Discussion of:
"The Financial (In)Stability Real Interest Rate, r**"
by Ozge Akinci, Gianluca Benigno, Marco del Negro, Albert Queralto

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XXVII Annual Conference of the Central Bank of Chile
2024

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Large literature highlights:

- Health of banks balance sheets matters for credit supply and the real economy
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$\Rightarrow$ This paper proposes r^{**}:

- Novel measure of financial stability (i.e. health of banks' balance sheet) $\rightarrow$ mapped on interest rate space
  - if $r < r^{**} \Rightarrow$ financial Stability $\rightarrow$ strong balance sheets
  - if $r > r^{**} \Rightarrow$ financial INstability $\rightarrow$ weak balance sheets

Summary: How to measure r^{**}

Model-based approach:

- (Quasi) standard model with financial constraints (Gertler & Kiyotaki 2010)
- Define r^{**} as the interest rate at which the constraint is *just* binding

Quantification of r^{**}:

- Calibrate the model
- Measure r^{**} by looking at financial data

Outline

- What is r^{**}?
  - Model and definition
  - Comment: Why is it useful?
- Identification and estimation of r^{**}

Model in a nutshell

At the end of period

Assets	Debt
B_t + $Q_t K_t$	D_t
	Net Worth N_t

Models with borrowing constraints:

$$\underbrace{B_t + Q_t K_t}_{\text{Assets}} \leq \overline{\phi_t} N_t$$

- N_t is key $\Rightarrow$ Determines asset demand (credit supply) & Investment (K_t)

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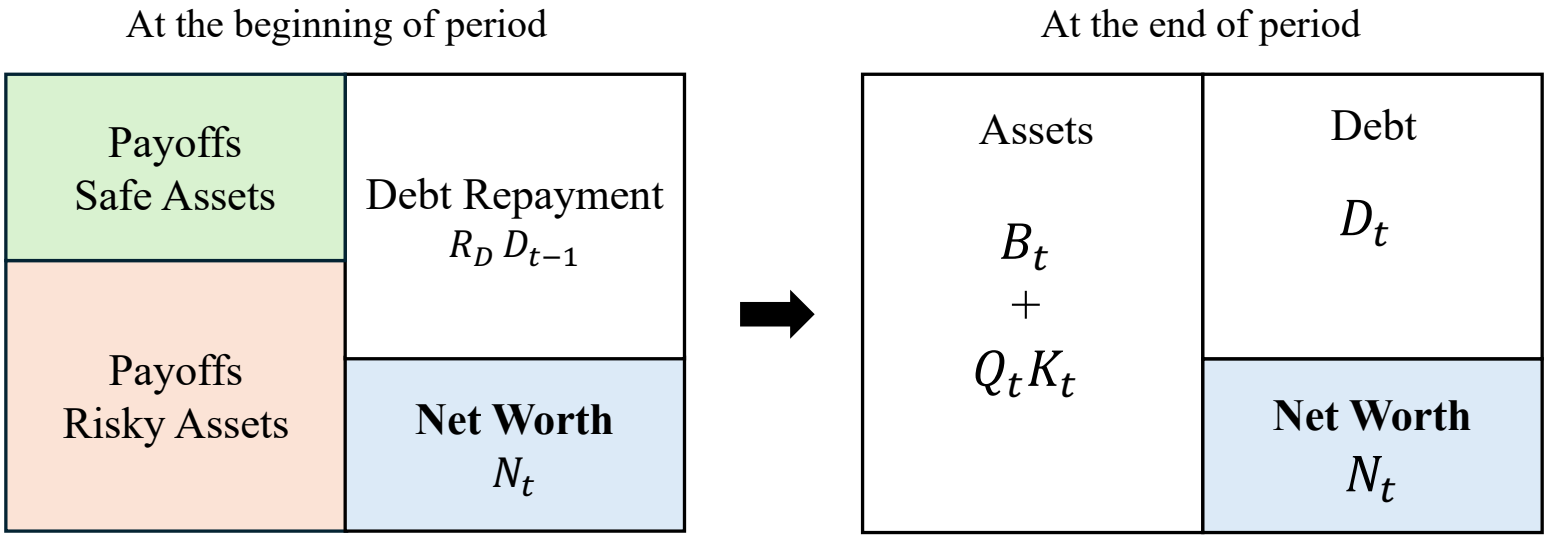

