Safer Banks: Fallacies, Irrelevant Facts, and Myths in the Capital Regulation Debate

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The Capital Regulation Debate

- The Financial Crisis of 2008 revealed the fragility of the world's financial infrastructure
  - Calls from regulators to increase bank capital req's
    - Basel III: from 2% equity to 4.5%-7%
    - Swiss: 10% equity

    $\Rightarrow$ *Safer Banks, Sustained Growth*

  - Cries from banks that increased capital req's will
    - Raise banks' cost of capital, and reduce lending capacity
    - Fewer loans, higher borrowing costs

    $\Rightarrow$ *Slower Economic Growth*

The Capital Regulation Debate

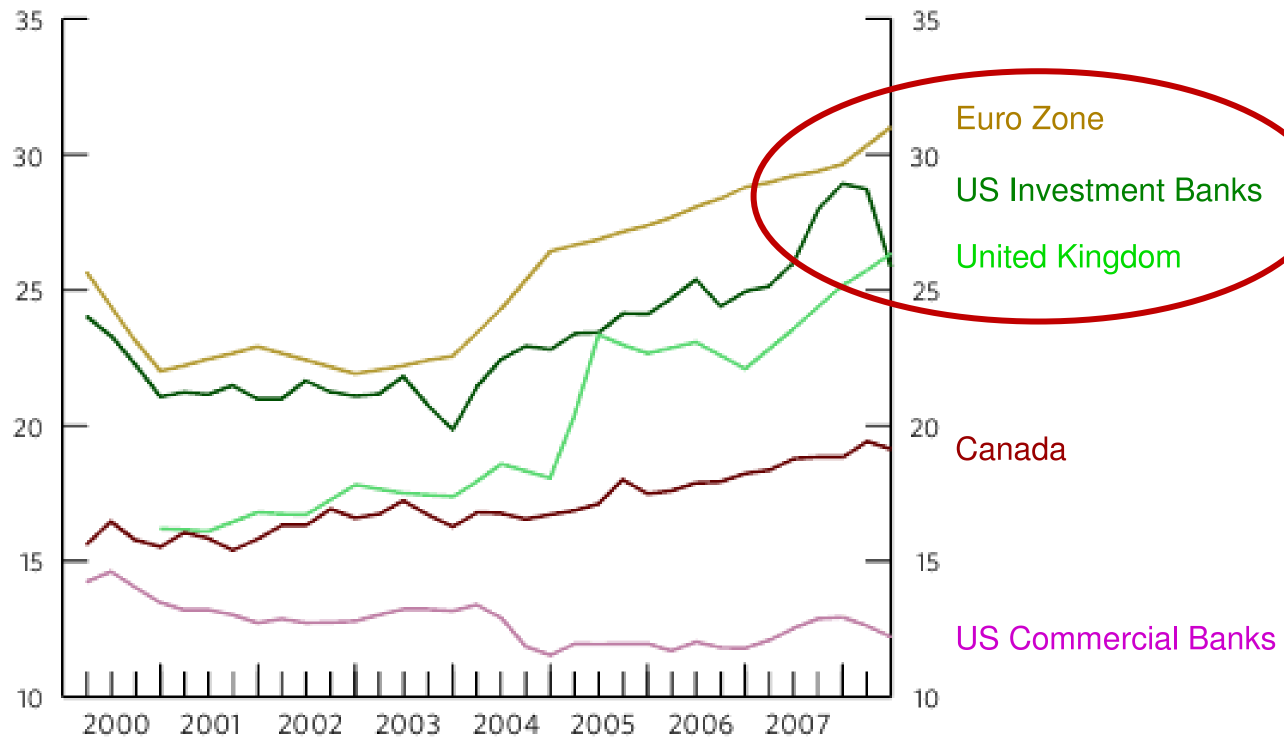
- A Fundamentals Approach

How can we apply finance first principles to clarify the debate and sort through the rhetoric?

How can we educate regulators and policy makers, so that they may restore the health of the world's financial system?

