MEMORANDUM

To: File No. S7-07-16

From: Sebastian Gomez, Senior Advisor to Chairman Jay Clayton

Re: Incentive-based Compensation Arrangements

Date: October 1, 2018

On October 1, 2018, Eric Diamond (Senior Advisor to Chairman Clayton) and Sebastian Gomez (Senior Advisor to Chairman Clayton) met with Sanjai Bhagat, Provost Professor of Finance, University of Colorado. The meeting participants discussed, among other things, the SEC's proposed rules relating to incentive-based compensation arrangements.

The information provided by Professor Bhagat is attached.

Attachment

Bank Governance, and Bank Capital

discussion overheads for

U.S. Securities& Exchange Commission

Washington, DC

October 1, 2018

Sanjai Bhagat
Provost Professor of Finance, University of Colorado
http://leeds-faculty.colorado.edu/bhagat/

Executive Summary

Banks whose
directors own more stock in the bank, and
banks that are **capitalized with more equity**

tend to be

► less risky

► more profitable.

Too-big-to-fail banks

are

bigger and

still too-big-to-fail

Federal government's financial safety net still covers about 60 percent of the financial system's liabilities – unchanged from before Dodd-Frank (FRB – Richmond).

Section 956 of the Dodd-Frank Act

requires six U. S. agencies (including the **SEC**) to jointly propose regulation to prohibit incentive-based compensation that would encourage "excessive" risk-taking.

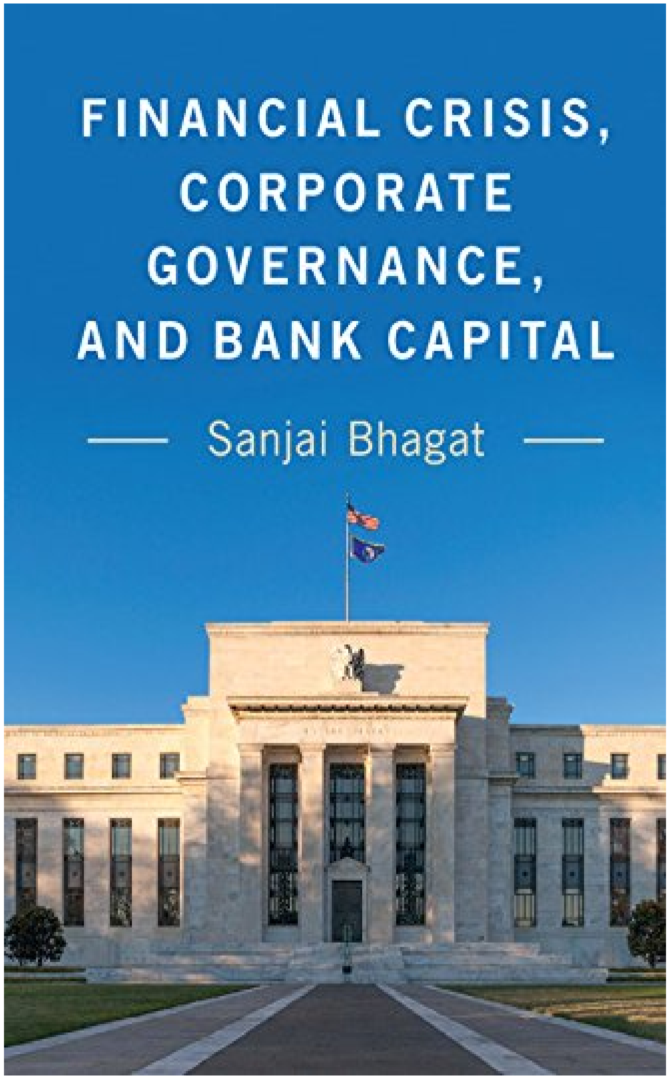
On April 21, 2016, these six U.S. agencies proposed new regulations, *"Incentive-based Compensation Arrangements."*

Final rule has not yet been proposed due to **concerns about the effectiveness and implementation of the proposal**.

This presentation highlights proposals on

►Incentive Compensation of Bank Managers and Directors

►Bank Equity Capital Ratio



Important point

Misaligned management incentive compensation not the cause of the financial crisis, though aided and encouraged it.

Cause of the financial crisis:

Public home-ownership policies leading to very relaxed mortgage standards.

Proposals address

Too-big-to-fail bank problem

Orderly Liquidation Authority

FSOC (SIFI designation authority)

Living wills, Stress tests

Exchange Stabilization Fund

Need for Volcker Rule

Bank managers invested in high risk but value-destroying investment projects and trading strategies during 2000-2007.

Early on: Positive cash flows

Later: Large negative cash flows

Implication

Abnormally large CEO stock sales

during and prior to financial crisis period

TBTF-bank CEOs sold significantly more of their stock than No-TARP bank CEOs

(Net Trades = Sells – Buys – Option exercise price)

	Total Net Trades: 2000-2008	Ratio of Trades to Beginning Holdings: 2000-2008
TBTF Firms (n=14)		
Median	$66,842,520	59.7% ***
L-TARP Firms (n=49)		
Median	$1,090,134	17.6% *
No-TARP Firms (n=37)		
Median	$1,226,977	4.0%

TBTF-bank CEOs sold significantly more of their stock than No-TARP bank CEOs even after adjusting for other financial determinants of insider trading

	Dependent Variable: ***Net Trades$_t$***	
	(1)	**(2)**
Assets (log) $_t$	-1.232***	-1.344***
	(0.003)	*(0.001)*
Book-to-Market $_t$	-4.154***	-3.404***
	(0.002)	*(0.007)*
Return $_{t-1}$	-0.179	-0.365
	(0.904)	*(0.805)*
Stock Volatility $_t$	58.793*	36.806
	(0.086)	*(0.289)*
CEO Total Compensation $_{t-1}$	2.170***	2.004***
	(0.001)	*(0.003)*
CEO % Equity Compensation $_{t-1}$	9.649***	10.152***
	(0.000)	*(0.000)*
CEO Equity Holdings (log) $_{t-1}$	1.384***	1.325***
	(0.000)	*(0.000)*
Capital-to-Assets $_t$	**--**	**-43.147*** **
		(0.006)
TBTF Dummy	**4.198** **	**4.247** **
	(0.019)	***(0.016)***
L-Tarp Dummy	1.547	1.673*
	(0.117)	*(0.088)*
Number of Observations	883	883
Year controls	Yes	Yes
Firm fixed-effects	Yes	Yes

Summary of Results

- Bank executives at these 14 institutions took billions of dollars ‘off-the-table’ from 2000-2008, yet their shareholders lost considerable amounts of money.

