

Is Fragility Essential or Useful for Banking?

Anat R. Admati

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

Midwestern Finance Association
February 23, 2012

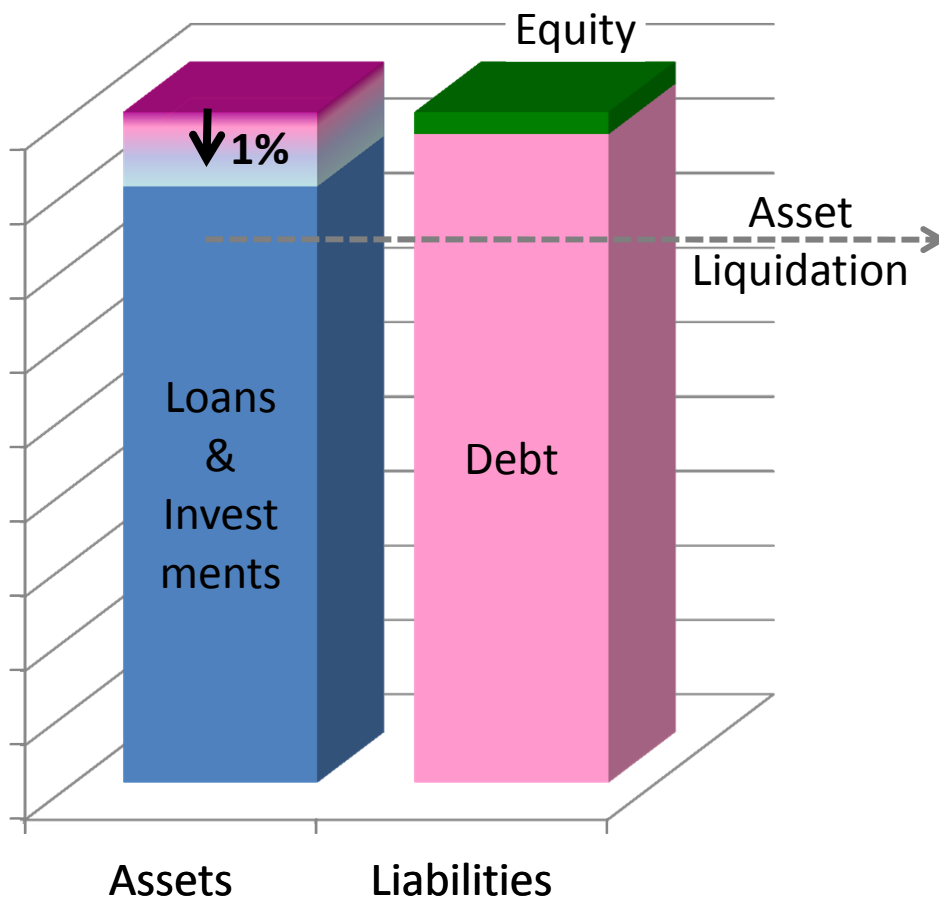
Some Motivating Issues

- Interpretation and narrative of 2007-2008 crisis.
 - Was it mainly (or just) a liquidity problem, a run affecting a wonderful, but inherently fragile, modern banking system, or a result of excessive leverage due to distorted incentives?
- Can a large financial institutions “fail?” Can bankruptcy or resolutions be made to work?
 - Too big/interconnected/important to fail is a major problem.
- Must the financial system be fragile, composed of highly leveraged, interconnected entities?
- Costs and benefits of regulation.
 - Health and safety issues arise in other regulated industries: Airlines, medicine, environment, nuclear plants.

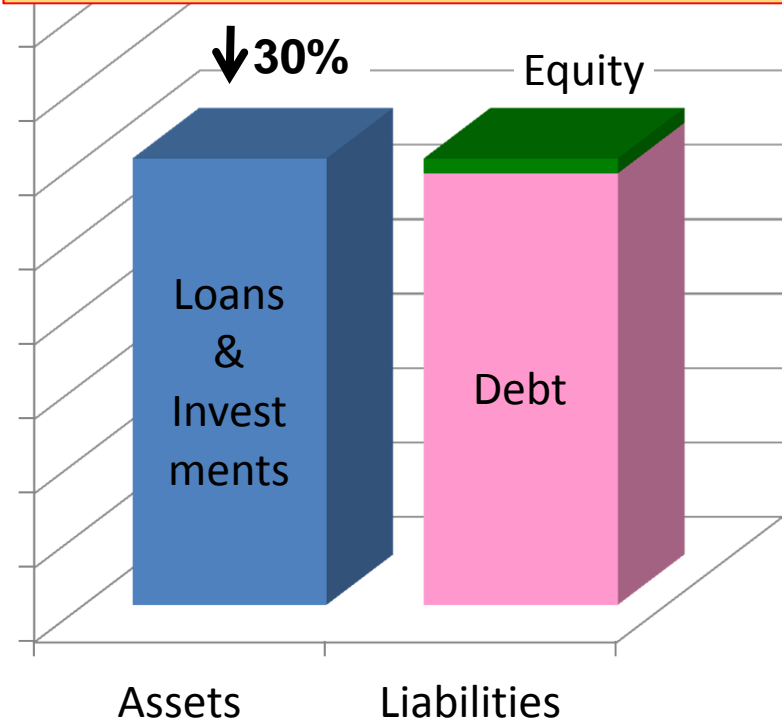
Deleveraging “Spirals”

- A 1% Asset Decline ...

⇒ 30% Balance Sheet Contraction



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



The Financial System has Become Excessively Fragile

- Components and reasons
 - High leverage
 - Short term funding, mismatched maturities of assets and liabilities.
 - Interconnectedness and complexity.
 - Derivatives, particularly credit derivatives.

Contagion and Systemic Risk

- Short term funding creates liquidity problems.
- Interbank (inter-system) connections mean spillover to counterparties (e.g., Lehman to Reserve Primary fund).
- Information contagion (inference on other banks and funds in similar business)
- Asset “fire sales” create feedback effects.
- Result: “too big” or “too systemic” to fail.

A Possible Solution: Much less leverage, much more equity

- Solvency problems at the heart of fragility.
- Runs don't happen out of blue.
- Pure liquidity problems are easy to solve if solvency not a concern.
- Addresses moral hazard: more incentives to care about downside risk.
- Compare housing crisis to internet "bubble bursting:" no leverage; limited damage.

