

COMMENT: “BANK CAPITAL AND REAL GDP GROWTH”

NINA BOYARCHENKO, DOMENICO GIANNONE AND ANNA KOVNER

SILVIA MIRANDA-AGRIPPINO
BANK OF ENGLAND, CFM & CEPR

2ND WE__ARE__IN MACROECONOMICS & FINANCE CONFERENCE
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SUMMARY

- **Relationship bwn bank capital and distribution of future growth**
 - **Empirical counterpart to rich theoretical literature** [e.g. He and Krishnamurthy (2012); Brunnermeier and Sannikov (2014); Gertler and Kiyotaki (2015); Adrian and Boyarchenko (2012)]
 - Shifts focus away from credit, dominant in existing literature [e.g. Brunnermeier, Palia, Sastry, and Sims (2017), Jordà, Schularick and Taylor (2013)]
 - Predictive quantile regressions [Adrian, Boyarchenko, and Giannone (2019)]
- **New Time Series for Bank Capital**
 - Captures regulatory requirements and intermediation by non-banks
 - Evolving definition of capital ratio
 - Total Equity Capital \Rightarrow Tier 1 Risk Based \Rightarrow Tier 1 Common Equity/CET1
 - Total Assets \Rightarrow Risk-Weighted Assets (RWA)

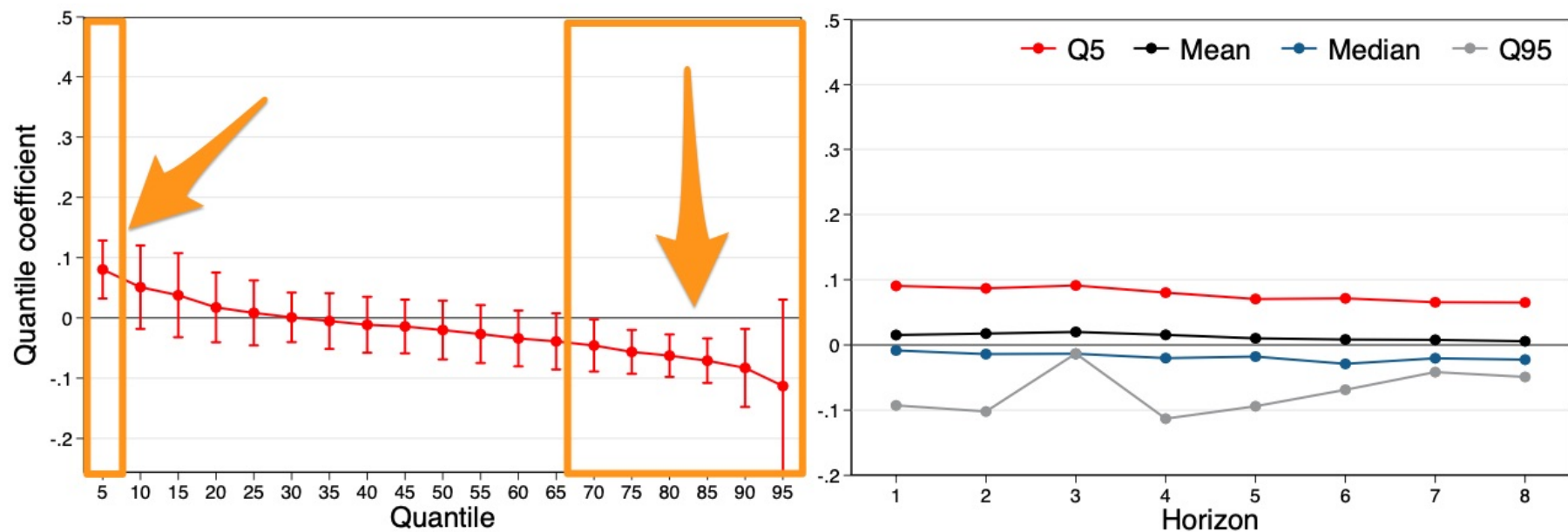
FINDINGS #1

Bank capital growth shrinks the distribution of future output growth around its mean/median

- Same central case, less risks
- Symmetric shrinkage of tails

⇒ what's not to like?!

