

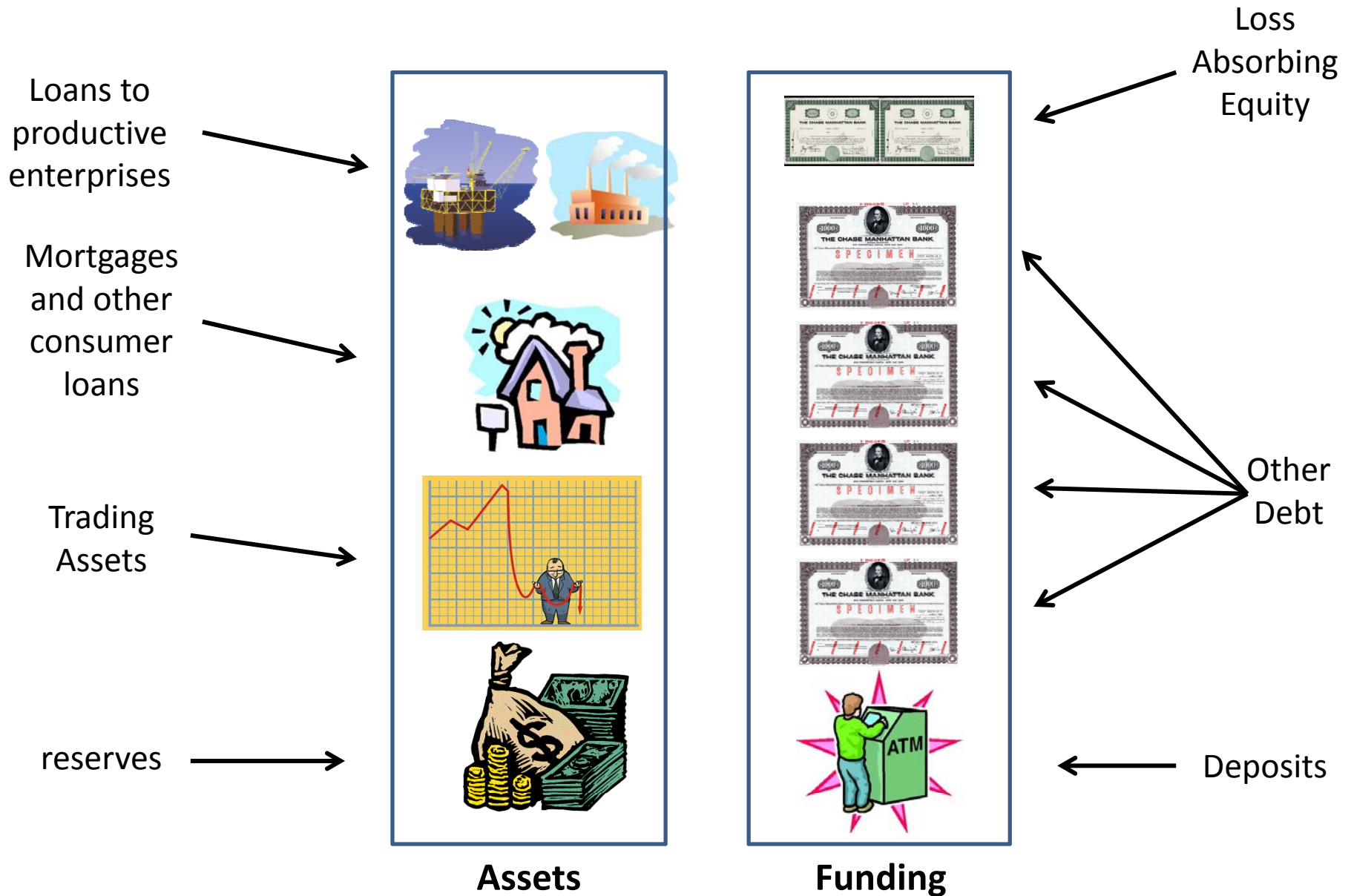
Bank Capital

How much is “Enough?”

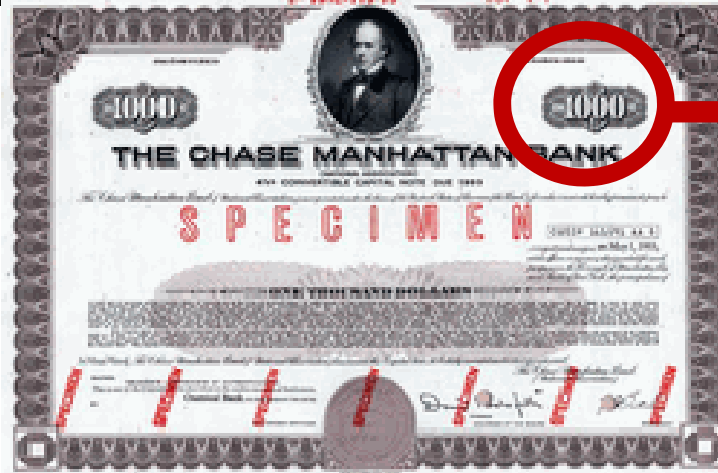
Anat R. Admati
Stanford University

Federal Reserve Bank of Chicago
48th Annual Conference on Bank Structure and Competition
May 10, 2012

Bank Capital is Loss-Absorbing Funding

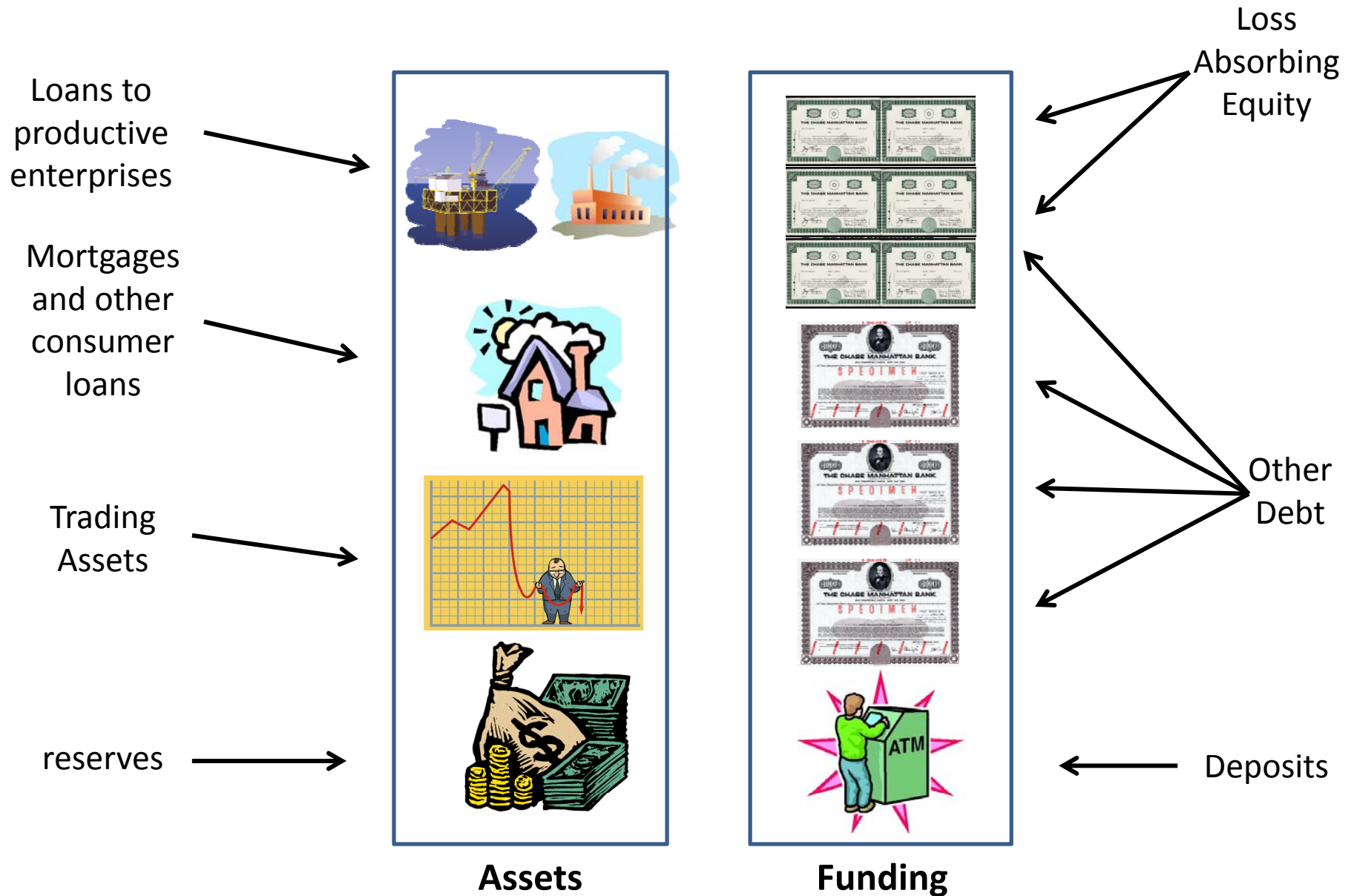


Debt is a “Hard Claim”



