

Systemic Risk, Macro Shocks and Macro-prudential Policies

by

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Discussion

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Main Insights of the paper

Need for clarity in the discourse on Systemic risk & Macroprudential Policies

Need for a clearer view on “systemic risk” and its different manifestations. Unless we get this right, it is hard to design macro-prudential policies to effectively deal with them.

- Systemic risk arises from propagation of shocks through the financial/real sector, with potential feedback effects on both. They are typically precipitated by macroeconomic shocks, such as secular decline in house prices, but not always.
- **Possible types of propagation:**
 - ❖ Contractual Dominos
 - ❖ Disappearance of Potential Contracting Counter-parties.
 - ❖ Information and Hysteria driven contagion.
 - ❖ Fire-sale of assets.
 - ❖ Market breakdown
 - ❖ Some combination of the above, and others.

Main Insights of the paper

Need to pay attention to the entire network, broadly defined

Triggering shocks to the system are likely major macroeconomic shocks. They are more potent when

- Some of the institutions (key links) in the network are weak and their risks are hidden;
- Many institutions in the network have similar or parallel positions;
- There are correlated counterparty exposures.

- **Implications:**
 - ***Regulators must have information about all the key players in the chain or network to be able to determine how shocks will propagate through the system.***
 - Network should be broadly defined:
 - Banks;
 - Money market mutual funds;
 - Hedging counterparties such as insurance companies, CCPs, etc.

 - It is insufficient to merely look at individual banks and then at correlations across banks.

Recent Developments Affecting the Risk Distribution in the Network Endogenous Response to LCR and Money Markets Reforms

FHLB Advances to Banks:

- Nearly 2/3rd of FHLB advances in January 2017 was accounted by commercial banks' borrowing. Most of these advances were extended to large commercial banks. Commercial banks with assets over \$50 billion accounted for less than 2% of overall advances in 2000, their share climbed around 50% by 2017.
- **What is the driver? – Collateral upgrade, triggered by LCR**
- Banks can post less-liquid assets such as whole mortgage loans to FHLBs as collateral against advances and use the proceeds to buy high quality liquid assets (HQLA). As long as FHLB advances have a remaining maturity of longer than 30 days, this strategy will improve the borrowing banks' LCRs.

Sources:

1. ***“Soaring Fed Home Loan Bank borrowings spark systemic risk fears” Louie Woodall (2018).***
2. ***“The Increased Role of the Federal Home Loan Bank System in1 Funding Markets, Part 2: Recent Trends and Potential Drivers” by Stefan Gissler and Borghan Narajabad (2017), FED Notes.***

A Recent Development Affecting the Risk Distribution in the Network Endogenous Response to LCR and Money Markets Reforms

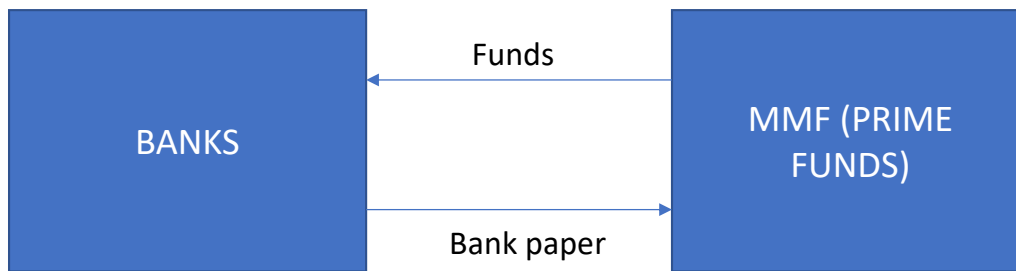
FHLB Advances to Banks:

- FHLBs have increased their short-term funding and by the end of 2016 almost 80% of liabilities had a residual maturity of less than 1 year. This implies a significant increase in FHLBs' maturity transformation - that is, a much larger gap between the maturity of FHLB assets and liabilities.
- This shift towards short-term funding has been accelerated by SEC's reform of prime money market funds. In response to the reforms, money market fund managers and investors shifted \$1.2 trillion from prime money funds to government money funds, which are investing heavily in short-term FHLB obligations..
- Other developments: ***non-bank financial companies now originate significant part of mortgage loans; FinTech companies provide banking services. (see additional references at the end). These are additional nodes in the chain.***

