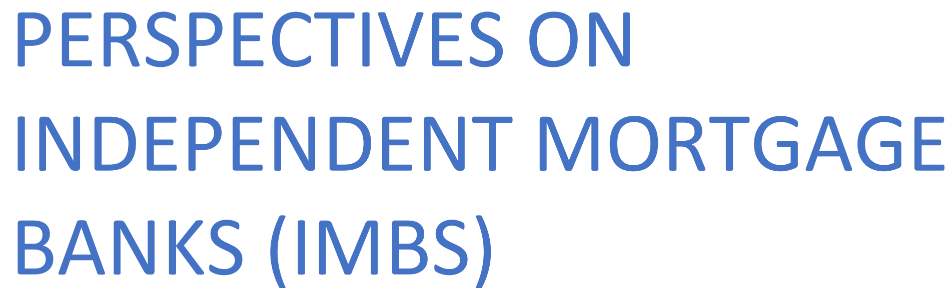

PERSPECTIVES ON INDEPENDENT MORTGAGE BANKS (IMBS)

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Abstract

Independent Mortgage Banks (IMBs) (aka non-banks) would be better called A. Mortgage Loan Manufacturers and B. Mortgage Servicers to avoid any confusion with a regular Bank. While IMBs are financial intermediaries, they have different roles, business models, and therefore risks than regular banks.

This 3-part series provides some individual perspectives on IMBs, confirming their important role in the mortgage banking industry, while discussing the current environment with broader banking industry concerns regarding capital and liquidity, and potential second-order concerns in the non-banking space.

Ultimately, if regulators and policymakers would like to help this mortgage banking industry, policies and practices should be crafted in a complementary manner to attract longer-term capital to the industry.

Michael Chen-Young, PhD

Table of Contents

Perspectives on Independent Mortgage Banks (IMBs): Part 3 2

Appendix 1: Current market scenario background context on Banks, IMBs, Capital and Liquidity 8

Appendix 2: Illustrative IMB Business Segment, Balance Sheet, and Risk Framework 9

Appendix 3: Perspectives on Independent Mortgage Banks (IMBs): Part 1 10

Appendix 4: Perspectives on Independent Mortgage Banks (IMBs): Part 2 12

Perspectives on Independent Mortgage Banks (IMBs): Part 3

This concludes our series on **Perspectives on Independent Mortgage Banks (IMBs)** (aka non-banks). They say, if you've ever been in the mortgage industry, you never truly leave it. That holds true for me having spent over 15 years with multiple leadership roles both in the secondary and primary mortgage markets. While I now have my own consulting practice serving multiple CFOs across multiple industries (including mortgage banking), the economist and former IMB practitioner in me is always genuinely interested in the ongoing success of the mortgage banking industry with the many former organizations and colleagues who continue to operate all along its spectrum.

Part 1 posited that **Independent Mortgage Banks (IMBs)** (aka non-banks) would be better called **A. Mortgage Loan Manufacturers** and **B. Mortgage Servicers** to avoid any confusion with a regular **Bank**. While IMBs are financial intermediaries, they have different roles, business models, and therefore risks than regular banks.

Part 2 provided a **simplified risk analysis framework** reflecting IMBs' business lines along with their respective key balance sheet components and areas of key risks affecting IMBs. The framework was intended to facilitate more holistic discussions with a broader constituency about potential effects of adverse shocks in any of these areas of risk.[1]

This **Part 3** concludes with the below points and suggestions for constructive industry discussions:

1) As with any non-bank financial intermediary, liquidity and capital risks are real concerns for IMBs, especially with the important role IMBs have as the primary mortgage origination engine for most minority and first-time homebuyers.[2]

2) The recent liquidity turmoil in the banking industry has led to the tightening of credit and liquidity that banks extend to other industries. IMBs face potential near-term liquidity risk from banks tightening credit to IMBs if they provide fewer or more stringent bank warehouse repo lines (which effectively are short-term, fully secured working capital lines)[3]:
    a. Bank warehouse lines to IMBs typically advance ~95%-99% of the mortgage loan balances for <60 days before the mortgage loans are sold to investors / securitized by guarantors, with the IMB netting the profit(loss) on the loan sale or securitization.[4]
    b. Some of the banks in the recent news headlines that were either closed, taken over, or under more scrutiny previously were also notable warehouse bank creditors to several IMBs; the aggregate supply of warehouse lines will be reduced.
    c. While the aggregate demand for warehouse lines is also reduced due to lower mortgage origination volumes, IMBs who are deemed weaker counterparties due to their performance and capital may find a disproportionate tightening of credit.[5]

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[1] Both Part 1 and Part 2 of this series are copied in the Appendix.