Promised Payment

Replacing Debt with Equity Reduces Leverage

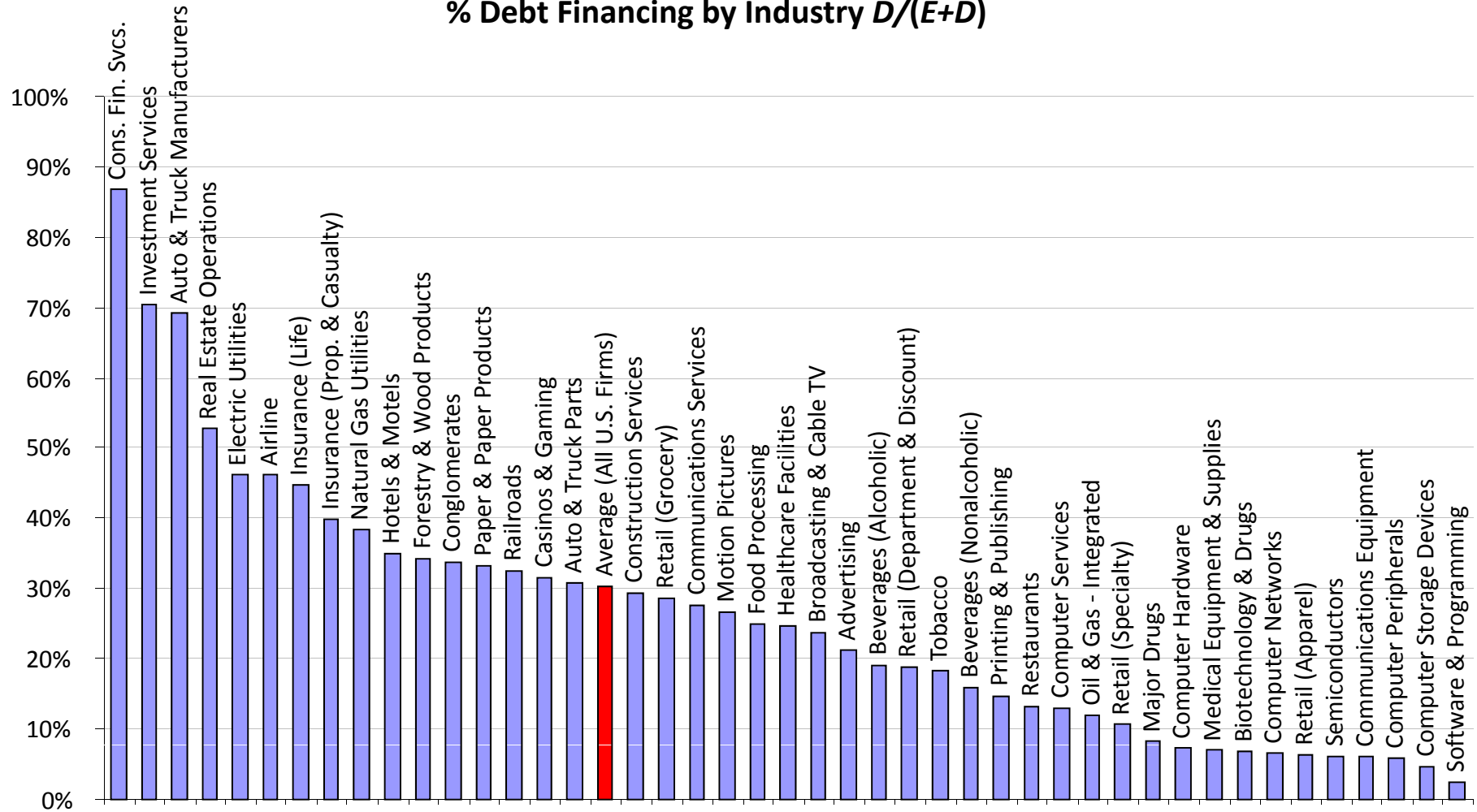


Banks Don't "Set Aside" their own Equity

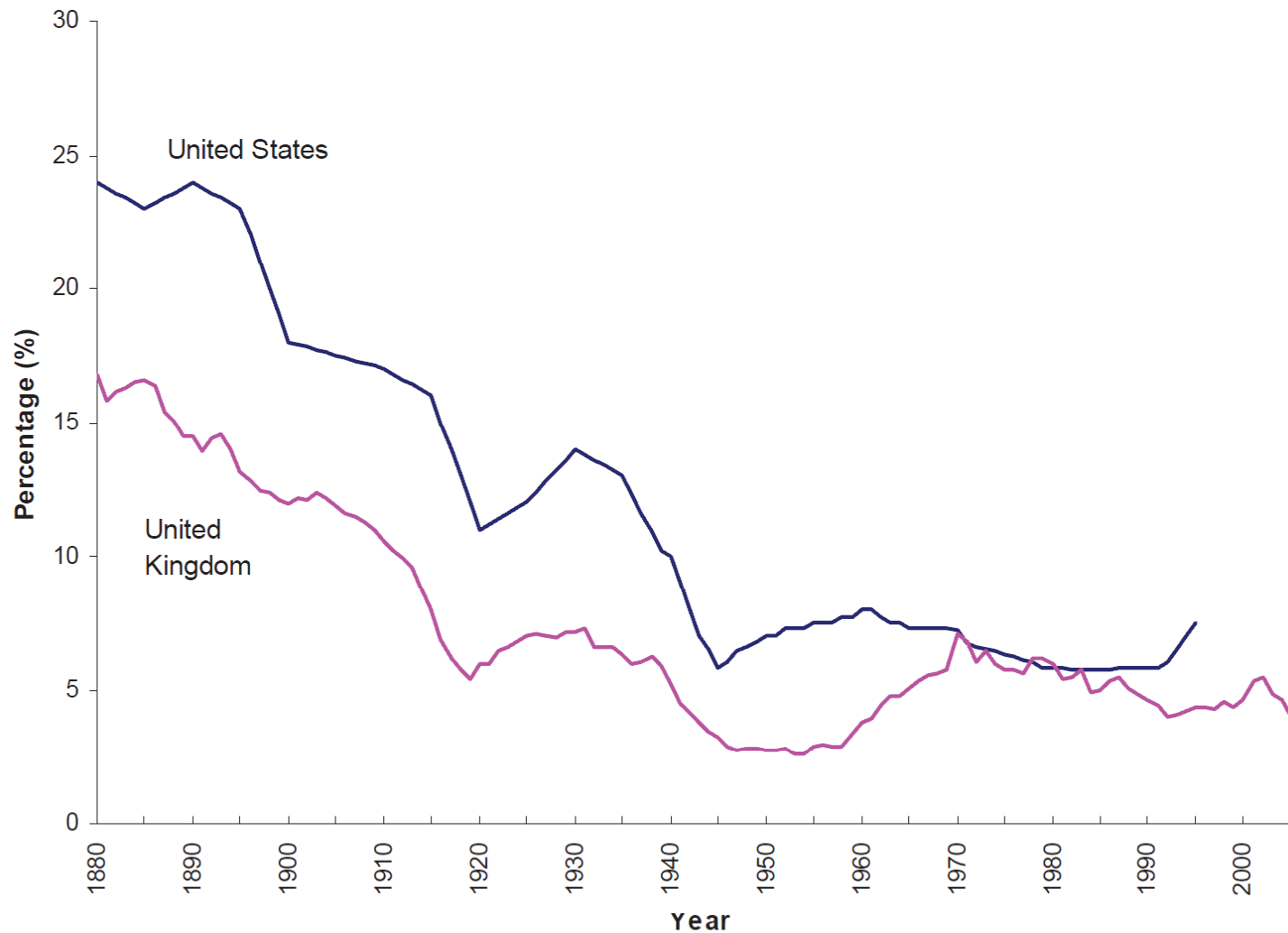
- Confusing jargon!
- "Hold" or "set aside" is misleading.
- Equity ("capital") is not the same as reserves.
- Capital requirements concern funding only.
 - No constraints on loans and investments.
 - A firm does not "hold" securities it issues.
- Confusion implies false tradeoffs with lending.
- "Hold capital" = borrow less, use more equity.