Why Not??

- Mantra: “Equity is Expensive”.
- Why exactly?
- In what exact sense, for whom?
- Important to know if we are to accept high leverage and resulting distortions.

A Purported Tradeoff

“More equity might increase the stability of banks. At the same time, however, it would restrict their 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
(November 20, 2009, interview)

The Real Deal

Well-designed capital regulation that **requires *much*** more equity, ~~might~~ **will** increase the stability of banks. At the same time, ~~however,~~ it would ~~restrict~~ **enhance** their ability to provide **good** loans to the rest of the economy **and** **remove significant distortions**. This may ~~reduces~~ **the growth of banks**. However, ~~it and has~~ **will** have a ~~negative~~ **positive** effects for all (**except possibly bankers**).

It Starts with Confusing Jargon

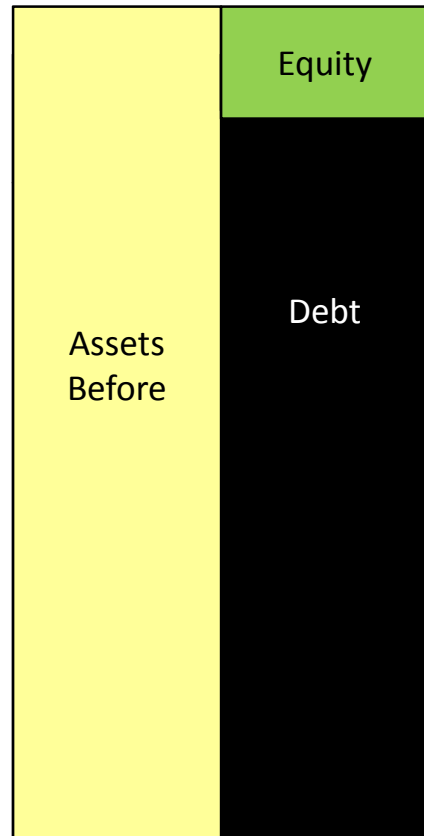
- “Capital is the stable money banks sit on... Think of it as an expanded rainy day fund” (AP July 21, 2010).
- “Every dollar of capital is one less dollar working in the economy” (Steve Bartlett Financial Services Roundtable, Sep. 17, 2010.)
- “Excess bank equity capital... would constitute a buffer that is not otherwise available to finance productivity enhancing capital investment.” (Alan Greenspan, July 27, *Financial Times* op-ed)

Misleading Language!

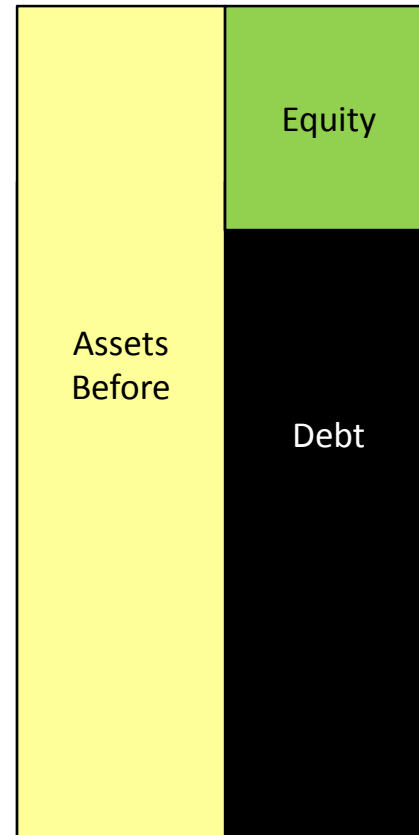
- “Hold” or “set aside” misleadingly suggests idle funds, passivity, cost.
- Capital requirements concern *funding side* only.
 - A firm does not “hold” securities it issues, investors do!
- liquidity/reserve requirements concern *asset side* of balance sheet, restrict holdings.
- **“Hold capital” = fund with equity.**
- Confusion implies false tradeoffs!

Equity Absorbs losses but is NOT idle!

Is the (100%) Apple Equity Idle??



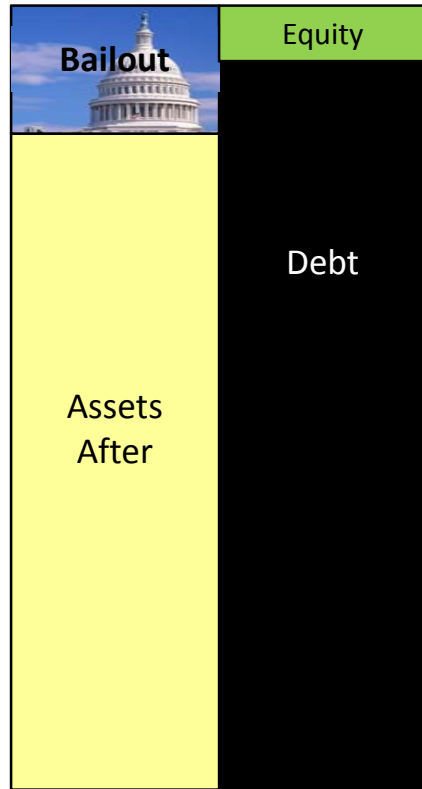
**Too Much
Leverage**



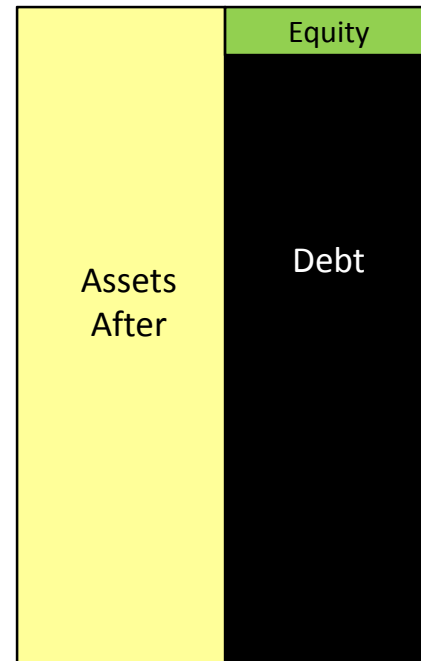
More Equity

Equity Absorbs losses but is NOT idle!