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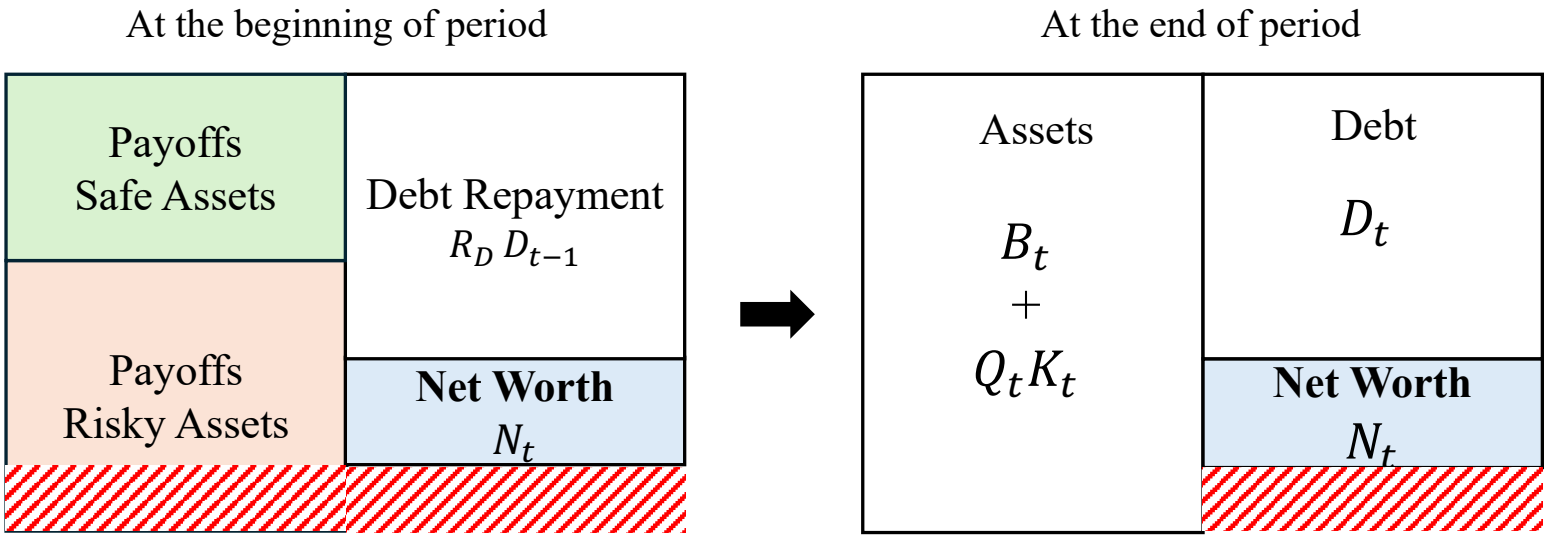

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Main mechanism (Valuation effect):

- Higher R_t $\Rightarrow$ lower price of long-term/risky assets Q_t

$$R_t \uparrow \Rightarrow Q_t \downarrow \Rightarrow N_t \downarrow$$

Model in a nutshell: Implications of a drop in net worth

Case I. Without borrowing constraint (or, N_t large so we are far from the constraint)

- Changes in net worth play no role
- Investment K_t is determined by:

$$E[\Lambda_{t+1}\left(R^K_{t+1} - R_t\right)] = 0$$

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$$N_t \downarrow \Rightarrow K_t \downarrow \Rightarrow Q_t \downarrow \Rightarrow N_t \downarrow ...$$

- Investment K_t is determined by the constraint (by net worth)

$$Q_t K_t = \phi_t N_t$$

while risk-premium:

$$E[\Lambda_{t+1}\Omega_{t+1}\left(R^K_{t+1} - R_t\right)] = \underbrace{\mu_t}_{\text{Lagrange multiplier}} > 0$$

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- For every state $(\mathbf{S_t}, \mathbf{Z_t})$: Find "distance to the constraint":

