

# **Cyclical Implications of Changing Bank Capital Requirements**

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**\* The views expressed in this presentation are those of the author and should not be attributed to the International Monetary Fund, its Executive Board, or its management.**

# Introduction

- **Question:**

How should regulators set bank capital requirements in different phases of the business cycle?

- **Widespread (standard) view:**

Bank capital requirements should be loosened during recessions and tightened during expansions to avoid excessive credit and output fluctuations (pro-cyclicality)

# Standard View

- Bank's initial balance sheet:

Assets	Liabilities
Loans	Capital
Cash	Deposits

**CAR > 0.08**

- Effects of recession:

Assets	Liabilities
Loans	Capital
Cash	Deposits

**CAR < 0.08**

**Loan write-offs**

- To satisfy the capital requirement ... further loan reductions

$$\uparrow \text{CAR} = \frac{\text{Capital}}{\text{Risk-weighted assets}} \downarrow$$

Loans	Capital
Cash	Deposits

**CAR = 0.08**

- Amplification of the credit crunch and the recession

## Standard View

- **Policy prescription:**

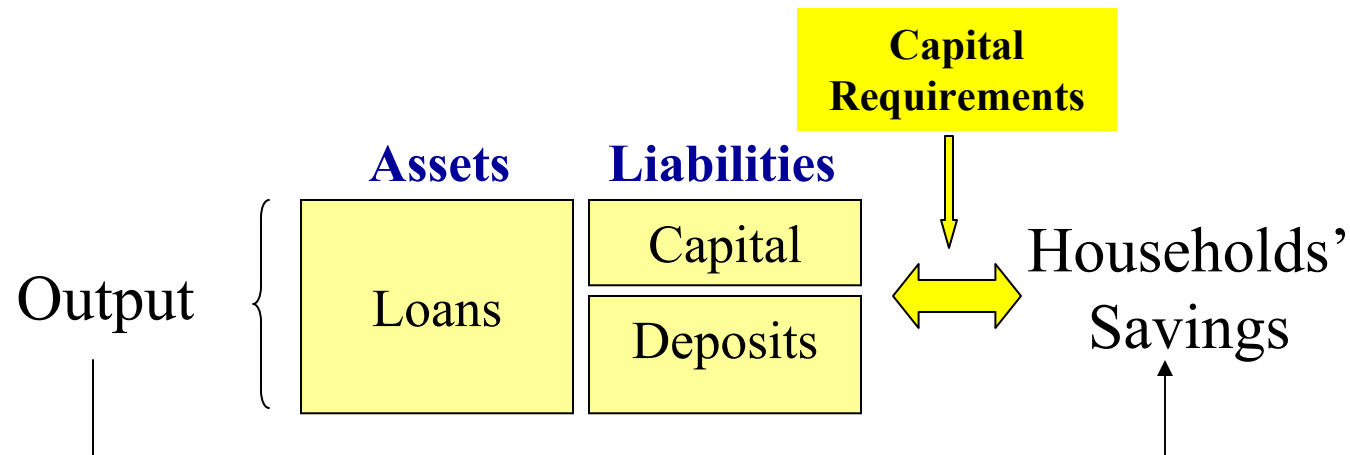
Capital requirements should be reduced in recessions—in response to loan write-offs

## Drawbacks

- Bank insolvencies are more likely (fiscal costs, deposit insurance losses)
- It ignores the effects of capital requirement policies on the consumption-saving decisions of households