Is the (100%) Apple Equity Idle??

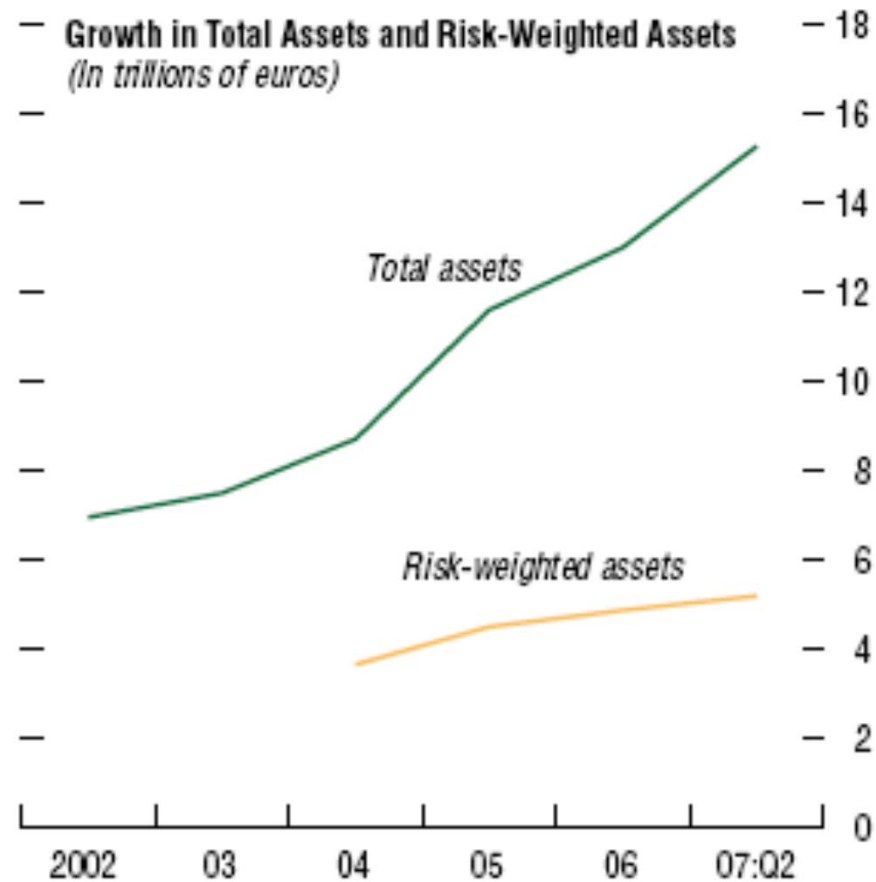


**Too Much
Leverage**



More Equity

The Denominator in Capital Ratio “Risk-Weighted Assets”