Banking Sector Leverage

- Bank Assets approached 30x Capital

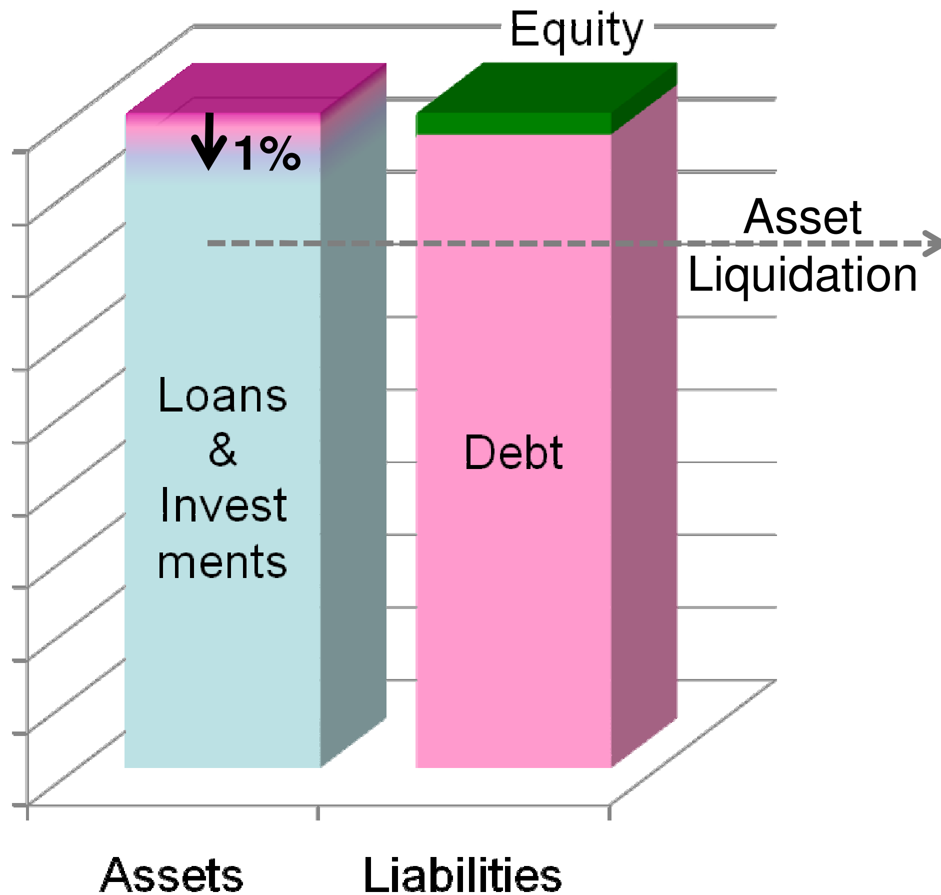


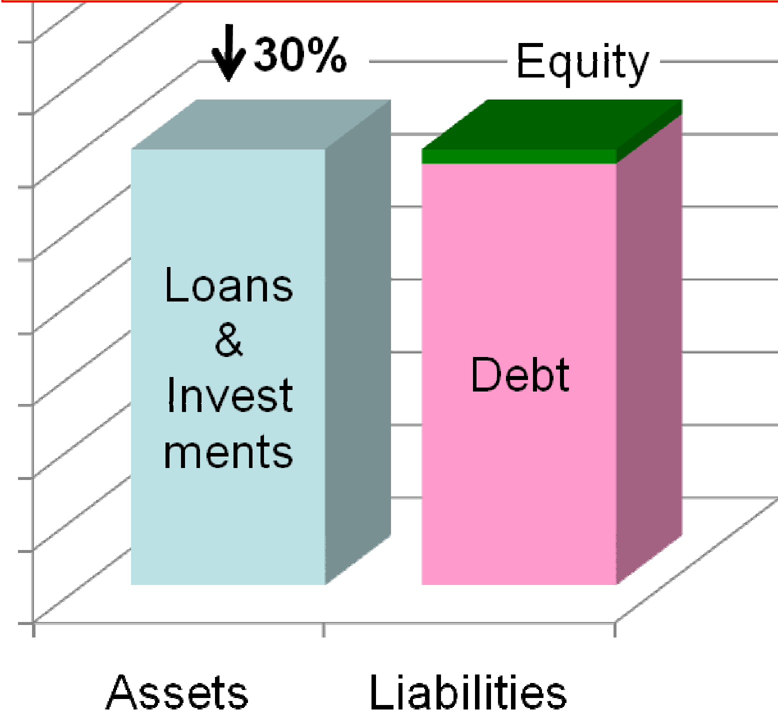
Deleveraging "Spirals"

- A 1% Asset Decline …

⇒ 30% Balance Sheet Contraction

- Asset Fire Sales
- Illiquidity / Market Failure
- Reg. Uncertainty / Bailouts





New Banking Regulation

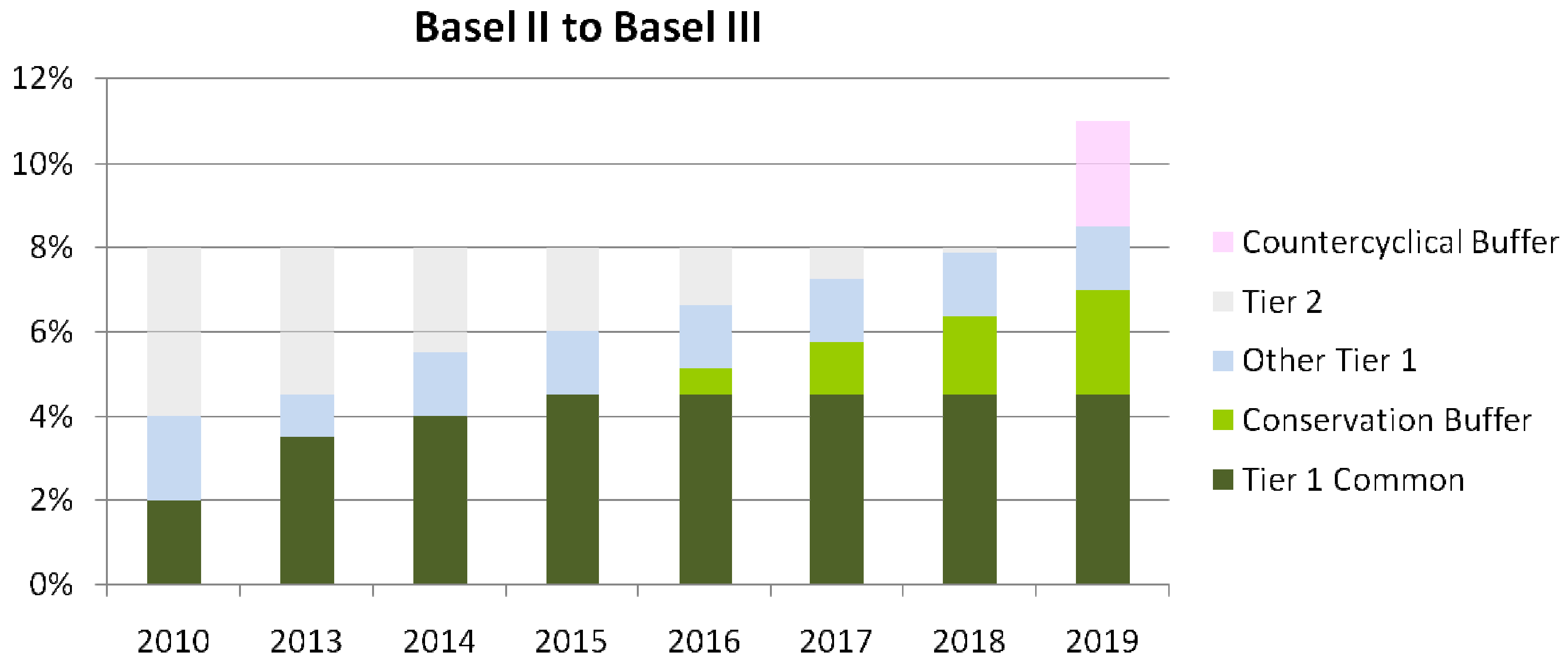
"Had the share of financial assets funded by equity been significantly higher in September 2008, it seems unlikely that the deflation of asset prices would have fostered a default contagion much, if any, beyond that of the dotcom boom."

-- Alan Greenspan, April 2010

- Why not force banks to reduce leverage via increased capital requirements?
  - Decrease amplification of shocks
  - Mitigate systemic externalities
  - Reduce need for public intervention