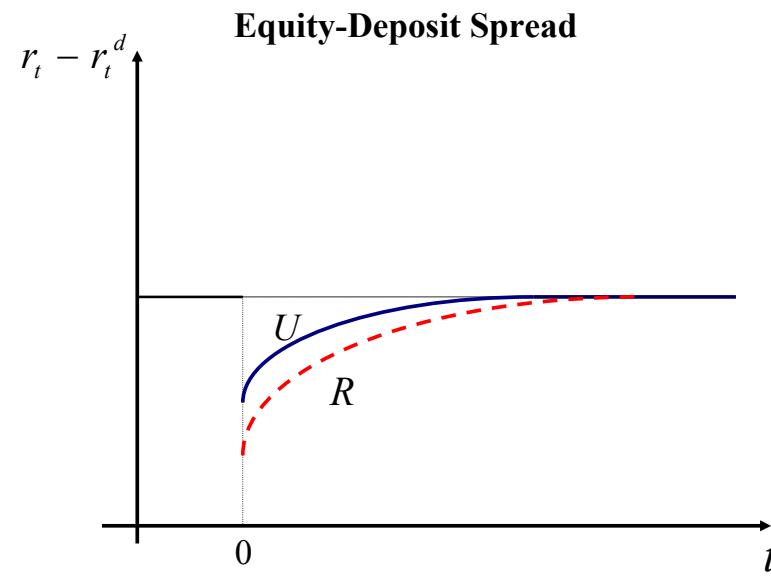
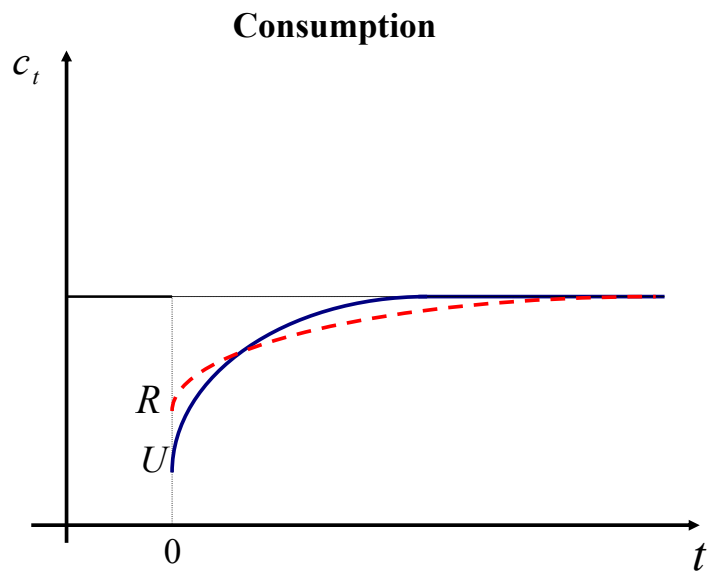
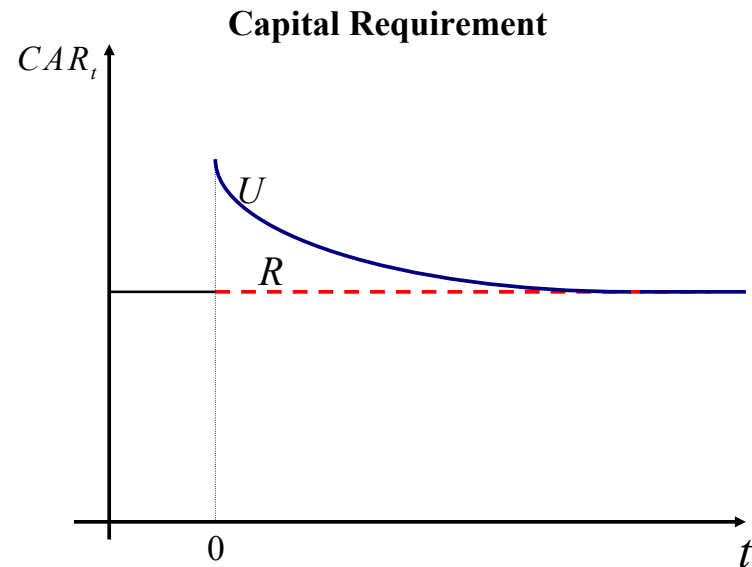
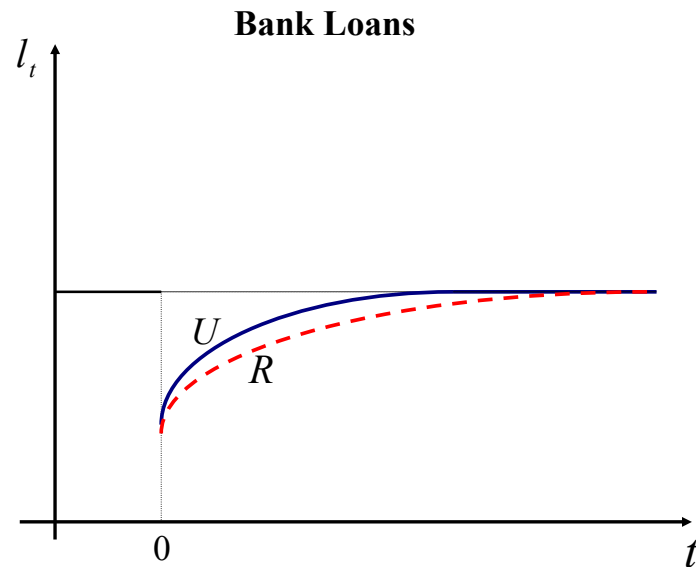
# Our Paper

