Breaking the Sovereign-Bank Nexus

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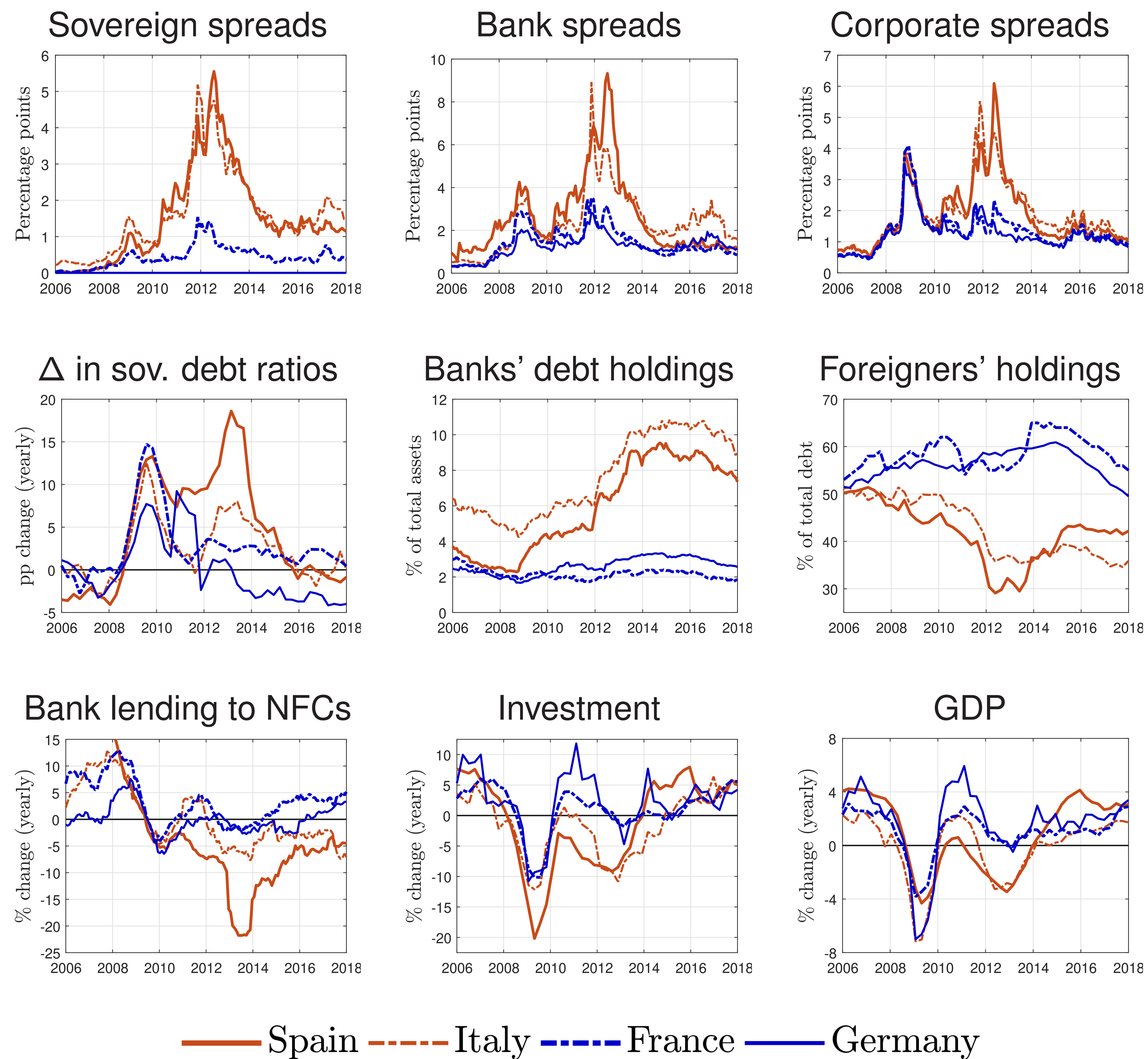
Motivation

European debt crisis and the **sovereign-bank nexus**:

- Mutually reinforcing negative effects of sovereign risk, financial instability and depressed economic activity