Leverage by Industry

% Debt Financing by Industry $D/(E+D)$



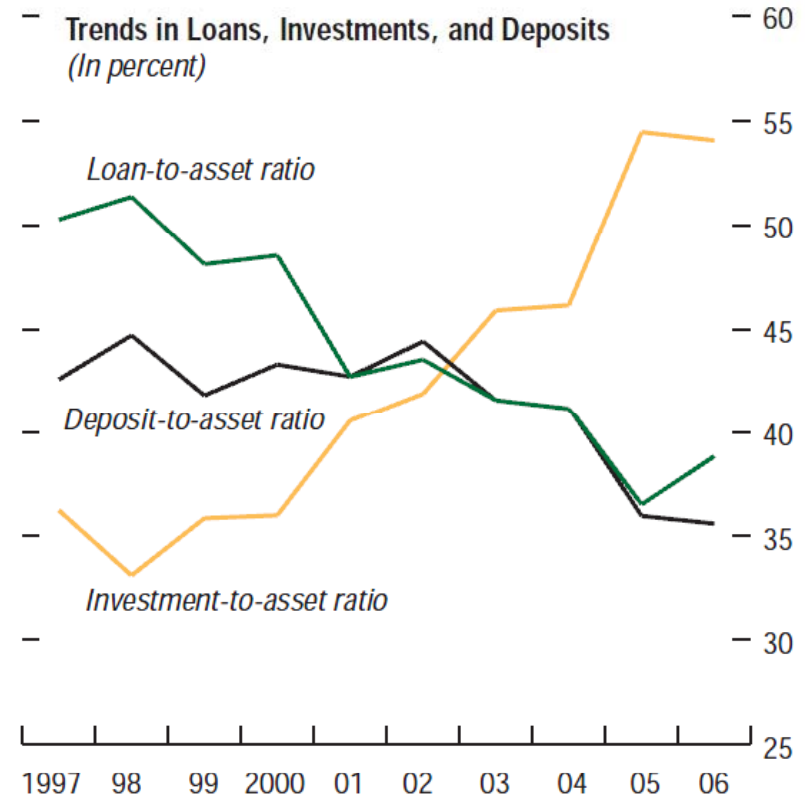
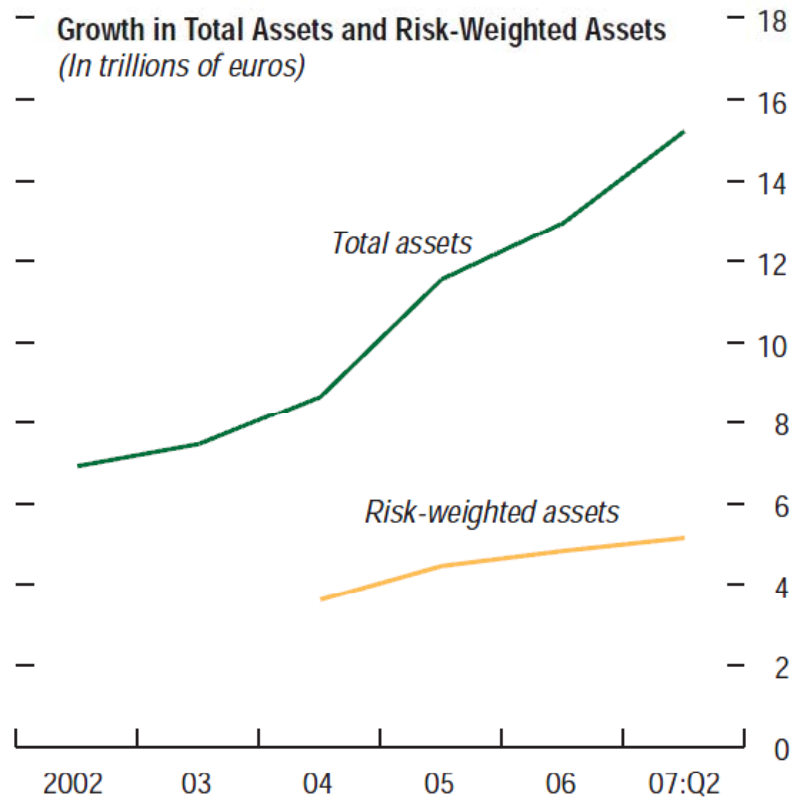
History of Banking Leverage in US and UK



Source: US: Berger, A, Herring, R and Szegö, G (1995). UK: Sheppard, D.K (1971), BBA, published accounts and Bank of England calculations.

Trends: Total Assets Grew, RWA Not Much More Trading, Fewer Loans and Deposits

Balance Sheet Profiles for 10 Large Publicly Listed Banks



International Monetary Fund Global Financial Stability Report, April 2008

5 Arguments Why Banks Should have Much More Equity

1. Reduces likelihood of distress or failure.
2. Protects the economy from spillover effects of distress or failure of banks.
3. Reduces Too-Big-To-Fail subsidies and huge distortions they generate.
4. Does not restrict any banking activity.
5. Does not increase banks' funding costs, except through reduction of subsidies.

Additional Observations

- More equity prevents excessive risk taking.
- More equity reduces likelihood of credit crunch.
- Risk weight system is very problematic.
- “Level playing field” argument is invalid.
- Leverage is “addictive” to a borrower.
- The best source of equity: retained earnings.

Greenspan on More Equity

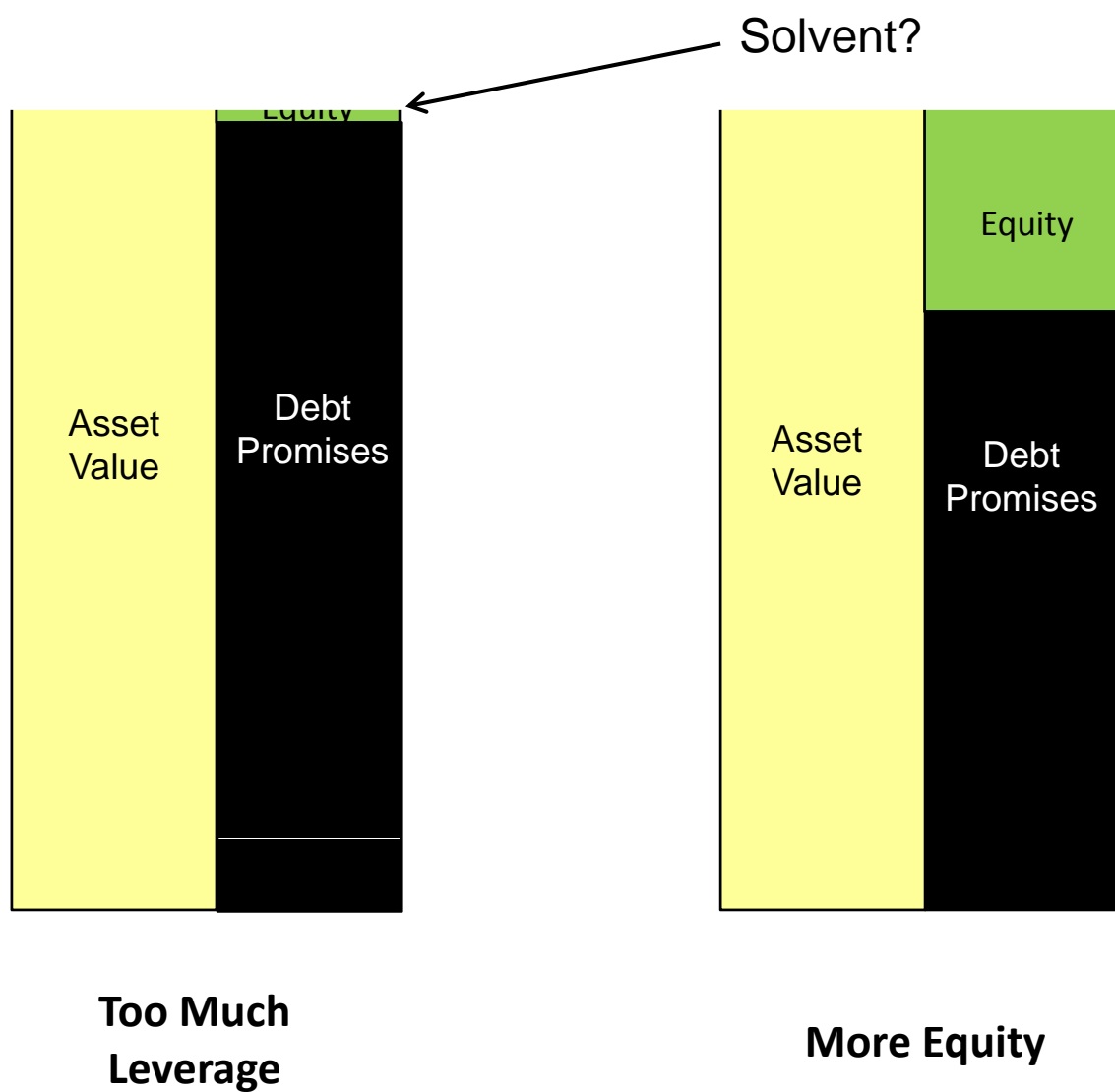
- “Had the share of financial assets funded by equity been significantly higher in September 2008, it seems unlikely that the deflation of asset prices would have fostered a default contagion much, if any, beyond that of the dotcom boom.”

