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Discussion of
**Interest Rate Risk in
Banking**

By

DeMarzo, Krishnamurthy, and Nagel

A Puzzle

- I struggled to understand what this paper is about
- Not because the title is not clear “Interest Rate in Banking”
- Nor because the paper is not clearly written
- But because I do not understand why the authors chose to make the paper about what is about
- The correct title should be “Interest Rate in Some Banking Activities”
- The fundamental question is why do we care only about those activities.

A Bank Balance Sheet

Asset

Loans

Securities

Derivatives

Liabilities

Deposit

Borrowing

Equity

- There are multiple ways to analyze the interest-sensitivity of a bank balance sheet
 1. Duration of Assets
 2. Duration of Assets- Liabilities
 3. Duration of Deposits
- The paper does not choose any of them

- The paper assumes that banks make no money
 - in investing in securities
 - In trading derivatives
 - in borrowing
- They make money only on
 - Loans
 - deposits
- Thus, they focus only on the duration of these components
- Why?

- One explanation is that these are sources of value that are not explicitly accounted for in a bank balance sheet
 - Thus, these are the hidden sources of bank (in)stability and insolvency
- Another is that these two components share some costs that are difficult to allocate
 - Since these costs drive duration, estimating these two parts together rather than separately is easier.
- A third reason is that we are interested in whether banks have a comparative advantage in holding long-term securities.
- Whatever the reason, it should be explained better.

Ambiguity

- “Indeed, Drechsler et al. (2023b) estimate that the **deposit** franchise has a negative duration, and compute that the value of the deposit franchise rose by \$1.6 trillion as rates have risen.” (p.5)
- “Unlike Drechsler et al. (2023b), we show that **franchise value** did not increase when interest rates rose in 2022. Rather, franchise value declined.”(p.5)
- “This misperception of deposit liabilities as having negative duration may then make it seem like cash-flow hedging not only stabilizes NIM, but also has duration-hedging benefits.” (p.44)

What I Like of the Paper

- It makes a simple but important point
- Both the value of the deposit franchise and the value of the loan franchise can be written as a floating component and a fixed component
- Suppose the deposit rate is given by

$$r_t^D = -\alpha^D + \beta_1^D r_t^*$$

- Then, the value of the deposit franchise is given by

$$\left[\underbrace{d(\alpha^d - c^D)}_{\text{Net Fixed Spread}} + \underbrace{d(1 - \beta_1^D)r_t^*}_{\text{Floating Spread}} \right]$$