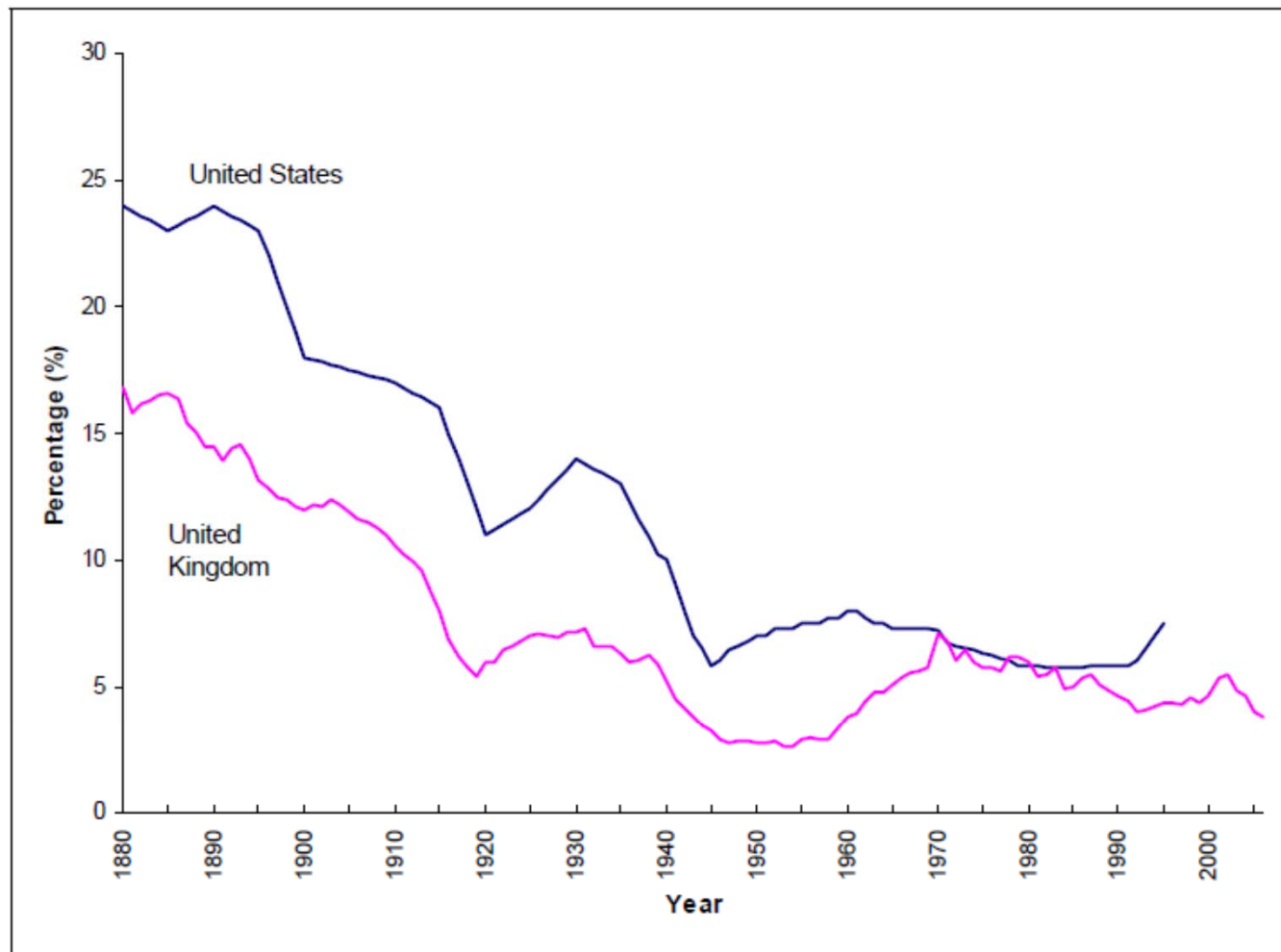


International Monetary Fund Global Financial Stability Report, April 2008

Historical Facts About Bank Capital

- In 1840, equity funded over 50% of bank assets in US.
- Over the subsequent century equity ratios declined consistently to single digits.
- There is evidence that steps to enhance “safety net” contributed to this. In the US
 - National Banking Act, 1863
 - Creation of the Fed, 1914
 - Creation of FDIC, 1933.
- Similar trends in UK, Germany. More trading business.
- **Bank equity did not have limited liability everywhere in the US until 1940s!**

History of Banking Leverage in US and UK (Allesandri and Haldane, 2009)



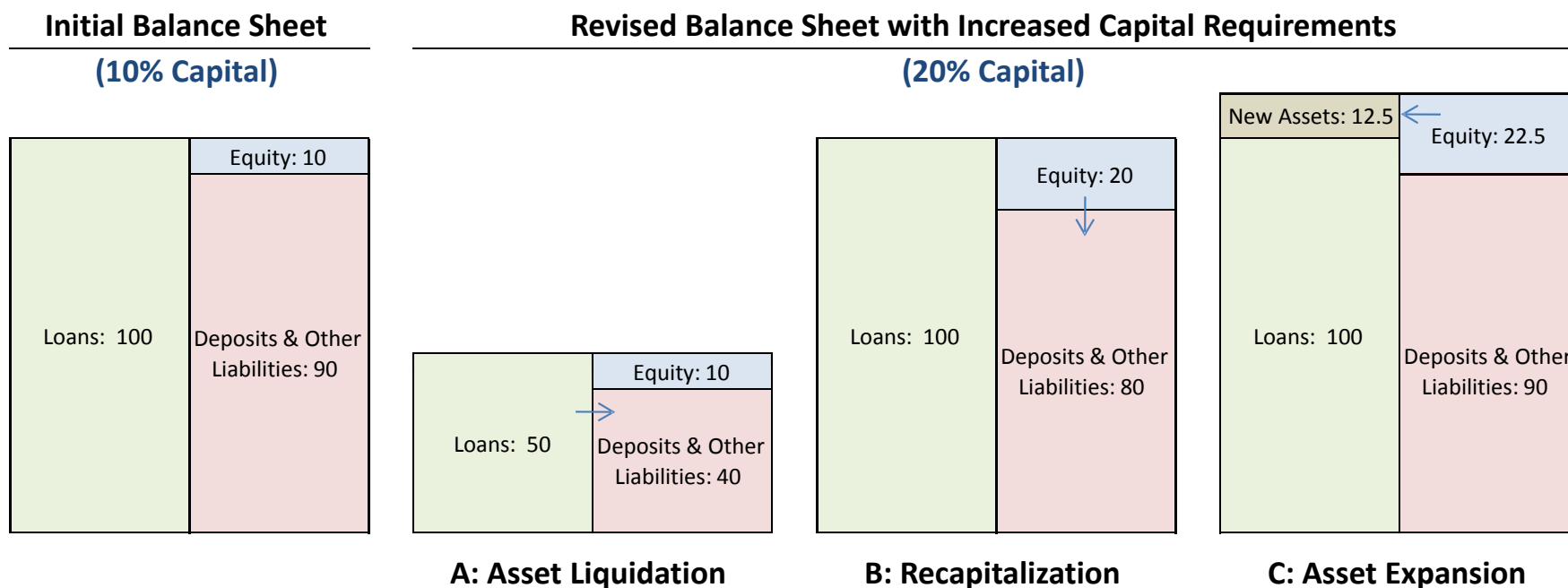
Source: US: Berger, A, Herring, R and Szegö, G (1995). UK: Sheppard, D.K (1971), BBA, published accounts and Bank of England calculations.

Basel II and Basel III Capital Requirements

- Tier 1 capital Ratio: Equity to *risk-weighted assets*:
 - Basel II: 2%,
 - Basel III: 4.5% - 7%.
 - Definitions changed on what can be included.
- Leverage Ratio: Equity to *total* assets:
 - Basel II: NA
 - Basel III: 3%.
- Tier 2: complete to 8% (Basel II), a bit more (Basel III).
- Basel II never fully implemented in the US. “Overwhelmed by the recent crisis scarcely after it has been introduced.” (Haldane, 2010)
- Very long implementation period (decade) for Basel III.
- Will Basel III help prevent another crisis?

Balance Sheets and Capital Requirements

- Increased Capital Requirements need **NOT** force banks to reduce lending or deposit taking.



Fallacy: “Equity is expensive because it has a higher required return than debt”

- Contradicts first principles of finance: the *cost of capital is determined by risk to which it is exposed.*
- Fixing the assets, lower leverage (less debt and more equity financing) lowers the required return on equity, because equity becomes less risky.
- *Redistributing risk among providers of funds does not by itself affect overall funding costs.*