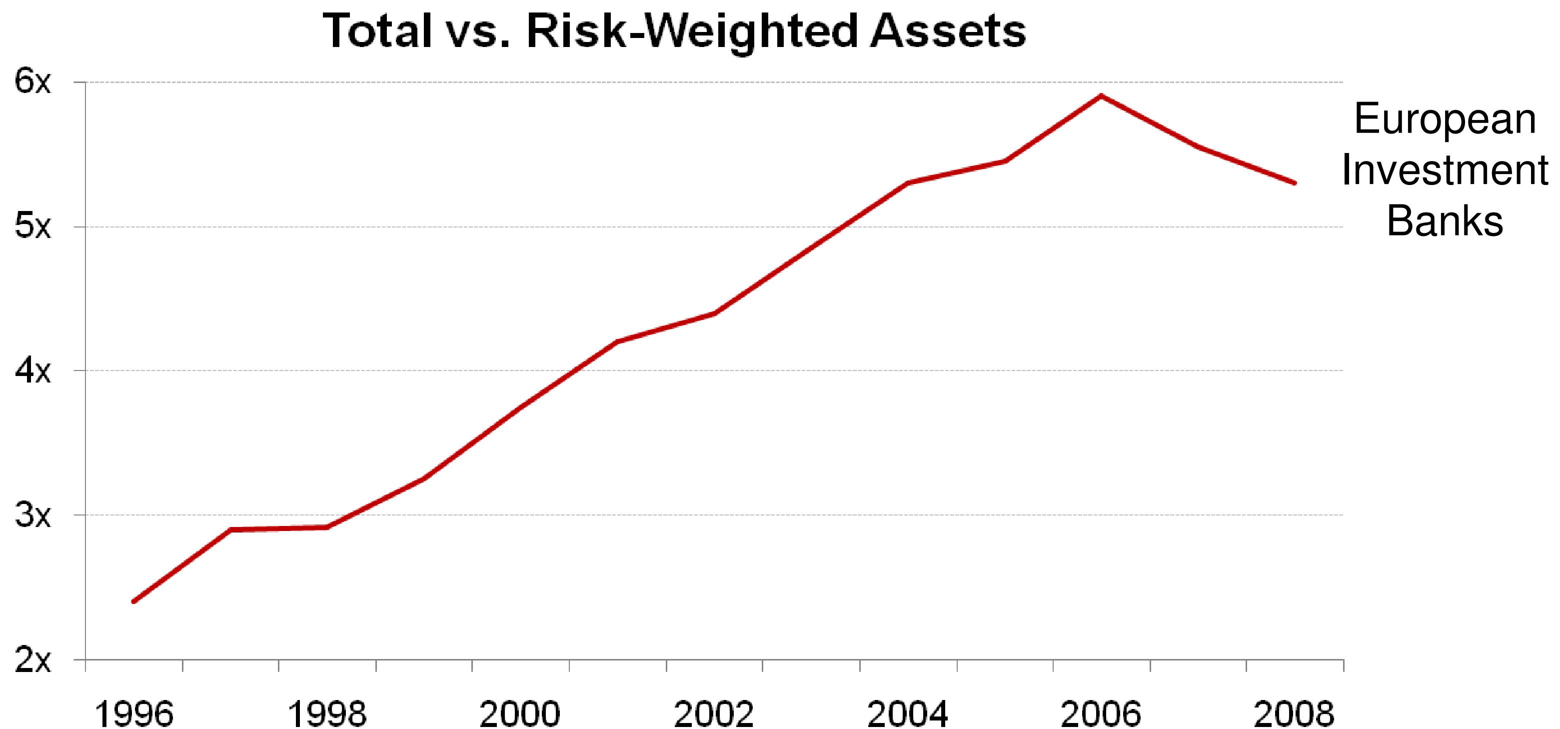
From Basel II to Basel III

- Basel III reflects a substantial increase
  - Tier 1 Common Equity requirements more than double
  - Additional buffers to prevent shortfalls



Beware the Denominator

- Capital measured as % of *risk-weighted assets*
  - Potential distortions, gaming
    - E.g. Structured products, Sovereign debt



New Banking Regulation

- Calls for tighter regulations (Swiss, BOE, …)
- But: Is equity "too expensive"?
  - Bankers and policy makers concerned that capital requirements will / must …
    - "Crowd out" bank lending
    - Reduce ROE and bank competitiveness
    - Raise funding costs, and hence loan rates
    - Distort aggregate investment
    - Reduce bank "discipline"
- *Many of these arguments are fallacious, irrelevant for public policy, or insufficiently supported*
    - Admati, DeMarzo, Hellwig, Pfleiderer (2010)

Confusion #1: “Crowding Out”

- Will increased capital requirements force banks to reduce lending and lead to a credit crunch?

“Demands to increase capital will require the UK‘s banking industry to hold an extra 600bn pounds of capital that might otherwise have been deployed as loans to businesses or households.”

-- British Bankers’ Association (July 2010)

“More equity … would restrict banks ability to provide loans to the rest of the economy. This reduces growth and has negative effects for all.”

-- Josef Ackermann, CEO of Deutsche Bank (Nov 2009)

Confusion #1: "Crowding Out"

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"Demands to increase capital will require the UK's banking industry to hold an extra 600bn pounds of capital that might otherwise have been deployed as loans to businesses or households."

-- British Bankers' Association (July 2010)

"Any excess bank equity capital constitutes a buffer that is not otherwise available to finance productivity-enhancing capital investment."

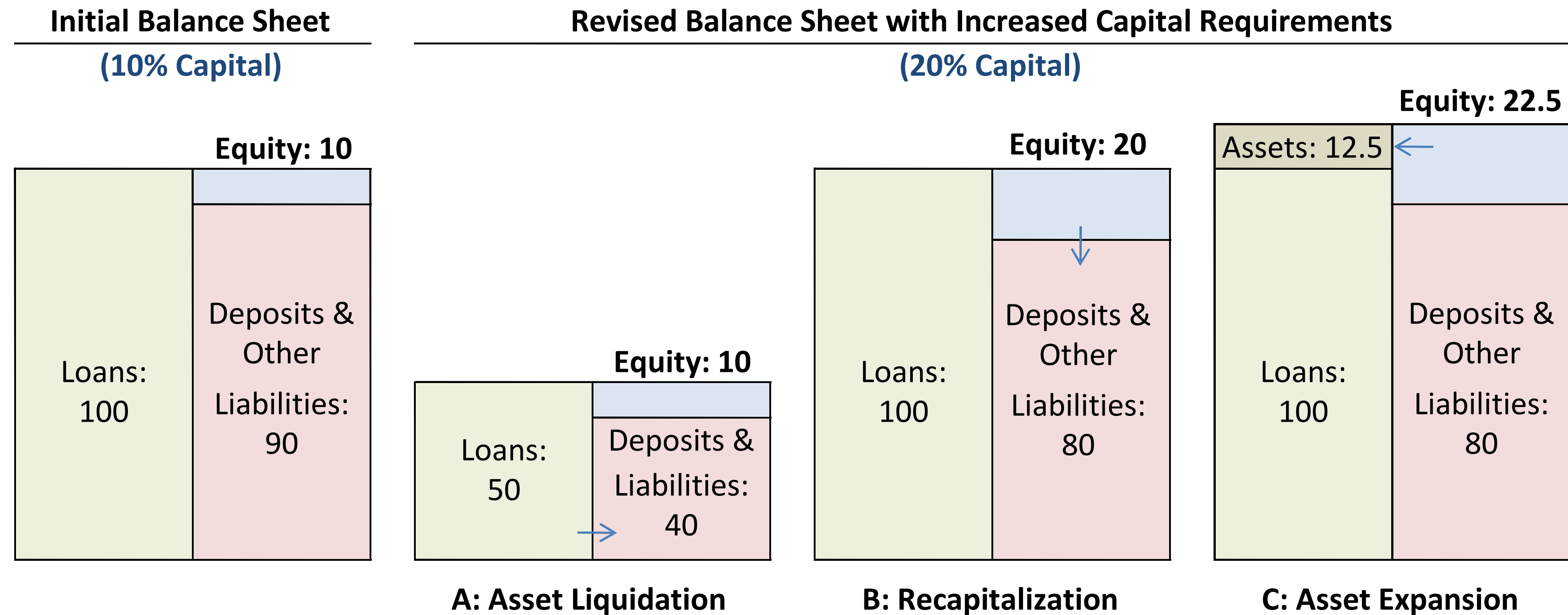
-- Alan Greenspan (FT, July 2011)