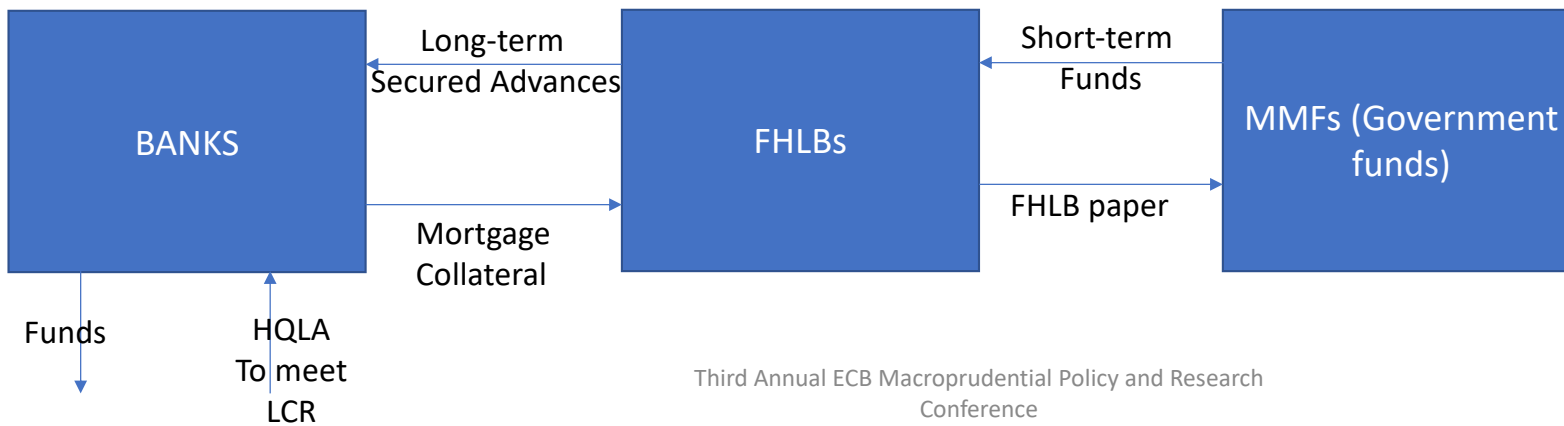
Sources:

1. ***“Soaring Fed Home Loan Bank borrowings spark systemic risk fears” Louie Woodall (2018).***
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***A Recent Development Affecting the Risk Distribution in the Network
An Additional Node in the Network with Maturity Mismatch***



***BEFORE
REFORMS
LCR & NSFR***



***AFTER
REFORMS
NSFR and LCR***

Main Insights of the paper

Why Banks bear so much Macro Risk? (capturing risk premium)

What should be the aggregate level of macro risk and who should bear it?

- The answer depends on what institutional arrangements we take as given:
 - If we take deposit insurance and central banks liquidity facilities as given, then banks will be largely funded by deposits end up taking maturity mismatch and liquidity risks.
 - Equity holders and managers will have incentives for risk taking, once the bank is largely funded by debt.
- This issue may not be unique to banks, however. Asset management firms, Pension funds and Insurance companies are large institutions. The latter two have long duration liabilities, and are exposed to macro risks. When they become under capitalized or under funded they can potentially present systemic risk to the economy.

Main Insights of the paper

Why Banks bear so much Macro Risk? (capturing risk premium)

- During the 2008 crisis, many pension funds became underfunded (negative shocks to equity and drop in interest rates clobbered their balance sheets). Legacy DB plans and State Pension plans are huge.
 - This has led to some risk taking by pension sponsors on the assets side.
 - Their need for long term assets can distort long-term government bonds prices & long-term swap spreads.
 - Persistent underfunding may ultimately require tax increases and/or State government borrowing, or re-contracting.
- All of the above could have systemic implications, given the size of these institutions relative to the overall economy. Pension funds and Insurance companies are heavy users of long—term interest rate swaps: they receive fixed and pay :IBOR (net) – this is a levered position.

Sources:

1. *Financial System Stability Assessment, IMF, July 2015.*
2. *The Economics, Regulation, and Systemic Risk of Insurance Markets, Edited by Felix Hufeld, Ralph S. J. Koijen, and Christian Thimann.*

Main Insights of the paper

Debt Ratchet Incentives & Commitment via Capital Requirements

Given some debt in place, Banks do not have an incentive to reduce debt: Admati, et.al (2018)

- Banks cannot credibly commit to reduce future debt levels.
- Mandated Regulatory capital requirements can provide this commitment tool.
- Preferred capital is pure equity.
- Regulators have gone for Total Loss Absorbing Capital (TLAC)
 - “The complementary TLAC requirement will set a new minimum level of total loss-absorbing capacity, which can be met with both regulatory capital and long-term debt. These requirements will improve the prospects for the orderly resolution of a failed GSIB and will strengthen the resiliency of all GSIBs”

Sources:

- 1. Admati, A., P. DeMarzo, M. Hellwig, and P. Pfleiderer (2018), The Leverage Ratchet Effect, Journal of Finance 73, 145 – 198.***
- 2. Federal Reserve Board adopts final rule to strengthen the ability of government authorities to resolve in orderly way largest domestic and foreign banks operating in the United States, December 2016.***

Total Loss Absorbing Capital (TLAC)

TLAC of Banks

“U.S. G-SIBs have an estimated aggregate TLAC amount of approximately \$2 trillion, which represents about 30% of their aggregate risk-weighted assets.

