Efforts to Reduce Leverage in the Chinese Economy[1]

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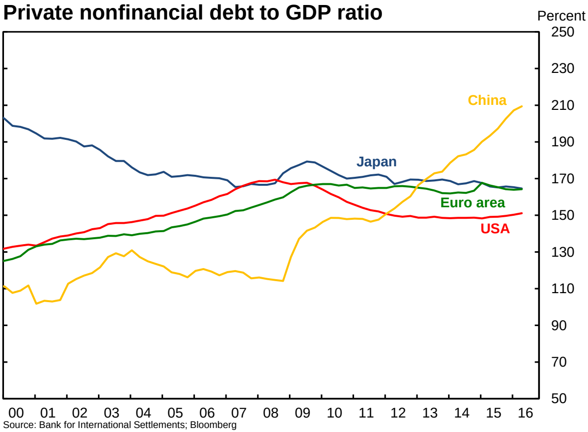
[1]The views expressed herein are those of the authors and do not necessarily reflect the views of the Federal Reserve Bank of San Francisco or the Federal Reserve System.

China Leverage Outpaces Advanced Economies



- 237% of GDP in 2017 Q1
- Far outpaces other EMEs

High Leverage Has Become An Official Concern

- Peoples Daily Quote of Unnamed "Authoritative Person":
- "High leverage will lead to high risk: If not well controlled, it will lead to systemic financial crisis and negative growth
- Easy credit conditions have spurred asset price spikes in housing, financial markets, antiques, art
  - WSJ: PVC pipe-making materials prices up 40% this year

Officials have moved to address situation

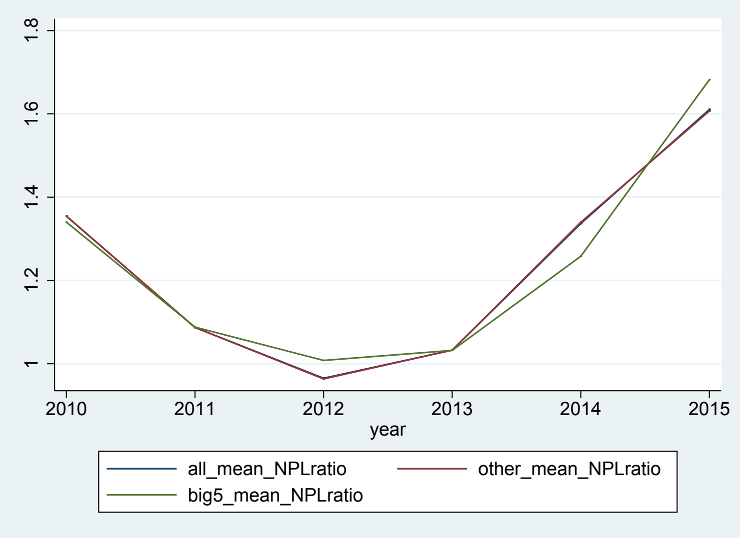
1. Enhanced regulatory standards
2. Debt equity swaps
3. PBOC efforts to restrain credit extension

Banks have moved to clean up their balance sheets

Net Charge-offs of Listed Chinese Banks (RMB Billions)				
	2012	**2013**	**2014**	**2015**
Large State Owned Commercial Banks (5)	21.9	59.2	139.7	248.5
National Joint Stock Commercial Banks (9)	7.0	28.9	77.6	151.9
City/Rural Commercial Banks (13)	1.9	4.3	8.4	15.6
Publicly Listed Banks (27)	30.9	92.3	225.7	415.9

Source: SNL/Walter Yao

But assets have deteriorated at same time



- Unclear whether chargeoffs are keeping pace
- 2015: Chargeoffs/Loans = 0.67% (1.06% in US)