Confusion #1: "Crowding Out"

- Capital requirements are about bank *funding*, not about asset holdings.
- We shouldn't confuse the two sides of the balance sheet. This is a question about capital structure.

Three Ways to Recapitalize

- Increased Capital Requirements need NOT force banks to reduce lending:



Confusion #2: "Lower ROE"

- Increased capital will lower banks' ROE

  "Banks… do not want to hold too much capital because by so doing they will lower the returns to equity holders."

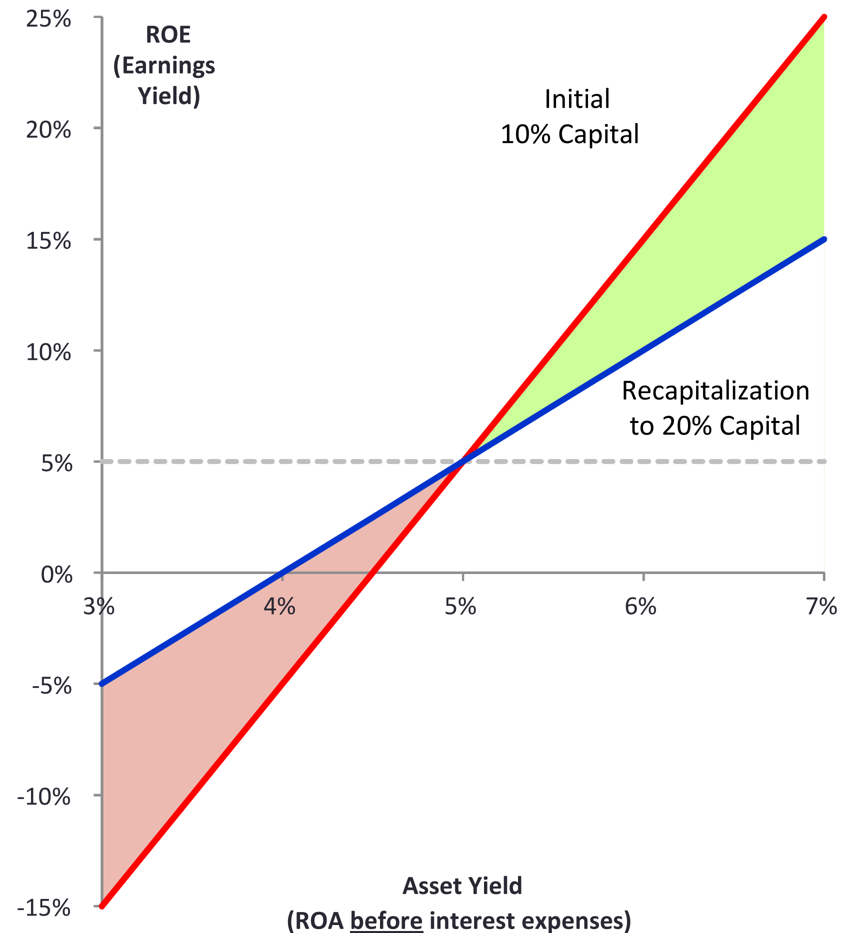
  -- *A leading banking textbook* (2008)

- This statement is partially true, BUT
  - Lower expected ROE does *not* reduce firm value
  - Lower expected ROE is appropriate given reduced risk

ROE and Capital

- Higher capital
  - Reduces ROE in good times
  - Raises ROE in bad times
  - ⇒ Value is preserved
  - ⇒ Risk is reduced

- Lower risk reduces equity holder's required return



Performance Evaluation / Compensation

- Two Asset Managers: Who deserves higher compensation?

Manager	#1	#2
Return	22%	20%
Strategy	High Risk	Low Risk
AUM	$100 m	$500m

- Ultimately, we care about risk-adjusted value added:

$$\text{Alpha x AUM} = (\text{ROE} - r_e) \times \text{Equity}$$

- Absent tax or bailout subsidies for debt, or other mispricing, this quantity is invariant to leverage

Confusion #3: "Equity is Too Expensive"

- The cost of equity capital is high

  "The problem with equity capital is that it is expensive … the suppliers of capital ask for high returns because their role is to bear the bulk of the risk"

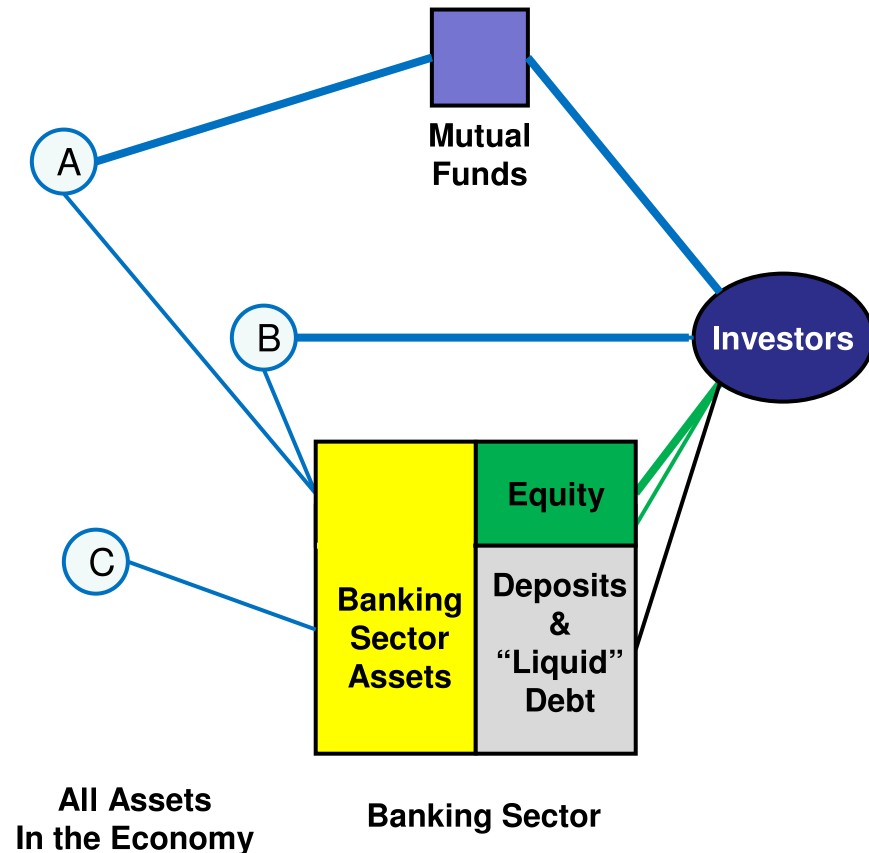
  "The cost of equity is high, and is insensitive to the level of bank capital"