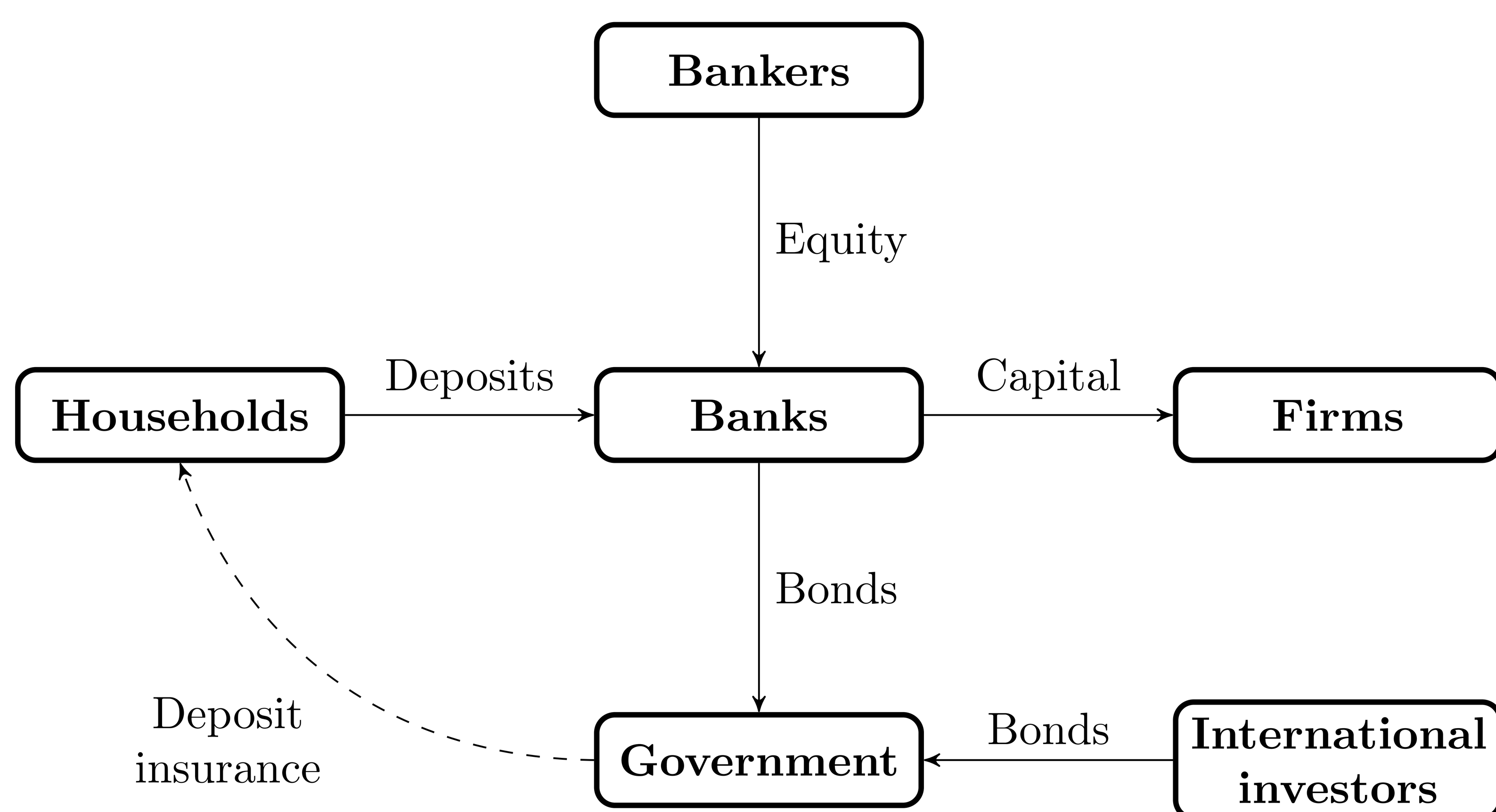


This paper

Non-linear DSGE model sheds light on the mechanisms behind:

- Endogenous feedback between bank failure and sovereign default risk
- Macroprudential implications of regulating banks' sovereign exposures

Model overview:



Key ingredients:

- Distortions associated with external debt financing drive banks' risk taking:
  - Limited liability: banks' losses limited to their equity contribution
  - Govt. guarantees: mispricing of risk at the margin

  → ***Risk-shifting channel***

- Capital regulation + limited participation in equity markets: bank intermediation is constrained by endogenous accumulation of capital

