


# Government Guarantees, Transparency, and Bank Risk-taking



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**ARC, November 2016**

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# Post-crisis narrative

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- Bailouts are too expensive and inequitable
- Bailouts undermine market discipline
- Reducing the expectation of bailouts and guarantees critical to improving financial stability

# Background

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- *“To promote the financial stability of the United States by improving accountability and transparency in the financial system, to end ‘too big to fail,’ to protect the American taxpayer by ending bailouts...”*

***Dodd-Frank Act***

# Background

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- *Resolution also ensures that moral hazard is addressed, through minimising the use of taxpayers' money... Instead, shareholders and debt holders will bear an appropriate share of the losses ... and will increase discipline on banks by attributing a suitable price to this risk during normal conditions.*

***EU Bank Recovery and Resolution Directive (webpage)***

# This paper

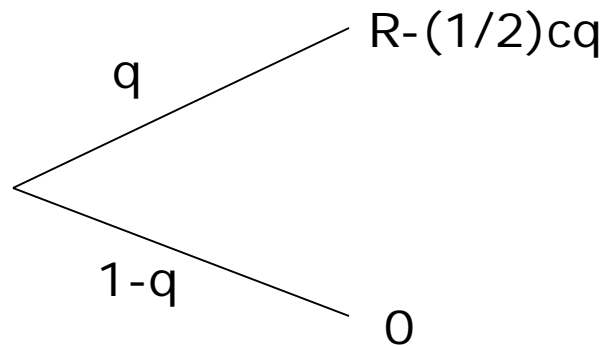
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- Explores conditions under which guarantees/bailouts increase risk taking
- Role of informed investors – pricing at the margin
- Effects on disclosure
- Interaction with leverage and capital regulation

# A model of bank risk taking

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- Banks invest in loan/assets which return  $R$  with probability  $q$  and  $0$  otherwise
- Banks can choose  $q$ , at the cost  $(1/2)cq^2$
- Screening/monitoring cost or risk-return frontier



# Bank funding

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- Banks fund themselves with capital and debt/deposits
- Banks are protected by limited liability: Pay debt/deposits only when successful
- Shareholders/managers control risk taking
- All debt is fairly priced. However:
  - A portion  $\theta$  of investors observes bank's actions and prices risk at the margin
  - A portion  $1-\theta$  infers bank's choice and price debt to break even in expectation

# How debt is priced matters

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- When investors can condition the pricing of debt on a bank's risk choice:
  - Higher risk taking increases demanded yield on debt
  - Discipline bank behavior
- When investor can only infer bank behavior:
  - Expectations of higher risk taking increase demanded debt yield
  - Induce bank to take more risk to match cost of liabilities



# Expected profits

Return when successful

Risk-free rate

Cost of capital

Screening costs

$$\Pi = q \left[ R - (1 - k) \left( \theta \frac{\bar{r}}{q} + (1 - \theta) r_D \right) \right] - kr_E - \frac{1}{2}cq^2$$

Prob. of success

Yield "informed" debt-holders

Yield "uninformed" debt-holders

$$r_D = \frac{\bar{r}}{E(q)}$$

# Equilibrium risk-taking

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Disciplining role of informed debtholders same as shareholders'