- Yes, the CEOs did lose considerable sums in the crash of 2008.

- But, the 2008 paper losses were much less than the cash already realized during and prior to 2008.

- **Bank executive compensation was not aligned with the returns shareholders received during 2000-2008, or with the risks the firms took.**

Restricted Equity Proposal

Proposal to reform

Executive Compensation Policy

Annual cash compensation: $2 million limit

Executive incentive compensation plans should consist ***only*** of:

Restricted stock

Restricted stock options

This compensation would be "restricted" in the sense that the shares cannot be sold and the options cannot be exercised for a period of 1 to 3 years after the executive's resignation or last day in office

Restricted Equity Proposal

Restricted Equity Proposal eliminates manager incentives to focus on short-term earnings at the cost of long-term value-creation.

Lowers the probability of the implosion of big banks and associated financial crisis.

Restricted Equity Proposal

Restricted Equity Proposal applies equally to senior managers in the financial and non-financial sector.

Lowers the probability of future

Enrons

WorldComs

Qwests

Wells Fargos.

From criminal indictment and court verdict documents:

Senior managers in Enron, WorldCom, Qwest

made false and misleading statements to boost quarterly earnings, which led to (temporary) increase in share price.

Restricted Equity Proposal

Senior managers in Enron, WorldCom, Qwest, Wells Fargo made false and misleading statements to boost quarterly earnings, which led to (temporary) increase in share price.

These managers sold their shares (received as part of their incentive compensation) at the inflated share price.

Later, when the market learnt about the false and misleading statements, share prices cratered hurting mostly other public shareholders, and their employees through drop in value of ESOPS and loss of jobs.

Restricted Equity Proposal

Under the Restricted Equity Proposal: Managers have to hold these shares and options for 1 to 3 years after their last day in office.

Senior managers in Enron, WorldCom, Qwest, Wells Fargo

would not have had the incentive to

make false and misleading statements to boost quarterly earnings and share price,

because they could not sell their shares at the higher share price.

2 Key Points

- We are not advocating more compensation-related regulation
  - Boards of directors, not regulators, should determine
    1. The mix and amount of restricted stock and restricted stock options a manager is awarded
    2. The percentage of holdings a manager can liquidate each year, prior to retirement
    3. The number of years post-retirement/resignation required for the stock and options to vest
- This need not reduce executive compensation
  - The net present value of all salary and stock compensation can be higher than historical levels, *so long as the managers invest in projects that lead to long-term value creation*
  - This proposal limits annual cash amounts, not total amounts over time

Caveats - 1

- Under-diversification: If executives are required to hold restricted shares and options they would most likely be under-diversified

- **Problem:** This lowers the risk-adjusted expected return for the executive

- **Solution:** Grant additional restricted stock and restricted stock options to the executive
  - Would require some prohibition against engaging in creative derivative transactions (such as equity swaps) or borrowing arrangements that would hedge the payoff from the restricted shares/options

Caveats - 2

- Lack of Liquidity of executives' compensation
- **Problem:** Given that the average tenure of these CEOs is about 5 years, a CEO may have to wait 6-8 years before being allowed to sell shares/options and realize their incentive compensation
- **Solution:** Allow sale or exercise of some portion of the executive's portfolio, possibly 5-15% of their shares/options

Director Compensation Policy

All director compensation

(including incentive compensation)