[2] See https://www.urban.org/research/publication/assessment-lending-lmi-and-minority-neighborhoods-and-borrowers

[3] See https://www.housingwire.com/articles/warehouse-lenders-facing-fallout-from-industry-woes

[4] See https://www.mba.org/docs/default-source/uploadedfiles/policy/22841-mba-warehouse-lending-brochure-pages

[5] See https://newslink.mba.org/mba-newslinks/2023/march/mba-education-webinar-apr-12-warehouse-lending-latest-activity-trends-and-developments

3) Regulators, such as the Federal Reserve, added liquidity-easing measures for banks to stem contagion effects on other banks. It would be prudent for regulators and policymakers to also try to insulate contagion and second-order shorter-term effects to other financial intermediaries that include IMBs:
    a. Part 2's simplified risk analysis framework along IMB's business lines may help identify some of the potential avenues of second-order contagion to determine proactive countermeasures.

    b. Some previously suggested countermeasures to enhance short-term liquidity to IMBs are below, each with its own set of pros and cons[6]:
        i. Adding IMB access to FHLB credit facilities (with both repo & MSR lines),
        ii. Adding agency/guarantor liquidity measures to reduce servicing advance requirements under mortgage delinquencies, such as:
            1. Shortening servicing advance repayment windows
            2. Encouraging greater MBS execution of the actual/actual versus the scheduled/scheduled MBS remittance types.[7]
                a. There have been some recent suggestions that IMB liquidity may be less constrained under the scheduled/scheduled versus an actual/scheduled remittance program *specifically under a falling rate environment where refinance UPB payoff float may offset loan servicing advance requirements (as what happened in 2020 with the COVID disruption)*; this formed the basis that the more popular **scheduled/scheduled** remittance program may require a lesser liquidity premium than the ***scheduled/actual*** remittance counterpart.
                b. This reasoning across remittance program types depends on an increasing prepayment of loans to create this float, which may not necessarily occur at the onset of the next credit cycle.

    c. Prudence requires acknowledging IMB counterparty risk with the above suggestions before extending broader credit, and not "throwing good money after bad"; reasonable and measurable criteria should be developed for access to these countermeasures, and unfortunately some who were "flying too close to the sun" may not survive (as in any industry).
        i. There are currently multiple different sets of financial covenants applied to IMBs from the warehouse banks and government agencies.
        ii. While each creditor's or counterparty's risk committee may have additional unique items, there appear to be some common covenants such as liquidity, adjusted tangible net worth, leverage and profitability that may be

[6] See some similar liquidity suggestions in https://www.urban.org/research/publication/comment-letter-fhfa-enterprise-sellerservicer-eligibility-requirements

[7] See, for example, https://www.fhlbc.com/solutions/details/is-your-remittance-type-costing-you-money ; https://www.urban.org/sites/default/files/2022-04/Comment%20Letter%20to%20the%20FHFA%20on%20Enterprise%20Seller_Servicer%20Eligibility%20Requirements.pdf

opportunities to standardize across both warehouse banks and government agencies.[8]

4) While counterparty risk concerns on IMBs' financial strength are valid, a longer-term healthy mortgage origination market includes IMBs with their proven flexibility and capacity to serve the full spectrum of borrowers, thus regulators and policymakers are encouraged to identify and address root causes that would attract longer-term capital to this industry.
    a. The simplified risk framework presented may also help in these discussions, adding the below context:
        i. Atlanta Fed President Raphael Bostic recently gave this quote in a recent CNBC interview when talking about the US debt ceiling debate, yet is so applicable to the mortgage banking industry: *uncertainty is not our friend when it comes to longer term investments*[9]
        ii. While I was a Deputy CFO and Treasurer of a former large IMB, the perspective of a seasoned banking industry veteran was shared: *the economics of mortgage banking is akin to running across a 10-lane superhighway at rush hour to pick up a dime*, highlighting seemingly disproportionate risks in the process of origination and servicing with small-to-moderate expected net returns.