Likely that Situation is Worse Than Portrayed

- Hidden loans
  - To maintain capital adequacy, Banks designating large share of lending as "investment"
  - $2 trillion in "investment receivables," About 20% of conventional loans
  - Perpetuation of "zombie" firms
- Special mention loans (SMLs)
  - Overdue, but not yet considered NPL
  - Much larger in volume than NPLs
  - Private estimates suggest reclassifying SMLs as NPL would raise 2015 NPL ratio from 1.7% to 5.8%
  - Would put banks below mandated coverage ratio

Official efforts to mitigate hidden lending

- Document 82
  - Restricts "trust beneficiary rights" (TBRs) and "directional asset management plans" (DAMPs)
  - Vehicles allowed banks to move loans off of their books into less-regulated environment
  - 16% of total banking sector loans
- Guidance for reduced short-term lending to other banks
- Enforcement to be phased in
  - Averse to launching a credit crunch
  - Compliance would require large increase in bank capital

Debt-Equity Swaps

- Reduce leverage by converting firm debt claims into equity
- Goal to convert as much as RMB 1trillion in debt
- Potential concerns:
  - Program notionally "voluntary and market-oriented," with no government responsibility for losses
  - Plans for transactions at "face value" seem unrealistic
  - Size goals are large, calling voluntary program into question
  - Potential perpetuation of "zombie firms"

Early transactions

- Huarong Energy
  - Converted RMB 2.75 billion in Bank of China loans to equity
  - With oil prices very low, this represented a substantial loss to bank
  - Required raising capital
  - Original shareholder claims also diluted
- Sinosteel
  - RMB 27 billion in loans from a number of banks
  - To avoid large capital hit on banks, government RMB 10 billion injection
  - Conversions only after 4 years to reduce original shareholder and bank burdens

New regime: Mitigate burdens on banks and government through "third party funds"

- Banks do not end up holding equities
- Debt sold to "implementing agencies", who convert debt to equity
- No government injections
- Has been used [Yunnan Tin Group, Wuhan Iron and Steel]
  - Loans sold at face value to a Fund controlled by China Construction Bank
  - National Social Security Fund, Asset Management Companies, insurance companies, private investors, and even the SOE in the deal buy shares in Fund
  - Can channel assets to other investors and households

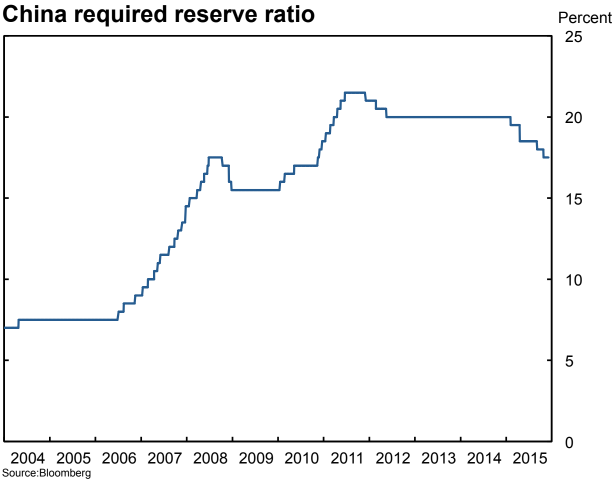
Primary burdens on household owners of equity in Funds

- If all goes well, SOE recovers and repurchases equity stake, perhaps with a capital gain
- If SOE unsuccessful, investors in Fund could suffer a loss
  - Since problem loans are purchased at face value, the Funds are taking negative net present losses
  - Ultimate burden depends on possibility of government assistance ex post or reallocation of burden across shareholders
- Bottom Line: New framework leaves burden sharing murky, but someone has to lose

PBOC has moved to restrain credit

- Increased repo rates by 10 bp
- M2 growth recently declined
- Tightened conditions in financial sector
  - "Guided" lending rates higher to mitigate capital outflows
  - Drained liquidity from financial sector after end of Chinese New Year
  - Had temporarily (28 days) allowed big five banks to cut reserve ratio from 17% to 16%

