

# **Discussion: “Risk Management in Financial Institutions”**

**by A. Rampini, S. Viswanathan, G. Vuilleme**

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Juliane Begenau (HBS & NBER)

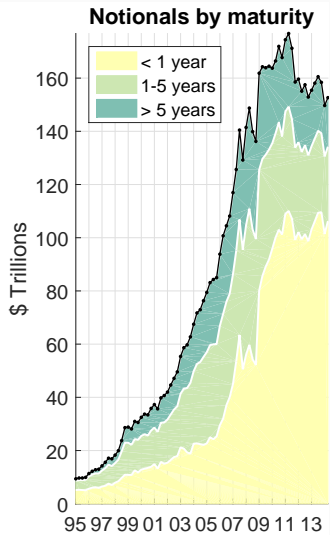
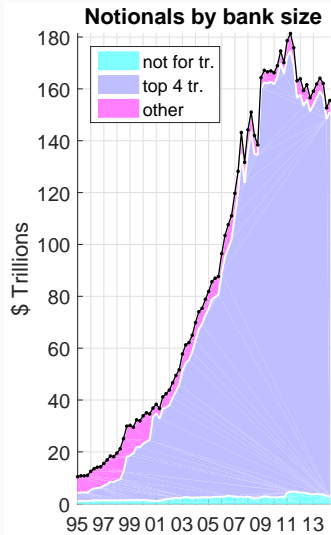
Liquidity & Financial Crises  
Wharton, October 14, 2016

- **Important Question:**
  - **What are the determinants of bank risk-management?**
- **Risk Management in Financial Institutions - Theory**
  - Rampini and Viswanathan theory
    - hedging is costly
    - low net-worth entities hedge less because they are financially constrained
    - trade-off between hedging & investment
- **This Paper: Evidence in U.S. bank sample**
  - high net-worth banks hedge more in the cross-sections and over time
  - house price shock to instrument exogenous drop in net worth

1. **Interest Rate Derivative Positions & Exposures**
2. **What is the key state variable**
3. **Open Questions/Suggestions**

# **(1) Interest Rate Derivative Positions and Exposures**

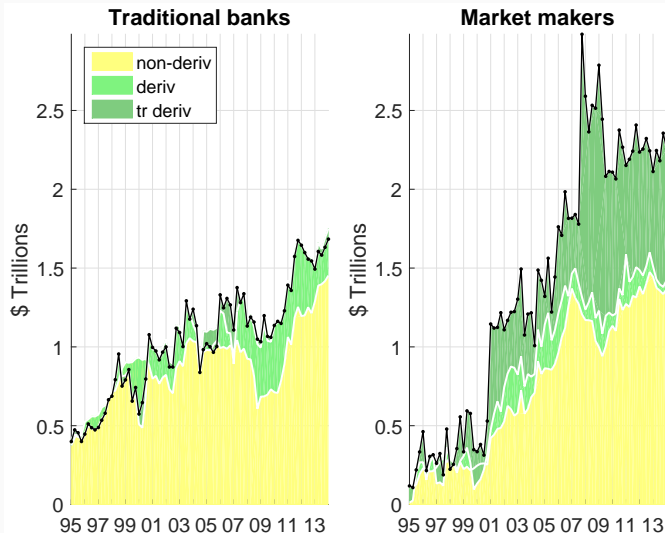
# BHC: Interest Rate Derivatives



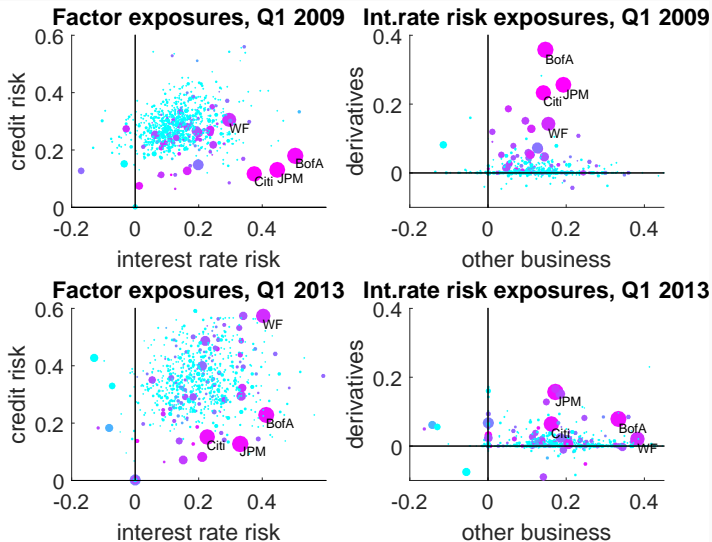
# Measurement of Interest Rate Exposure

- Here: underlying interest rate exposure measured as maturity or duration gap
- Value of entire fixed income portfolio sensitive to rates
- Begenau, Piazzesi, and Schneider (2015)
  - construct replicating portfolio of banks' balance sheet using call report data
  - credit and interest rate factor
  - interest exposure measured using all interest rate sensitive positions on balance sheet