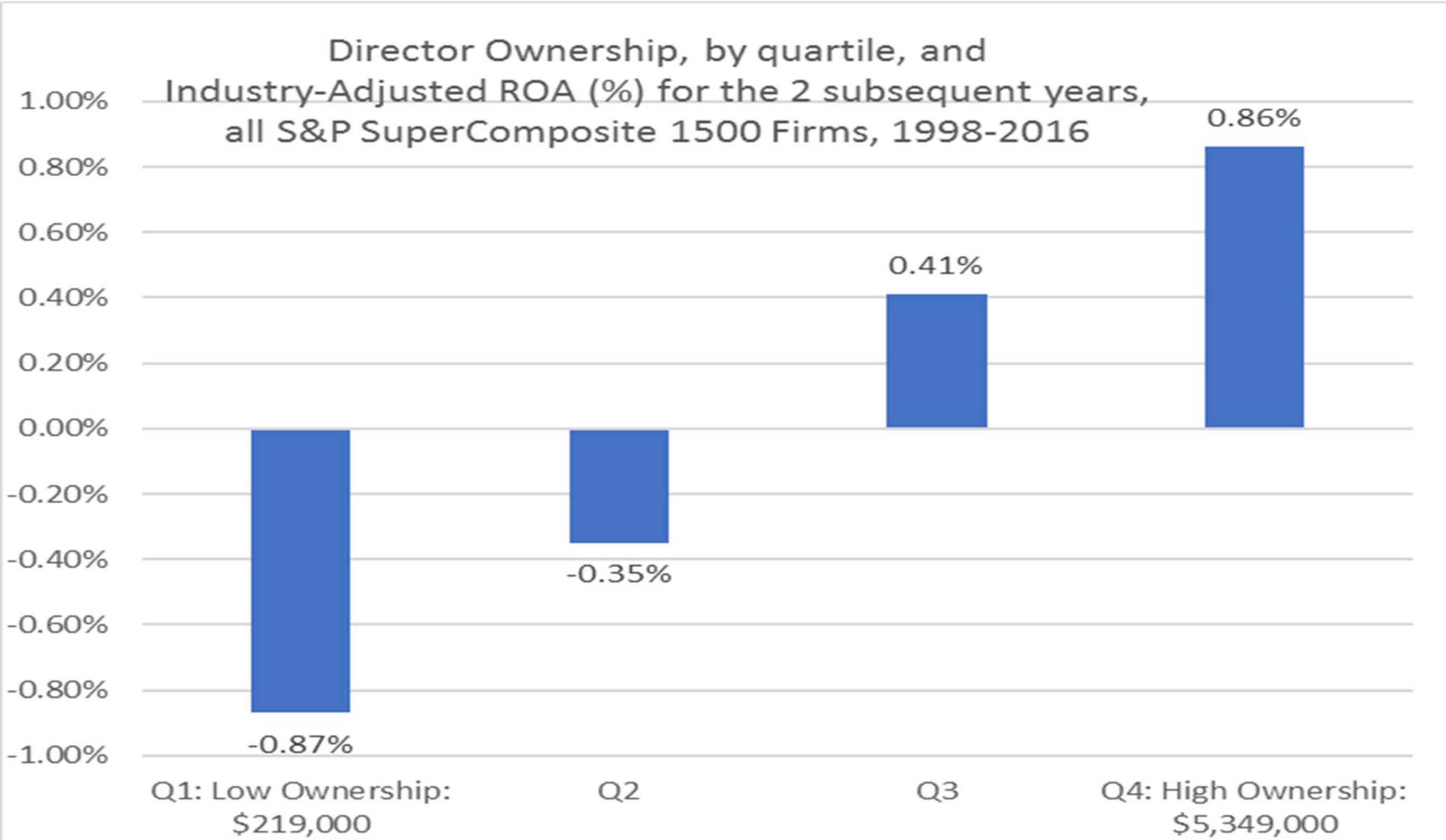
should consist only of

restricted equity

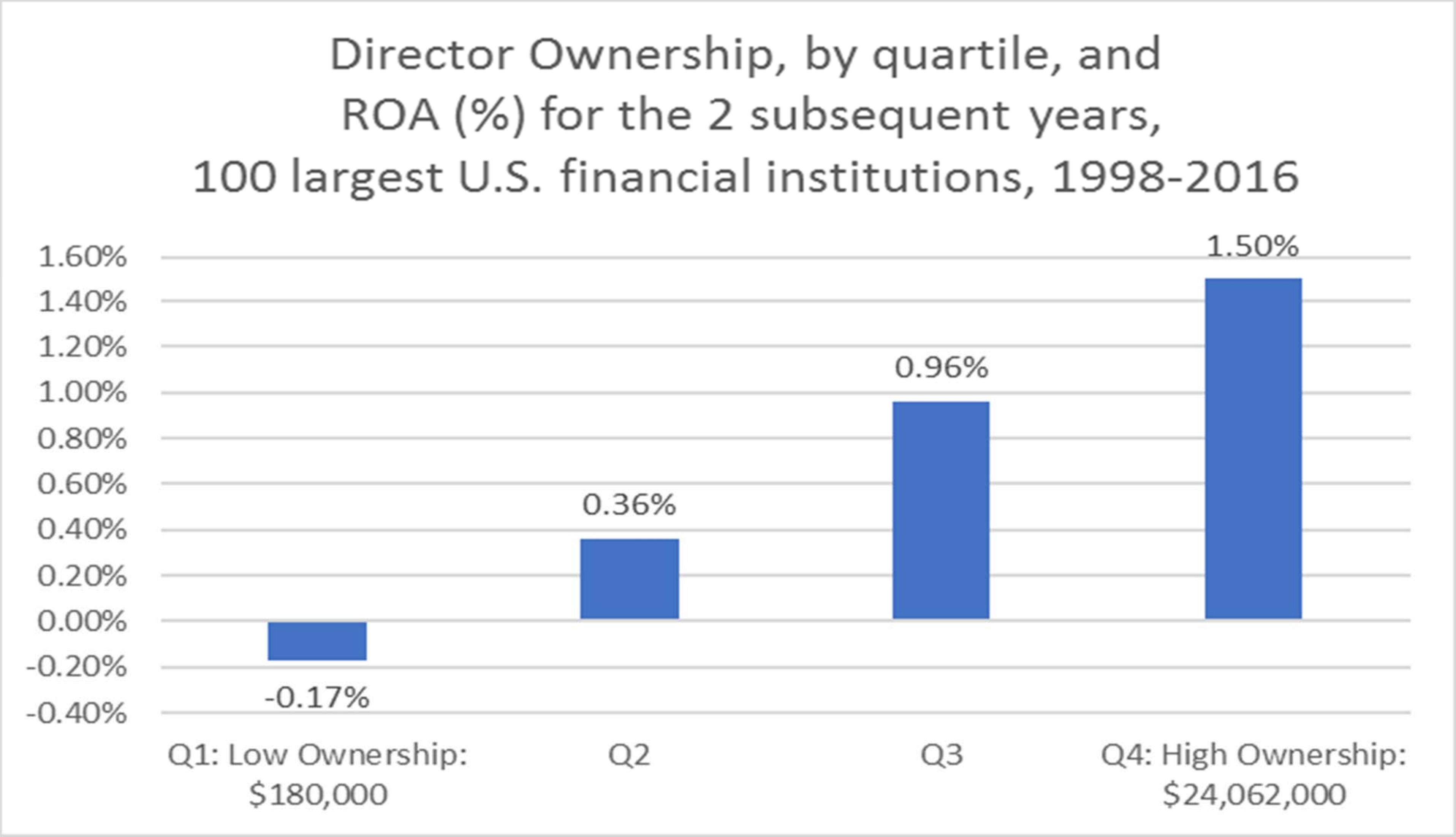
(restricted stock and restricted stock option) –

restricted in the sense that the director cannot sell the shares or exercise the options for one to three years after their last board meeting.