    b. If regulators and policymakers would like to **help attract longer-term capital to the industry**, it would be helpful to use the above context and find ways to reduce uncertainty (such as in regulatory policy complexity and enforcement), reduce financial volatility, standardize consistent financial covenants[10], while understandably balancing with reasonable consumer protection
        i. A common example of **uncertainty stems from the enforcement of FHA False Claims Act**, with negative experiences from the 2008 housing crisis that brought the Great Recession; bad actors do need to be punished, while striving to establish clear guidelines on prospective expectations so everyone knows the "rules of the road", *ex ante*.[11]

        ii. Another example stems from the **Dodd-Frank Loan Officer (LO) Compensation rule**; while well-intentioned to prevent bad actor LOs (effectively an IMB's salesforce) or organizations from taking unfair advantage of borrowers by steering them to more expensive/risky mortgage loans when they may have qualified for other less expensive/risky mortgage loans, the policy as implemented specified that mortgage banks may not vary LO compensation by

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[8] See (again) https://www.urban.org/research/publication/comment-letter-fhfa-enterprise-sellerservicer-eligibility-requirements for comments on selected agency financial covenants

[9] See https://www.cnbc.com/video/2023/04/18/recession-is-not-my-baseline-outlook-atlanta-fed-president-raphael-bostic.html

[10] See (again) the recent article regarding FHFA proposed Enterprise Seller/Servicer Eligibility Requirements regarding financial covenants at https://www.urban.org/research/publication/comment-letter-fhfa-enterprise-sellerservicer-eligibility-requirements

[11] See the referenced article for a more comprehensive list of regulatory changes after the Great Recession in 2008 that increased the cost and risk of mortgage lending and servicing, contributing to the retreat of banks from mortgage servicing at https://internationalbanker.com/finance/why-have-banks-stepped-back-from-mortgage-servicing/

any product or proxy of product, introducing another expensive regulatory compliance item.[12]

1. Beyond the regulatory compliance expense with **LO Compensation**, a major unintended consequence was impairing the mortgage bank's ability to execute flexibility by aligning their salesforce's compensation incentives with the organization's overall performance, but instead paying the LO salesforce primarily on the absolute loan size.
2. A "normal" company outside of mortgage banking would try to align employee compensation including bonus plans with company profitability; the more an employee helps sell higher margin products or finds innovative ways to reduce costs, the better the employee payout (aka "***pay for performance***")
3. However, for mortgage banks, the company profitability performance is quite correlated with the loan product mix, with profitability typically in the declining order of government loans (e.g., FHA, VA, USDA), conventional loans, jumbo loans, then other loans. The jumbo loans are the highest loan sizes (dollar volume), but less profitable to the organization.
4. A mortgage banking alignment of their salesforce with a direct "***pay for performance***" program is effectively precluded due to the **LO Compensation** legislation and regulatory implementation; instead, it's turned into a "***pay for volume***" incentive structure with LOs. While mortgage banks may try to align incentives with branch managers and not direct LOs, the measurement and tracking is more indirect and arguably less efficient.
5. The net unintended consequence of the current **LO Compensation** policy results in a *near-inelastic* sales compensation incentive structure. Because the sales compensation makes up ***~50%*** of the overall costs to originate a mortgage loan, mortgage banks are left with one hand tied behind their backs in trying to modify the other half of the cost equation in their efforts to manage performance and return to profitability. To better enable IMBs to better manage their financial performance and become better counterparties, policy should be modified to allow alignment through **"*pay for performance*"** instead of the effective current **"*pay for (any) volume*"** incentive structure.
6. To be clear, while we are suggesting that this specific LO Compensation policy be changed to undo this major unintended consequence, a revised policy should still **punish bad LO actors** for unfairly taking advantage of borrowers to their detriment, and **LOs should continue to be paid as a salesforce** in bringing in business. The policy should be adjusted to allow the alignment of incentives with the organization, where for example, it would make sense that the LO commission for a jumbo loan that couldn't qualify as a government or conventional loan be paid differently. And when the takeout investors who buy Jumbo

[12] See https://files.consumerfinance.gov/f/201301_cfpb_loan-originator-compensation-rule_summary.pdf. Per the CFPB summary, to *prevent incentives to "up-charge" consumers on their loans, the final rule generally prohibits loan originator compensation based upon the profitability of a transaction or a pool of transactions*.