- **Focus:** effects of capital requirement policies on the (inter-temporal) consumption-saving decisions of households



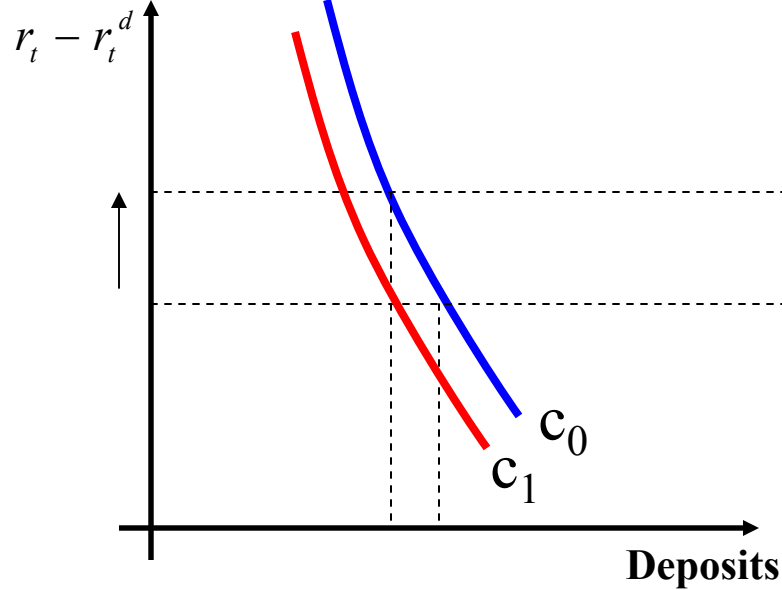
- **Findings:**
  - Capital requirements should be increased in response to negative loan supply shocks (loan write-offs).
  - This policy provides stronger incentives to save and allows a more rapid recovery of bank loans and output.

# Loan Write-offs in Unrestricted (U) and Restricted (R) Models



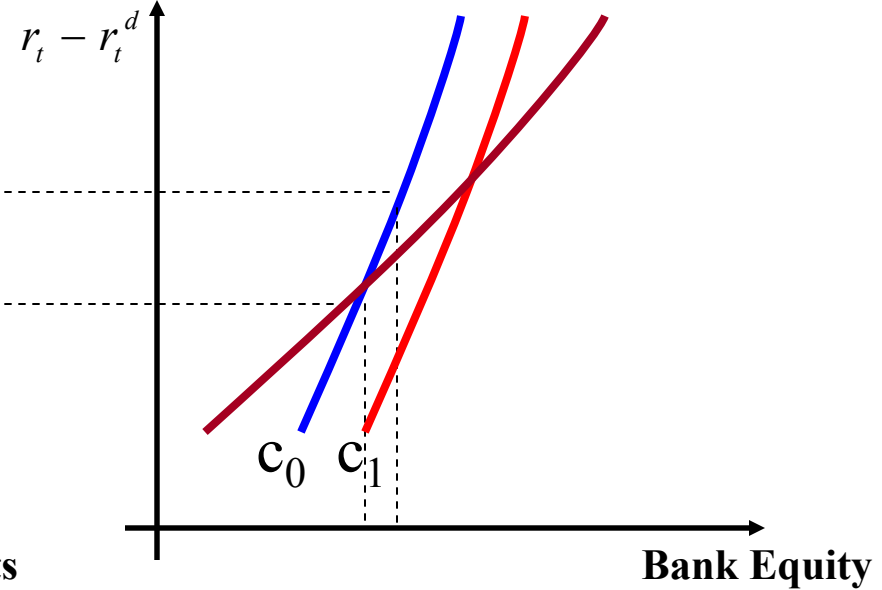
# “Impact” Effects of Increasing Capital Requirements