M&M and Banking, a 50+ years Debate

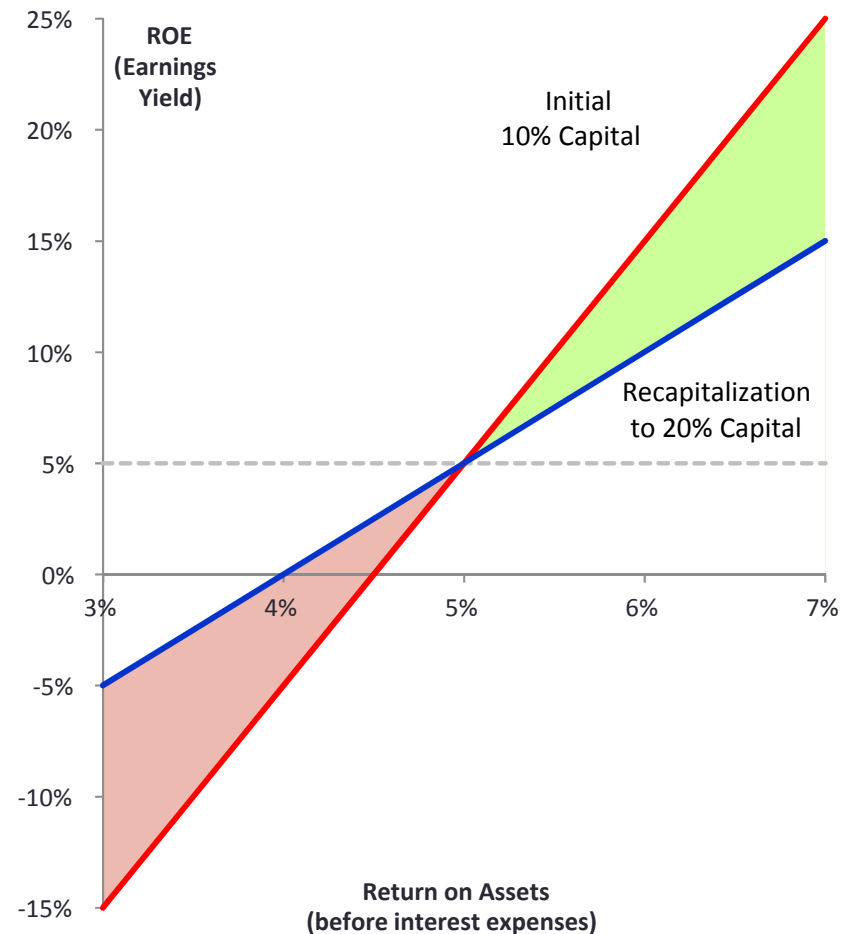
- Modigliani and Miller (1958) does NOT say that banks, or the capital structure of *any* firm, are irrelevant. However,
- *The impact of a change in funding mix must be examined through its effect on frictions, i.e., how it changes the total cash available.*
 - This principle applies to banks and non-banks.
 - Denying this is akin to denying gravity.

ROE *Should be* Irrelevant to this Debate

- Return on Equity (ROE) does not measure shareholder value.
- No one is entitled to a “target ROE.”
 - Expected/required ROE must be judged *relative to the risk of the equity*.
- Leverage increases the risk of the per-dollar return on equity, thus increasing required ROE *whether or not value is created*.
- Any firm or manager can increase average ROE by increasing leverage (or risk).
- Unless leverage and risk are fixed, ROE comparisons are meaningless.

ROE and Capital

- Higher capital
 - Reduces ROE in good times
 - Raises ROE in bad times
 - \Rightarrow Value is preserved
 - \Rightarrow Risk is reduced
- Lower risk reduces equity holder's required return



Funding Considerations for Non-Banks

- Debt has a tax advantage.
- Debt increases “deadweight costs” of default and bankruptcy.
- Debt creates “agency costs,” conflicts of interest that lead to sub-optimal investment decisions, including excessive risk-taking, debt overhang (underinvestment).
 - Agency costs can increase borrowing cost.
 - Debt covenants can reduce flexibility.
- On average: 70% of funding is by equity.

Funding Considerations for Banks

- Deposits and other “money-like” instruments are “cheap” because they provide liquidity to creditors.
- Tax code favors any form of debt.
- When liabilities are part of a subsidized “safety net” (underpriced guarantees), borrowing costs do not reflect the riskiness of the assets.
- Deadweight bankruptcy costs are borne by governments.
- Capital providers do not bear all the risk of the assets; taxpayers bear downside, write put for free.
- No tradeoffs! The more debt the better.

The “Safety Net”

- Motivation: stability, prevent inefficient runs.
- Composition:
 - Deposit insurance
 - liquidity window
 - Implicit backing of government sponsored enterprises
 - Too-big/important/interconnected-to fail.
- Covered 45% of US bank liabilities in 1999 (Walter and Weinberg, 2002), 59% of bank liabilities in 2008 (Malysheva and Walter, 2010).
- Credit ratings reflect increasing size of “too-big-to-fail” subsidy.
- Value of the subsidies is substantial.
 - Ex ante: subsidized borrowing rates.
 - Ex post: cost of bailouts, resolution of failed institutions.

The Impact of the Safety Net

- Numerous distortions:
 - Incentives/ability to grow inefficiently, unfair competition.
 - Incentives to evade capital regulation and increase leverage.
 - Incentives for excessive risk taking.
 - Enormous distortions associated with subsidies.
- It is impossible and undesirable to commit not to bail out.
- Charging for guarantees is difficult, moral hazard remains.
- Equity is the best preventative approach:
 - *Self insurance at market price!*

Regulation Debate must Focus on *Social Costs & Benefits*

- Leverage is subsidized both through tax and safety net, even though high leverage generates *negative externalities*
 - fragility and systemic risk,
 - excessive risk,
 - credit freeze due to debt overhang.
- Lost subsidies are not a social cost!!!
 - Subsidies should be designed to help social welfare.
- It is possible to neutralize the tax subsidy.
 - Abolish corporate tax,
 - Do not allow deductibility above certain leverage level
 - Maintain tax book separate from capital structure.