loans shrink (as in the current banking environment), then shouldn't there be some flexibility to reduce the volumes of Jumbo loans and redirect efforts to other loans?

iii. A third topic regarding efforts to attract longer term capital to the industry involves helping **reduce IMBs' financial balance sheet volatility.**
    1. The largest long-term asset on IMBs' balance sheets is the Mortgage Servicing Right (MSR) asset.
    2. The MSR asset, with similarities to an Interest-Only Strip financial asset, is currently valued using individual Level 3 models, as there isn't a readily available liquid market from which to infer market-clearing prices.
    3. There have been numerous risk-based capital debates including Basel III standards regarding the appropriate risk-weighting of this **MSR asset** in Tier 1 capital calculations; we will not attempt to define the appropriate risk-weighting, and instead defer to other industry experts.
    4. However, we aim to simply bring focus on the fact that this MSR at fair value may dominate IMB's assets, and is typically highly sensitive to interest rates and other servicing related assumptions.
    5. There have been different historical proposals in the industry regarding ways to increase IMB balance sheet liquidity with less reliance on retaining the full MSR asset, or adding liquidity specific to the MSR asset that go beyond the scope of this series.[13]
    6. Given the dominance of the MSR asset on most IMBs' balance sheet, this issue will require a deeper analysis with the multiple agents operating in this space.

[13] See for example FHFA's Alternative Mortgage Servicing Compensation Discussion Paper at https://www.fhfa.gov/PolicyProgramsResearch/Research/PaperDocuments/20110927_DP_AltMortgageServicing_508.pdf

It should be obvious that this short series cannot substitute for greater in-depth analyses of IMBs, their important roles and balancing with real risks. There are many industry colleagues who can help with the in-depth analyses, who should be consulted as stakeholders discuss potential improvements to the overall market. Housing is too important to the US economy to not be judicious in contemplating complementary improvements.

Frameworks are helpful to ground the conversations, along with practical experiences to highlight impacts and potential unintended consequences. The risk framework from **Part 2** (copied below) should enable objective discussions on various risks to better understand potential shocks to various parts of IMBs' financial and economic positions. The points and suggestions from **Part 3** above hopefully start some more robust discussions.

Ultimately, I do think a part of public policy should be finding ways to **attract longer-term capital to the mortgage banking industry**, as that engine is necessary to promote and execute housing policy. Multiple organizations are part of the solution, including IMBs.

At some point, we all have family members who will need mortgages and benefit from the continued innovation in the industry!

Thank you for your time in reading this article and engaging positively in the discussion.

Appendix 1: Current market scenario background context on Banks, IMBs, Capital and Liquidity

1. [IMBs] rely on warehouse lines of credit – borrowing facilities usually provided by traditionally insured depository institutions [banks] – to provide the necessary liquidity for IMBs to do what they're best at: originating loans to individual borrowers and selling them to investors … In short, warehouse lenders and their IMB customers move more than $1 Trillion of dollars in capital each year from Wall Street to Main Street
    - *See https://www.mba.org/docs/default-source/uploadedfiles/policy/22841-mba-warehouse-lending-brochure-pages*
2. Nearly every publicly traded bank in the country is sitting on loans that have declined in value since they were made … Among 435 publicly traded U.S. banks listed on major exchanges … they had $242 billion of unrealized losses on their loans, defined as the difference between the loans' fair values and carrying amounts. That was equivalent to 14% of their total equity and 21% of their tangible common equity … Banks reporting large fair-value discounts on their loans could face earnings or liquidity pressure … 435 banks in The Wall Street Journal's sample included 100 where the combined unrealized losses on loans and held-to-maturity securities were equivalent to 50% or more of their total equity
    - *See https://www.wsj.com/articles/declines-in-loan-values-are-widespread-among-banks-c3ee622f*
3. Warehouse lenders face fallout from [banking] industry woes … Despite optimism that fallout on the financial system from the bank failures will be contained, … the current turmoil in the system will likely lead to a tightening in underwriting standards and less credit availability … It's just a matter of to what degree. How much will these institutions [banks, including warehouse lines] retrench … is not readily apparent yet
    - *See https://www.housingwire.com/articles/warehouse-lenders-facing-fallout-from-industry-woes/*
4. Need for heightened communication with your warehouse lenders … Concern among IMBs that warehouse lenders will be faced with increased organizational and regulator pressure
    - *See https://newslink.mba.org/mba-newslinks/2023/march/mba-education-webinar-apr-12-warehouse-lending-latest-activity-trends-and-developments/*
5. Independent mortgage banks and mortgage subsidiaries of chartered banks lost an average of $301 on each loan they originated in 2022 [or averaging 13 bps per loan], down from an average profit of $2,339 per loan in 2021 … There is no denying the very difficult circumstances in which mortgage companies are still operating today
    - *See https://www.mba.org/news-and-research/newsroom/news/2023/04/06/imb-production-profits-falls-to-series-low-in-2022*
6. IMBs don't retain much risk. They are primarily pass-through entities
    - *See https://www.housingwire.com/articles/imbs-face-ripple-effect-from-recent-bank-failures/*
7. Opinion: The incredible value of IMBs … IMBs are the ones doing FHA loans today
    - *See https://www.housingwire.com/articles/opinion-the-incredible-value-of-imbs-in-the-market/*
8. Atlanta Federal Reserve President Raphael Bostic: Uncertainty is not our friend when it comes to longer term investments (with respect to debt ceiling and passing an agreement sooner than later today)
    - *See https://www.cnbc.com/video/2023/04/18/recession-is-not-my-baseline-outlook-atlanta-fed-president-raphael-bostic.html*