“The Crisis,” Brookings paper, April 15, 2010.

- “.. if capital and collateral are adequate...losses will be restricted to equity shareholders who seek abnormal returns; Taxpayers will not be at risk. Financial institutions will no longer be capable of privatizing profit and socializing losses.”

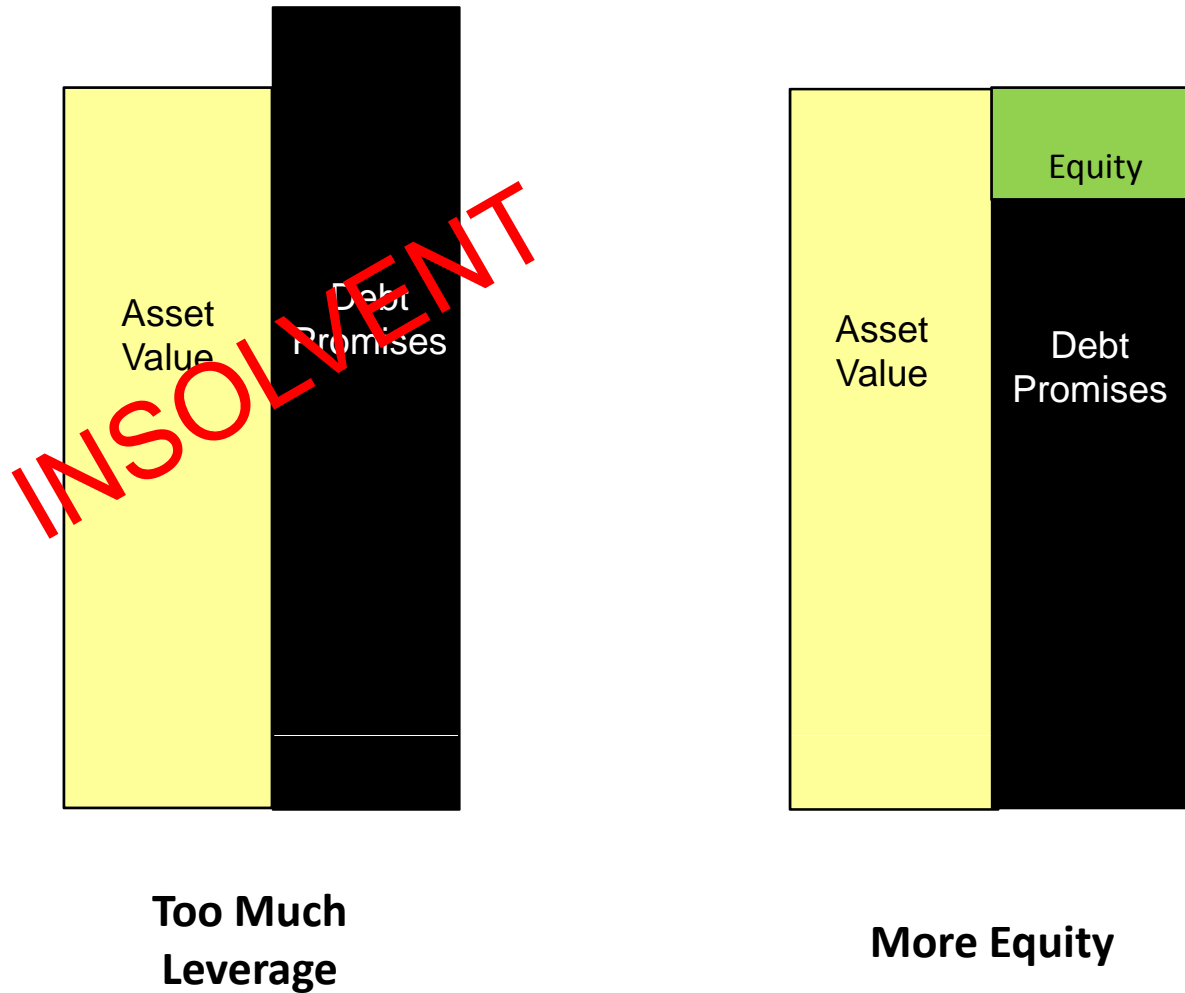
Quoted in “Greenspan Defends Legacy, Urges Higher Capital, Collateral Standards,” *WSJ*, April 7, 2010.

1. Equity Absorbs Losses



A loss 

1. Equity Absorbs Losses



1. & 2. Equity Reduces Likelihood of Distress and Systemic Risk

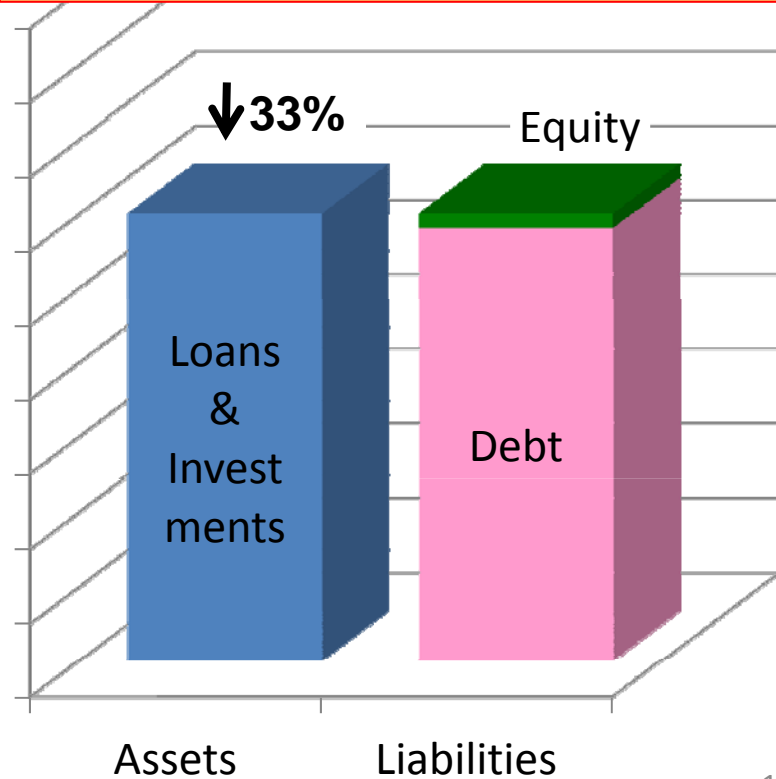
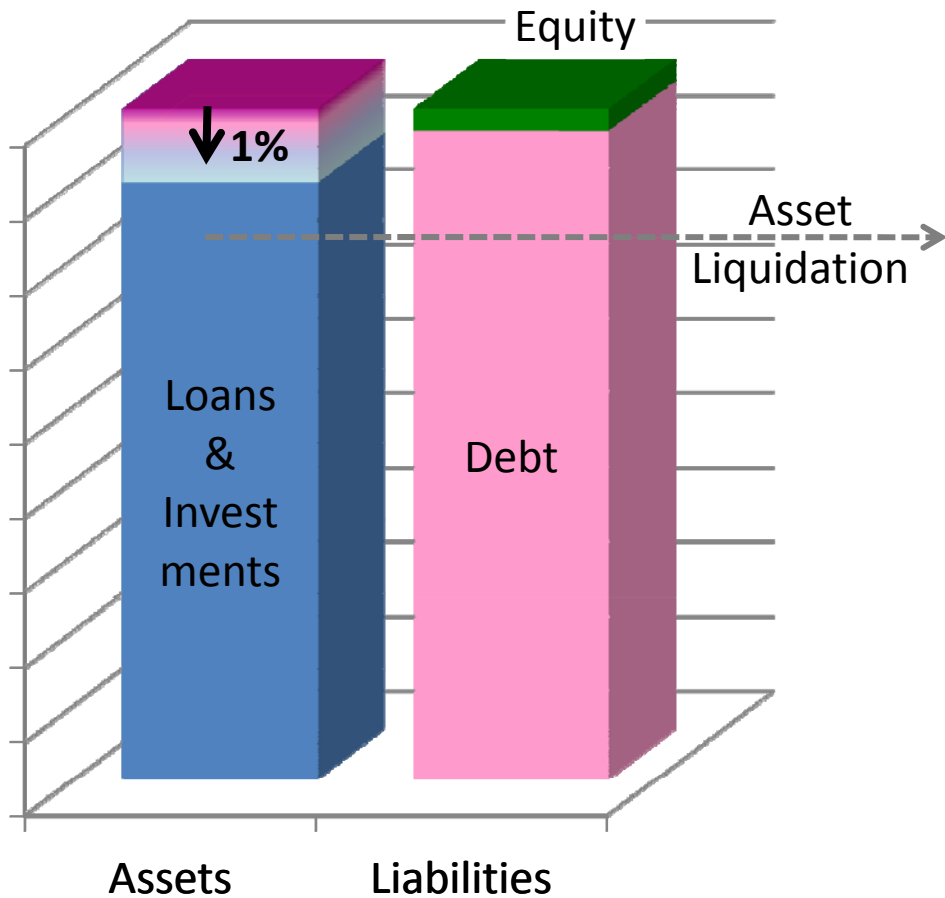
- The insolvency and bankruptcy of Lehman Brothers led to
 - Enormous ripple effects, financial system meltdown, guarantees, bailouts, Fed windows, TARP.
 - “Out of ... 13 of the most important financial institutions in the US, 12 were at risk of failure within a period of a week or two.” (Bernanke to FCIC)
 - “Everyone got hurt. The entire economy has suffered from the fall of Lehman Brothers... the whole world.” (Anton Valukas, Lehman court-appointed investigator to “60 minutes.”)