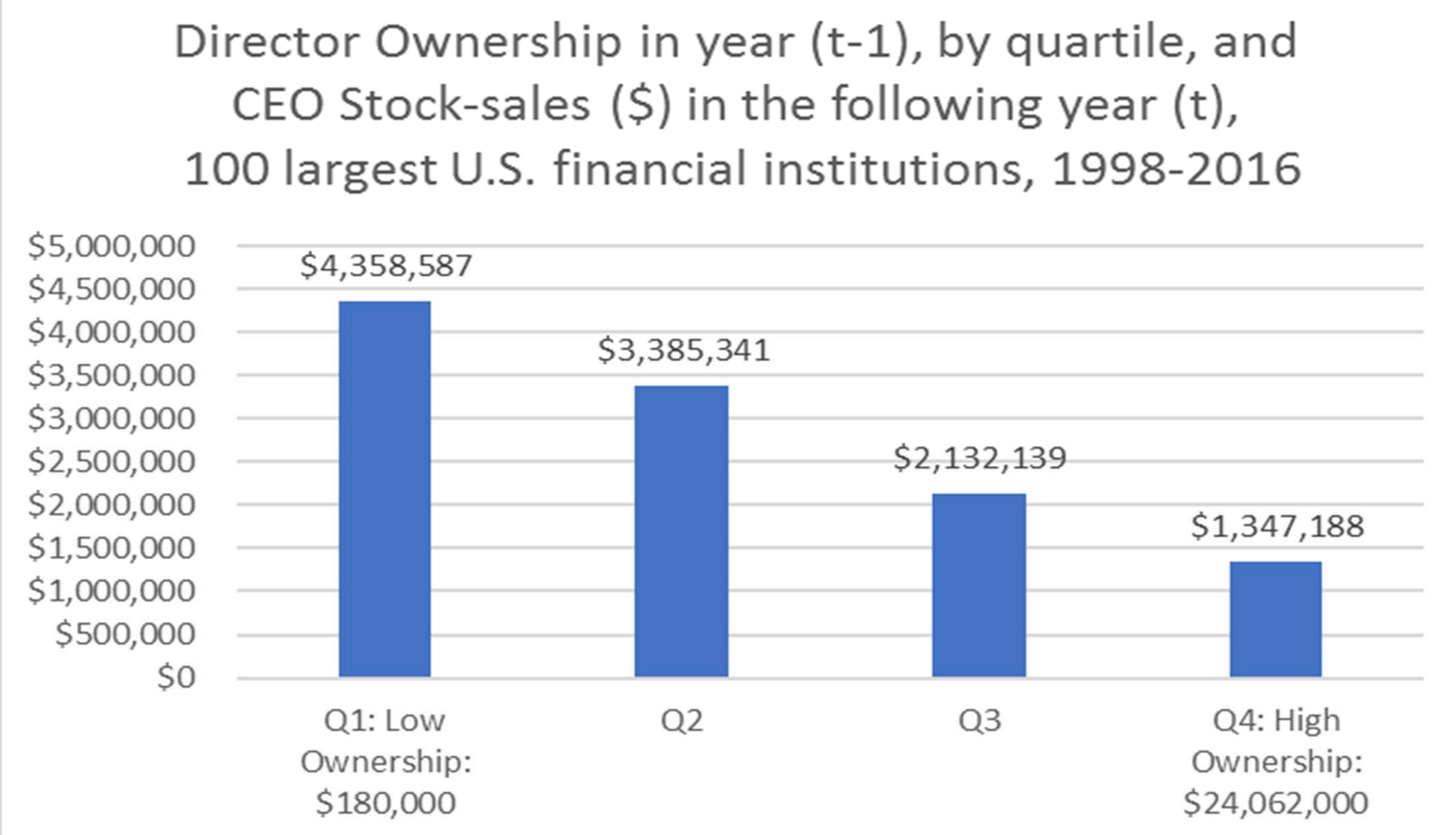
Companies perform better when directors own more stock



Banks perform better when bank directors own more stock



When bank directors own more stock, bank CEOs engage in less stock-sales



Equity Incentives and Bank Capital

- Equity based incentive programs
  lose their effectiveness in motivating managers
  as a bank's equity value approaches zero .