Equity-Deposit  
Spread



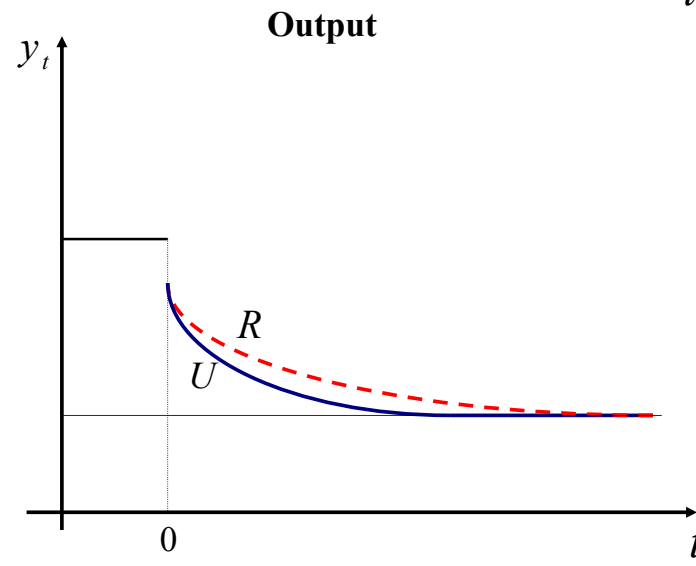
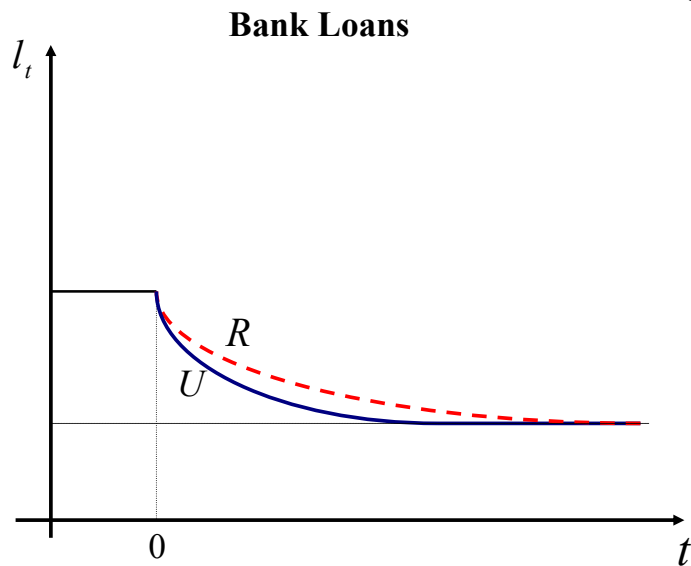
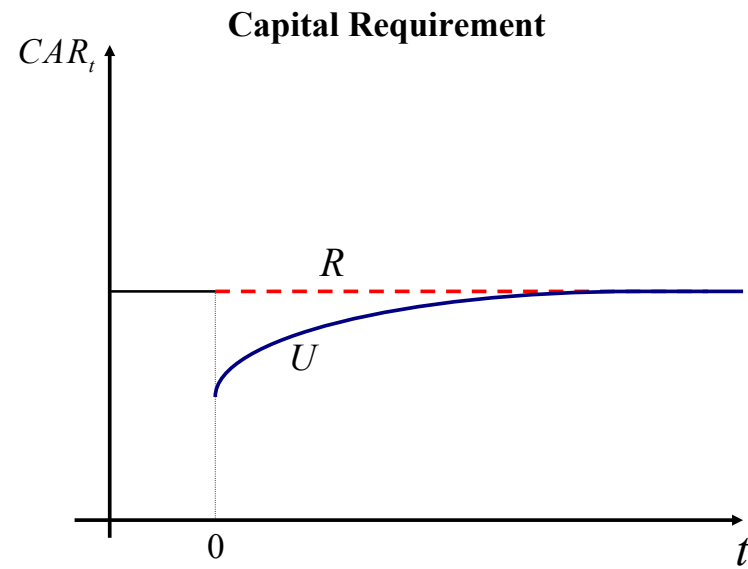
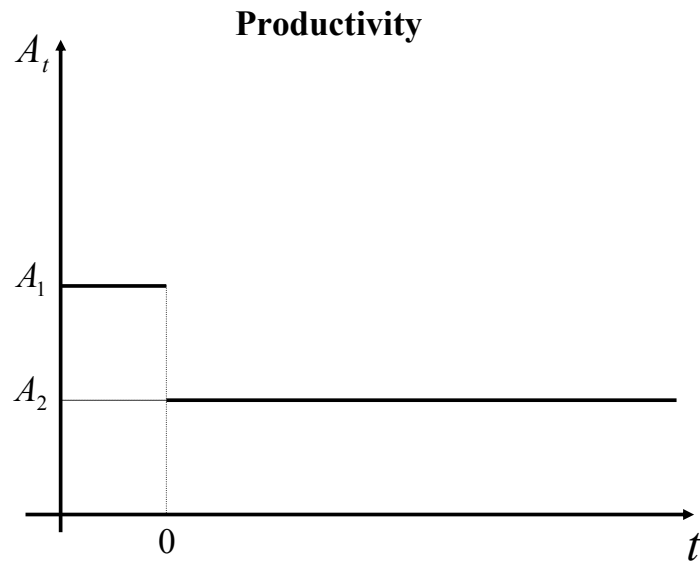
$$d_t = c_t \cdot \delta(r_t - r_t^d)$$