  -- Goldman Sachs VP (2011)

- This argument simply ignores M&M: the cost of equity will decline with higher capital and reduced risk, offsetting its higher cost
  - Are bank equity holders especially irrational?
  - Are there "supply constraints"?

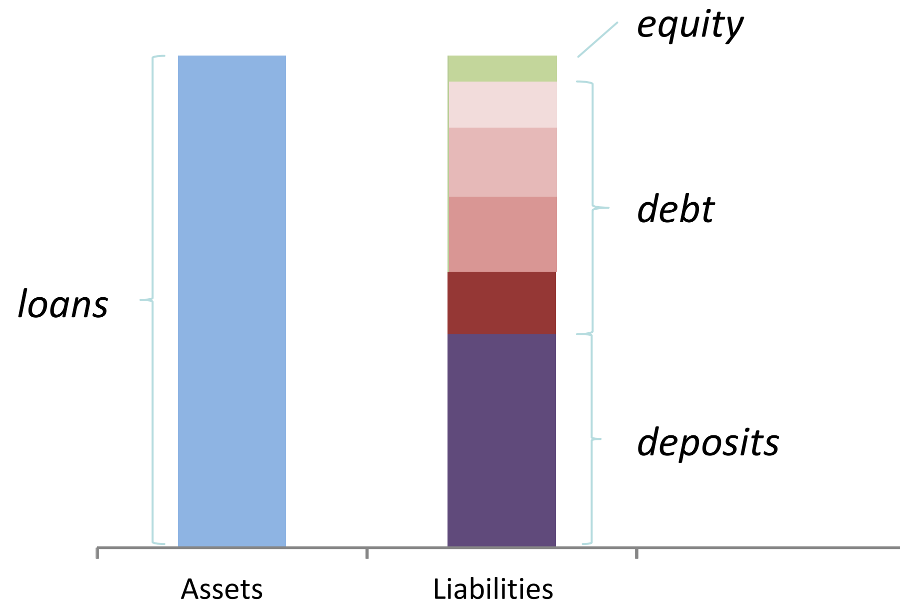
Is Equity Capital in Limited Supply?

- Even asset expansion need NOT deprive the economy of "needed liquidity"
  - Productive opportunities and portfolios need not change
  - Eventual size of balance sheets to be determined "naturally"



A Thought Experiment

- Bank Value Creation
  - Lending (assets)
  - Deposit taking, transaction services
  - Money creation
- Equity reduces money creation capacity
  - $\Rightarrow$ Minimal equity

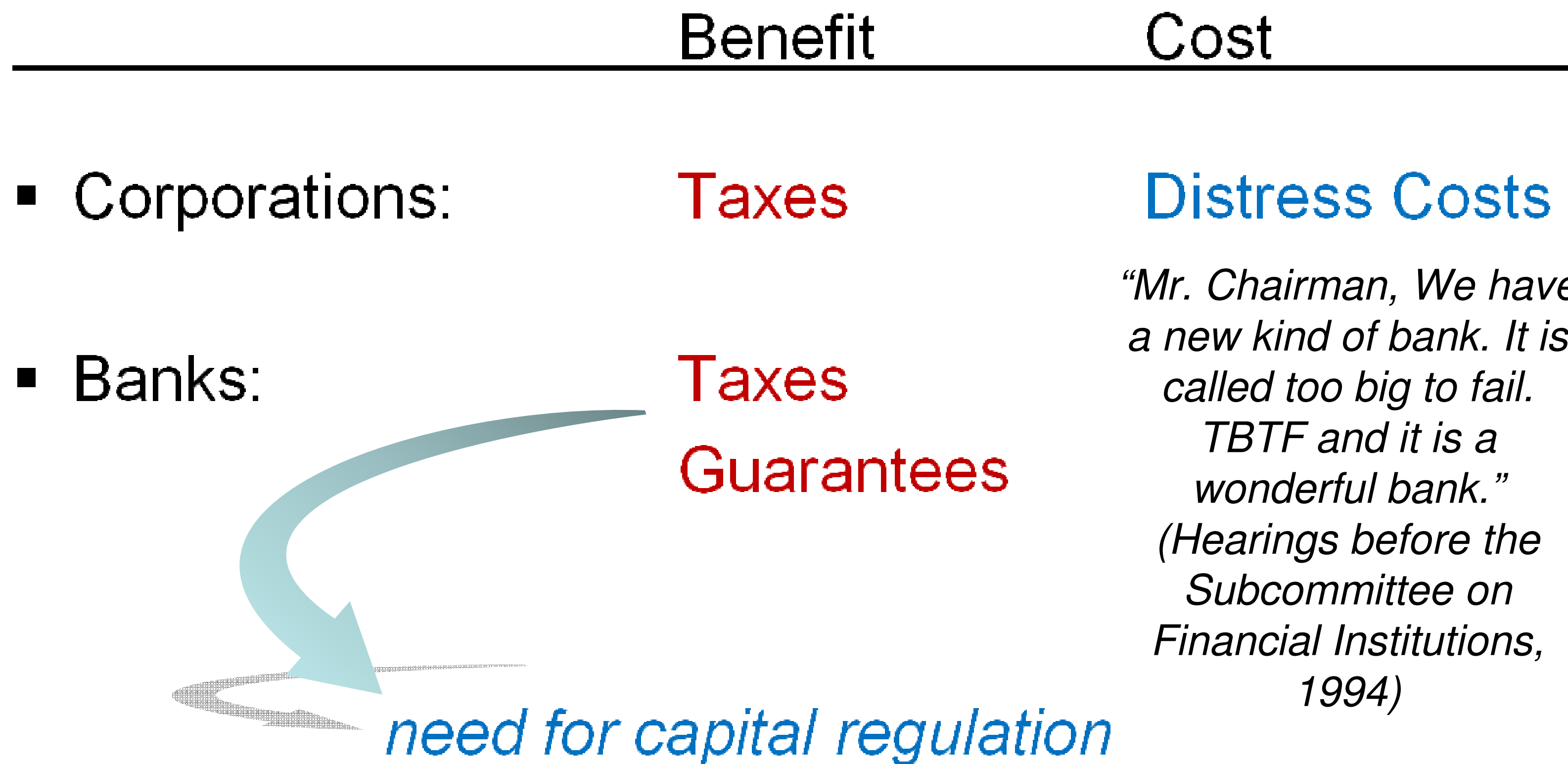


- These activities can be separated

Supply-side arguments don't justify low capital requirements

What About Frictions?