$$\underbrace{r^{**} - r}_{\text{measure of resilience of banking sector}}$$

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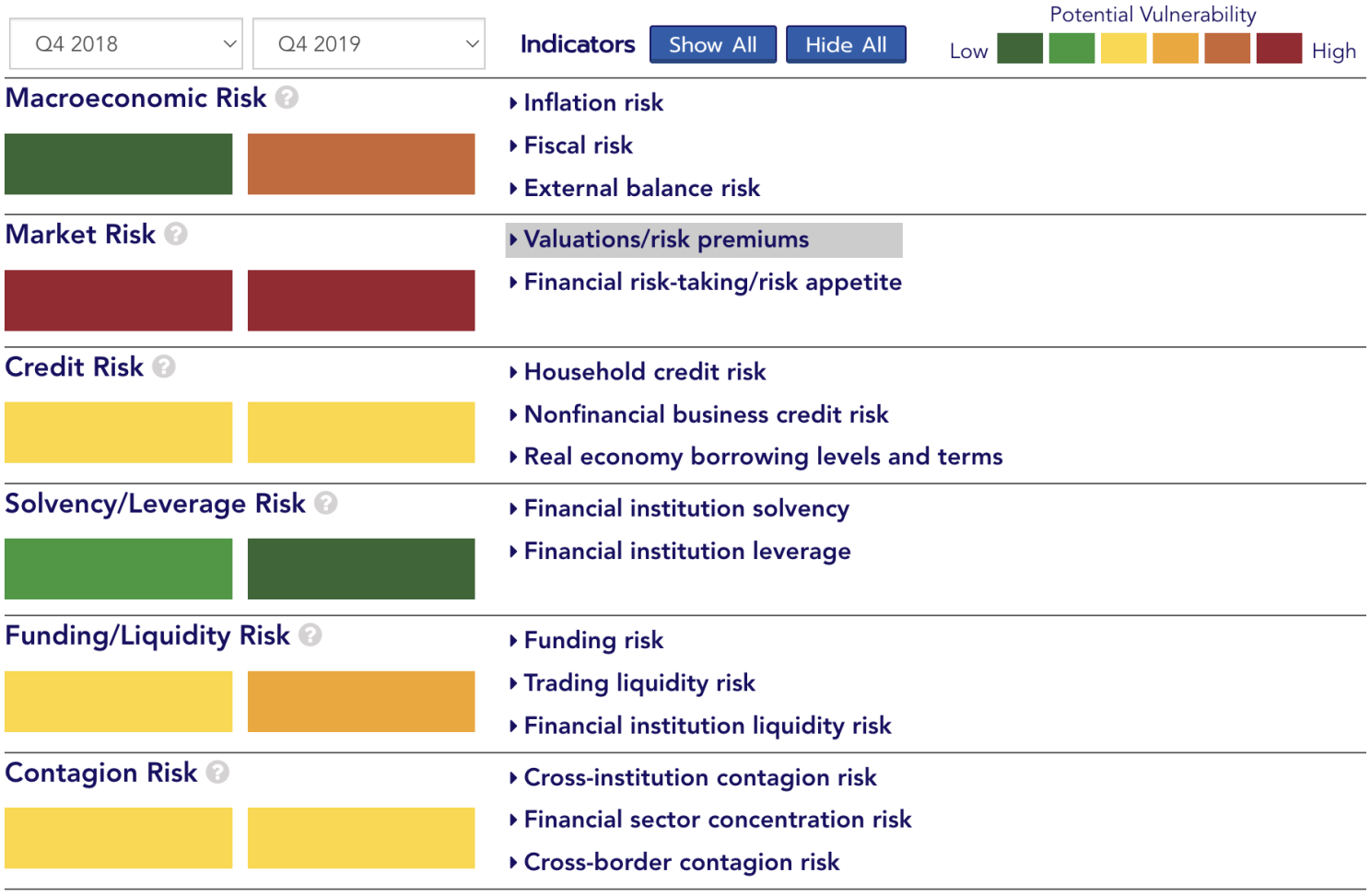