2. Equity Reduces Deleveraging Multiples

A 1% Asset Decline with 3% equity ...

⇒ 33% Balance Sheet Contraction

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



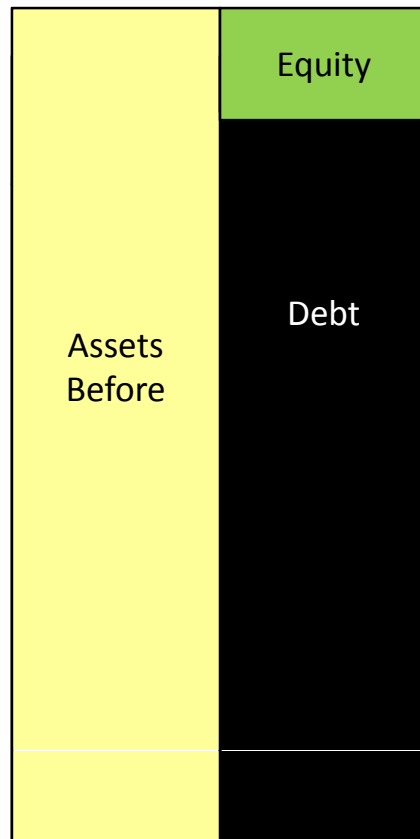
2. Equity Reduces Fragility and “Systemic Risk”

- Solvency concerns are key to system fragility.
- More equity attacks all contagion mechanisms.
 - Contractual cascades
 - Information contagion
 - Deleveraging spirals
- Liquidity problems are less likely and easier to solve without solvency concerns.

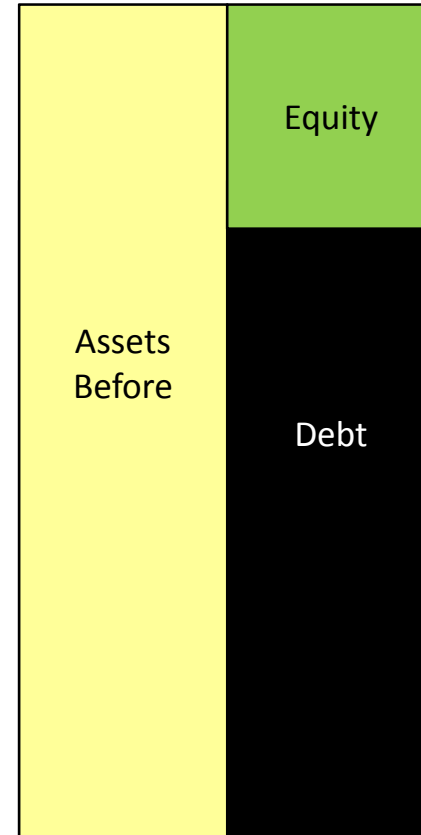
3. Equity Reduces the TBTF Problem

- Fear of “Lehman moment” is evident.
- Excessive growth and concentration trends.
 - Top 60 global banks groups held \$64 trillion in 2010, larger than global GDP; *alarming trends*.
 - Evidence this is related to TBTF.
- Moral hazard, excessive risk and leverage.
- Large distortions in allocation of resources (including human).
- Excessive political power for large banks.