- Tradeoff Theory (private incentives for leverage)



What About Frictions?

- Key frictions favoring bank leverage:
  - Tax Benefits
    - Corporate tax code penalizes equity relative to debt
  - Government Guarantees
    - Taxpayers subsidize bank debt:

    Moody's June 2011: "Currently, Bank of America receives five and Citibank four notches of uplift from government support assumptions"
    - Full commitment against bailouts impossible/undesirable

- But neither friction is "real"!
  - These benefits are not social benefits
  - They are transfers from taxpayers to bank investors

Why Taxes and Subsidies Matter

- What private incentives do these frictions create?
  - Tax effect: $\tau_c\, r_d$ 33%(5%) = 1.65%
  - Subsidy effect: $(1 - \tau_c)\,(r_d - r_d^*)$ 67%(5% – 4%) = 0.67%
  - Each 1% of debt lowers WACC by 1.65 + 0.67 = 2.32 bp
- Given r_u = 5.3% and 3% equity to total assets

  ⇒ WACC = 5.3% – 97%(2.32%) = 3.05%
- Each 1% of capital (equity) reduces
  - Enterprise value by 2.32 bp / 3.05% wacc = 76 bp
  - Equity value by 76bp / 3% equity = 25% !

⇒ *Large increase may not be implementable / sustainable …*

Potential Real Consequences…

- To implement / sustain a significant increase in capital, the increased private cost must be
  - Passed on to borrowers, or
  - Offset by other policy changes

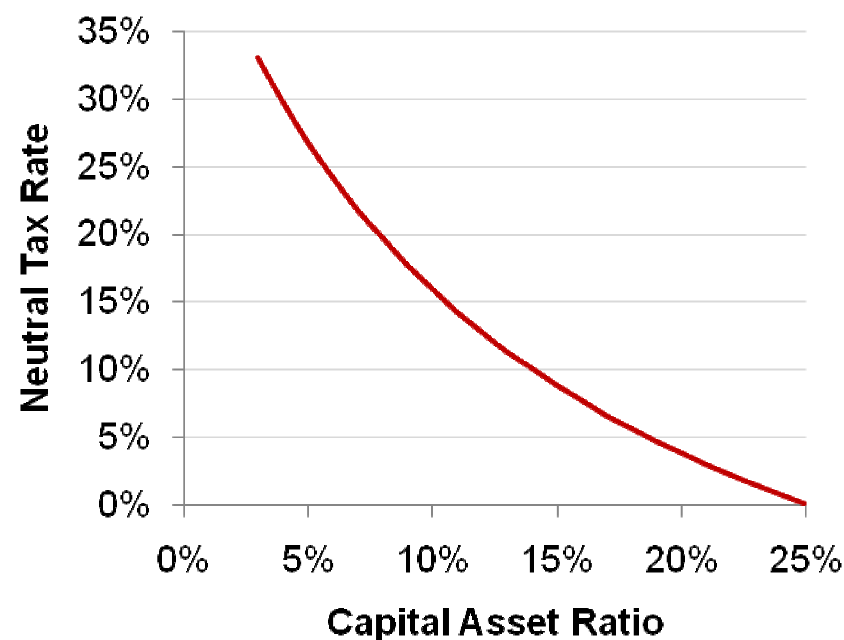
- Average Loan Rate
  - Perfect Competition: $ALR \times (1 - \tau_c) \times (1 - e) = WACC$
  - Typical expense ratio $e = 13\%$

  $\Rightarrow$ ALR must increase by 4 bp per 1% capital

  $\Rightarrow$ *Potential impact on real investment*

…Which Can Be Completely Mitigated

- But these costs are private, not social, and the result of policy choices
  - Why do we subsidize bank leverage while at the same time trying to control it?
- Alternatives
  - Allow tax deductions for incremental equity capital
    - Imposes taxes “as if” bank remained highly levered
  - Reduce average tax rate



⇒ *the effect of lost subsidies can be easily neutralized*

The Key Question

- The key question for policymakers is therefore:

  What friction exists, beyond these two, justifying high leverage for banks?

- Surprisingly, this question is seldom asked
  - Yet a student who has grasped the fundamental concepts of finance will naturally be lead to it

- Potential candidates: Incentives &/or Issuance Costs?

Agency Costs & Incentives

- Much of modern corporate finance is devoted to understanding the incentive effects of contracts
  - Contracts $\rightarrow$ Incentives $\rightarrow$ Real Outcomes
- Capital Structure
  - Debt distorts incentives of equity holders
    - Excessive risk-taking (asset substitution)
    - Under-investment (debt overhang)
  - Debt *may* improve corporate governance
    - Discipline versus Free Cash Flow
    - Even if it does, is it the least costly mechanism?

Does Debt "Discipline"?

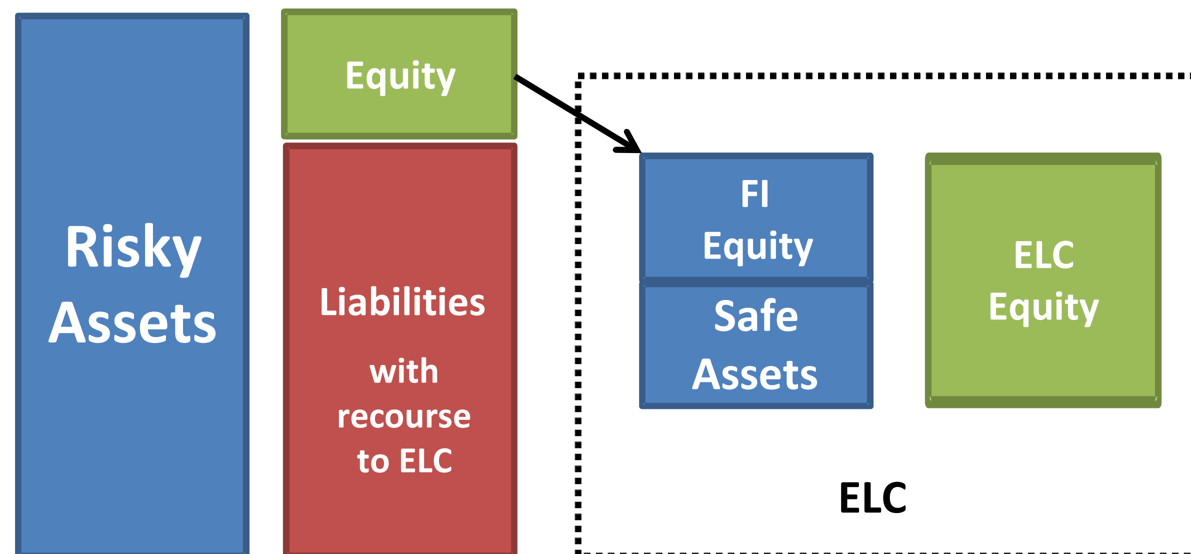
- Can debt help limit Asset Substitution?
- This is paradoxical, as leverage increases incentives toward risk taking
- Calomiris (1999): Junior debt holders monitor & "run" if risk increases ("canary in the coal mine")