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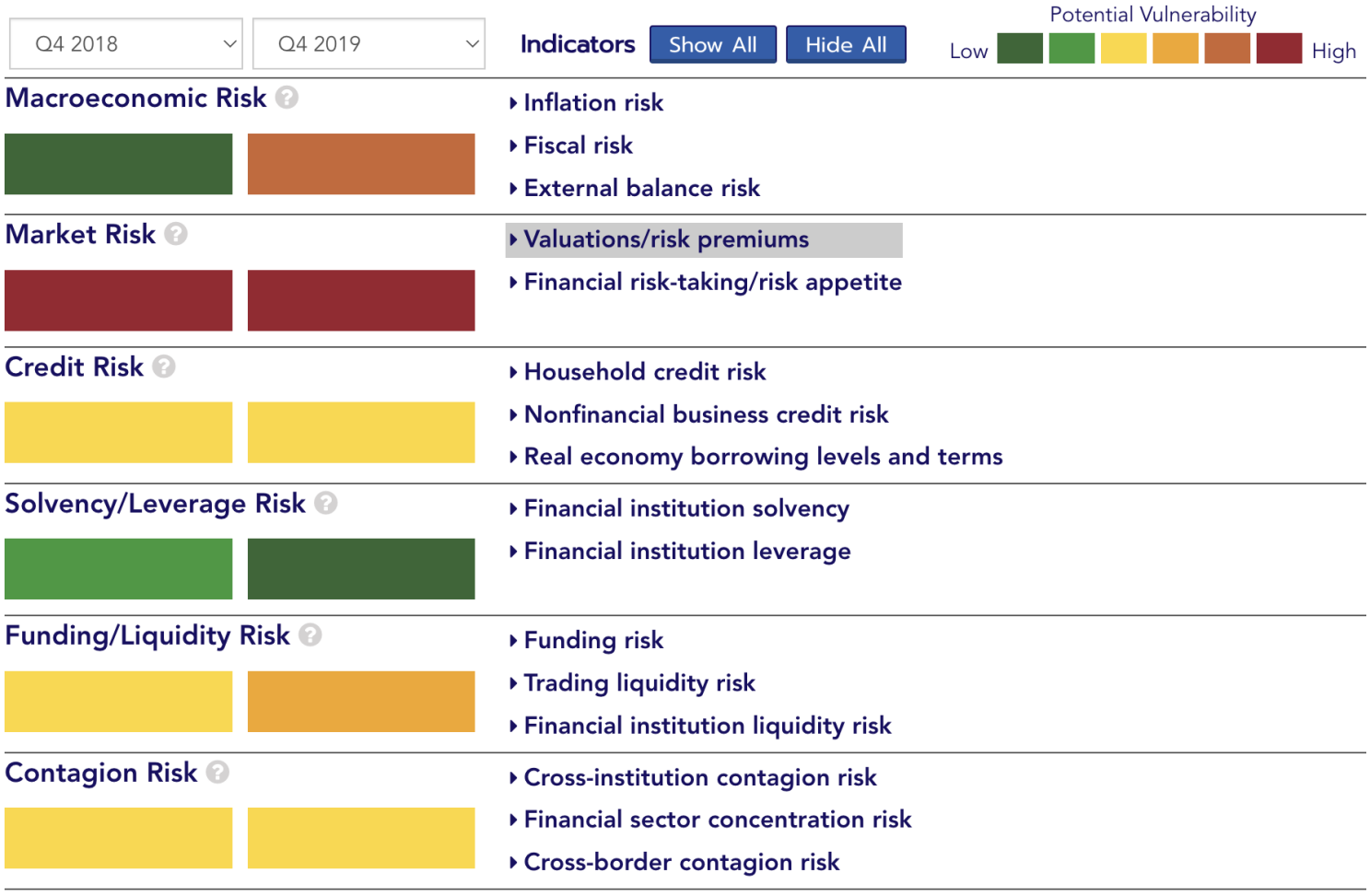

$\Rightarrow r^{**}$: Summarizes vulnerabilities into a simple indicator on the interest rate space!

- Very useful!

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- $r > r^{**} \rightarrow$ worry about balance sheets
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IV. Other mechanisms not considered by the model:
- Credit risk
- Franchise value effects

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   - Simulation based on **two** main shocks: $\mathbf{Z} = \{Z_{TFP}, Z_R\}$ ... (+ Z_ζ with low vol)
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$\Rightarrow$ **This is great!** $\rightarrow$ with $\hat{g}$ we don't need to reestimate model to find indicator!

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Approximated function $r^{**} = \hat{g}(\text{vars})$ is very accurate **in simulated data!**