3. More Equity Reduces Need for Bailouts

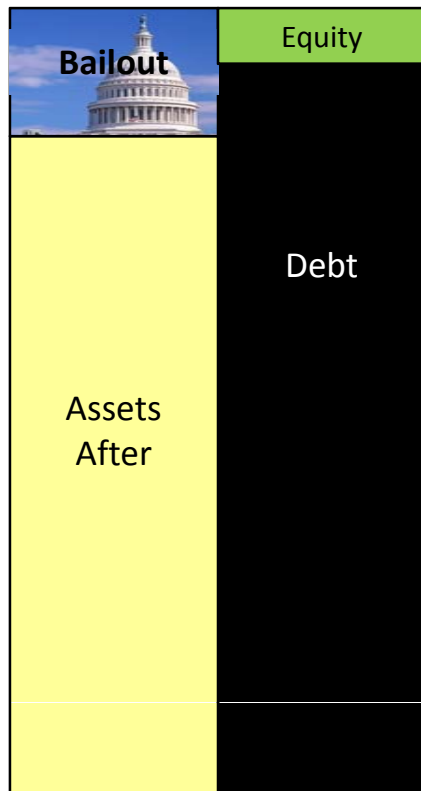


**Too Much
Leverage**

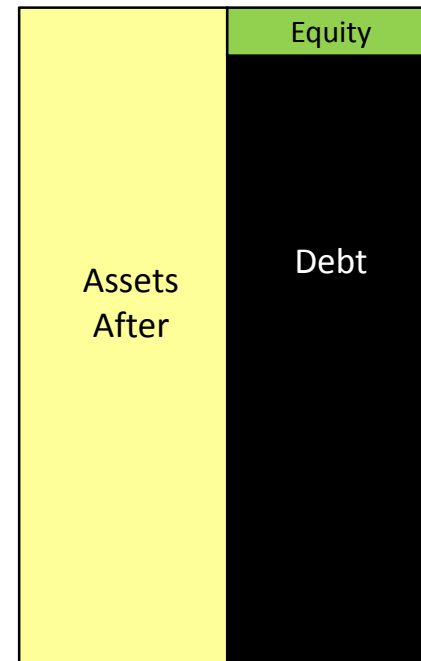


More Equity

3. More Equity Reduces Need for Bailouts



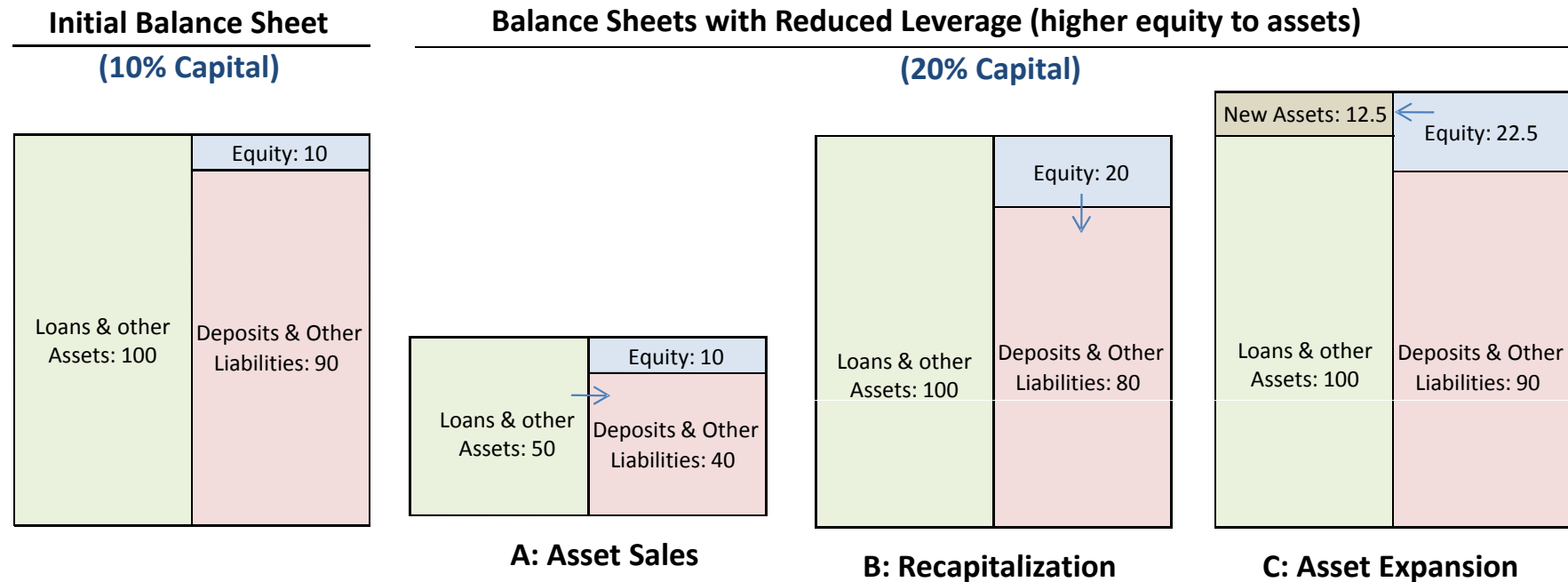
**Too Much
Leverage**



More Equity

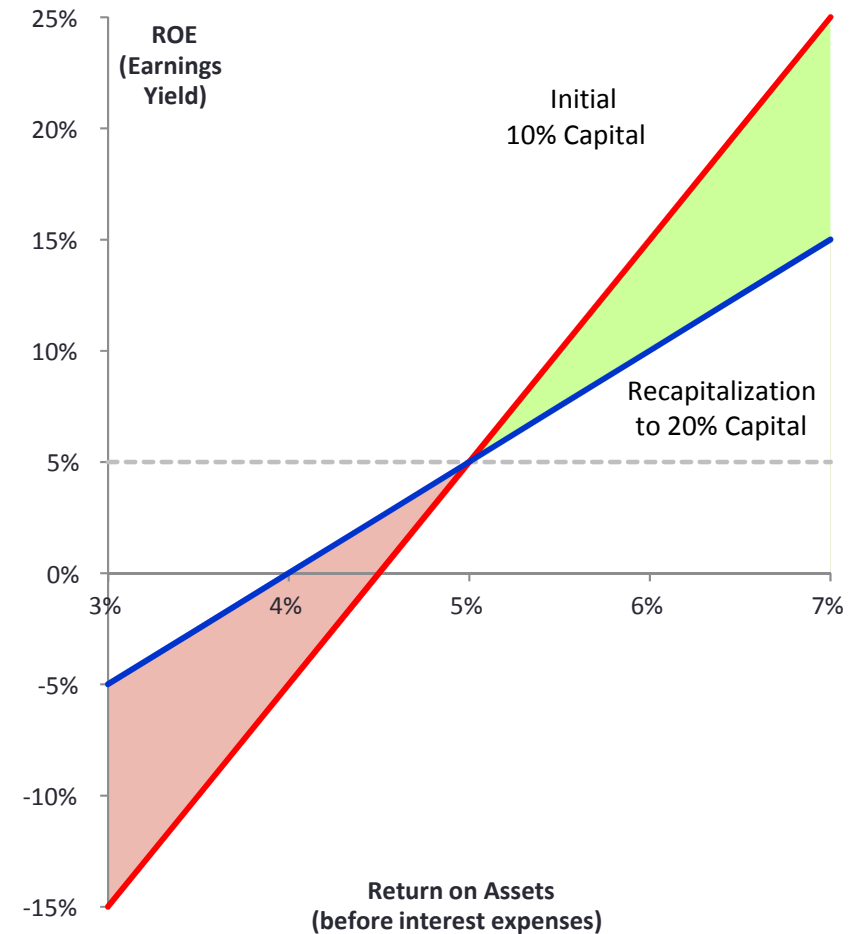
4. More Equity Does Not Restrict Any Banking Activity

- Three ways to reduce leverage.
- Same loans in Balance Sheet B.
- Same loans and debt in Balance Sheet C: Add equity!



5. More Equity Makes ROE Less Risky

- Higher capital
 - Lower ROE in good times
 - Higher ROE in bad times
 - \Rightarrow Risk to equity reduced
- With lower risk, *required* return on equity is lower



5. More Equity Lowers the Required Return on Equity

- In financial markets, “required” return on any security depends on its risk.
- Borrowing magnifies risk (leverage effect).
- More equity reduces the risk of equity.
- Redistributing risk among investors within balance sheet does not *by itself* affect total funding costs.
- Impact of funding mix only through changes in the total funds available to investors.

ROE Focus is Flawed and Dangerous

- ROE, unadjusted for risk and leverage, does not measure shareholder value.
- Leverage increases risk and thus required ROE.
- Any firm or manager can increase average ROE by increasing leverage or risk.
- Reaching “target ROE” by increasing risk and leverage endangers the bank and the economy.

Is Equity “Expensive?”

- If equity is “expensive” because it has higher required return than debt, and if ROE measures shareholder value, then
- Why would Apple use 100% equity? Why not borrow and create leverage?
 - Apple could borrow very cheaply!
 - Leverage would increase its ROE!
- Bank stocks trade in same markets as others, are held by same or similar end investors.

5. Leverage Lowers Funding Costs only Because of Debt Subsidies

- Underpriced safety net means
 - Borrowing costs do not fully reflect risk.
 - Creditors don't monitor.
- Additional tax subsidy.
- Loss of subsidies is not a social cost!

Moody's Announcement: June 2, 2011

- SUPPORT FOR BOFA, CITI, AND WELLS FARGO EXCEEDS PRE-CRISIS LEVELS
- **Moody's government support assumptions for Bank of America, Citigroup, and Wells Fargo are higher than what similarly rated institutions would have received prior to the crisis.** For example, Bank of America N.A.'s and Citibank N.A.'s C- (C minus) unsupported BFSRs translate to a Baa2 rating on Moody's long-term debt scale; prior to the crisis a similarly rated, systemically important bank would typically have benefited from no more than three notches of uplift, meaning its ratings would be no higher than A2. **Currently, Bank of America receives five and Citibank four notches of uplift from government support assumptions**, bringing their senior ratings to Aa3 and A1, respectively. Wells Fargo's unsupported BFSR of C+ (C plus) translates to an A2 rating on Moody's long-term debt scale; prior to the crisis a similarly rated, systemically important bank would typically have received no more than two notches of uplift, to Aa3. Currently, Wells Fargo's Aa2 senior rating benefits from three notches of uplift

Safety Net Subsidy Lowers Borrowing Costs for Banks

- Rating agencies give uplifts.
- Subsidies are substantial,
 - TBTF subsidies explain “scale effect.”
 - Subsidies reflected in higher ROE.

Reduced Cost in Basis Points	Extra Return on Equity (with 3% equity)
2.50	0.81%
5.00	1.62%
7.50	2.43%
10.00	3.23%



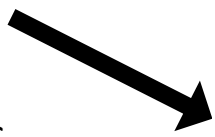
Financial
Markets
And
Greater
Economy



**Systemic
Risk**

Debt

(high levels of leverage create systemic risk and distort risk taking incentives)



Funding



Equity

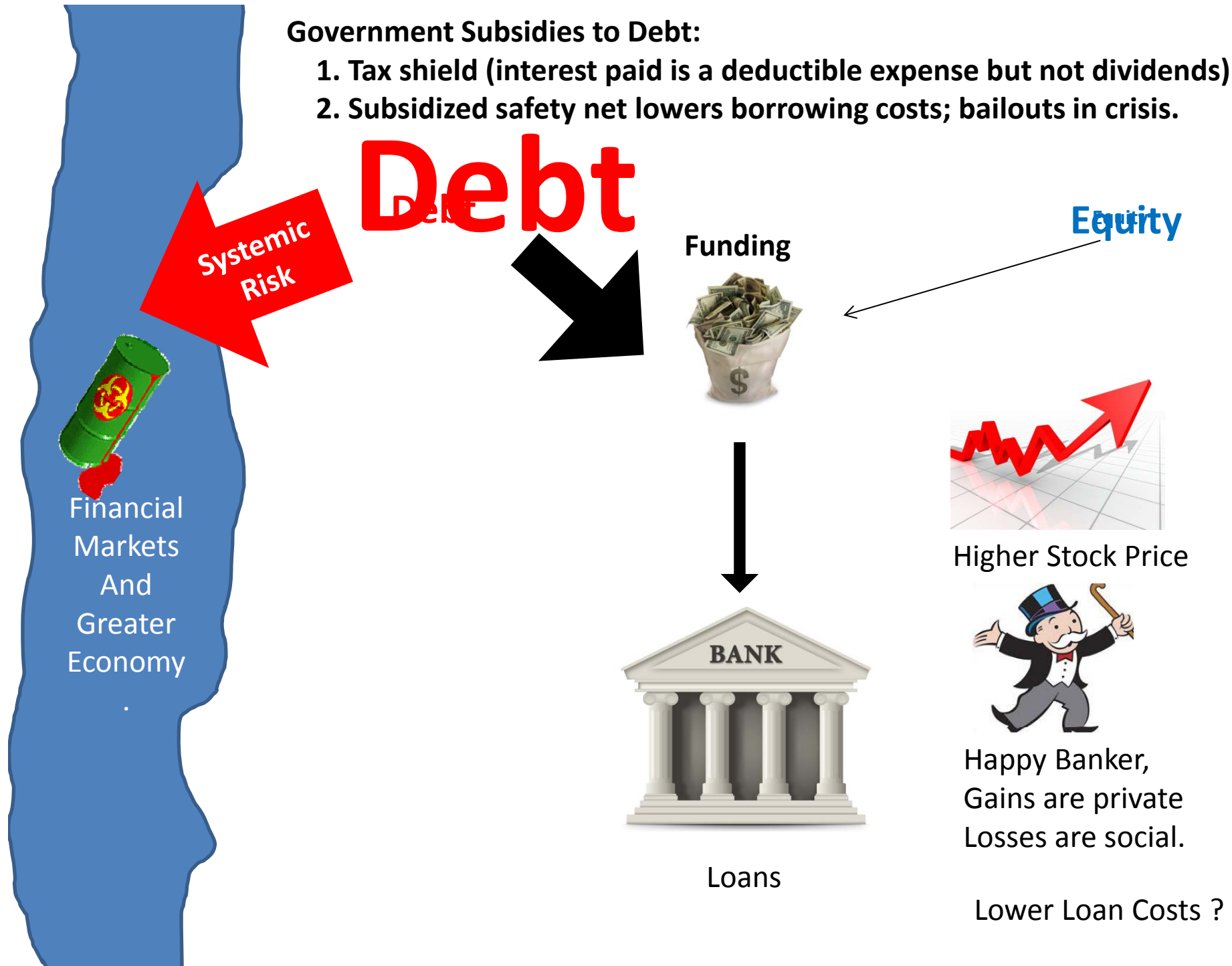
(provides cushion that absorbs risk and limits incentives for taking socially inefficient risk)