$$\hat{q} = \frac{R - r_D (1 - \theta) (1 - k)}{c}$$

Higher yield on uninformed debt increases risk taking

$$r_D = \frac{\bar{r}}{E(q)}$$

# Effect of government guarantees/bailouts

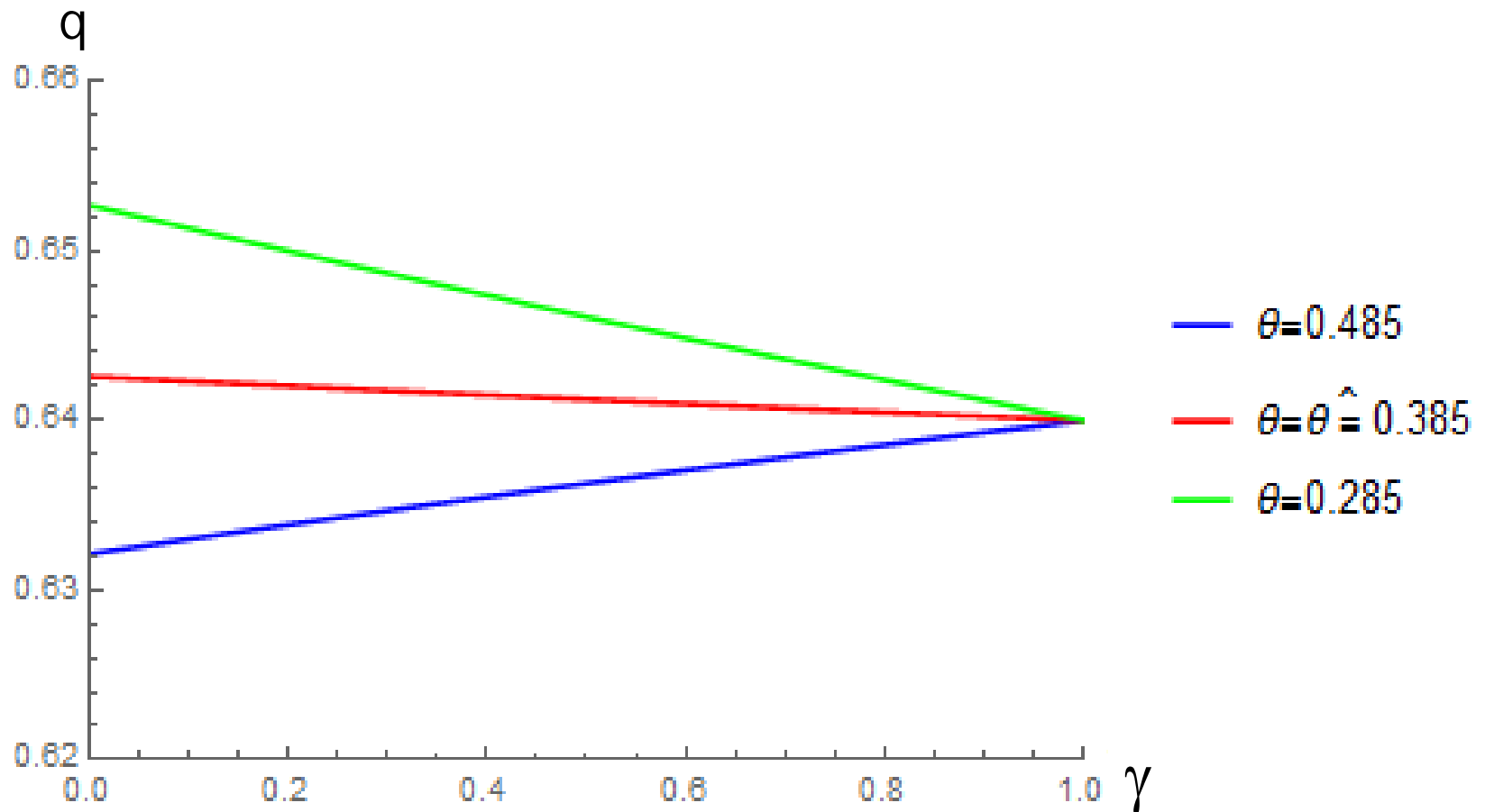
- Debt investors attach some probability  $\gamma$  to a government bailout in case of bank failure
- Two opposite effects on risk taking:
  - Reduce disciplining effect of informed debtholders: **Increase risk taking**
  - Reduce required yield for uninformed debtholders, thus increases profits in case of success: **Decrease risk taking**

Net effect depends on proportion of informed debtholders

$$\hat{q} = \frac{R - \gamma(1 - k)\bar{r} - r_D (1 - \gamma) (1 - \theta) (1 - k)}{c}$$