A. Using $r^{**} = \hat{g}(\text{leverage, safe assets ratio}) \rightarrow R^2 = 99.7\%$

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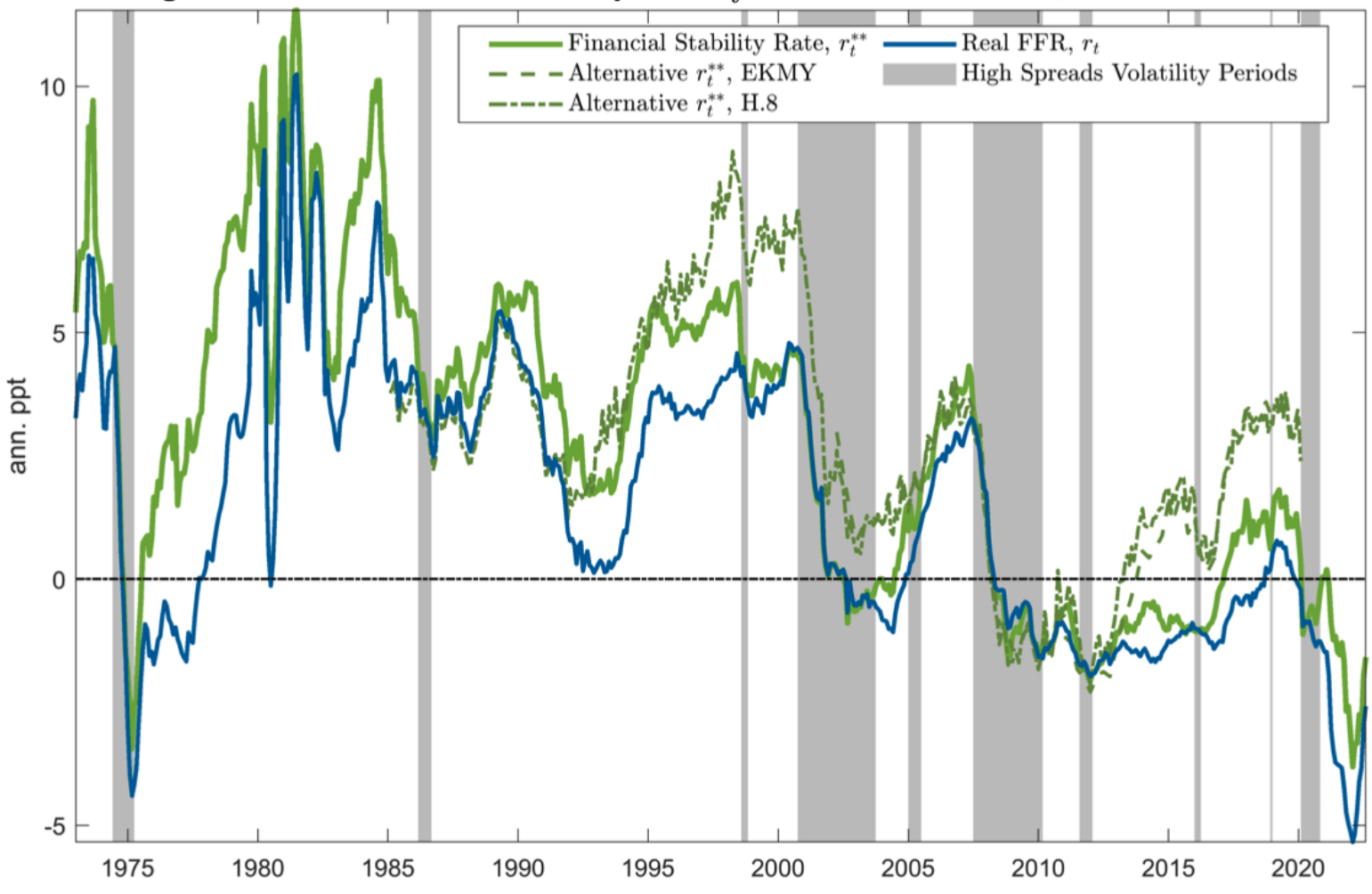
Figure 11: The financial stability rate r_t^{**} and the real rate r_t in the data