⇒ “upside risks” also down,
but only in the short run



FINDINGS #2

Bank capital growth shrinks the distribution of future credit growth AND shifts it to the left

- Aggregate credit falls & extreme events less likely
- Dynamics matter \Rightarrow it takes a few years of capital growth to reduce downside risk

(a) Q5

	1Q		4Q		8Q	
Annual growth	-0.03 (0.07)	0.03 (0.07)	0.01 (0.05)	0.05 (0.05)	0.03 (0.03)	0.04 (0.02)*
Y5-Y1 growth		0.20 (0.06)***		0.17 (0.06)***		0.20 (0.03)***

(b) Q50

	1Q		4Q		8Q	
Annual growth	-0.22 (0.07)***	-0.24 (0.08)***	-0.07 (0.04)*	-0.08 (0.03)**	-0.07 (0.04)*	-0.09 (0.03)***
Y5-Y1 growth		0.07 (0.07)		0.06 (0.05)		0.06 (0.04)

(c) Q95

	1Q		4Q		8Q	
Annual growth	-0.22 (0.11)**	-0.23 (0.09)***	-0.15 (0.06)**	-0.11 (0.04)***	0.07 (0.09)	0.06 (0.09)
Y5-Y1 growth		-0.12 (0.07)*		-0.02 (0.03)		0.02 (0.08)



FINDINGS #3

Information content of bank capital growth for tail growth events above and beyond credit growth

EXCESS CREDIT GROWTH NOT A PROBLEM PER SE IF BANKS ARE WELL CAPITALISED

(a) Recession probability

	(1)	(2)	(3)
Constant	-2.55 (0.41)***	-2.41 (0.32)***	-0.92 (0.69)
L.Y1 log real credit growth	-1.12 (0.22)***		-1.98 (0.39)***
L.Y5-Y1 log real credit growth	1.33 (0.34)***		-0.13 (0.66)
L.Y1 capital ratio growth		-0.52 (0.19)***	-1.01 (0.21)***
L.Y5-Y1 capital ratio growth		-1.66 (0.41)***	-1.20 (0.50)**

(b) Average growth

	(1)	(2)	(3)
Constant	0.66 (0.09)***	0.56 (0.14)***	0.53 (0.13)***
L.Y1 log real credit growth	0.14 (0.06)**		0.21 (0.07)***
L.Y5-Y1 log real credit growth	-0.18 (0.08)**		-0.23 (0.13)*
L.Y1 capital ratio growth		0.02 (0.03)	0.06 (0.03)**
L.Y5-Y1 capital ratio growth		0.05 (0.03)*	-0.01 (0.04)

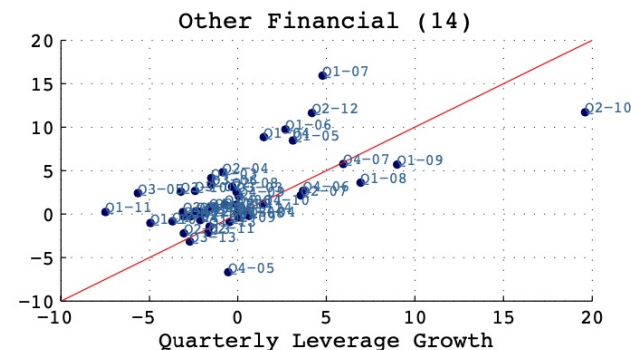
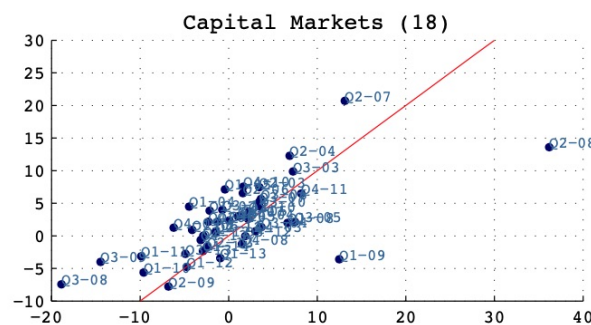
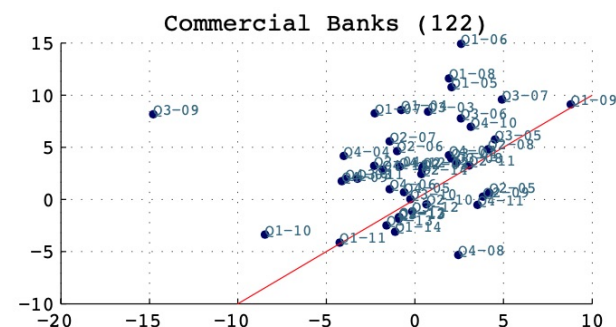
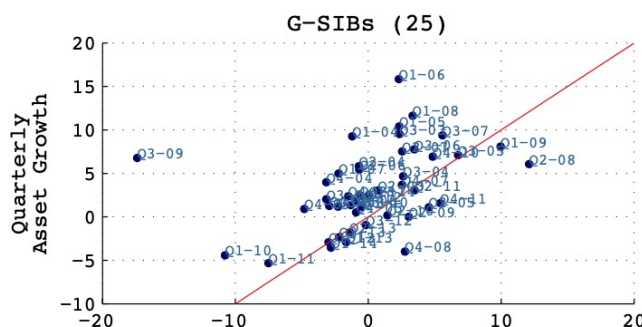
COMMENTS

