Monitoring GNMA/GSE Pipeline Liquidity

GSE Liquidity Working Group
Financial Research Advisory Committee
Office of Financial Research
Background on GNMA/GSE pipeline risks

- Secondary mortgage market is heavily federalized.
- GNMA/GSE securitization volume is now dominated by non-depository mortgage originators.
  - CFPB, HUD and state-level oversight – no stress testing.
  - Reliance on short-term bi-lateral repo funding.
  - **Short-run risks** – covenants on repo, slowing of mortgage refis (reduced fee income), underfunding for servicing advances, other balance sheet failures.
  - **Liquidity risk** – changes in forward markets, (hedging costs), repo pricing.
  - **Systemic risk** – Repo runs (short-run triggers and BAPCPA 2005), mortgage fire sales, unfunded rep and warranty guarantees, risk to origination capacity.

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR
Importance of Non-Depository Origination for GSE and GNMA Securitization

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.

Source: Inside Mortgage Finance
Post BAPCPA(2005): Dominance of Master Repurchase Agreements

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.

Source: SEC Edgar.
Dominant Non-Depository Funding Facility: Mortgage Repurchase Agreements

- **Summary of Contract Structures:**
  - Strict capital and accounting covenants.
  - Significant roll-over risk (short term maturities).
  - Often highly concentrated repo buyer exposure.
  - Risk of haircuts and dynamic margins.
  - **Exempt from automatic stay under BAPCPA 2005** (repo buyer holds perfected mortgage collateral).
  - Rep and warranty risk resides with originator (repo seller with little capital).
  - Mortgage servicing positions at risk: liquidity needs for advances.

## Pre-Crisis Outcomes for Top Forty Originators in 2006

<table>
<thead>
<tr>
<th>Firm Type</th>
<th>Originations as % of Total</th>
<th>% of Firm Originations with MRAs</th>
<th>% of Firm Failures&lt;sup&gt;1&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial banks</td>
<td>38.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Federal Savings Banks</td>
<td>1.9%</td>
<td>60.6%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Savings and Loans</td>
<td>29.0%</td>
<td>64.8%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Affiliated Mortgage Companies</td>
<td>12.7%</td>
<td>100.0%</td>
<td>89.0%</td>
</tr>
<tr>
<td>Independent Mortgage Companies</td>
<td>3.5%</td>
<td>84.0%</td>
<td>66.7%</td>
</tr>
<tr>
<td>Real Estate Investment Trusts</td>
<td>10.7%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<sup>1.</sup> Supervisory closure, Chapter 11 closure, distressed closure.

Systemic Risks

- **Repo buyer runs** – rapid loss of mortgage origination capacity, mortgage fire sales.
- **Unfunded rep and warranty guarantees** – risks to GNMA/GSEs.
- **Un-priced liquidity provided by GNMA/GSEs** – repo is a bet on securitization speeds.
Pipeline Risk Metrics for Systemic and Short Term Risk

1. **Monitor the Y-14 data** for the size of the mortgage warehouse lines and counterparty concentration among bank holding companies.

2. **Work with HUD** to monitor the repo counterparty concentration, covenants, and roll over risk for originators who sell to GNMA.

3. **Work with FHFA/U.S. Treasury** to monitor the repo counterparty concentration, covenants, and roll over risk for originators who sell to the GSEs.

4. **Monitor the haircuts, margins, and coupons** of bilateral mortgage repo (Form PF) for market trends – not directly related to MRAs.


This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR
GNMA/GSE Pipeline Risk Oversight Questions?

1. What is the aggregate counter party funding risk exposure of GNMA and the GSEs?
2. What is the nature of the capital at risk for the reps and warranties on the loans?
3. What are the covenants on the MRAs and how do they compare with the GNMA and GSE covenants?
4. How would the non-depository mortgage originators behave in a stress scenario?
5. How “run-proof” are the GNMA/GSE counterparty funding structures (haircut and margin dynamics)?

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.
Proposed Metrics for TBA Market Liquidity

- **Trading Volume:** Trade frequency, Transaction volume.
- **Turnover Rate:** \( \frac{\text{Volume of trades}}{\text{Stock of Securities} \times \text{Average price of all trades}} \).
- **Bid-Ask spreads.**
- **Price Impact:** Amihud type measures (absolute value of daily returns/daily volume).
- **Duration, OAS.**
- **Dollar roll specialness:** Implied financing rate relative to the prevailing interest rate.

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.
TBA Oversight Questions

- What are the apparent reasons for the decline in TBA liquidity?
  - Importance of shifts in ownership pattern (“buy and hold” due to QE and increased bank holdings)?
  - Reduced dealer willingness to make markets – effect of Dodd-Frank and Basel III?
  - Reductions in GSE retained portfolio?
  - What are the economic factors associated with TBA dollar roll specialness?