This is a significant increase from the pre-crisis period in which U.S. G-SIB firms had loss-absorbing capacity of only 5% of risk-weighted assets.

TLAC levels amounting to an average of approximately 30% of risk-weighted assets represents the upper range of historic losses experienced by banks during the most recent financial crisis as well as past financial crises.”

Is TLAC a reasonable substitute for equity? Can regulators trigger bail in at the right time to ensure sufficient new Equity under the resolution in SPOE?

*Source: REPORT TO THE PRESIDENT OF THE UNITED STATES Pursuant to the Presidential Memorandum Issued April 21, 2017 **Orderly Liquidation Authority and Bankruptcy Reform** FEBRUARY 21, 2018*

Main Insights of the paper

The Assessment of System Risk Exposure

- Slow versus Fast Dynamics:
 - Financial systems can rapidly adjust (asset prices, “Stocks” as opposed to “Flows”)
 - Macro variables respond more slowly
- Rapid adjustments in Stock variables cannot be effectively addressed by “flow” based interventions.
- Measuring systemic risk is problematic.
- Adherence to any specific modeling framework can be problematic:
 - Return generating processes in Finance
 - DSGE models in macroeconomics

Main Insights of the paper

The Assessment of System Risk Exposure

- Rely on more flexible approaches:
 - Take cognizance of the fact that no one theoretical approach is likely to be suitable for different manifestations of systemic risk.
 - Identify a clear narrative (story) that can best explain any given potential crisis
 - In 2007 US Yield curve inverted:
 - Two stories with very different implied actions: savings glut and impending recession.
 - Additional data: OIS yield curve up to 1 year was inverted – market was expecting rate cuts.
 - Use a portfolio of models that provide the best possible insight to deal with that potential crisis.
 - Elements of judgment/discretion is inevitable.

Regulators' View of Bank Network through CCAR Stress Testing ***Comprehensive Capital Analysis and Review (CCAR)***

- The CCAR stress tests for all large banks are done at the same time under common scenarios.
- Regulators get a view on the collective losses that may be borne by the G-SIBs in the stress scenario.
- The scenarios take account of a variety of risks to the financial system and in a way that reduces procyclical effects.
- The regulator is able to tell whether parallel positions are taken by the G-SIBs.
- Based on test results, regulators can restrict banks' distribution of profits.
- ***But they do not include other non-bank players in the chain/network who may influence funding and liquidity disruptions.***

Source: "Next Steps in the Evolution of Stress Testing", Governor Daniel K. Tarullo (September 2016)

SPOE, OLA, Treatment of QFCs and Chapter 14

I will conclude by touching upon the resolution process for GSIBs, which cuts to some points made in the paper.

- The current thinking still supports the Single Point of Entry (SPOE) at the holding company level, so that bank and dealer subsidiaries can function smoothly during the resolution process.
- A greater role for judicial overview is proposed in the resolution process, and a lesser role for FDIC.
- Temporary stay for Qualified Financial Contracts (QFC) such as repos during the early stage of the resolution.
- Stricter terms for Treasury funding of the bankrupt entity.

*Source: REPORT TO THE PRESIDENT OF THE UNITED STATES Pursuant to the Presidential Memorandum Issued April 21, 2017 **Orderly Liquidation Authority and Bankruptcy Reform** FEBRUARY 21, 2018*

Conclusions

- Very interesting paper. It raises important questions that deserve careful reflections by academics and regulators.
- Emphasizes the role of clearly defining systemic risk and examining the whole chain or network of financial institutions for designing appropriate macro-prudential regulation.
- The paper stresses that systemic risk is inherently hard to measure. Hence there is a need to have a clear narrative/story. Once this is in place, regulators need to be flexible on the use of models.

Additional References

- Liquidity crises in the mortgage market , (2018), by You Suk Kim, Steven M. Laufer, Karen Pence, Richard Stanton, and Nancy Wallace.
- Financial Stability Implications from FinTech Supervisory and Regulatory Issues that Merit Authorities' Attention, Financial Stability Board, 27th June 2017.