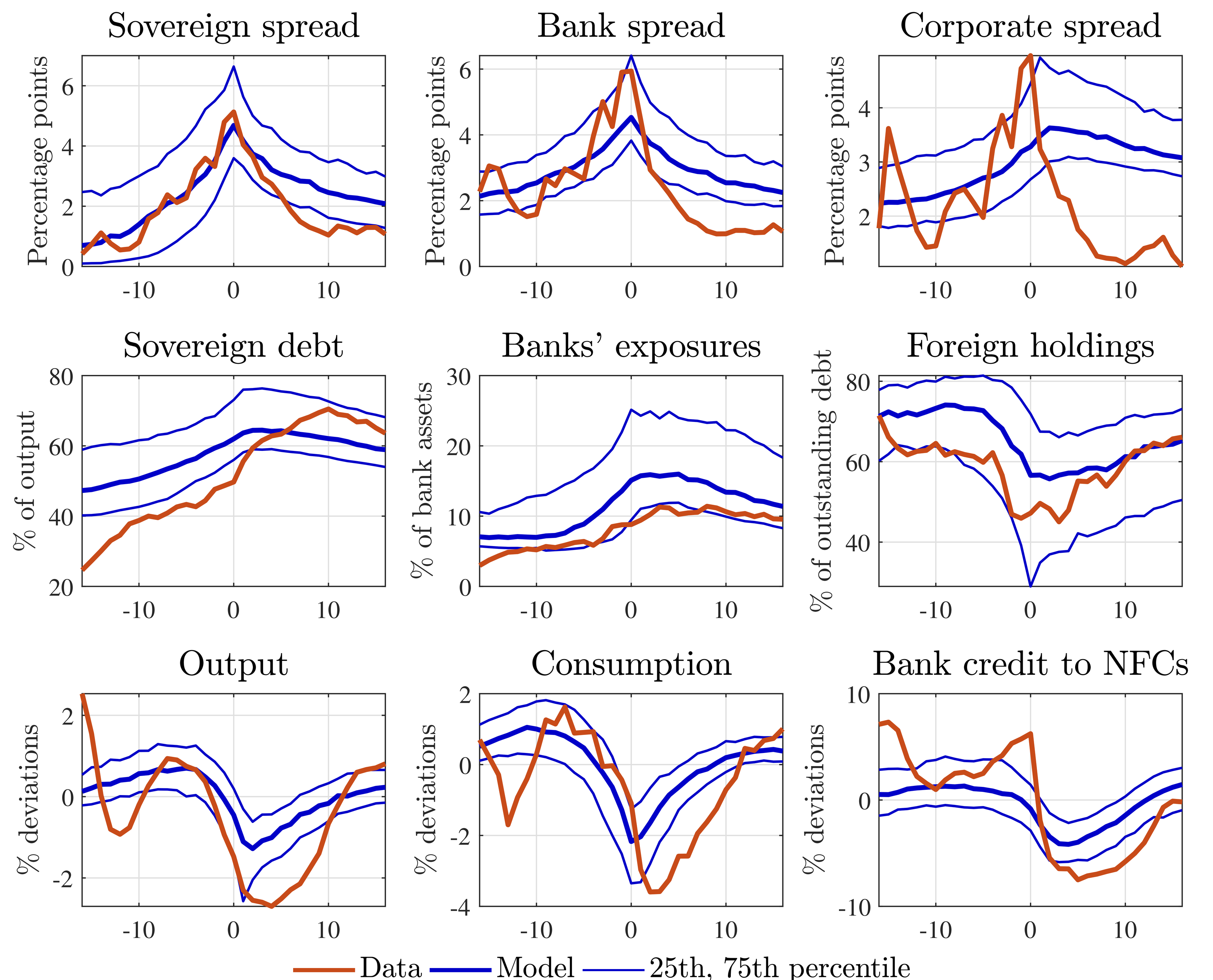
  → ***Net worth channel***

→ **Main trade-off**: Higher capital requirements mitigate banks' risk-shifting incentives at the cost of constraining credit supply

Quantitative exercise: calibration based on a peripheral EU country (Spain 1999-2018)

Results

Crisis events: model vs. data



∗ Crisis events in the model are defined as periods in which sovereign and bank spreads 2 standard deviations above unconditional mean

Counterfactual 1: riskless sovereign debt

→ Contribution of sov. risk explains ∼60% of the drop in output during crises

Counterfactual 2: higher capital requirements (sovereign risk weights)

→ Ameliorate banks' risk-shifting incentives and mitigate the effects of higher sovereign risk on macro outcomes but constrain credit supply