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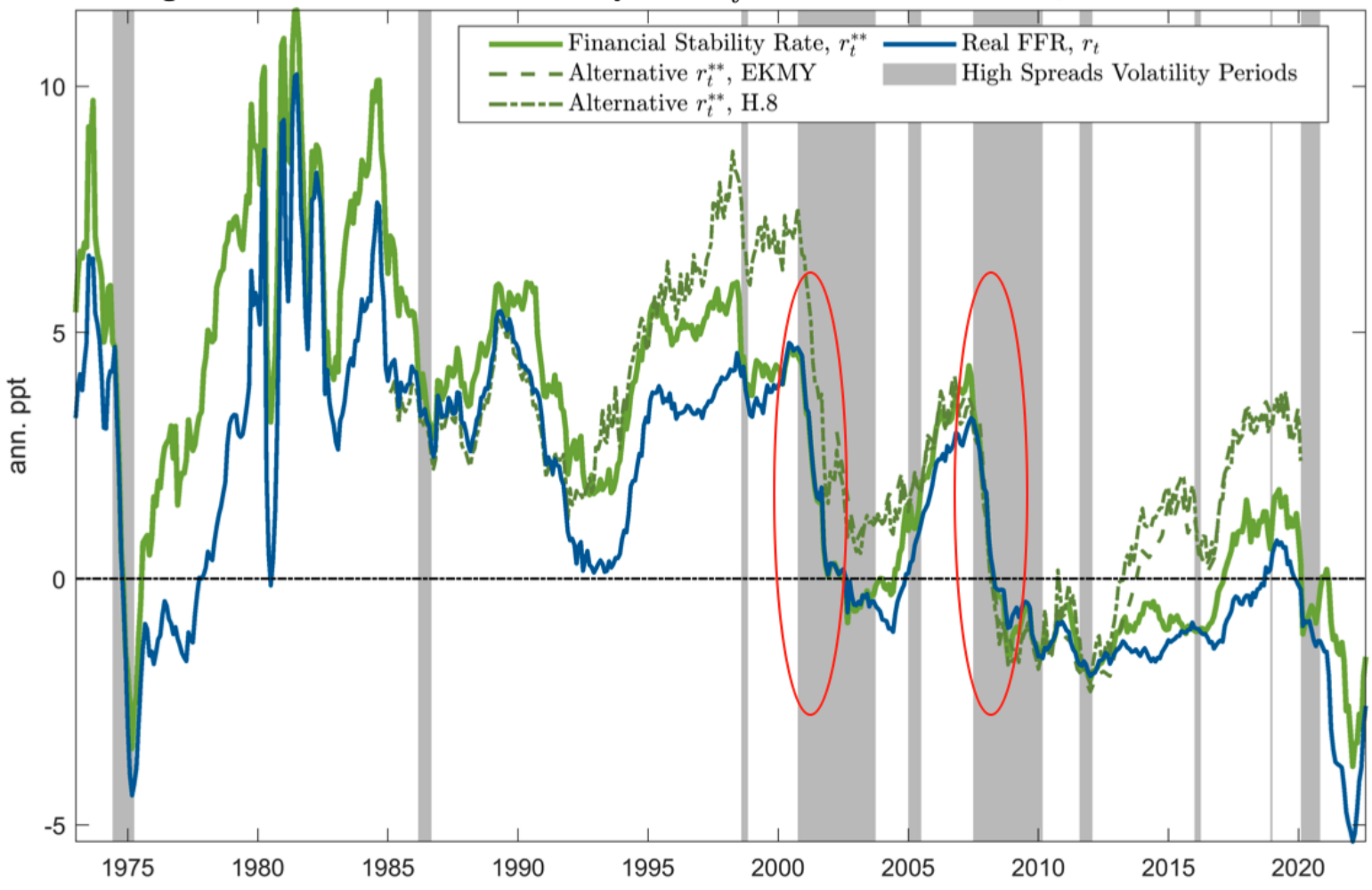

- Constraint is binding in **2001 & 2008 recessions**

* According to the model, what generated the drop of r^{**} in these recessions?

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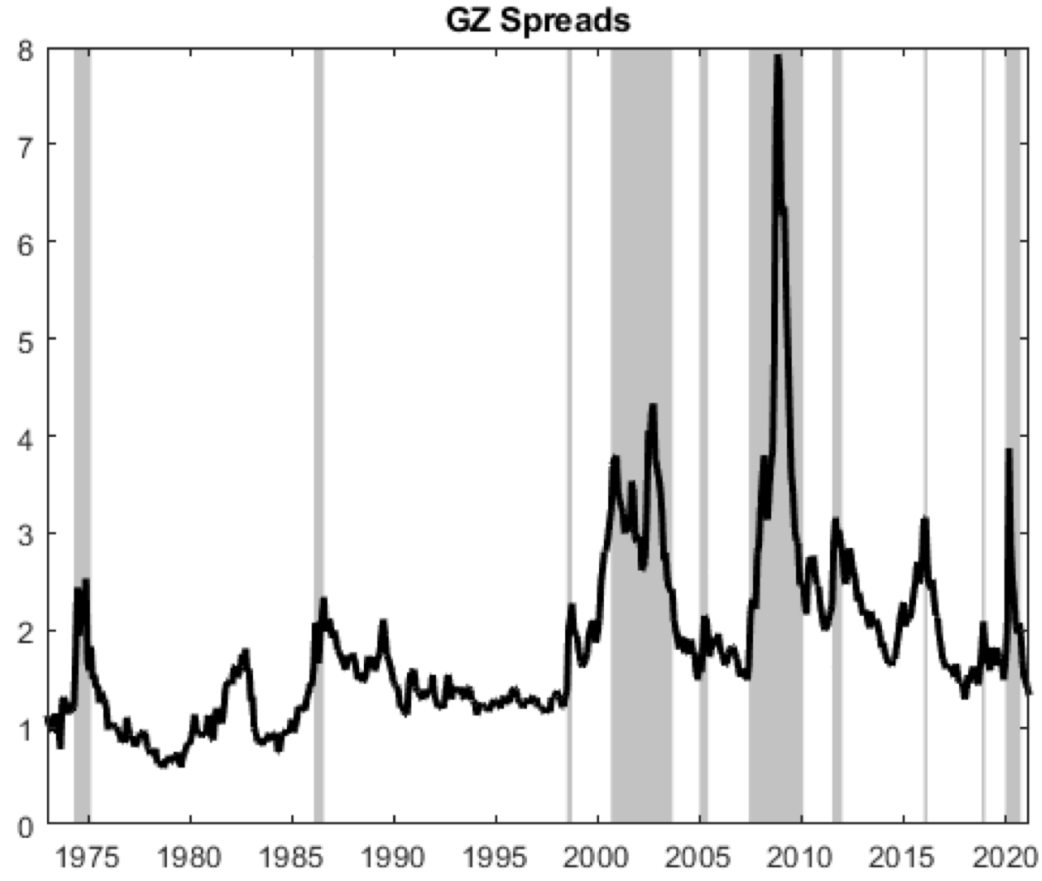