- The same is true for loans

What is Missing

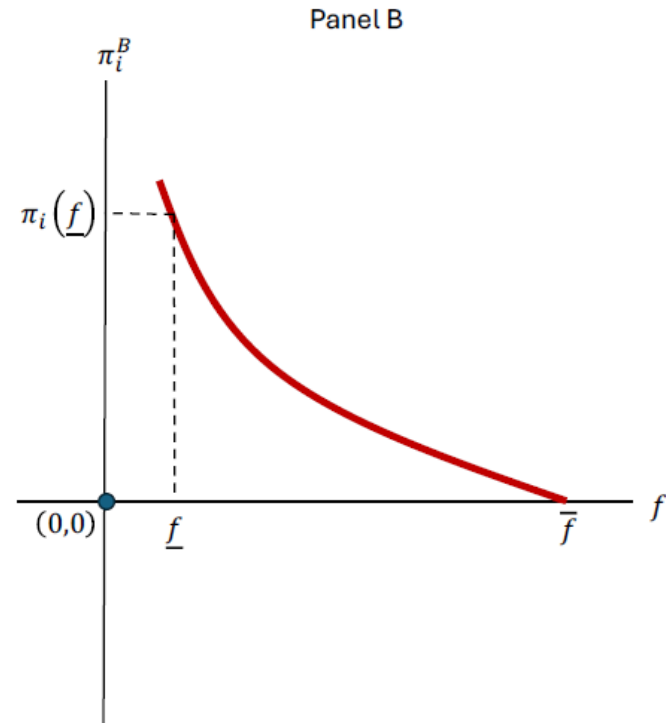
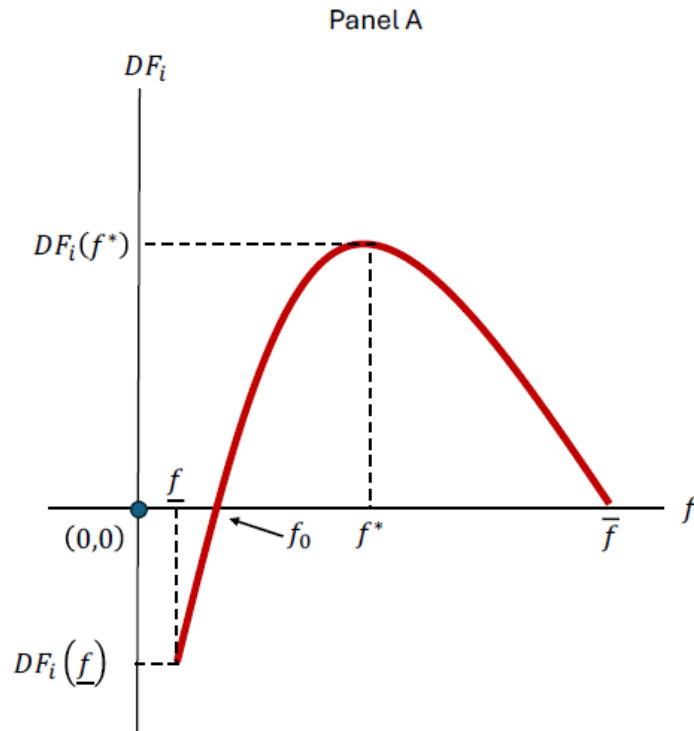
1. The probability that the deposit franchise is lost
 - This probability increases with the FFR (Jiang et al. (2024), DSSW 2024)
 - This loss dominates any other effect
2. The probability that the loan franchise vanishes, which might be increasing in the interest rate
3. The economics underlying both franchises

Where Is the Economics?

- The paper assumes that the deposit rate is an affine function of the FFR
- The same is true for lending
- But these functions should be the equilibrium outcomes of competition among banks and
 - banks with MMF for deposits
 - banks and non-bank financing for loans
- Full disclosure: Naz, Tano, and I have a paper doing precisely this for deposits
- In any competition model, the price response also affects the quantity.

- Thus, when banks do not respond one-to-one to increases in FFR, they will lose some deposits.
- Why? It is better to lose some deposits than to match the FFR increase one-to-one.
- Naz, Tano, and I estimate that for every 1pp of increase in the FFR banks lose 2% of deposits.
- This effect increases the positive duration of the deposit franchise.

Deposit Franchise and Bank Profit



Empirics

- Not all the costs are for deposits and loans
- Many banks have large brokerage and IB activities
- There is no franchise value for IB?
- In this case, you divide the costs based on the share of the revenues
- How big an approximation is that?
- Why can't you do something like that for loans too?

An Interesting Finding

- “Virtually all banks, except those with the highest securities duration contribution, had expected that a rise in interest rates would raise their market value of equity!” (p. 52).
- The authors jump to the conclusion all banks made a mistake
- Yet, there are two alternatives
 1. The impact is nonlinear
 2. The loss in equity is due to the risk of losing the franchise

Announcement Effects of FFR

- To study the duration of assets minus liabilities we should focus on abnormal equity returns around the announcement of FFR increases

$$\text{Abnormal Return}_{it} = \beta_0 + \beta_1 \times \text{Digital}_i + \varepsilon_i$$

	(1)	(2)
Digital	-0.003* (0.002)	-0.003* (0.002)
Security Losses		0.006 (0.023)
Constant	-0.003** (0.001)	-0.003* (0.002)
Observations	709	709
R2	0.01	0.01

Conclusions

- There are a lot of interesting insights in the paper
- It is not fully clear, however, what the big idea of the paper is.
- Nothing in the paper contradicts DSS that the deposit franchise has a negative duration
- The paper only says that if you consider also the loan franchise the net result might be a positive duration.
- But this fact does not undermine the most important facts: banks have a comparative advantage in holding long-term lo