# Net effect of bailout expectations

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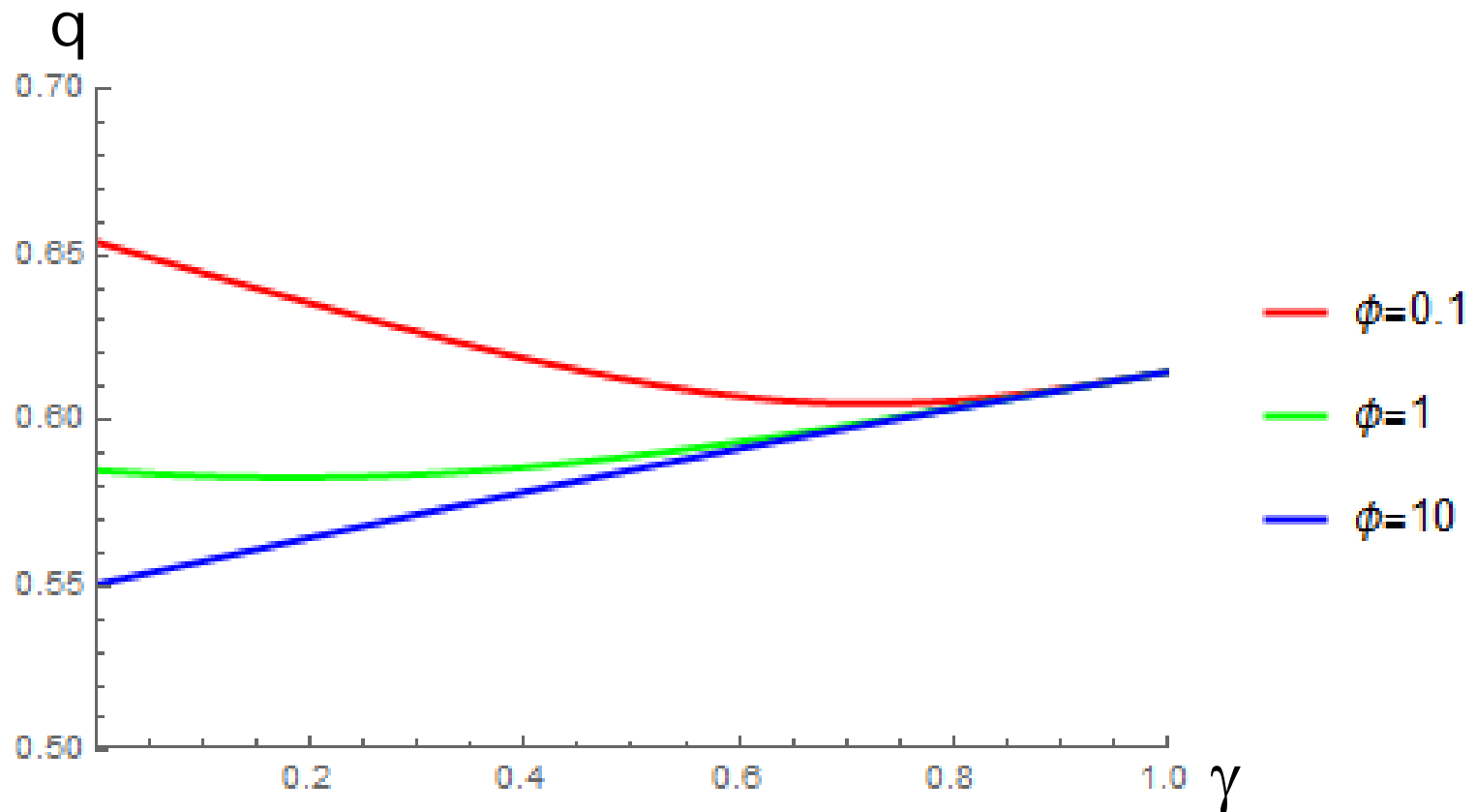
# Endogenous information disclosure

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- Allow banks to choose portion of informed debtholders (at a cost)
  - Banks “like” informed bondholders: increased discipline implies lower yields, higher profits
  - Think about this as investment in information disclosure
- Additional moral hazard effect emerges
  - Expectation of bailout reduce incentives for disclosure
- Net effect depends on disclosure costs
  - **If high, bailouts decrease risk taking, if low the opposite**