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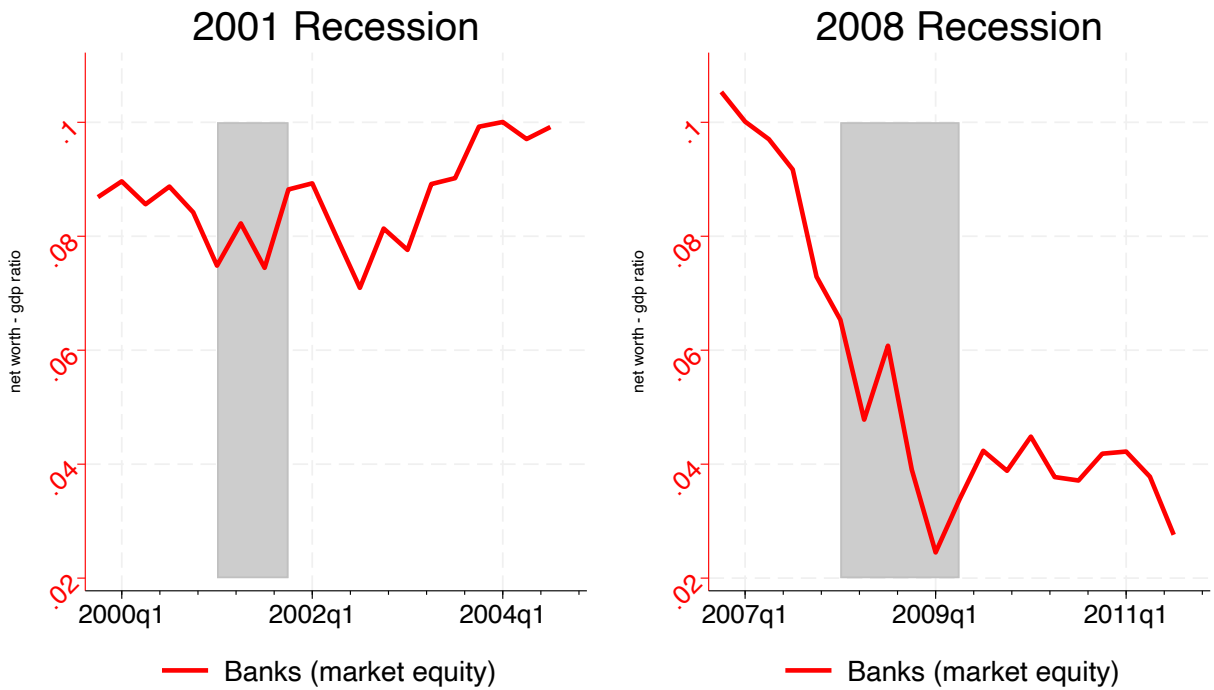