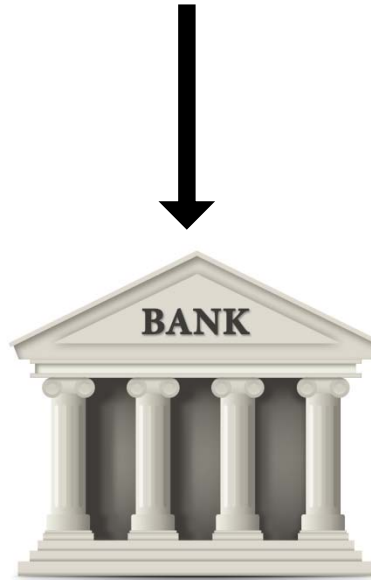
**Systemic
Risk**

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

Funding



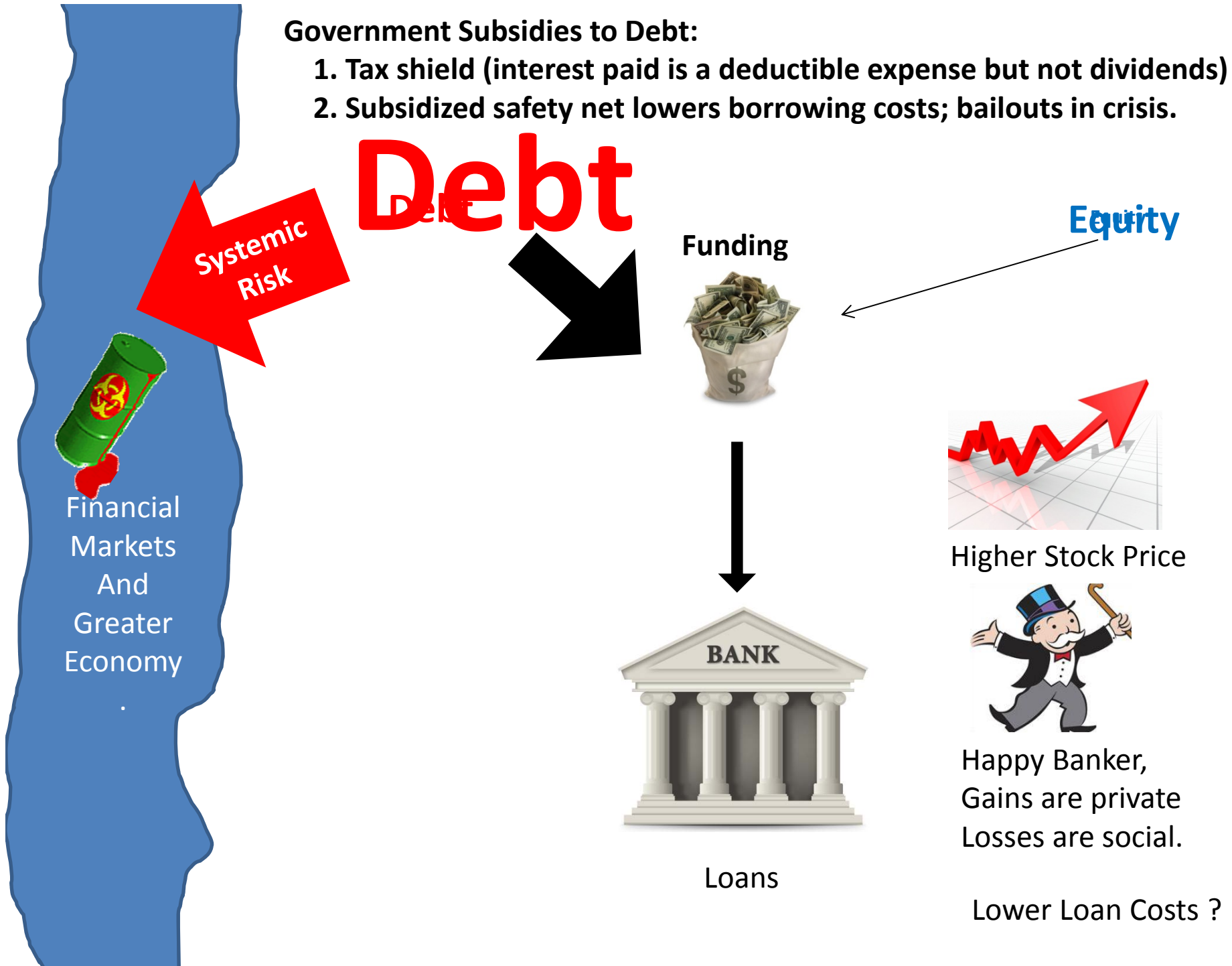
Equity
(provides
cushion that absorbs
risk and
limits incentives
for taking
socially inefficient risk)



Loans

Government Subsidies to Debt:

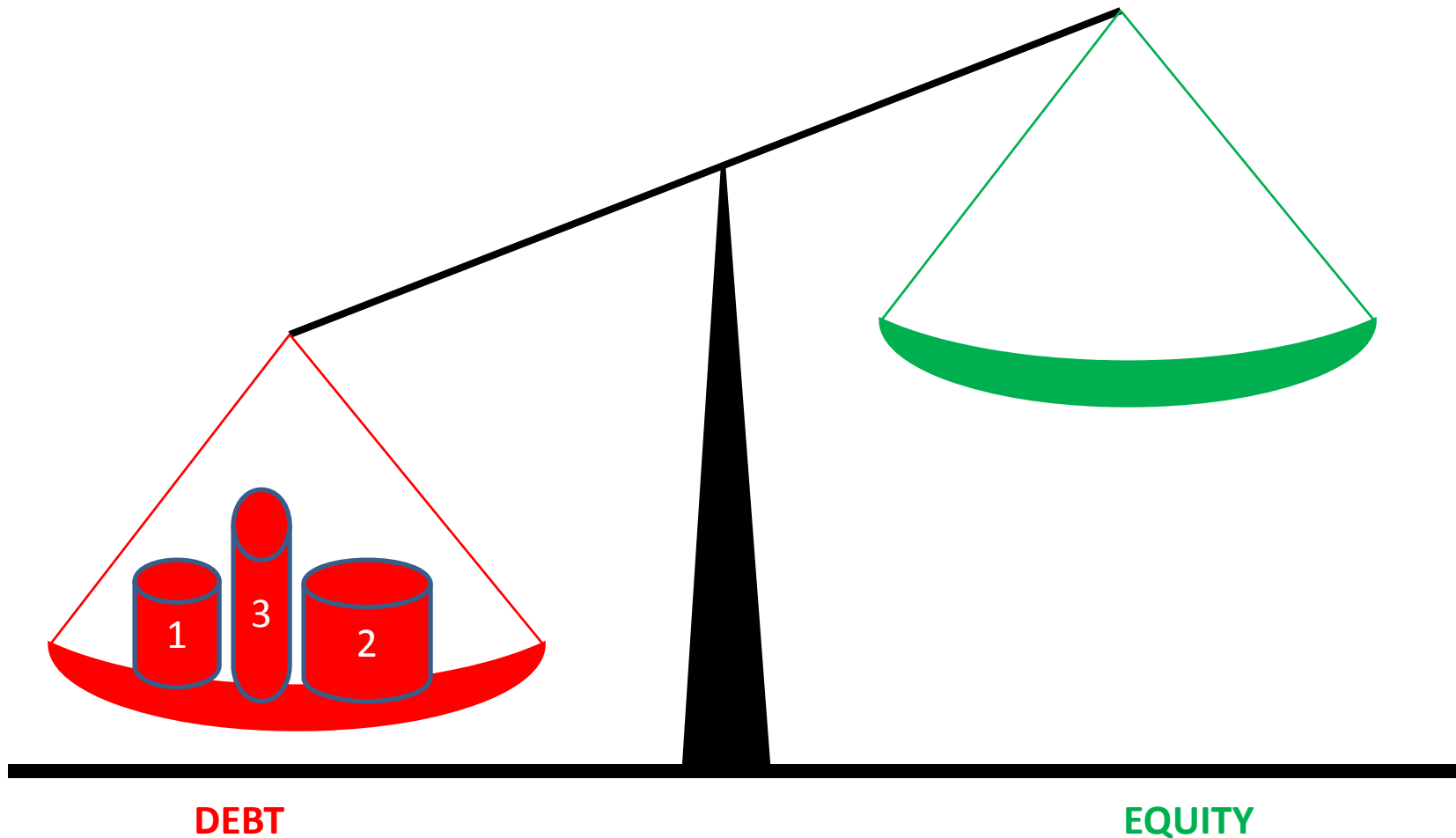
1. Tax shield (interest paid is a deductible expense but not dividends)
2. Subsidized safety net lowers borrowing costs; bailouts in crisis.