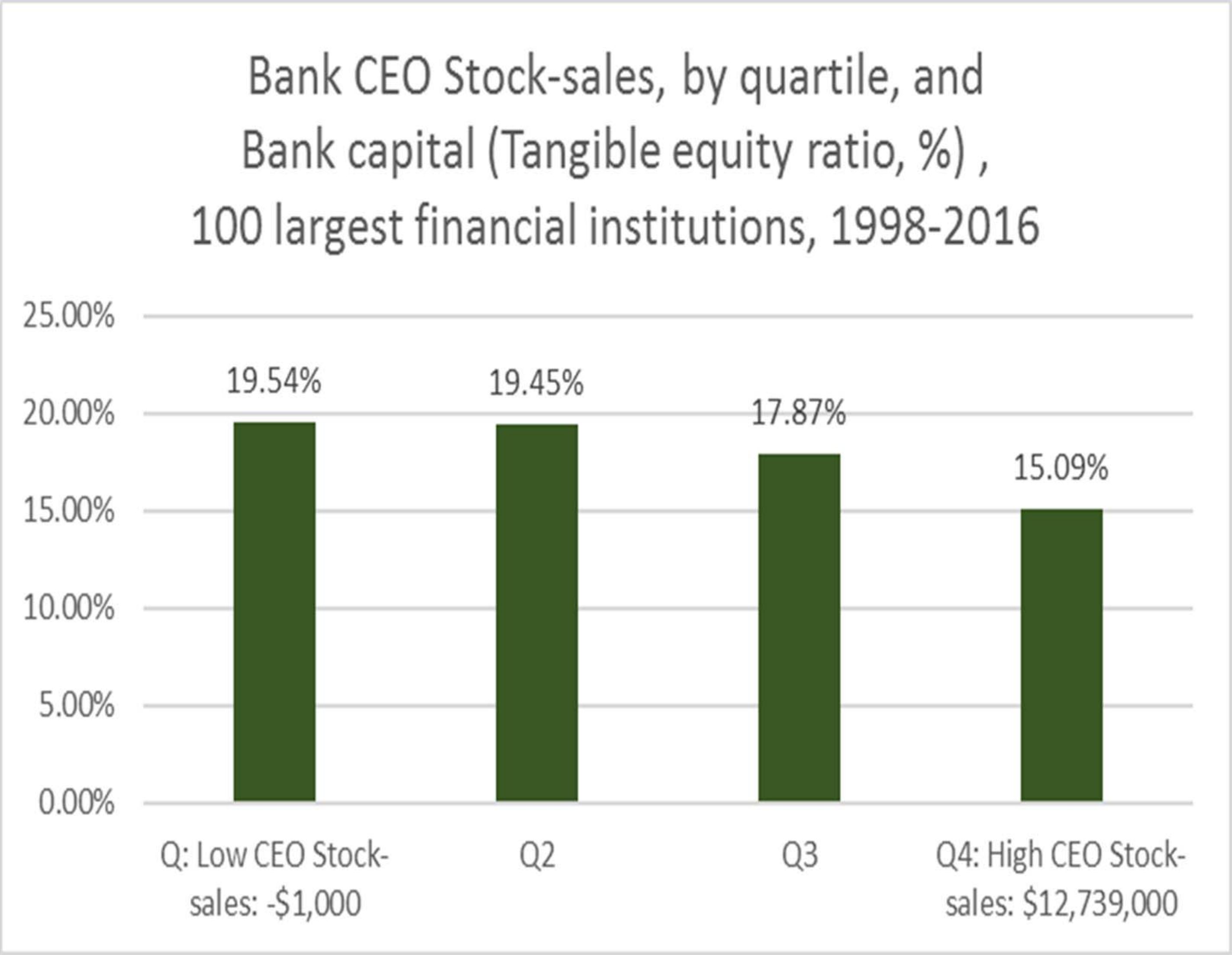
- Bank CEOs do not sell much stock when bank's equity capital ratio is high.

- Bank CEOs can make honest business mistakes.

Bank CEOs engage in less stock-sales when their banks have more equity capital

	100 largest U.S. financial institutions		
	Dependent Variable: CEO Stock-sales$_t$		
	2000-2006 Pre-Crisis	**2007-2009 Crisis**	**2011-2016 Post-Crisis**
Assets (log) $_t$	-0.917 **	-2.117 ***	-1.601
	(0.025)	*(0.004)*	*(0.272)*
Book-to-Market $_t$	-2.729 **	-3.456 *	-3.207 **
	(0.024)	*(0.071)*	*(0.019)*
Return $_{t-1}$	-0.311	-0.433 ***	-0.574 **
	(0.242)	*(0.004)*	*(0.016)*
Stock Volatility $_{t-1}$	32.7	41.602 **	40.0035 *
	(0.171)	*(0.021)*	*(0.077)*
Δ Stock Volatility $_{t-1 \text{ to } t}$	1.394 **	2.936 ***	1.207 *
	(0.024)	*(0.004)*	*(0.075)*
CEO Total Compensation $_{t-1}$	1.848 **	2.344 **	2.008 **
	(0.021)	*(0.017)*	*(0.024)*
CEO % Equity Compensation $_{t-1}$	9.387 ***	11.231 ***	8.533 ***
	(0.001)	*(0.002)*	*(0.003)*
CEO Equity Holdings (log) $_{t-1}$	1.119 ***	1.328 ***	1.127 ***
	(0.001)	*(0.001)*	*(0.008)*
Tangible Common Equity to Assets $_t$	**-32.252 *****	**-50.101 *****	**-41.305 ****
	(0.003)	***(0.001)***	***(0.012)***
Median Director Ownership (log) $_{t-1}$	**-1.488 *****	**-2.286 *****	**-1.811 ****
	(0.003)	***(0.001)***	***(0.040)***
TBTF Dummy	3.411 **	6.569 ***	-2.011
	(0.040)	*(0.003)*	*(0.598)*

Bank CEOs engage in less stock-sales when their banks have more equity capital



<u>Bank risk measures</u>

$$Z\text{-}score = \frac{(ROA + CAR)}{\sigma(ROA)}$$

ROA: Return on Assets
CAR: Equity capital to total assets ratio
Higher Z-score => Safer bank

Merton's distance-to-default (DD): firm equity is modeled as a call option on the underlying value of the firm with an exercise price equal to the face value of the firm's liabilities.