  - Even with such debt, a larger equity cushion will help

- Fragility of debt ⇒ subject to inefficient, costly runs
- Potential discipline undermined by guarantees
- *Where was the discipline prior to 2008?*

Does Debt "Discipline"?

- Debt can provide "discipline" against Empire Building / Entrenchment (Jensen 1986)
- Is this the main agency problem for banks?
  Does high leverage uniquely solve this problem?
- Focus on improved governance/shareholder rights
- Admati & Pfleiderer 2010: Equity Liability Carrier



Under-Pricing & Issuance Costs

- Debt is less subject to under-pricing (Myers-Majluf 1984)
  - True, but this does NOT imply high leverage is optimal
  - Lower leverage $\Rightarrow$
    - Greater ability to rely on retained earnings
    - Equity is less sensitive so any underpricing is less severe
- Easily mitigated
  - Restrict payouts (dividends and share repurchases)
  - Rights offerings: low cost & removes underpricing concern
  - Remove discretion: mitigate negative inferences (force issuance if capital falls too low or risk increases)

Optimal Capital Structure

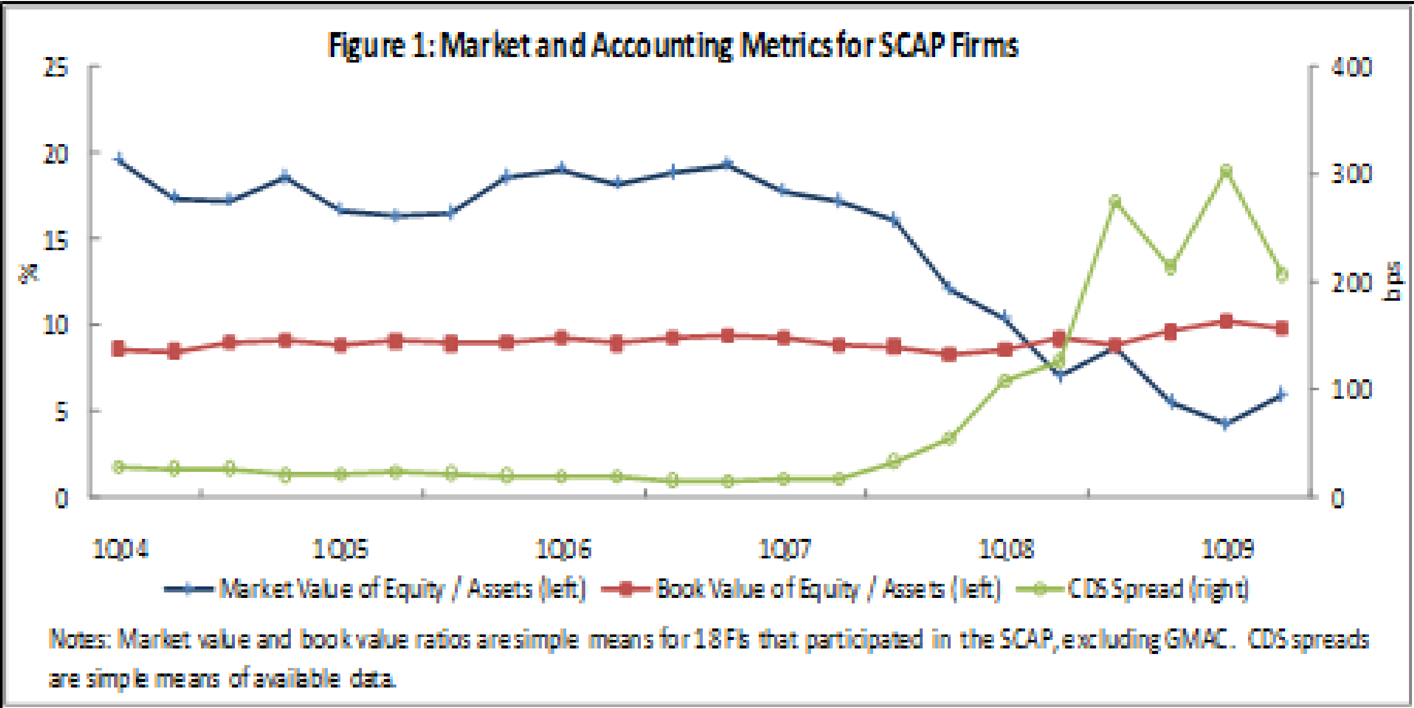
	Social Benefit	Cost
▪(**Banks:**	Taxes	Distress Costs ++
	Underpricing	Asset Substitution++
	??Governance??	Debt Overhang

▪Ave. Leverage for non-financial firms ~ 40%

Assessment & Policy Recommendations

- Substantially increase bank capital requirements
  - No clear social cost, significant benefit
  - Consider 15%+ relative to *total* assets
- Move to market-based assessments of risk and capital
  - Static risk-weighting creates distortions; regulators are ill-equipped to keep up with financial innovation
  - Measure equity capital using market (vs. book) values; market value drives solvency and incentives
- To speed recapitalization and avoid negative inferences
  - Require banks to suspend equity payouts
  - Mandate rights offerings to maintain desired capital ratios
- Policy makers should focus on
  - Changing tax and support policies that subsidize leverage
  - Strengthening corporate governance and internal controls

Market vs. Book Equity



Source: Kevin Stiroh, FRB-NY

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Bottom Line

- We have *created* a system where banks have every incentive to be an "LLC": leveraged, large, and highly correlated