Capital Requirements and Lending

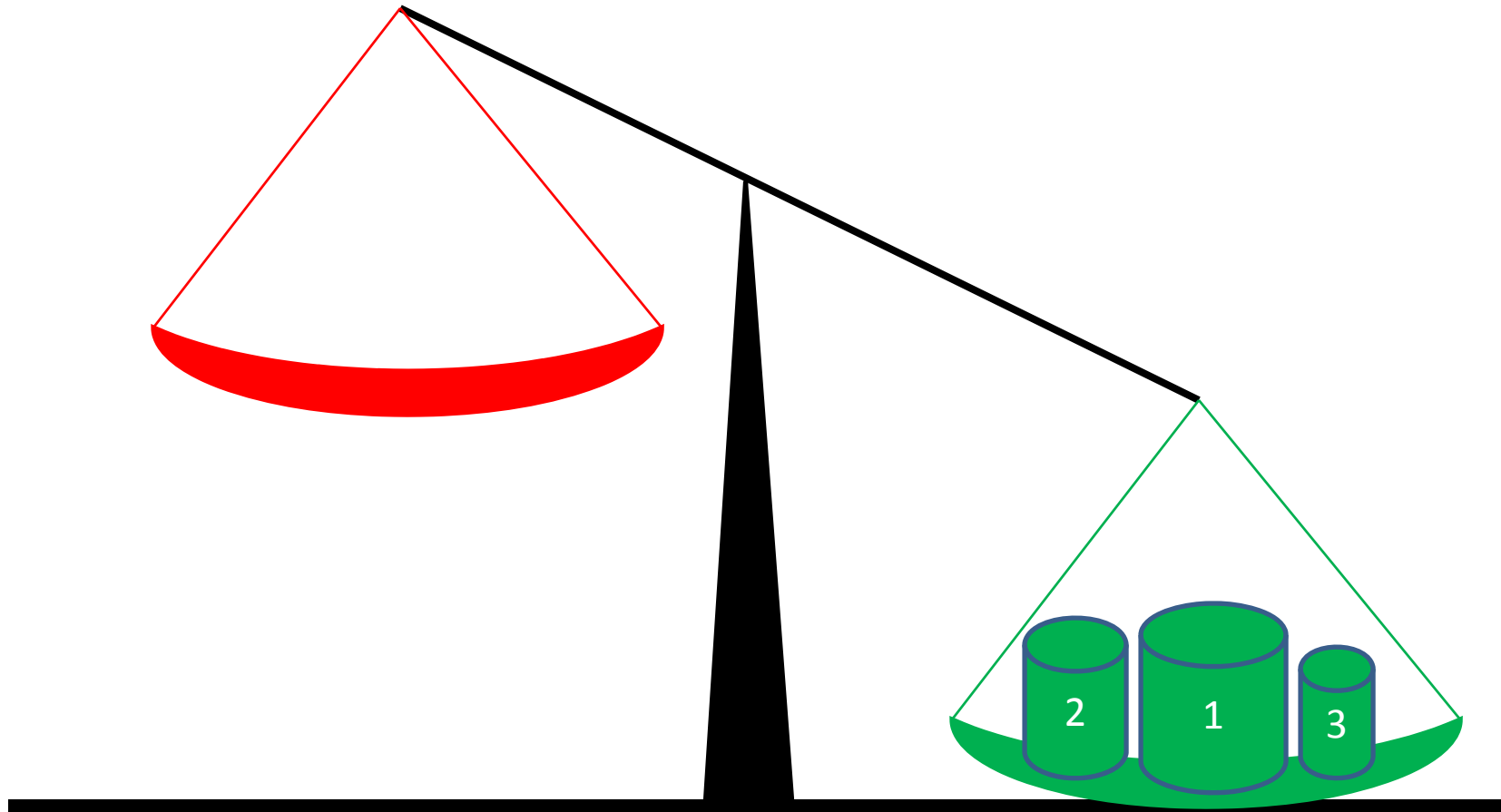
- Credit crunch is due to *excessive leverage* and not too much equity.
 - “Debt overhang” is the critical effect.
- A bank with 25% equity makes *better* lending decisions than one with 5% equity.
 - less likely to over-invest in excessively risky loans.
 - *less* likely to under-invest because of debt overhang
- Risk weight system discourages lending.