Appendix 2: Illustrative IMB Business Segment, Balance Sheet, and Risk Framework

IMB Segment A. Mortgage Origination (= Loan Manufacturing)			Areas of Key Risk		
Activity Stage	**Key Assets**	**Key Liabilities**	Interest Rate	Credit	Regulatory/ Compliance
I. Originate Loan: Process & Underwrite Loan Applications	**1) Loan Pipeline's Interest Rate Lock Commitment (IRLC), FV** *(combined loan & servicing right components)*	**1a) Net Derivative Liabilities** *(pull-through adj. Pipeline Hedges)*	✓		✓
II. Close Loan by Funding Borrowers	**2) Loans Held for Sale, FV** *(combined loan & servicing right components)*	**1b) Net Derivative Liabilities** *(continued Pipeline Hedges)* **2) Secured Debt: WH Bank Repo Debt** *(typically advancing ~95-99% of LHFS FV)*	✓		✓
III. Sell/Securitize Loan to Investor/Guarantor	**3) Net Cash Gain on Sale: Loan component** (excluding MSR), *(after Repo line payoffs, incurred hedged costs, and incurred loan net costs to originate)* **AND** **4) Either Cash/Non-Cash**: a) **Cash Gain on Sale: SRP** *(servicing released premium)* , or b) **Non-Cash Gain on Sale: Capitalized Originated MSR** *(servicing retained)* **5) Sold Loan Repurchase Reserve**	**3) Ongoing Sold Loan Repurchase Obligation** *(per Agency Seller guidelines)* *(economic; off balance sheet)*			✓

** WH Bank = Banks providing warehouse repo and MSR-related credit lines to IMBs; includes most megabanks and many regional banks*

IMB Segment B. Mortgage Servicing			Areas of Key Risk		
Activity Stage	**Key Assets**	**Key Liabilities**	Interest Rate	Credit	Regulatory/ Compliance
IV. Acquire MSRs: a) Receive own Originated MSR *(intercompany servicing retained)*	**1) Capitalized Originated MSR, FV**	**1) Unsecured Debt** **2) Secured Debt (if applicable):** a) **WH Bank MSR Lines of Credit** *(typically advancing <50% of MSR FV)* b) **WH Bank Servicing Advance Lines** **3) Ongoing Servicing Obligation** *(per Agency Servicing guidelines)* *(economic; off balance sheet)* **4) MSR FV Hedge (if applicable)**	✓		✓
b) Purchase other entities' MSRs *(via Flow / Bulk MSR purchases)*	**2) Purchased MSR, FV**		✓		✓
VI. Perform Servicing Operations: a) Performing Loans	**3a) Net Cash from servicing performing loans**				✓
b) Non-Performing Loans *(if applicable)*	**3b) Servicing Advances - Receivable from Agencies** *(P&I, T&I and Corporate Advances)*			✓	✓
VI. Manage MSR FV mark-to-market changes	**4) MSR, FV over time**		✓		

** WH Bank = Banks providing warehouse repo and MSR-related credit lines to IMBs; includes most megabanks and many regional banks*