Equity-Deposit  
Spread

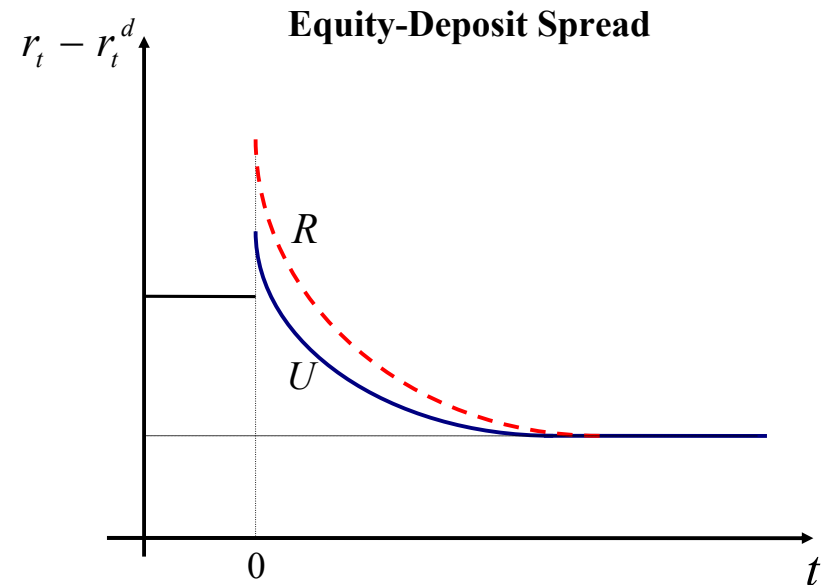
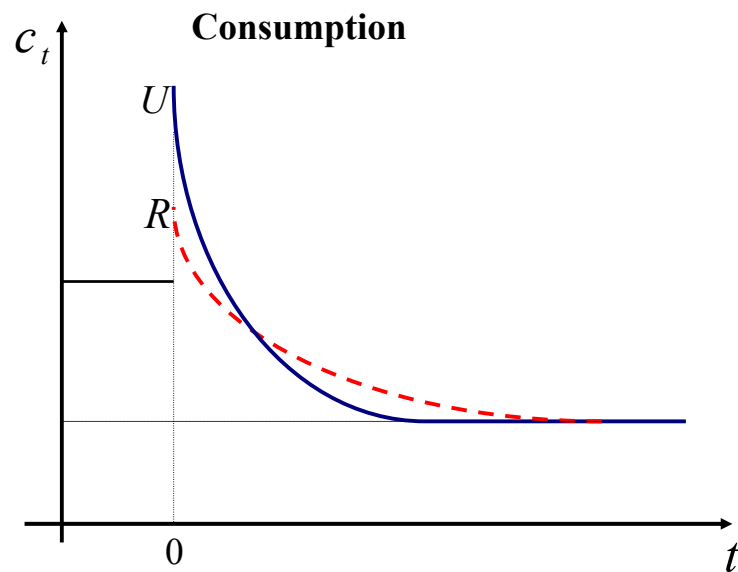


