

A Quantitative Model of Banking Industry Dynamics

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The opinions in this presentation are my own and not the ones of the Federal Reserve System or anyone else associated with the System.

Three papers in one

1. A tour de force of empirical regularities for banks
2. A state of the art model capturing complex interactions across large banks and bank types --- regional, fringe, in addition to large.
3. A calibration exercise and coupled with an interesting policy experiment that posits the introduction of an explicit too-big-to-fail policy.

Banks or bank holding companies?

- The empirical analysis is based on Call Report data --- this is a report filed by banks.
- But the largest banks, which are the focus of the paper, have more complex operations, including broker dealers.
- Treasury operations manage risks across the holding company.
- The paper equates size and geographical span with systemic risk, but complex operations and interconnections that span the financial system can contribute to systemic risk.
 - G-SIB criteria: size, interconnectedness, complexity, and substitutability within a jurisdiction.

Complexity beyond size

A snapshot from JP Morgan's SEC 10K form for 2023

JPMorgan Chase						
Consumer Businesses			Wholesale Businesses			
Consumer & Community Banking			Corporate & Investment Bank		Commercial Banking	Asset & Wealth Management
Banking & Wealth Management ^(a)	Home Lending	Card Services & Auto ^(b)	Banking	Markets & Securities Services	• Middle Market Banking	• Asset Management
<ul style="list-style-type: none"> • Consumer Banking • J.P. Morgan Wealth Management • Business Banking 	<ul style="list-style-type: none"> • Home Lending Production • Home Lending Servicing • Real Estate Portfolios 	<ul style="list-style-type: none"> • Card Services • Auto 	<ul style="list-style-type: none"> • Investment Banking • Payments • Lending 	<ul style="list-style-type: none"> • Fixed Income Markets • Equity Markets • Securities Services • Credit Adjustments & Other 	<ul style="list-style-type: none"> • Corporate Client Banking • Commercial Real Estate Banking 	<ul style="list-style-type: none"> • Global Private Bank

(a) In the fourth quarter of 2022, Consumer & Business Banking was renamed Banking & Wealth Management (“BWM”).

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A broker dealer is only one way in which JPM adds complexity to its operations

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Also consider asset and wealth management, an important source of fee income

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Or commercial banking services including trade finance and correspondent banking services

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Interconnections can boost systemic risk

- Bank of New York Mellon may look like a regional bank by size of deposit operation, but...
- Its custodial operations are a central node for the financial system.
- BNY Mellon is the sole settlement agent for U.S. government debt instruments, such as U.S. Treasuries.
This means all cash trades in or repo trades backed by Treasury collateral—whether cleared through FICC or traded bilaterally — settle through BNY Mellon.

Bottom line:

- I would suggest broadening the lens of the analysis to recognize tht a fuller set of factors can influence systemic risk.

Are we in a TBTF environment?

- The moment matching exercise assumes that observed data are not influenced by TBTF policies.
- Yet, an empirical moment matched is that the failure rate of the largest, national banks is 0.
- Against this background the authors consider the introduction of TBTF policies.
- Should it be the other way around? In other words, could it be that the 0 failure rate for the largest banks is an artifact of implicit guarantees?

Or an alternative hypothesis

Minimum Capital Requirements	Bank Categories ⁶				
	Category I	Category II	Category III	Category IV	Other
Risk-Based Capital					
• Advanced Approaches	✓	✓	X	X	X
• Standardized Approach	✓	✓	✓	✓	✓
• Stress Capital Buffer	✓	✓	✓	✓	X
• Countercyclical Capital Buffer	✓	✓	✓	X	X
• GSIB Surcharge	✓	X	X	X	X
Leverage Capital					
• U.S. Tier 1 Leverage Ratio	✓	✓	✓	✓	✓
• Supplementary Leverage Ratio	✓	✓	✓	X	X
• Enhanced Supplementary Leverage Ratio	✓	X	X	X	X
Total Loss Absorbing Capacity					
• TLAC	✓	X	X	X	X

- Capital requirements are tailored by bank size --- Category I including G-SIBs.
- Could the tailoring account for a redressing of risk-taking incentives and lower failure rates for Category I banks?
- But model does not include this tailoring.

Model is part of a broader research agenda

- Closely related to previous work by the same authors --- for instance, Corbae and D'Erasmus (Ecta, 2021).
- In the same vein, the approach is to build up a rich banking sector, but economize on other features --- no endogenous labor or capital accumulation.
- An important simplification is that all profits are distributed as dividends.
 - Presumably bank growth can occur through external equity injections.
 - Extensive empirical analysis does not touch on this aspect of the model.
- The model includes non-bank financial intermediaries.
 - The model is already plenty complex. Are non-bank intermediaries essential? Could they be pruned or left for sensitivity analysis?

National reach or a broader set of activities

- In line with the empirical analysis, the model only considers the traditional banking model.
- If banks compete by diversifying the set of services they offer, would the considerations surrounding TBTF be different?
- In other words, it would seem central to trace the effects of the failure of one of the large banks --- something the authors do not undertake.
- But those effects have to depend on the substitutability between the services of different banks --- specialized, if not unique services (think BNM) must influence the costs of letting a large bank fail.

An alternative policy experiment

- In the aftermath of the SVB collapse, deposits started flowing away from regional banks toward the largest banks.
 - Did perceptions of an implicit guarantee for large banks play a role in this deposit flow?
- Correlated business models can amp up the systemic risk of regional banks.
- The Bank Term Funding Program introduced in the aftermath of the SVB failure allowed banks to pledge Treasury and agency securities at their full face value as collateral against loans.
- Could the model be used to assess the BTFP?

Expositional suggestions

- Dean and Pablo have taken on a hard task --- the paper is very much work in progress.
 - If you are not itching to read the paper, I would wait for the next draft.
- It takes too long to get to the heart of the analysis:
 - Roughly 20 pages are devoted to the empirical analysis.
 - With 20 pages for the model, the TBTF experiment is relegated to page 40.
 - Is there some way to frontload some of the analysis?
- Some of the model exposition could be pushed to an appendix.
- It would be useful to expand the overview of the model --- a chattier roadmap would better prepare the reader for the complexity of the problems faced by the various agents and how they are related to one another --- this might be just enough for the main body of the paper.

And some more expositional suggestions (once you start it's hard to stop)

- The empirical analysis could be the start of a handbook chapter.
- To make it even more useful to the reader, you could lean in that direction and compare and contrast your results more fully against the broader literature.
- The calibration section and moment matching exercise could stand to be revamped.
 - I found it hard to interpret some of the key moments presented.
 - It would be useful to show an explicit yardstick for the distance between data and model moments.