Appendix 3: Perspectives on Independent Mortgage Banks (IMBs): Part 1

Perspectives on Independent Mortgage Banks (IMBs): Part 1

Independent Mortgage Banks (IMBs) (aka non-banks) would be better called **Mortgage Loan Manufacturers and Servicers** to avoid any confusion with a regular **Bank**. They have different roles, business models, and therefore risks. While a Bank may choose to also be in the business of manufacturing and/or servicing mortgage loans, an IMB may not do the same as a Bank (unless it were to get a bank charter) and do things such as take deposits, lend against those deposits, or hold multiple other assets beyond mortgage loans manufactured or mortgage servicing right assets.

One must understand the structure of IMBs before one engages in risk discussions versus several headlines in the news re: IMBs and (dis)similarities with Banks. Below is a brief outline of IMB's choice of business lines:

1. **Mortgage Origination business (if the IMB originates loans versus only servicing):**
   - Highly cyclical origination volumes with volatile (+/-) profit margins
   - Loan origination (i.e., manufacturing) operational process (from application>processing>underwriting>closing>funding)
   - Short-term Interest Rate risk management via hedges (forward TBA sales) between loan's interest lock through to loan sale/securitization (typically end-to-end <60 days)
   - Short-term Warehouse (WH) Bank liquidity facility (from a regular Bank) provides a fully secured repo/line-of-credit to finance the originated loan unit it reaches loan sale/securitization (typically <30 days)
   - Loan sale/securitization process (via secondary desk)
     - Servicing Retained of the Mortgage Servicing Right (MSR): if desired on loan securitization where forego additional upfront cash proceeds at loan securitization, OR
     - Servicing Released of the MSR: receive additional upfront cash proceeds at loan securitization
   - Key P&L Components:
     - Revenue: Loan Origination Fees, Gain on Sale
     - Expenses: Cost to originate loans, Loan Officer (LO) Sales Compensation, Other Overhead Expenses
   - Key Balance Sheet Components:
     - Asset: Cash; Loans Held-for-Sale (short-term)
     - Liability: WH Bank secured repo/line-of-credit

2. **Mortgage Servicing business (if the IMB retained servicing from their origination side and/or acquired other originated MSRs)**
   - Servicing Retained of the Mortgage Servicing Right (MSR): non-cash outlay
   - Purchases of other sellers' Originated MSR or Bulk MSR: requires cash to purchase from the MSR seller
   - Perform mortgage servicing operations and receive net cash flow:
     - Servicing cash inflows: borrower payments; servicing advances re-imbursed
     - Servicing cash outflow: cost to service; servicing advances paid
     - Net cash flow is typically >0 once the loan is current, or performing; if the loan becomes delinquent, net cash flow may become negative

   - Key P&L Components:
     - Revenue: Servicing Fee Income (Operations)

- Expenses: Cost to Service (Operations), Other Overhead Expenses
- Other: Net MSR Fair Value MTM gains/(losses)

- Key Balance Sheet Components:
    - Asset: Cash; Mortgage Servicing Right (MSR) (long-term)
    - Liability: Unsecured Debt; WH Bank-specific MSR Lines of Credit (<50% FV financing)

A forthcoming Part 2 will touch on some liquidity discussions that have surfaced in recent headlines.

Spoiler-alert: I think too much focus has been on the term ***liquidity*** with some extrapolating a similar concern on the IMB side. But effectively the spark of the SVB bank run, which created a liquidity crisis, was the lack of sufficient ***capital under the scenario*** of a material increase in bank withdrawals that forced realizing the fair value losses in the assets. This is precisely what bank stress scenarios were supposed to show, and there was clear failure on both the bank management and regulatory sides. More to come in Part 2 later this week …

Appendix 4: Perspectives on Independent Mortgage Banks (IMBs): Part 2

Perspectives on Independent Mortgage Banks (IMBs): Part 2

Independent Mortgage Banks (IMBs) (aka non-banks) would be better called **A. Mortgage Loan Manufacturers** and **B. Mortgage Servicers** to avoid any confusion with a regular **Bank**. They have different roles, business models, and therefore risks.