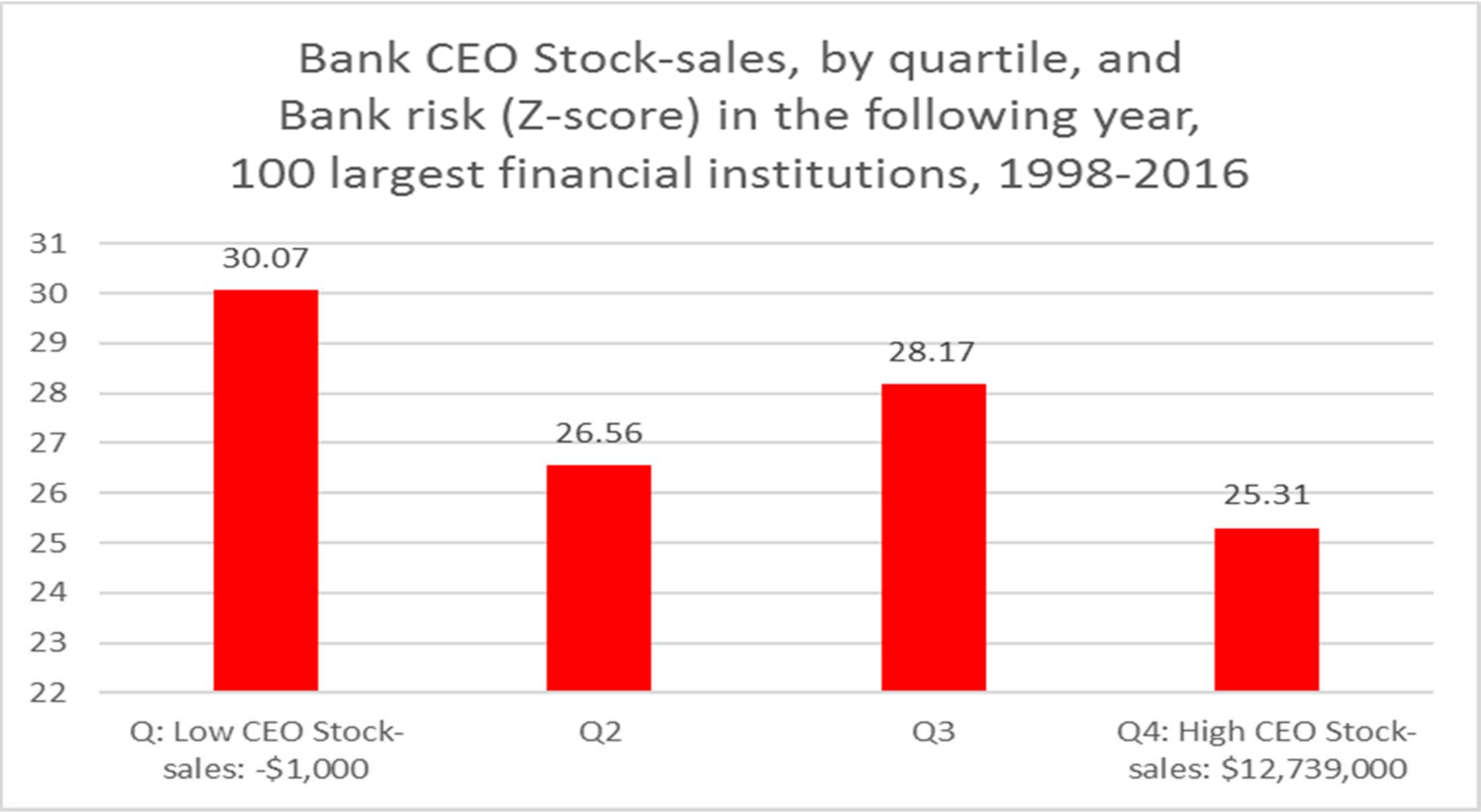
$$\text{DD} = \frac{\ln\left(\frac{V}{F}\right) + (\mu - 0.5\sigma_V^2)T}{\sigma_V\sqrt{T}}$$

Higher DD => Safer bank

Banks are safer when bank directors own more stock in the bank, and CEOs engage in less stock-sales

	100 largest U.S. financial institutions		
	Dependent Variable: *ln (Z-score)*		
	2000-2006 Pre-Crisis	**2007-2009 Crisis**	**2011-2016 Post-Crisis**
Assets (log) $_t$	-0.039 **	-0.082 ***	-0.045 **
	(0.013)	*(0.006)*	*(0.037)*
Market-to-Book $_t$	0.239 *	0.207 *	0.209 **
	(0.069)	*(0.095)*	*(0.044)*
Median Director Ownership (log) $_{t-1}$	**0.142 *** **	**0.292 *** **	**0.189 *** **
	(0.001)	***(0.001)***	***(0.002)***
Abnormal CEO Trading $_{t-2 \text{ to } t-1}$	**-2.076 *** **	**-3.825 *** **	**-1.327 ** **
	(0.001)	***(0.001)***	***(0.026)***
Constant	3.055 ***	4.061 ***	4.605 ***
	(0.001)	*(0.001)*	*(0.001)*

Banks are safer when bank CEOs engage in less stock-sales



Bank Capital Requirements Reform

Three criteria for evaluating bank capital reform programs:

- simplicity,
- transparency,
- focus on creating and sustaining long-term shareholder value without any expectation of taxpayer-funded bailouts.

Bank Capital Requirements Reform

Bank capital requirements reform proposal

- Bank capital (tangible equity) should be calibrated to the leverage ratio
  - *not the risk-weighted* capital approach that is at the core of Basel
  - total assets includes on-balance sheet and off-balance sheet assets.
- Bank capital (tangible equity) should be at least 20% of total assets.

Large Bank Capital Requirement Recommendations

Large Bank Equity Capital in October 2008	FDIC Vice-Chairman Hoenig (March 2017)	US House CHOICE Act, Chairman Hensarling (June 2016)	Federal Reserve Bank Governor Tarullo (***WSJ***, June 16, 2011)	Bhagat and Bolton (July 2010)	Admati, Demarzo, Hellwig and Pfleiderer (September 2010)	Barth and Miller (February 2017)
3% to 5%	**10%**	**10%**	**14%**	**20%**	**20% to 30%**	**23%**

Fallacy of the argument

“Increased equity requirements will decrease funds available for banks to lend.”

Confuses bank financial inputs (equity and debt capital), with bank product (loans).