In past, PBOC frequently adjusted reserve requirements

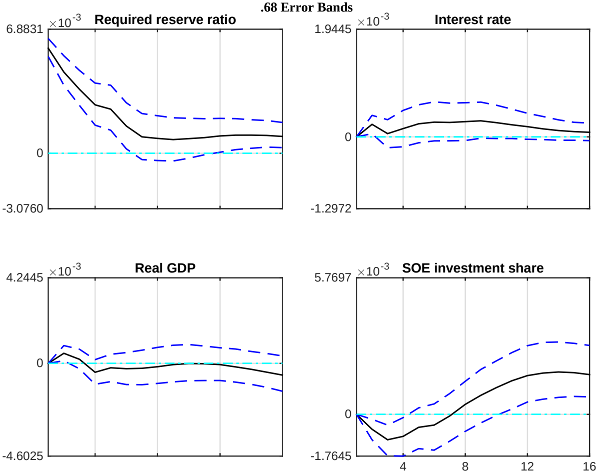


- Since 2005, adjusted RR over 40 times
- Between 2006 and 2011, RR rose from 8.5% to 21.5%

These adjustments distorted resource allocations

- Tax on commercial banks
- Disproportionately affects state-owned enterprises (SOEs)
  - SOEs enjoy implicit government guarantees on loans
  - SOEs have superior access to bank loans despite low productivity
- $\uparrow$ reserve requirements reallocates resources from SOEs to POEs
  - Reduces SOE activity relative to POE
  - POEs have higher average productivity (Hsieh-Klenow, 2009)
  - Adjusting reserve requirements can influence productivity

BVAR: ↑ RR reallocates investment away from SOEs



RR announcements effects on stock returns

Event window	1-day (H=0)	3-day (H=1)	5-day (H=2)
RR_{t-1}	0.00206	0.00479	0.01057
	(7.20)	(9.21)	(15.74)
$\mathbf{SOE_{jt} \times RR_{t-1}}$	-0.0012	-0.00225	-0.00442
	(-3.21)	(-3.32)	(-5.05)
SOE_{jt}	-0.00007	-0.00026	-0.00041
	(-2.60)	(-5.29)	(-6.47)
$Size_{jt}$	-0.00034	-0.00099	-0.00155
	(-27)	(-43)	(-53)
BM_{jt}	0.00009	0.00024	0.00047
	(2.22)	(3.29)	(4.96)
Sample size	4,119,971	4,079,847	4,0003,53
R^2	0.00071	0.00182	0.00288

The RR announcements effects observed mainly after 2009, with rise of shadow banking following fiscal stimulus

	Pre-stimulus (2005-2008)		Post-stimulus (2009-2015)	
Event window	1-day (H=0)	3-day (H=1)	1-day (H=0)	3-day (H=1)
RR_{t-1}	0.0010	0.0003	0.0029	0.0081
	(2.00)	(0.31)	(8.08)	(12.57)
$\mathbf{SOE_{jt} \times RR_{t-1}}$	0.0001	0.0012	-0.0024	-0.0046
	(0.11)	(1.03)	(-4.78)	-5.03
SOE_{jt}	0.00002	0.0005	-0.0002	-0.0005
	(2.90)	(4.09)	(-4.85)	(-8.86)
$Size_{jt}$	-0.0003	-0.0008	-0.0004	-0.0011
	(-9)	(-14)	(-26)	(-41)
BM_{jt}	0.0000	0.0001	0.0001	0.0004
	(-0.25)	(-0.56)	(2.91)	(4.50)
Sample size	1,018,628	1,003,518	3,101,343	3,076,329
R^2	0.0005	0.0011	0.0008	0.0022

Conclusion

- Chinese officials have moved to rein in excessive credit situation
  - No mood for sharp credit reduction
  - Tension between maintaining growth pace and forestalling crisis requiring capital injections
  - Political pressure to support employment
  - Form of adjustment likely to distort sectoral and geographic allocations of resources
- Chinese financial system will probably require some capital injections from government
  - As a share of GDP, not comparable to past exercises, so capacity to manage situation not likely to be in question
  - Debt-equity swap guidelines indicate diminished taste for government contributions