

SHOULD BANKS BE WORRIED ABOUT DIVIDEND RESTRICTIONS?

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BANK CAPITAL REGULATION IS NOW COUNTERCYCLICAL

- help banks to maintain stable credit supply, new since GFC
- build up capital in good times, as buffer against losses
- it is key to let banks **use** buffer in bad times!
 - ▶ difference between alleviating and avoiding severe crises
- why does it matter?
 - ▶ buffer (or capital) requirements constrain banks' equity payouts
 - ▶ bank shareholders consider equity to be costly (governance)
 - ▶ equity payout restrictions can hurt funding-market access
- spend considerable resources to calibrate buffer in good times
 - ▶ detailed stress tests give good idea of potential bank losses
- but not clear how buffers should be used during a financial crisis

PAYOUT RESTRICTIONS TOO TIGHT OR LOOSE IN CRISIS?

- how much to rely on structural vs. cyclical capital buffers
 - ▶ regulators introduced many different buffers following GFC
 - ▶ most of them are structural (CCB, DSIB, GSIB,...)
 - ▶ OSFI recently strengthened role of Canada's cyclical buffer (DSB)
- structural buffers impose payout restrictions when equity low
 - ▶ cyclical buffers can be released to avoid that
- trade-off:
 - ▶ payout restrictions retain equity, strengthen banks directly
 - ▶ but also make banks less attractive to funding market

regulator cares about the net effect on stability of credit supply!

- need to understand this trade-off
 - ▶ to make sure that new buffers actually improve financial stability

REGULATORS' PREFERRED BUFFER DESIGN

- how regulator would like to respond to severe crisis:
 1. initially restrict payouts, limit time banks spend with low equity
 2. keep buffers reduced for a while, support banks' funding access
- this optimally balances banks' health and credit supply
 - ▶ maximizes financial stability, modelled in Schroth (2021)
 - ▶ empirical evidence from COVID
 - AcostaSmith-Barunik-Gerba-Katsoulis (2023)
 - Mathur-Naylor-Rajan (2023)
- policy implications fit very nicely current regulatory setup:
 1. structural buffers restrict payouts while equity very low
 2. keep cyclical buffer requirement low during and following crises
- Basel III's mix of structural and cyclical buffers is about right
- caveat: regulators' preferred design may not be credible
 - ▶ raise cyclical buffer back up following initial payout restrictions

NEED TO MAKE BUFFER DESIGN TIME CONSISTENT

- markets need to believe that cyclical buffers kept low for a while
 - ▶ otherwise they won't fund banks during a severe financial crisis
 - banks should be worried about initial dividend restrictions
 - because they remove ex-post the need to keep buffers low
 - ▶ regulators stop caring about funding access when equity recovered
 - ⇒ buffers cannot be effectively cyclical if not time consistent
 - ▶ would effectively end up with one big structural buffer
 - ▶ can only alleviate, but not avoid severe crises
 - optimal time-consistent buffers differ from preferred buffers
 - ▶ fewer or no initial payout restrictions, lowers financial stability
- but they still manage to avoid severe financial crises
- policy implication: roll all buffers into a single cyclical buffer

MODEL

- firms borrow K from banks to produce $zK^\alpha + (1 - \delta)K$
 - ▶ aggregate uncertainty: $z \in \{z_L, z_H\}$ with $Pr(z_L) = \rho$
- households get wages $z(1 - \alpha)K^\alpha$ and dividends D , discount β
- banks get loan repayments $z\alpha K^\alpha + (1 - \delta)K$
 - ▶ discount dividend payouts with $\gamma < \beta$ (bank capital costly)
 - ▶ banks' future value determines funding access: $\gamma E(V') \geq \theta K$
- if bank value V exceeds bank equity A , then banks earn rents
- suppose a regulator can make promises $\{V'\}$ to banks
 - ▶ V becomes state variable (eg, Kydland-Prescott, 1980)
 - ▶ crucial complication: regulator's promises may not be credible
 - ⇒ ex-ante want to ease funding access, ex-post dislike rents

CALIBRATION OF COMPETITIVE EQUILIBRIUM

Table: Model parameter values

parameter	value	target
β	0.94	return on savings
γ	0.93	6% financial crisis frequency (OECD)
δ	0.10	average replacement investment
α	0.35	capital income share
θ	0.10	12% total equity-asset ratio (US)
(z_L, z_H, ρ)	(0.8, 1.05, 0.2)	losses from two bad shocks is MST

note: CET1 to total asset ratio is lower in Canada, calibration yields lower γ (higher cost of capital), results similar

NO REGULATION IN MODEL

- why?? because we want to study optimal regulation
 - ▶ e.g., a capital requirements of $x\%$ can mean all kinds of things
 - ▶ need “non-parametric” approach to macroprudential regulation
- in practice financial regulators have lots of discretion
 - ▶ to impose new types of regulations (often during crises)
 - ad-hoc dividend restrictions during covid
 - ▶ in applying existing regulation
 - relax regulatory reporting requirements (forbearance) during covid
 - higher capital buffer requirements following covid
- we can formulate an objective for the regulator
 - ▶ Basel III: mitigate economic fluctuations from financial cycles
 - ▶ here: maximize welfare (present value of GDP)
- then focus on constrained efficiency in model economy

WELFARE AND CREDIBILITY OF REGULATOR

- benchmark: Markov-perfect constrained efficiency
 - ▶ regulator makes no promises, welfare is $W_M(A)$
 - ▶ severe financial crises cannot be avoided (Schroth, 2021)
- can regulator make credible promises to improve on W_M ?
- think about a “game” between market participants and regulator
 - ▶ similar as in sovereign default literature
- market stops believing if regulator defaults on promised V once
 - ▶ threat of “worst equilibrium” supports the “good equilibrium”
 - ▶ market believes as long as regulator has no incentive to default
- impose limited-commitment constraints on regulator
 - ▶ make sure constrained-efficient allocation never worse than W_M
 - ▶ after every possible history: $W(A, V) \geq W_M(A)$