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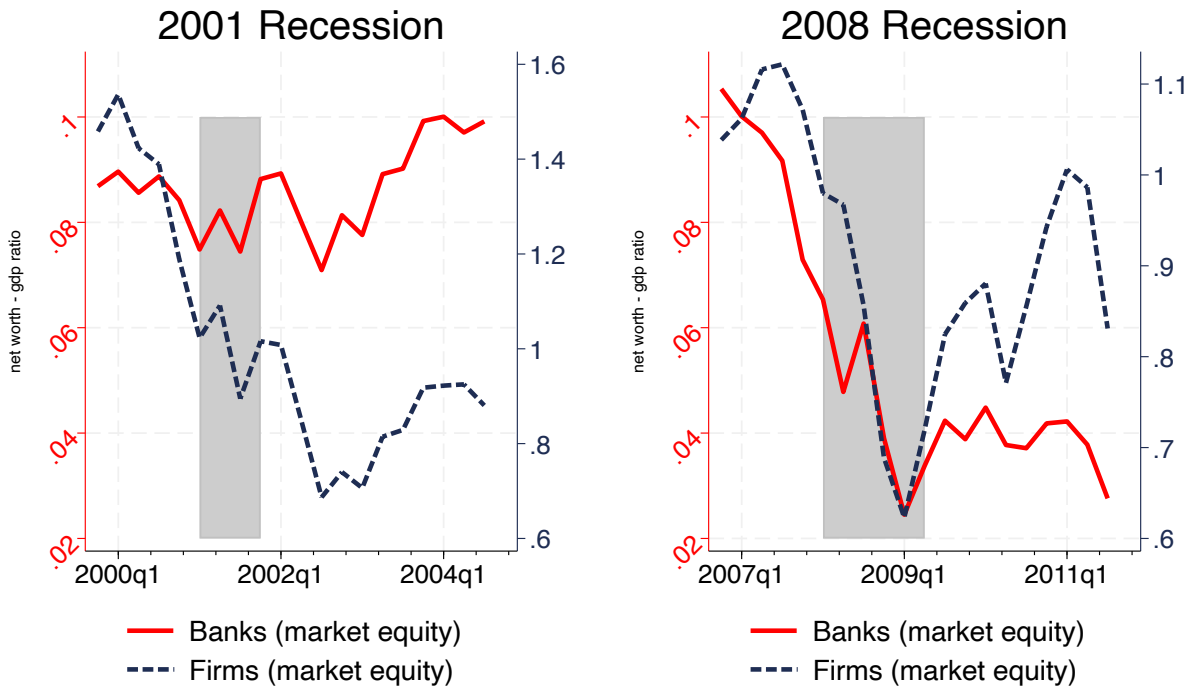

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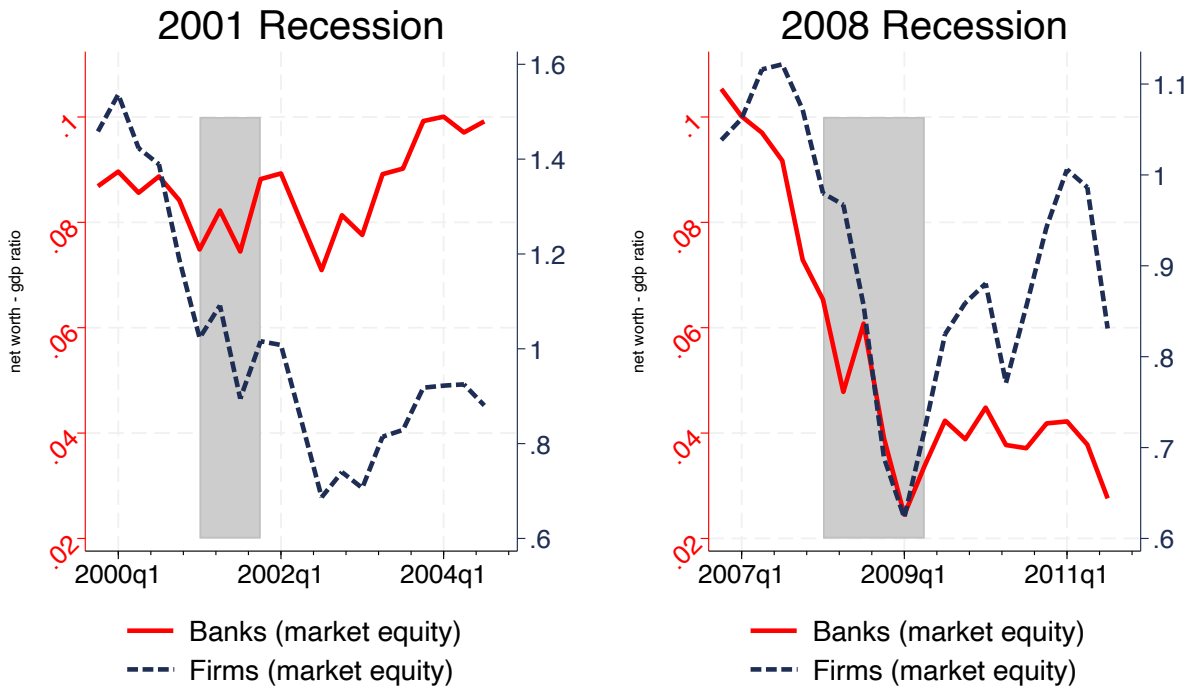

- Villacorta (2023, R&R JF): Differential importance of bank vs firm constraints:
  - In 2001: weak firms' balance sheets $\rightarrow$ credit demand & high spreads
  - In 2008: weak banks' balance sheets $\rightarrow$ credit supply & high spreads

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