Loans

Government Subsidies to Debt:

1. Tax shield (interest paid is a deductible expense but not dividends)
2. Subsidized safety net lowers borrowing costs; bailouts in crisis.



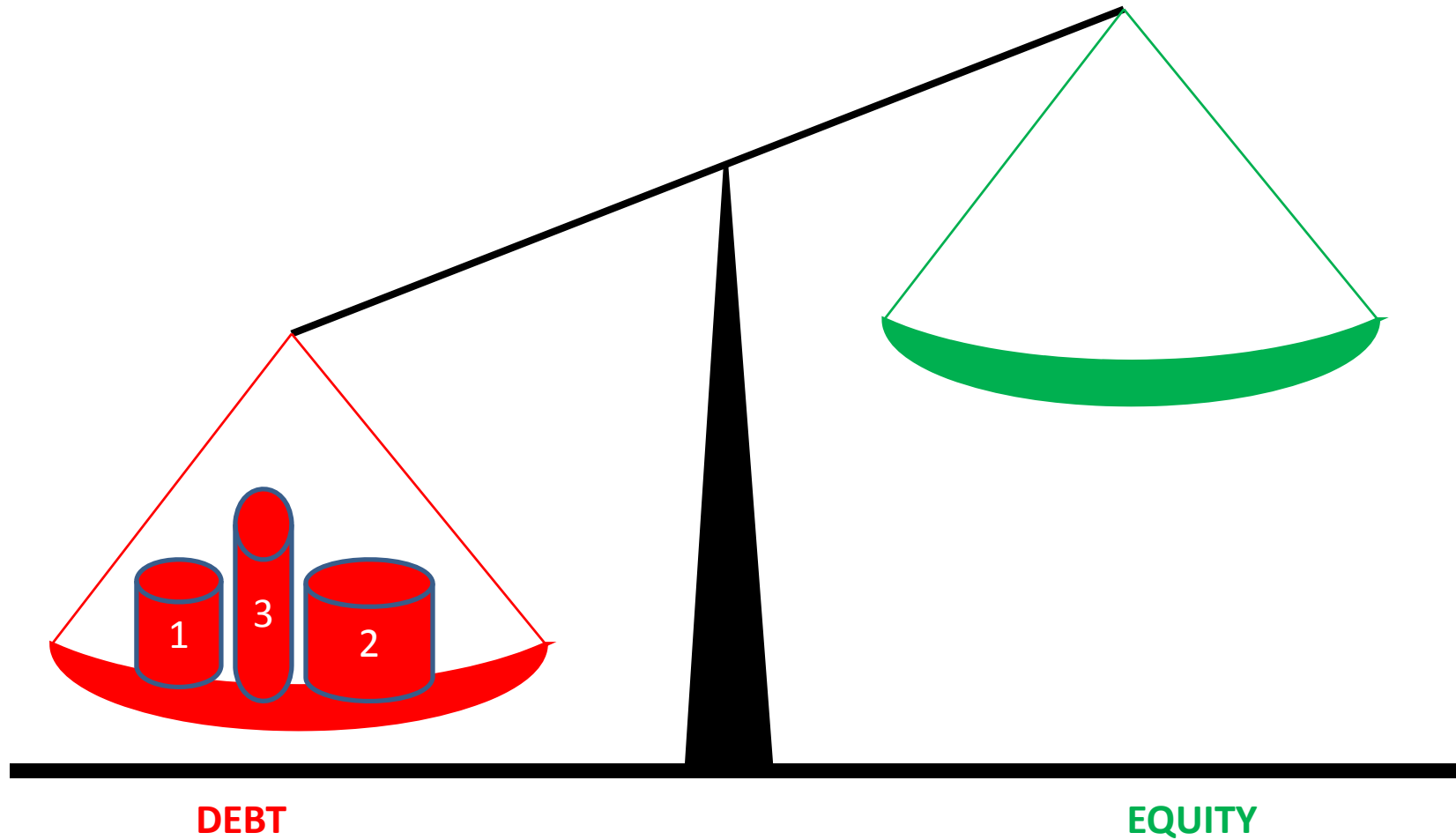
Additional Benefits to Lower Leverage: Reduces Moral Hazard

- Heavy borrowers may take excessive risk, “heads I win, tails creditors lose.”
- Guarantees exacerbate the problem.
- More equity shifts downside risk to managers and shareholders; better incentives to manage risk.

Additional Benefits to Lower Leverage: Helps Prevent Credit Crunch

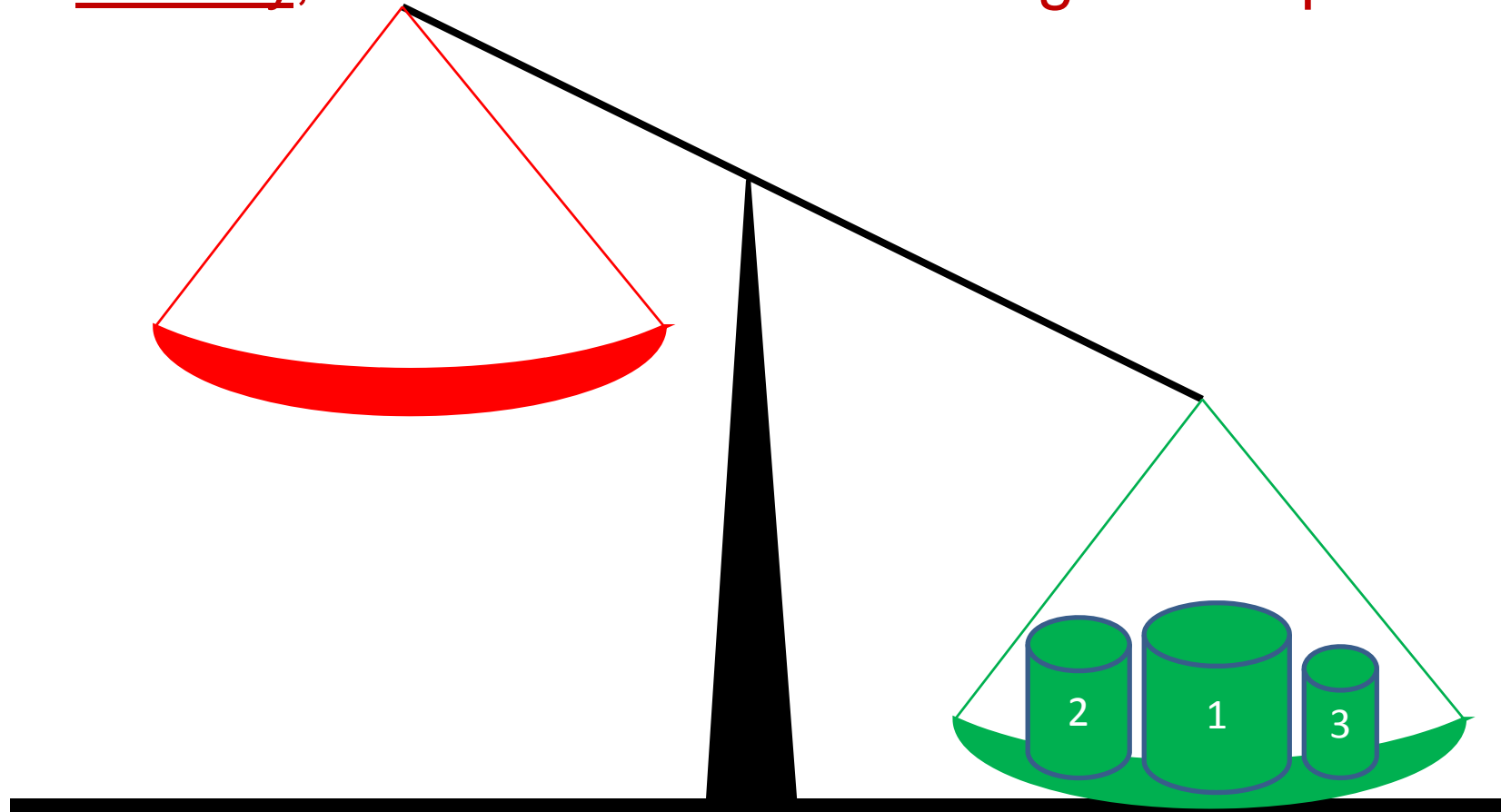
- Credit freeze due to too much debt in place.
- Debt overhang leads to underinvestment.
- Inefficient “deleveraging” can be managed to avoid impact to lending (retain earning!).
- Better capitalized banks make better lending decisions.