- Clear and clean analysis, results are intuitive & make sense, provides empirical foundation for theoretical models
- Economic discussion somewhat downplayed
 - Endogeneity of bank capital
 - Determinants of changes in capital ratio
 - Features of credit contraction
 - Mapping with regulatory changes
 - Model's dimension
- **Caveat:** Not quite my area of expertise, so more a collection of reflections/open questions than a set of specific comments

#1: ENDOGENEITY OF BANK CAPITAL

Capital ratios may change for reasons other than regulation, and that are endogenous to the cycle

- Capital may rise (or not fall) endogenously because banks anticipate deterioration in future fundamentals and attempt to cushion losses
- Cost of raising capital likely to be state/cycle-dependent too



#2: DETERMINANTS OF CHANGES IN CAPITAL RATIOS

- Are changes in capital ratios more likely to occur through changes in numerator or denominator? Does this change over time? Does it matter?
- Banks can adjust capital ratios through
 - Issuing equity or Retaining profits/curbing dividend payouts
 - Cutting RWA, which include lending
- Banks typically reluctant to cut dividends, also during crises [Acharya, Gujral, Kulkarni & Shin (2011)]
- Equity issuance typically rare. US commercial banks raise and retain less equity during credit expansions (1980-2012) [Baron (2020)]
- Retained earnings account for the bulk of banks' higher risk-weighted capital ratios (2009-2012) [Cohen and Scatigna (2016)]

#3: FEATURES OF CREDIT CONTRACTION

- What are the likely characteristics of the credit contraction that follows a rise in bank capital?

In the short run:

- Higher capital growth \Rightarrow Lower credit growth
- Lower credit growth \Rightarrow Lower output growth
 - But:** Higher capital growth \nRightarrow Lower output growth
- Heterogeneity in credit contraction
 - Across households and firms
 - Through higher prices (spreads) or lower volumes
 - Between commercial banks and other fin'l intermediaries
- State-dependence of credit reaction [Bahaj and Malherbe (2020)]

#4: MAPPING WITH REGULATORY CHANGES

- Can we map changes in bank capital with macropru regulation, and conclusions reached using the former for the latter?
- Asymmetric reaction of bank capital to regulatory requirements
 - Increase in regulatory requirement \Rightarrow increase in bank capital
 - Relaxation of regulatory requirements ?
- Covid experience suggests important asymmetries at play [Berrospide, Gupta, and Seay (2022)]
 - Banks reluctant to use buffers/stigma effects
- Spillovers of regulations from banks to other fin'l intermediaries

#5: MODEL'S SIZE

- **Disconnect between forecasting the mean and the distribution of output growth**
- Large literature establishes role of rich information to forecast the mean
 - Large VARs
 - Factor Models
- Apparent disconnect with bi/tri-variate models to characterise the whole distribution
- Role of omitted info

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