# Interest rate exposures of traditional banks (all others; left panel) and market makers (share of trading assets > 10%; right panel)



# Factor Exposures and Interest Rate Risk Exposure in the cross-section



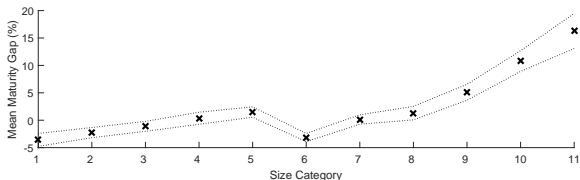
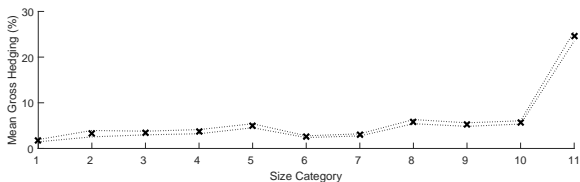
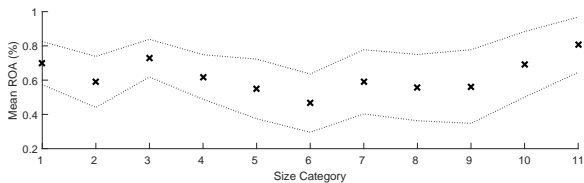


**(2) What is the key state variable?**

## Paper: high net-worth banks hedge more

- Net worth is key state variable in model
- Measured as
  - size  $\sim \log(\text{book assets})$
  - Market cap
  - Market cap/ asset
  - net income/ asset
  - credit rating
  - net worth index = i.e. first principle component of size, market cap/asset, dividend/asset, net-income/asset
- Economically, which maps back best to the model?
  - Surprising that market cap/asset (i.e. mkt leverage) seem not to work
  - Size is important but perhaps less reflective of financial constraints, (e.g. business model)
  - What is the state variable constraining banks beyond size?

# Net income, gross hedging, maturity gap by size buckets (11 = top 30 banks)



## Relationship b/w Gross Hedging and Net-worth (Net-Income)

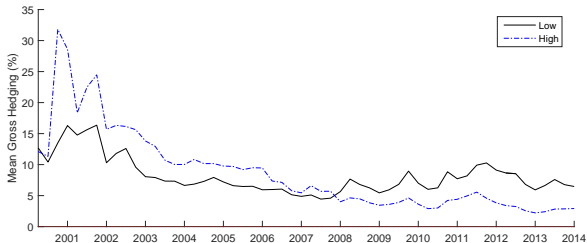
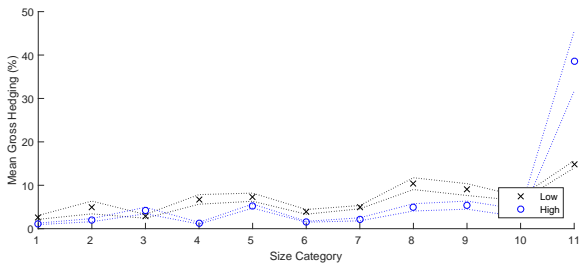
	Pooled cross-section		OLS panel	
Net Income	1.21*** (3.28)	0.02 (0.07)	10.31 (0.3)	-5.29 (-0.22)
Log Assets		0.02*** (15.65)		2.13*** (5.49)
Bank & Time FE			Yes	
Observations	73	73	4329	
Clustered Bank & Time			Yes	

**(3) Open  
Questions/Suggestions**

## Suggestions / Open Questions

- Implication from theory?
  - Choice between hedging and profitable investments
  - Suggestion:
    - Proxy banks investment opportunities by Tobin's Q
    - If banks are truly financially constrained, may choose to cut hedging in favor of investment
    - Test whether constrained firms with high Tobin's Q cut hedging more to avoid cutting investment
- Do non-hedging banks tend to be more risk-loving?
  - Study characteristics of non-hedging banks
  - High maturity gap banks (high interest rate exposure) have
    - higher RWA/A
    - higher leverage
    - higher loan growth pre-crisis
    - hedge less

# Change over time? (group banks into high and low net-worth bins)



- Very interesting paper!
- Question clearly important
- Evidence for Rampini and Viswanathan risk management theory
- A few suggestions
  - exploit cross-sectional more (already do a lot) to delve deeper into testing the theory
  - what is the state variable that matters for risk-management?
  - study subsample periods



- Distress measure includes exits due to merger and acquisition that occurred extensively over the sample period
- Sample of banks changes
- Understanding the nature of the constraint
  - What is the appropriate state variable
  - Suggestion:
    - Compare banks that IPOed to banks that stay private - see Scharfstein & Falato (2016)
    - Access to public markets potentially loosens constraints  
Financial constraints