Banks/Bankers Prefer to Borrow and Resist More Equity.



1. Subsidies (taxes and safety net)
2. ROE fixation
3. Debt overhang

For Society, Excessive Bank Leverage is “Expensive!”



DEBT

- ~~1. Subsidies (taxes and safety net)~~
- ~~2. ROE fixation~~
- ~~3. Debt overhang~~

EQUITY

1. Reduces systemic risk
2. Reduces deadweight cost of distress, default, crisis
3. Reduces inefficiencies of high leverage (excessive risk, debt overhang)

“Level Playing Field” Argument is Invalid

- Banks can endanger an entire economy (Ireland, Iceland).
- Banks compete with other industries for inputs (including talent); subsidies distort markets.
- It is not a national priority that “our” banks are successful if they impose risk and cost on us.
- Argument creates “race to the bottom.”

Basel Capital Requirements

- Tier 1 capital Ratio: Equity to *risk-weighted assets*:
 - Basel II: 2%
 - Basel III: 4.5% - 7%, up to 9.5% for SIFIs.
 - Definitions changed.
- Leverage Ratio: Equity to *total assets*:
 - Basel II: NA
 - Basel III: 3%.
- Numbers are based on flawed analyses of tradeoffs.
- Risk weights hide risks, are manipulable & distortive.

Balance Sheet Realities

- Contingent and other liabilities (and assets) live off balance sheet.
 - SPVs, Money Market Funds, etc.
 - Can show up suddenly on balance sheet.
- Loan accounting is highly problematic.
- IFRS vs GAAP: derivatives netting must be meaningful *when it matters*, i.e., in default.
- Accounting tricks (Repo 105).

Debt-Like “Capital” is Ineffective Substitute

- No subordinated debt or hybrid lost in crisis.
- Equity dominate co-cos and bail-in debt,
 - Straightforward, less complex,
 - More reliable to absorb losses.
- Hybrids, bail-in can create instability around triggers, it matters who holds them.

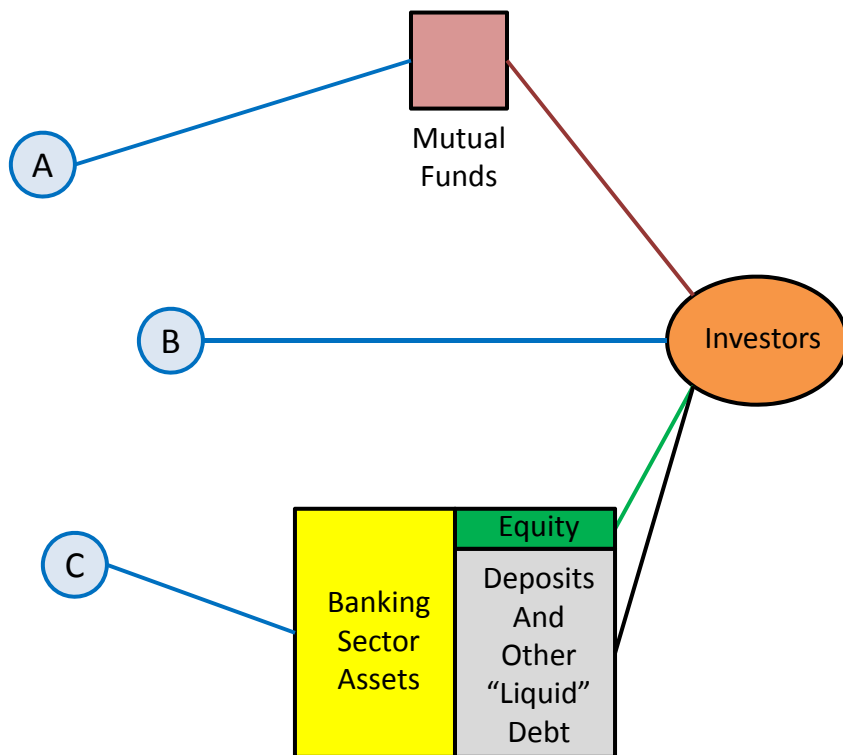
“Shadow Banking” and Enforcement Challenge

- Crisis exposed ineffective enforcement.
 - Must watch the *system*.
 - Regulated banks sponsor entities in the shadow banking system.
- Enforcement issues are not a valid argument against regulation: Give up tax collection?

How Much Is “Enough” Bank Capital?

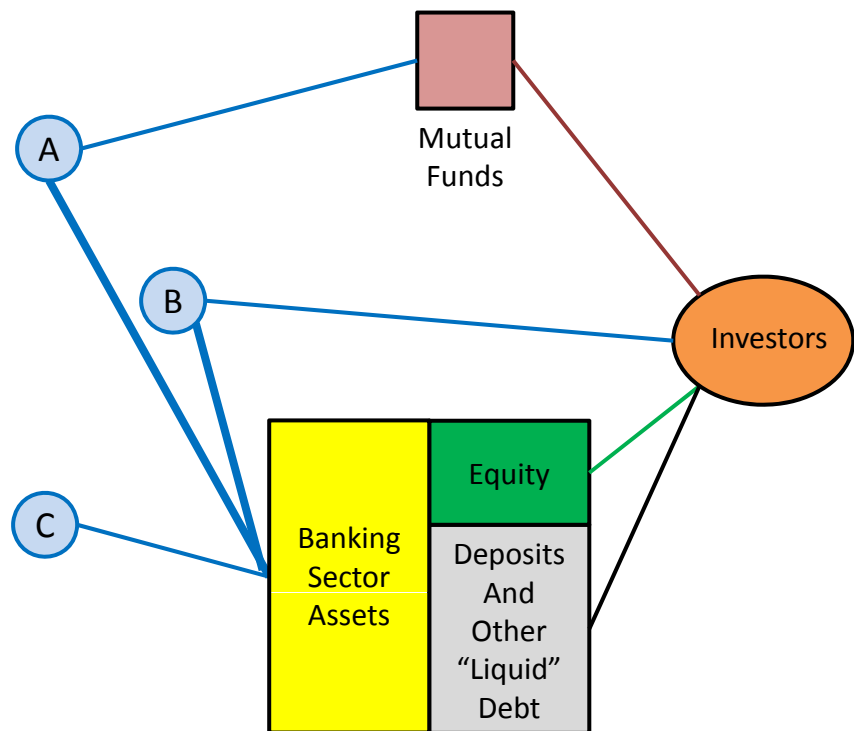
- Much more than Basel III levels.
- Order of magnitude 20-30% of total assets.
 - Benchmark: eliminate TBTF, easier than resolution.
 - Significant social benefits; what is the relevant cost?
- Retained earnings easiest source of equity.
- Viable banks can raise equity at appropriate prices.
 - “Dilution” only from equity bearing more downside.
 - Inability to raise equity flags insolvency.
- Risk weights are very problematic, distort lending decisions, hide risk, are manipulable.

The BIG Picture



All the Assets In the Economy

Banking Sector



All the Assets In the Economy

Banking Sector

- All risks are held by final investors. Rearranging claims aligns incentives better.
- Key question: Are all productive activities taken? Is risk spread efficiently?
- A lot of funding in the economy not through banks.

Fallacies, Irrelevant Facts, and Myths
in the Discussion of Capital Regulation:
Why Bank Equity is *Not* Expensive

August, 2010, revised March 2011

Debt Overhang and Capital Regulation

March 2012

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<http://www.gsb.stanford.edu/news/research/Admati.etal.html>