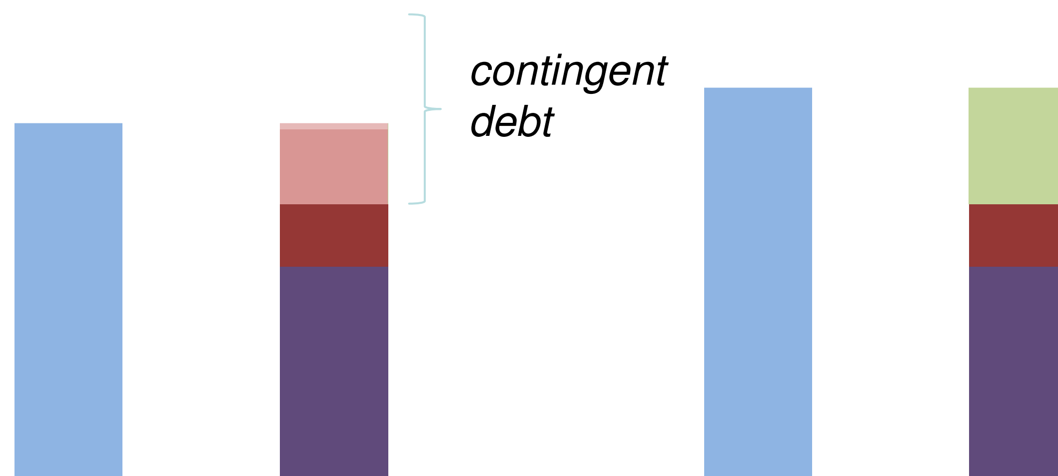
"But as long as the music is playing, you've got to get up and dance. We're still dancing…"
–Chuck Prince, Citigroup CEO

- Policymakers should focus on
  - Neutralizing manmade distortions that inhibit higher capital
  - Determining the proper level of risk-adjusted capital required to thwart systemic contagion

⇒ self-insurance & market discipline

Contingent Capital

- Contingent Capital provides a cushion against default
  - But compare to equity recaps
  - Coco's:
    - Problematic to implement (manipulation)
    - No (social) cost savings relative to equity
    - No liquidity provision, no "re-loading"



Why Do Banks Have High Leverage?

- Beyond direct subsidies from taxes & government support, high bank leverage need not even be privately optimal ex ante
  - Capital structure is not determined ex ante by all parties with full commitment to complete contracts
  - Sequential Banking: Banks have an incentive to increase leverage to effectively "dilute" existing creditors (Bizer & DeMarzo 1992)
  - Maturity Rat Race: Banks have an incentive to shorten the maturity of claims to "preempt" existing creditors (Brunnermeier & Oehmke 2010)
  - Debt Overhang: Once over-levered, equity holders will not unilaterally recapitalize (Myers 1977)

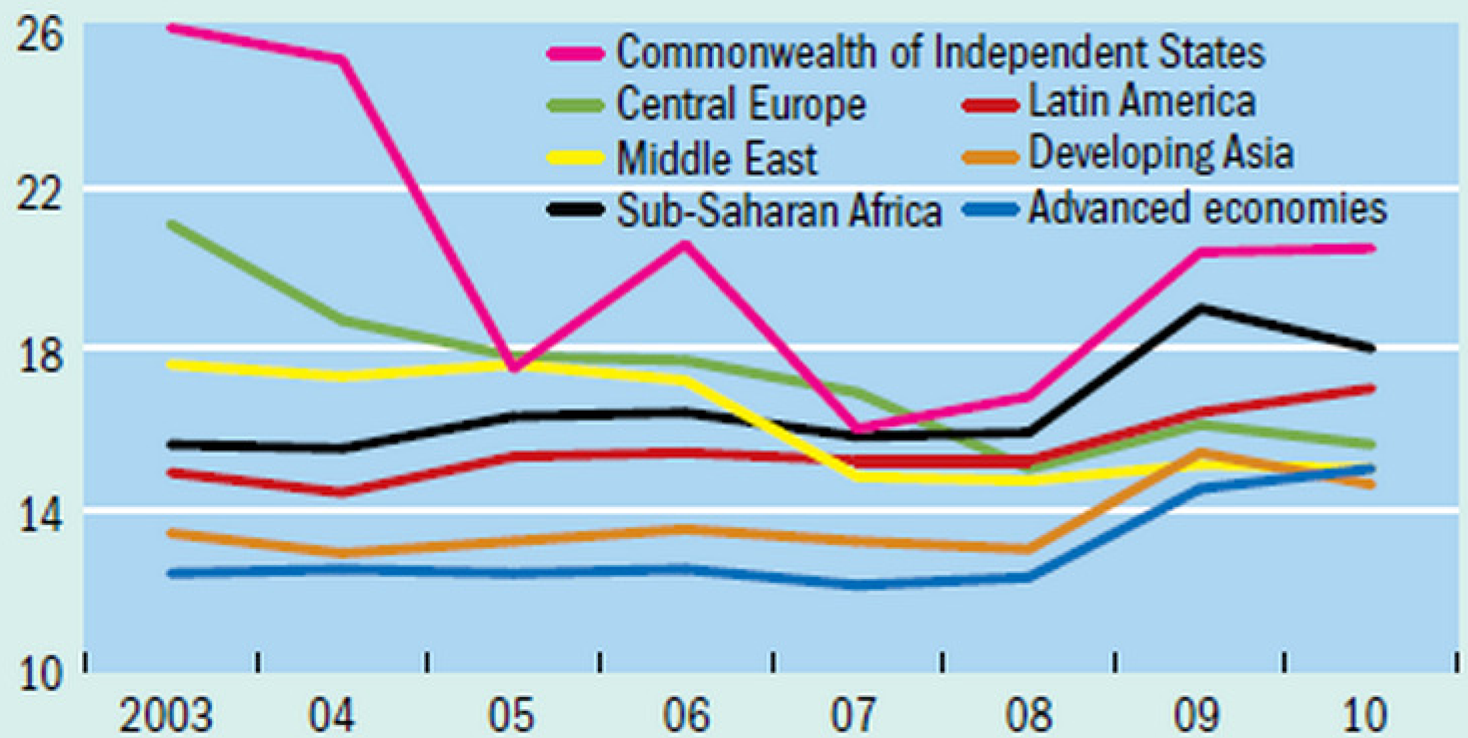
Finance Education

- It is fashionable to question the usefulness of finance education, and even blame the crisis on Economists and "MBAs"
- The real lesson from the crash is not that there is a problem with what we teach –

Rather we need to make sure finance students -- and policymakers -- are internalizing the core principles of financial economics!

Why Taxes and Subsidies Matter

- Enormous private incentives to “increase capital efficiency”
  - Explains strategies and mindset of bankers
  - Powerful incentives to work around any new regulation
- Need for coordination / harmonization
  - >4% increase may not be implementable, unless higher costs can be passed on to borrowers
  - Drive activity to “shadow” banks


Bank capital ratios have improved since the start of the crisis.
(ratio of bank regulatory capital to risk-weighted assets, medians)
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14
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Commonwealth of Independent States
Central Europe
Latin America
Middle East
Developing Asia
Sub-Saharan Africa
Advanced economies
2003
04
05
06
07
08
09
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