# Net effect of bailout – endogenous share of informed bondholders

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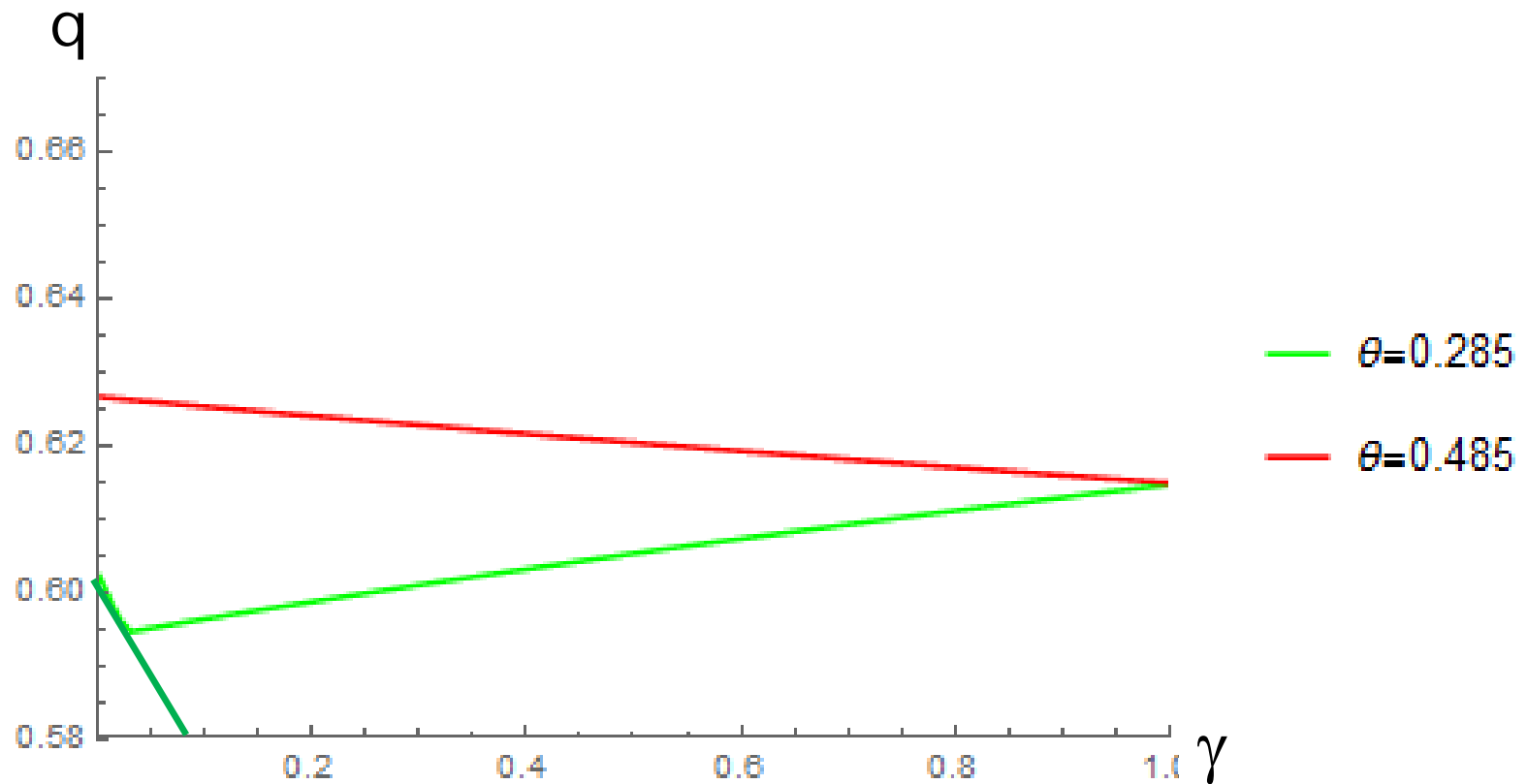
# Endogenous leverage

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- Allow banks to choose leverage ( $k$ )
- Capital is expensive (equity premium) but can serve as commitment device
  - Higher capital reduces cost of uninformed debt
- (Again) Additional form of Moral Hazard
  - Bailout expectation reduce incentives to hold capital
  - **Risk taking unequivocally increases**
- Role for capital/leverage requirements
  - Tighter requirements allow for more generous bailout policy
  - Bailouts always “bad” for unregulated intermediaries