Capital structure of an auto company
30% equity, 70 % debt
Product mix: 40% sedans, 30% trucks, 30% SUVs
Vehicles produced: 0.2 million/month

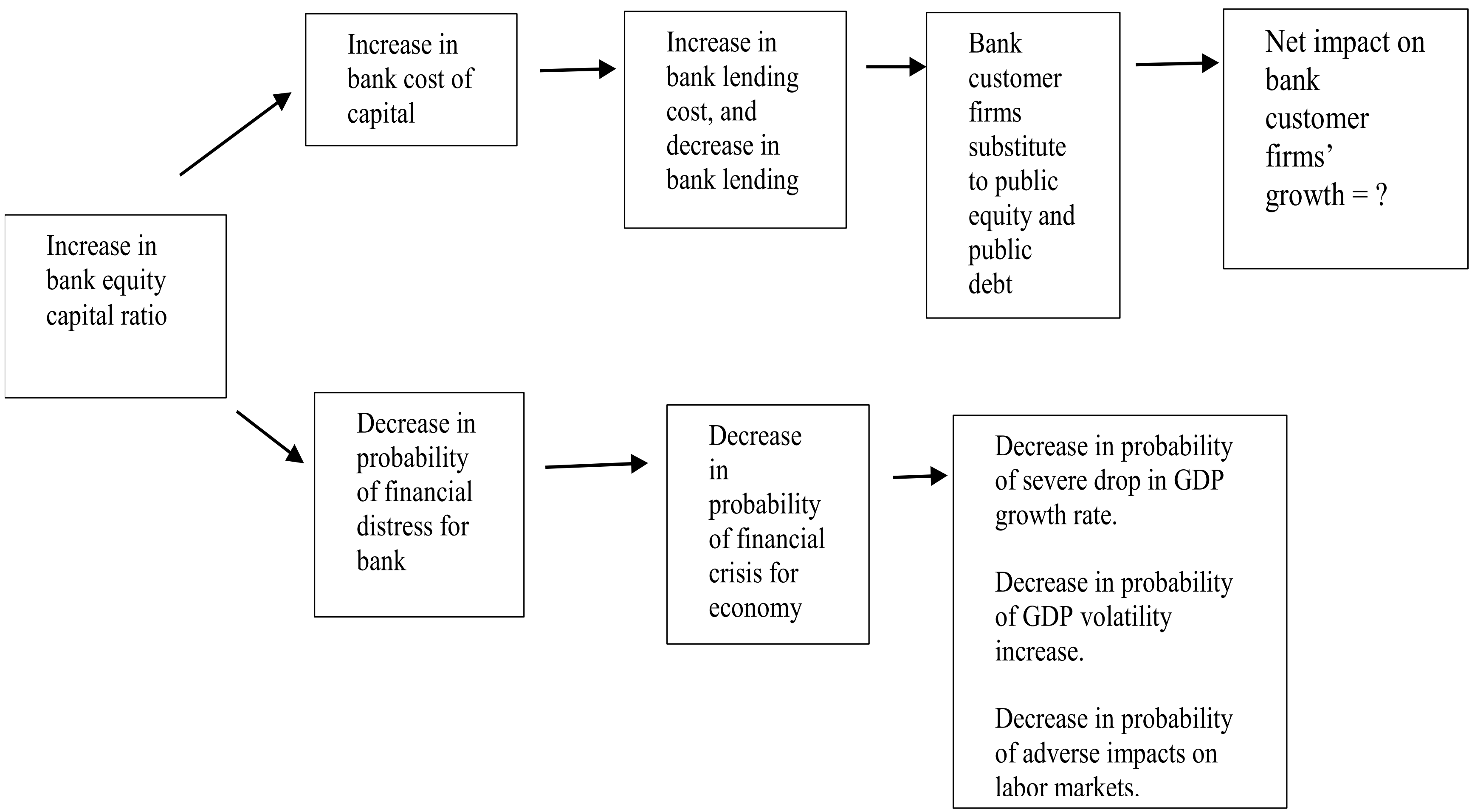
New capital structure of the auto company
40% equity, 60 % debt
New product mix: ??
Vehicle produced: ??

Fallacy of the argument
"Increased equity requirements will increase banks' funding costs."

Impact of a 10% increase in bank equity capital

Kisin and Manela (2014):	3 basis points (.03%) increase in the bank's cost of capital
Kashyap, Stein and Hanson (2010):	25-45 basis points increase in the bank's cost of capital.
Alnahdeh and Bhagat (2017):	35-92 basis points increase in the bank's cost of capital.

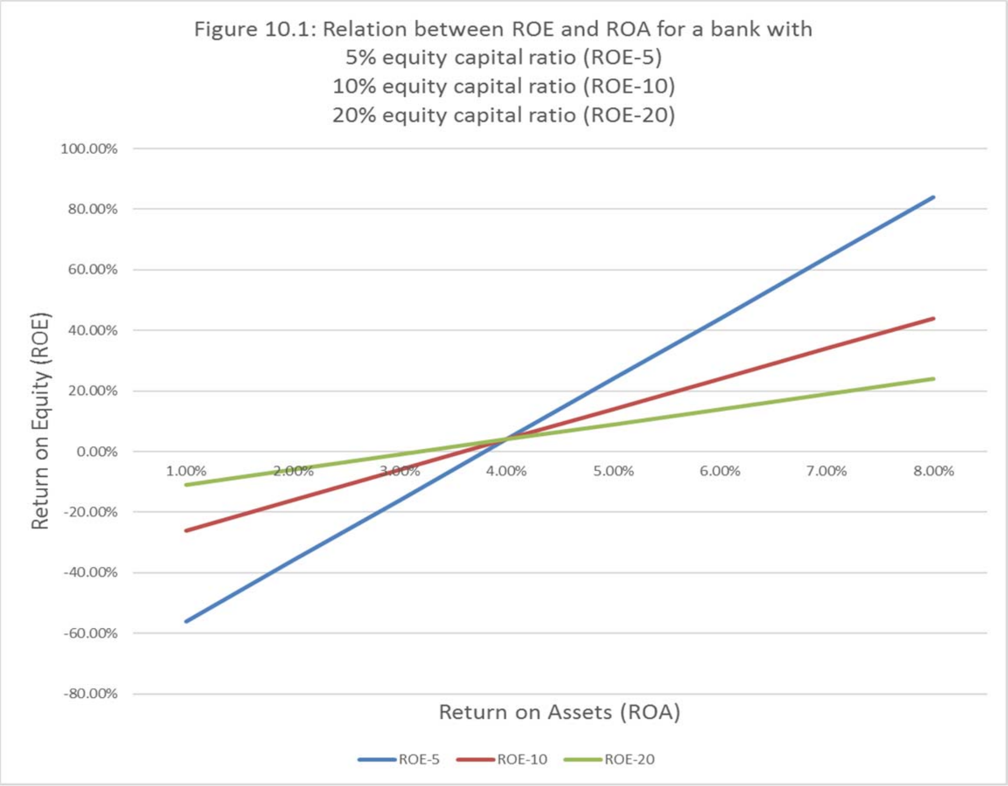
Impact of Increase in Bank Equity Capital Ratio on the Economy



