
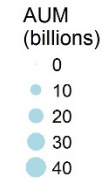
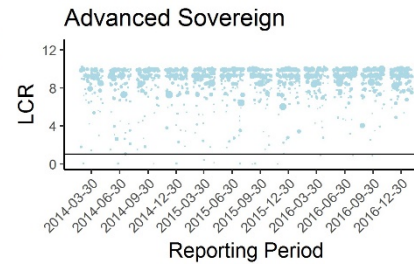
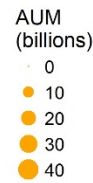
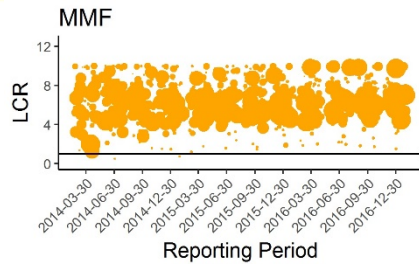
Level 1 Level 2



## Average High Quality Liquid Assets











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## Summary

- LCR may be a useful indicator for supervisors
- A ratings based measure of liquidity does not suit all IFs, other approaches include market based measures (bid-ask spread, average daily volume etc.)
- More work needs to be done on developing a suite of liquidity measures for IFs
- Analysis of the liability side of the balance sheet is also important – investor profiles



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# Thank You