# Net effect of bailout – endogenous leverage (with capital requirements)

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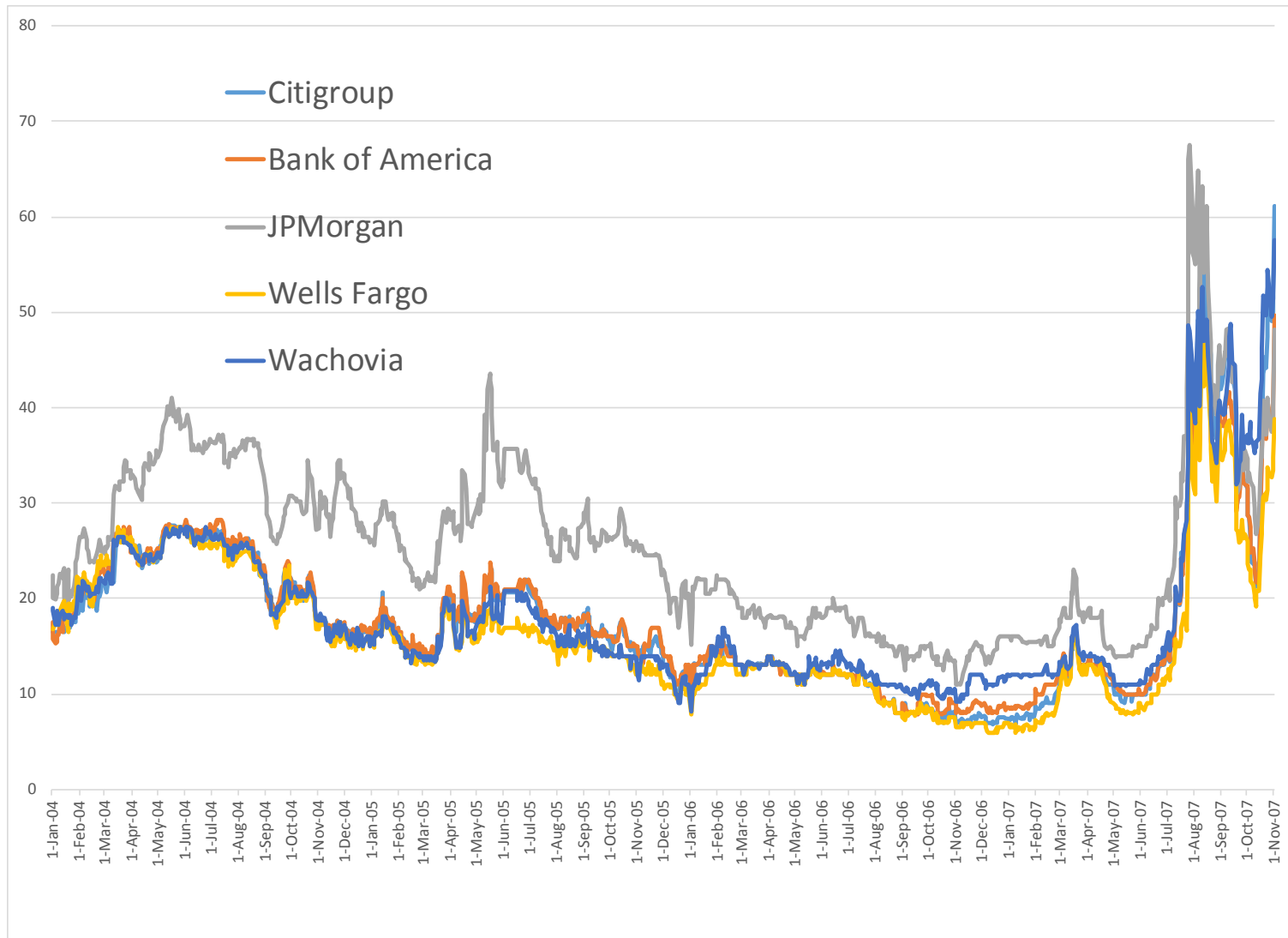


# Empirical evidence

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- Solid evidence on what happens to banks at risk of failure
  - Deposit withdrawals
  - Higher cost of funds
- Much less clear evidence on ex-ante market discipline
  - Spreads start rising relatively late
  - Holding disclosures have an impact on markets

# Bank CDS spreads before GFC



# Conclusions

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- Effect of bailout expectation on risk taking depends on degree of pricing at the margin
- Empirical evidence on pricing at the margin is mixed
- Higher leverage associated with bailout expectations suggests a need for coordination between resolution and prudential regulation policies
- Perhaps right focus not on bailin/bailout, but on how to design efficient bailouts