Fallacy of the argument

"The return on equity (ROE) decreases as a bank is financed with more equity capital."

Not true when bank ROA on the low-side; shareholders care about ROA, not ROE.



Is bank manager compensation overly weighted on bank ROE?

Fallacy of the argument

"More banking activities would move to the shadow banking system if banks have to adhere to high equity capital ratio requirements."

Bank managers compensated under the Restricted Equity incentive compensation proposal (stock and options have to be held 1 to 3 years after their last day in office) have no incentive to organize shadow banks.

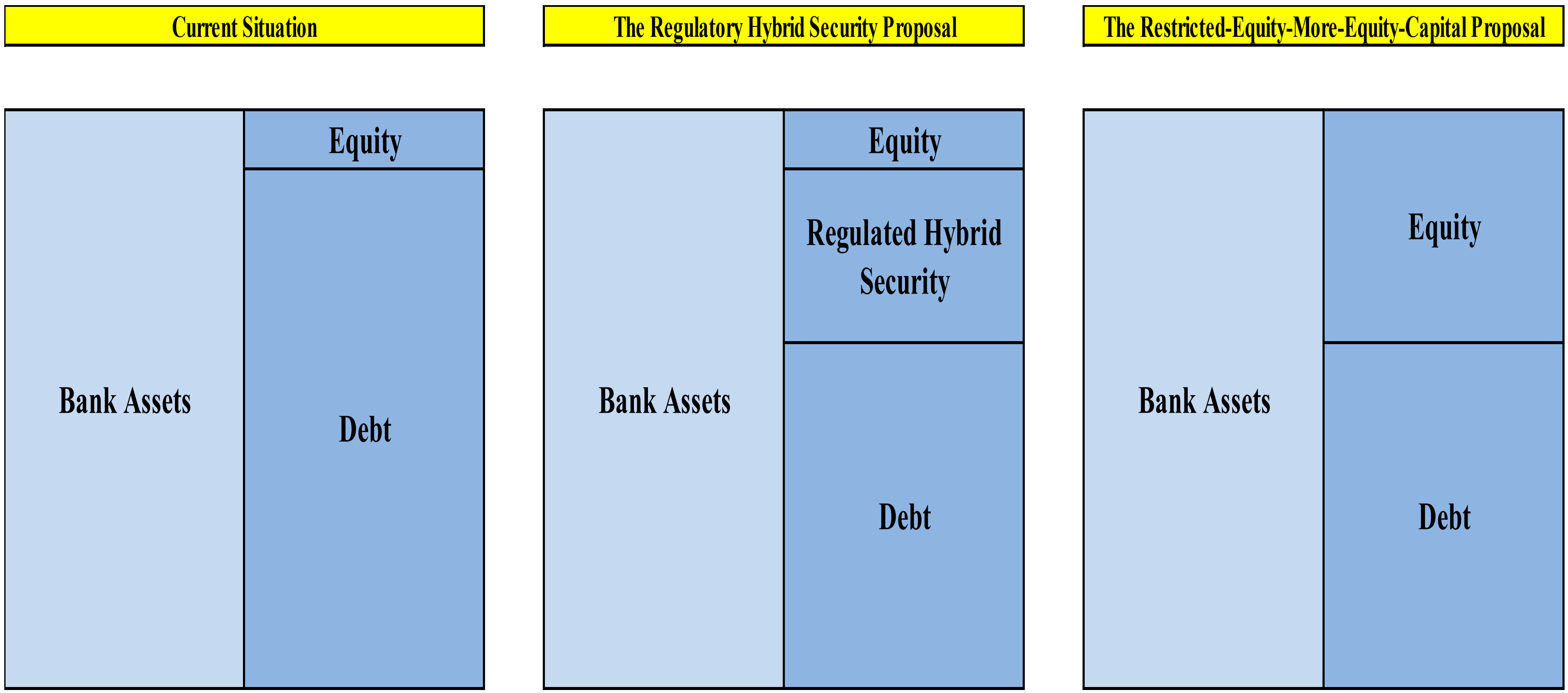
Most of the shadow banks were off-balance sheet vehicles of the big banks. Bank managers whose incentive compensation had a significant ROE component would prefer the high leverage of the off-balance sheet vehicles.

- Bank managers compensated under the Restricted Equity incentive compensation proposal (stock and options have to be held 1 to 3 years after their last day in office) have no incentive to focus on short-term ROE.
- Simple and transparent bank capital structure requires off-balance sheet vehicles to be brought back on-balance sheet, and be subject to the 20% equity capital requirement.

Problem with The Regulated Hybrid (Contingent Capital) Proposal

What/Who triggers the conversion of the hybrid security to equity?

What is the problem with *plain* EQUITY?



Summary and conclusions

Directors own more stock in the bank

Banks that are **capitalized with more equity**

tend to be

► less risky

► more profitable.