Private “Benefits” of Equity and (non-demand-deposit) Debt



1. Tax advantages make it cheap
2. Implicit guarantees make it cheap
3. ROE fixation

SOCIAL Benefits of Equity and (non-demand-deposit) Debt



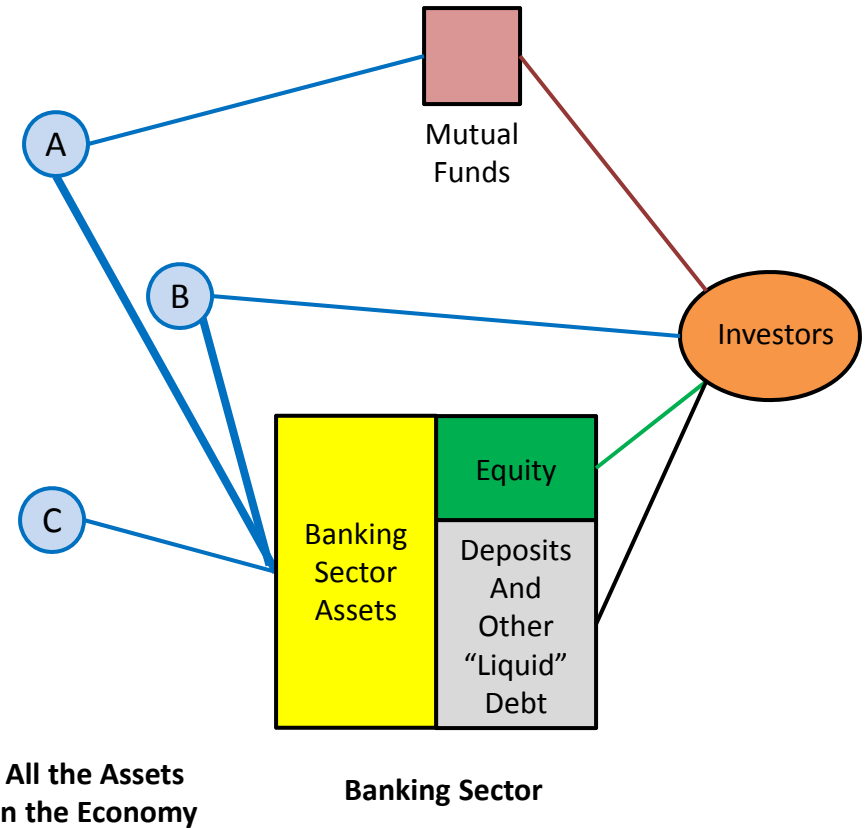
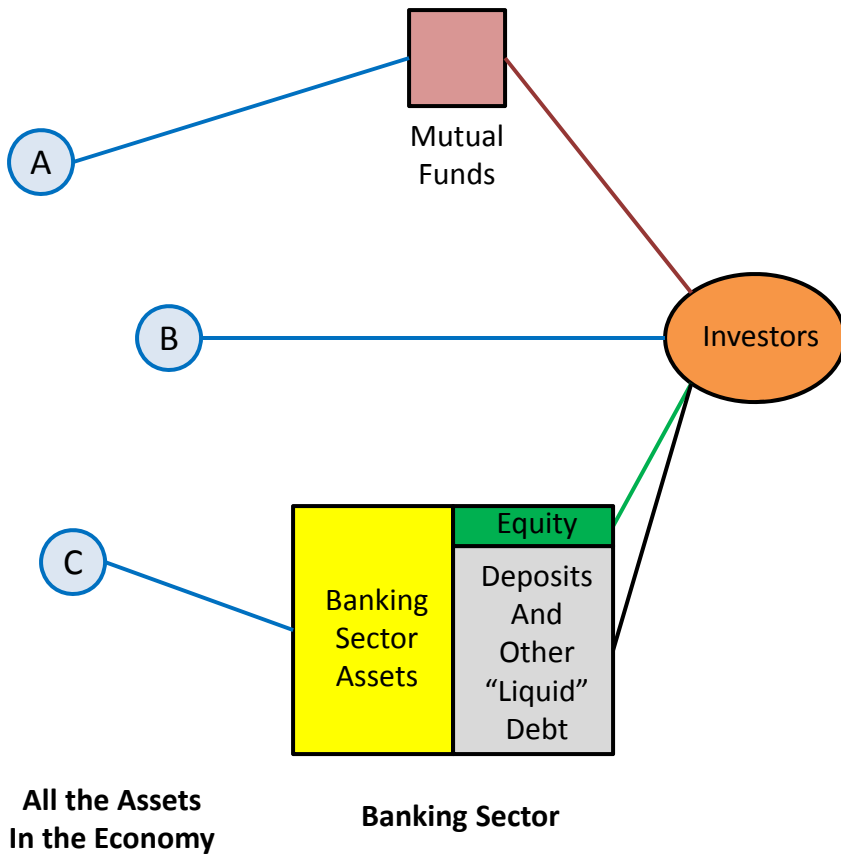
DEBT

- ~~1. Tax advantages make it cheap~~
- ~~2. Implicit guarantees make it cheap~~
- ~~3. ROE fixation~~

EQUITY

1. Reduces systemic risk
2. Reduces incentives for excessive risk-taking
3. Reduces deadweight costs associated with bailouts

The BIG Picture



- 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.

Other Arguments against Regulations

- “Level Playing Field” Concerns are invalid.
 - Banks can endanger the entire economy (Ireland, Iceland).
 - Banks compete with other industries for inputs (talent) .
 - Misguided subsidies distort the market process.
 - Argument create “race to the bottom.”
- “Shadow banking” is an enforcement issue that must be tackled anyway.
 - The crisis exposed ineffective enforcement.
 - Regulated banks sponsored entities in shadow banking.
 - Should we give up tax collection because of loopholes?

Why Current Shareholders and Bankers Resist Recapitalizations

- Flawed ROE fixation.
- Lost subsidies.
 - More taxes
 - Lost value of guarantees.
- Debt overhang: current equity would absorb some losses that would otherwise be borne by debt holders, FDIC, or taxpayers.

Controlling Equity Payouts (Dividends, Buybacks) is key to transition

- Largest 19 banks in the US paid almost \$80 billion in dividends from Q3 2007 to Q1 2009, almost 50% of TARP capitalization for these banks.
- JP Morgan Chase paid almost \$11 billion in 2011, including almost \$1 billion in October. This with \$2.1 trillion debt, \$110 billion market value of equity. How is this good for the economy?

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

Anat R. Admati
Peter M. DeMarzo
Martin F. Hellwig
Paul Pfleiderer

More materials available at
<http://www.gsb.stanford.edu/news/research/Admati.etal.html>

Sequel paper on debt overhang forthcoming.