$$k_t = \bar{b}_t - c_t \cdot \delta(r_t - r_t^d)$$

# Unanticipated and Permanent Reduction in Productivity in Unrestricted (U) and Restricted (R) Models



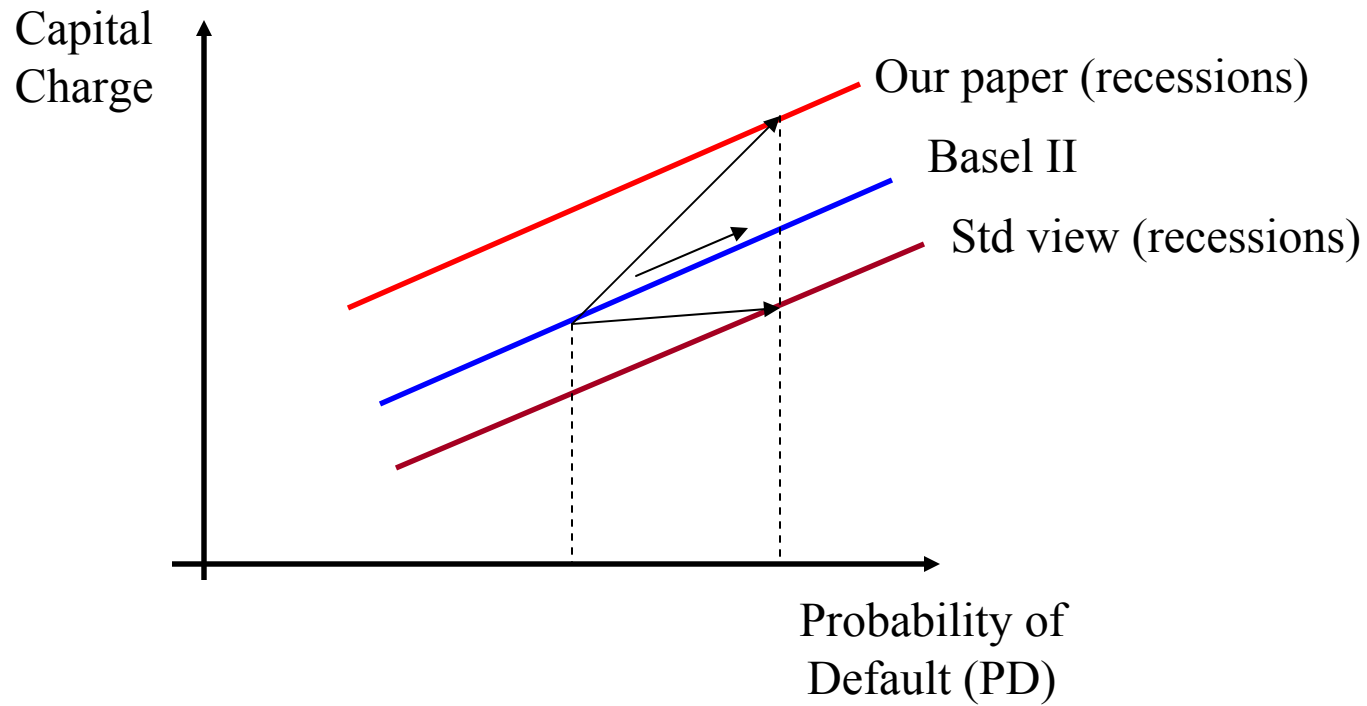
## Unanticipated and Permanent Reduction in Productivity in Unrestricted (U) and Restricted (R) Models



### ■ Findings:

- Capital requirements should be lowered in response to negative productivity (loan demand) shocks.
- This policy amplifies the output decline but enhances welfare by releasing deposit liquidity, thus facilitating households' dissaving during times of low productivity.

## Basel II: The Standard View and Our Paper



# Conclusions

- **We study the inter-temporal effects of bank capital requirement policies on households' savings, bank credit and output.**
- **We find that bank capital requirements should be increased in response to negative loan supply shocks and decreased in response to negative loan demand shocks.**
- **These results contrast, but are not incompatible, with those of the standard view.**
- **There is a trade-off: lowering capital requirements in recessions may prevent second-round loan supply reductions (benefit), but it may also discourage savings and thus delay the recovery of loans and output (cost).**
- **For policy purposes, we raise a red flag. Cost-benefit trade-offs suggest that policymakers should exercise great caution before implementing policies consistent with the standard view.**
- **Given our limited (quantitative) knowledge of these trade-offs, we advocate maintaining capital requirements constant in all phases of the business cycle.**