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR
Conclusions

- Significant pipeline risk exposure for GNMA and GSEs.
  - Dominance of imperfectly monitored bi-lateral repo funding.
  - Importance of risk segmentation between repo buyers and sellers.

- **Need to monitor the pipeline risks**: aggregate funding positions, MRA (haircuts, margins covenants), funding for reps and warranties and servicing advances, run-risk of repo buyers.

- **Need to monitor the liquidity of the forward markets**: hedging and trading.

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.
Background Data
Federalization of Secondary Residential Mortgage Market

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.

Source: Inside Mortgage Finance, 2016
Importance of Non-depository Mortgage Origination

(% Non-depository Origination to Total U.S. Origination)

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.
8-K Recorded MRA filings and Non-Depository Origination Share

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.

Source: HMDA, SEC Edgar
**Current:** Top public independent mortgage companies are heavily reliant MRAs (< 364 day roll overs)

<table>
<thead>
<tr>
<th>Firm</th>
<th>Moody’s Credit Rating</th>
<th>Secured Debt/Gross Tangible Assets Q12016</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHH Mortgage, Inc.</td>
<td>Ba3</td>
<td>22.5%</td>
</tr>
<tr>
<td>Provident</td>
<td>B1</td>
<td>33%</td>
</tr>
<tr>
<td>PNMAC</td>
<td>B1</td>
<td>37.9%</td>
</tr>
<tr>
<td>New Resi</td>
<td>B1</td>
<td>73%</td>
</tr>
<tr>
<td>PMT</td>
<td>B1</td>
<td>62%</td>
</tr>
<tr>
<td>Walter</td>
<td>B3</td>
<td>85%</td>
</tr>
<tr>
<td>Ocwen</td>
<td>B3</td>
<td>75%</td>
</tr>
</tbody>
</table>

Source: Moody’s Investment Services

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR.
Current: Concentrated Repo Commitment Market – Excluding Private Equity/Hedge Funds

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR

Source: Inside Mortgage Finance
Pre-crisis: New Century Committed MRAs  
(December 2005)

- **Warehouse Lenders (MRAs) -- TOTAL $14.35B**
  - Bank of America, N.A. - $3B
  - Barclays Bank, PLC - $1B
  - Bear Stearns Mortgage Capital - $800M
  - Citigroup Global Markets Reality Corporation - $1.2B
  - Credit Suisse First Boston Capital, LLC - $1.5B
  - Deutsche Bank - $1B
  - IXIS Real Estate Capital, Inc - $850M
  - Morgan Stanley Mortgage Capital Inc. - $3B
  - UBS Real Estate Securities Inc. - $2B

- **Off-Balance Sheet (SIV) Borrowing -- TOTAL $2B**
  - Von Karman Funding Trust - $2B

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR

Source: SEC Edgar, New Century 10-Q, Q4
## Current: MRA Structure for Third Largest Lender – Penny Mac Mortgage Investment Trust

<table>
<thead>
<tr>
<th></th>
<th>Committed</th>
<th>Net Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Suisse First Boston</td>
<td>$858,021,000</td>
<td>$752,000</td>
</tr>
<tr>
<td>Citibank</td>
<td>$824,003,000</td>
<td>0</td>
</tr>
<tr>
<td>Bank of America, NA</td>
<td>$568,850,000</td>
<td>0</td>
</tr>
<tr>
<td>JPMorgan Chase &amp; Co</td>
<td>$543,313,000</td>
<td>$136,000</td>
</tr>
<tr>
<td>Morgan Stanley Bank, NA</td>
<td>$252,082,000</td>
<td>$462,000</td>
</tr>
<tr>
<td>Daiwa Capital Markets</td>
<td>$178,994,000</td>
<td>$80,000</td>
</tr>
<tr>
<td>Barclays Capital</td>
<td>$12,379,000</td>
<td>$239,000</td>
</tr>
<tr>
<td>BNP Paribas</td>
<td>$10,122,000</td>
<td>0</td>
</tr>
<tr>
<td>Fannie Mae Capital Markets</td>
<td>$5,863,000</td>
<td>$5,863,000</td>
</tr>
<tr>
<td>Deutsche Bank</td>
<td>$784,000</td>
<td>$784,000</td>
</tr>
<tr>
<td>Goldman Sachs</td>
<td>$262,000</td>
<td>$262,000</td>
</tr>
<tr>
<td>Other</td>
<td>$656,000</td>
<td>$655,000</td>
</tr>
<tr>
<td>Unamortized debt issuance costs</td>
<td>($1,081,000)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,258,502,000</strong></td>
<td><strong>$13,488,000</strong></td>
</tr>
</tbody>
</table>

This slide represents ongoing Working Group discussions and is not intended as a recommendation to the OFR. Source: PNMC 10-Q 2016:Q1