As mentioned in **Part 1** of this thread, too much focus has been on the term ***liquidity*** with some extrapolating a similar concern on the IMB side. But effectively the spark of the SVB bank run, which created a liquidity crisis, was the lack of sufficient ***capital under the scenario*** of a material increase in bank withdrawals that forced realizing the fair value losses in the assets. This is precisely what bank stress scenarios were supposed to show, and there was clear failure on both the bank management and regulatory sides.

Part 1 identified 2 business lines of an **IMB** with their respective key balance sheet components. The below illustrative tables simplify these IMB business lines along with their respective key balance sheet components and areas of key risks. This simplified foundation is intended to facilitate more holistic discussions with a broader constituency about potential effects of adverse shocks in any of these areas of risk and their impacts to capital by evaluating impacts to assets & liabilities, without having to understand a full blown mathematical ALM model under stochastic simulations (which is what companies would use to try to quantify and therefore manage these types of shocks).

With these tables, one can then discuss IMB liquidity specific to each business line and sensitivity to the areas of risk. Negative shocks (whether real or reasonably expected) in any of the areas of key risk may erode expected returns on capital, at which point may create self-fulfilling liquidity issues for IMBs. This necessitates a keen understanding and awareness by policymakers and the organizations operating in this space to craft holistic solutions in lieu of piecemeal reactions.

Illustrative IMB Business Segment, Balance Sheet and Risk Framework:

IMB Segment A. Mortgage Origination (= Loan Manufacturing)			Areas of Key Risk		
Activity Stage	**Key Assets**	**Key Liabilities**	Interest Rate	Credit	Regulatory/ Compliance
I. Originate Loan: Process & Underwrite Loan Applications	**1) Loan Pipeline's Interest Rate Lock Commitment (IRLC), FV** *(combined loan & servicing right components)*	**1a) Net Derivative Liabilities** *(pull-through adj. Pipeline Hedges)*	✓		✓
II. Close Loan by Funding Borrowers	**2) Loans Held for Sale, FV** *(combined loan & servicing right components)*	**1b) Net Derivative Liabilities** *(continued Pipeline Hedges)* **2) Secured Debt: WH Bank Repo Debt** *(typically advancing ~95-99% of LHFS FV)*	✓		✓
III. Sell/Securitize Loan to Investor/Guarantor	**3) Net Cash Gain on Sale: Loan component** (excluding MSR), *(after Repo line payoffs, incurred hedged costs, and incurred loan net costs to originate)* **AND** **4) Either Cash/Non-Cash**: a) **Cash Gain on Sale: SRP** *(servicing released premium)* , or b) **Non-Cash Gain on Sale: Capitalized Originated MSR** *(servicing retained)* **5) Sold Loan Repurchase Reserve**	**3) Ongoing Sold Loan Repurchase Obligation** *(per Agency Seller guidelines)* *(economic; off balance sheet)*			✓

** WH Bank = Banks providing warehouse repo and MSR-related credit lines to IMBs; includes most megabanks and many regional banks*

IMB Segment B. Mortgage Servicing			Areas of Key Risk		
Activity Stage	**Key Assets**	**Key Liabilities**	Interest Rate	Credit	Regulatory/ Compliance
IV. Acquire MSRs: a) Receive own Originated MSR *(intercompany servicing retained)*	**1) Capitalized Originated MSR, FV**	**1) Unsecured Debt**	✓		✓
b) Purchase other entities' MSRs *(via Flow / Bulk MSR purchases)*	**2) Purchased MSR, FV**	**2) Secured Debt (if applicable):** a) **WH Bank MSR Lines of Credit** *(typically advancing <50% of MSR FV)* b) **WH Bank Servicing Advance Lines**	✓		✓
VI. Perform Servicing Operations: a) Performing Loans	**3a) Net Cash from servicing performing loans**	**3) Ongoing Servicing Obligation** *(per Agency Servicing guidelines)* *(economic; off balance sheet)*			✓
b) Non-Performing Loans *(if applicable)*	**3b) Servicing Advances - Receivable from Agencies** *(P&I, T&I and Corporate Advances)*	**4) MSR FV Hedge (if applicable)**		✓	✓
VI. Manage MSR FV mark-to-market changes	**4) MSR, FV over time**		✓		

** WH Bank = Banks providing warehouse repo and MSR-related credit lines to IMBs; includes most megabanks and many regional banks*

The concluding Part 3 of this article series on IMB Liquidity will discuss some near-term and longer-term considerations given some of the recent shocks and some potential medium-term shocks.