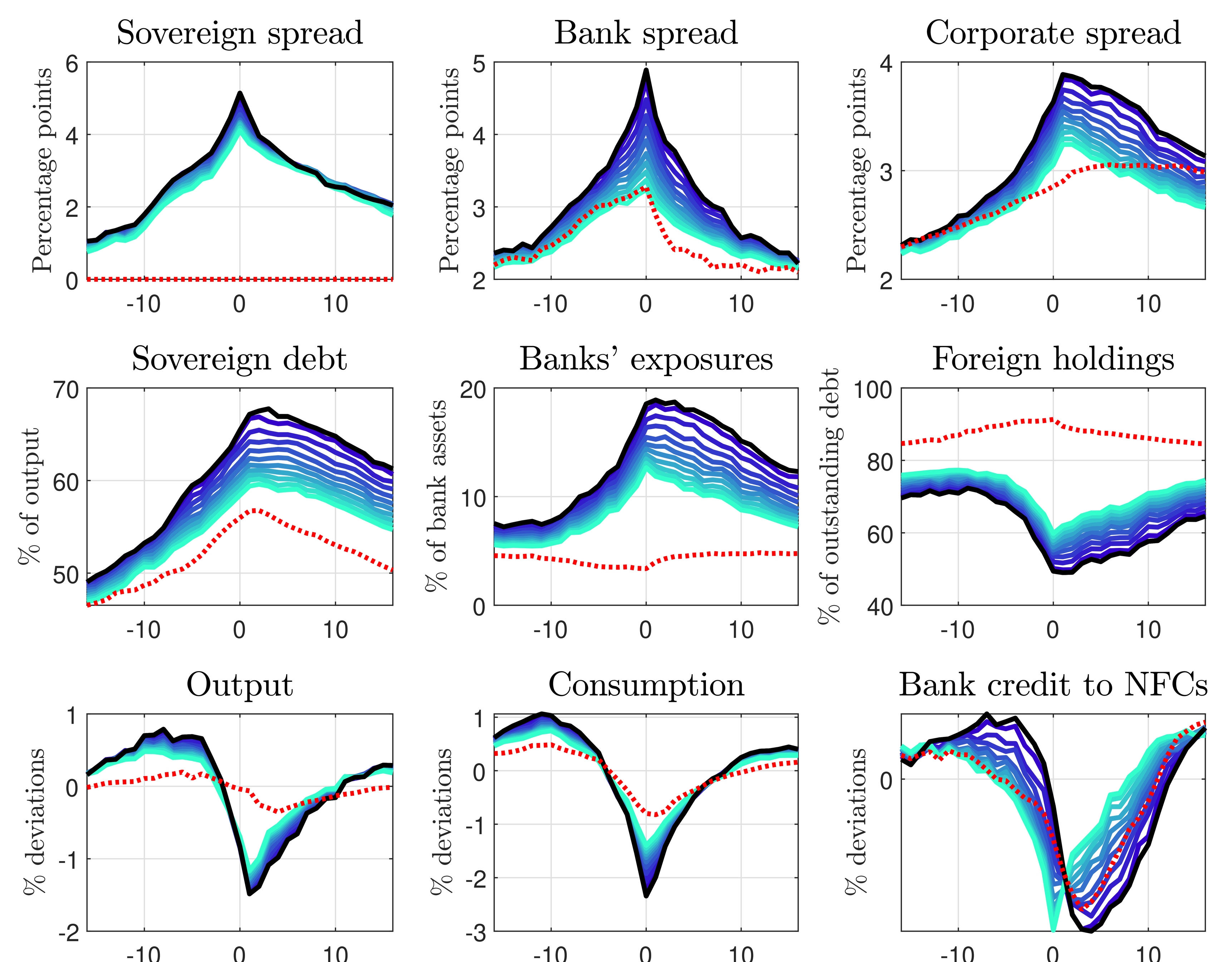
k	e
	d
b	

e: equity
d: deposits
b: sovereign bonds
k: other risky assets

Capital requirement: $e \geq \gamma(k + \iota b)$

Bank's balance sheet and capital regulation

Counterfactual exercises



Black lines: baseline economy
Red lines: counterfactual economy without sovereign risk
Blue lines: higher capital requirements

$\iota = 10\%$ $\iota = 20\%$ $\iota = 30\%$ $\iota = 40\%$ $\iota = 50\%$ $\iota = 60\%$ $\iota = 70\%$ $\iota = 80\%$ $\iota = 90\%$ $\iota = 100\%$