TIME-CONSISTENT SECOND BEST

$$W(A, V) = \max_{\{D, B, K, V_L, V_H\}} \{D + \beta(1 - \alpha)K^\alpha + \beta\rho W(A_L, V_L) + \beta(1 - \rho)W(A_H, V_H)\}$$

subject to

$$D + K \leq A + \beta B, \quad (\text{bank budget constraint})$$

$$D \geq 0, \quad (\text{dividend non-negativity})$$

$$\gamma[\rho V_L + (1 - \rho)V_H] \geq \theta K, \quad (\text{limited commitment bank})$$

$$V_j \geq A_j, \quad j = L, H, \quad (\text{participation bank})$$

$$D + \gamma[\rho V_L + (1 - \rho)V_H] \geq V, \quad (\text{promise keeping regulator})$$

$$W(A_j, V_j) \geq W_M(A_j), \quad j = L, H, \quad (\text{limited commitment regulator})$$

where $A_j = z_j \alpha K^\alpha + (1 - \delta)K - B$ for $j = L, H$.

NUMERICAL ANALYSIS

- solve model, use to study a severe financial crisis

- scenario:

assume banks have lost almost their entire equity

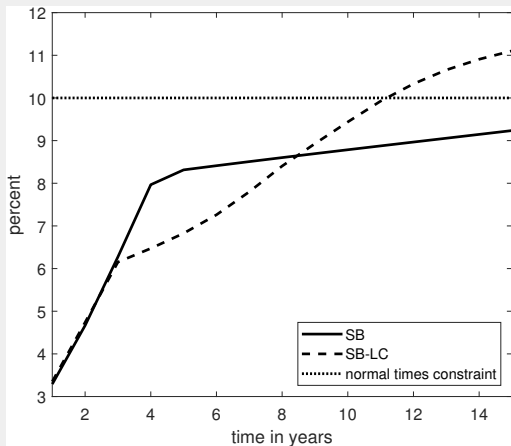
- ▶ “Jiang-Matvos-Piskorksi-Seru shock”
- ▶ banks’ market capitalization drops by 45% (eg, Feb-March 2020)

and then only good shocks (z_H) afterwards

- compare impulse responses:
second best with full (SB) and with limited commitment (SB-LC)
- LC-regulator takes into account an externality:
 - ▶ equity makes limited-commitment constraints tighter
 - ▶ $W(A, V) - W_M(A)$ is decreasing in A , for given V

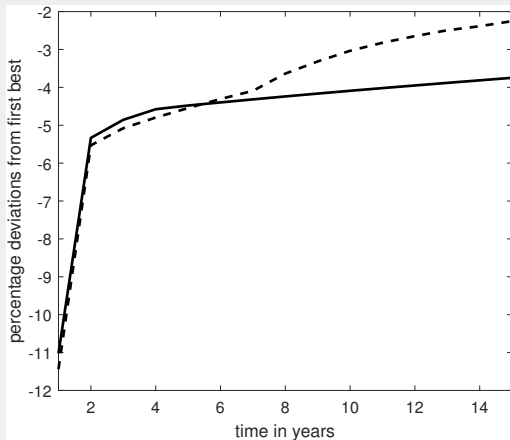
eg, regulator knows they will not honor rents if equity too high

BANKS SPEND MORE TIME WITH LOW CAPITAL RATIO



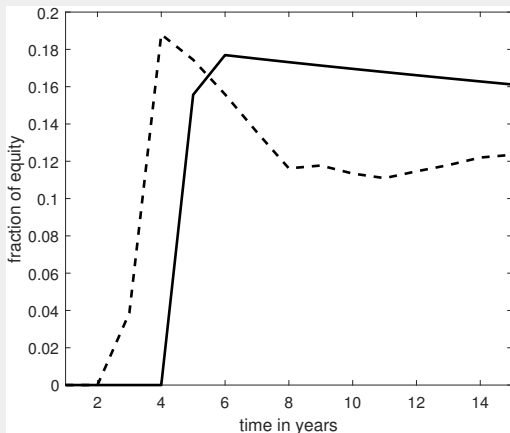
- define capital ratio as $\frac{\gamma[\rho A_L + (1-\rho)A_H]}{K} \cdot 100$
- recall market-funding constraint $\frac{\gamma[\rho V_L + (1-\rho)V_H]}{K} \geq \theta = 0.10$

CAN STILL AVOID SEVERE CREDIT CRUNCH



- comparison: in competitive equilibrium lending falls by 25%
- regulator uses credibility to prevent most severe crises
 - ▶ at cost of allowing for more frequent intermediate crises

RESTRICT DIVIDEND PAYOUTS MUCH LESS



- allow early payouts to avoid banks' equity recovering too quickly
- create recovery path on which regulator *needs* to honor promises

CONCLUSION

- bank regulators seem to be able to avoid severe credit crunches
- might wonder: are they too soft on banks during financial crises?
 - ▶ we would then worry about even worse crises down the road

this paper: not necessarily

- regulators' forbearance can make their actions ex-ante credible
 - ▶ payout restrictions of structural buffers can be too tough
 - ▶ they cannot stabilize credit sufficiently to avoid severe crises
 - ▶ and they can prevent cyclical buffers from working as intended
 - by undermining their credibility
- policy implication:
smaller structural and larger cyclical buffers!