CoCos: A Promising Idea Poorly Executed

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Background

- Prudential regulation and tax provisions drive market for CoCos
  - Unattractive to issue CoCos unless tax authorities judge them as sufficiently like debt to permit interest payments to be tax deductible
    - Most European countries do so
    - IRS has declined to do so and so US banks do not issue CoCos
  - Unattractive to issue CoCos unless regulatory authorities deem them sufficiently like equity to count as Tier 1 capital.
- Hybrids have been used in capital markets since introduced to finance railway expansion in the U.S. in the mid-19th century
- Potential role in bank capital emerged in academic work in mid-1990s (Doherty & Harrington (insurance) & Flannery (banking))
  - More than a score of proposals by 2010.

Calomiris/Herring Proposal

- ✓ Our version is based on a particular view of what went wrong in the crisis: perverse incentives led to inadequate measurement of risk <u>ex ante</u> and underestimate of risk <u>ex post</u>
  - — Incentives for <u>banks</u> to engage in regulatory arbitrage and concealment of losses through gains trading and ever-greening
  - — Incentives for <u>supervisors</u> to forbear
- ✓ Our remedy: timely replacement of lost capital will
  - — Protect against insolvency ex post
  - — Incentivize good risk management ex ante
- ✓ Objective: to provide incentives for banks to voluntarily recapitalize while still have access to markets
  - — Avoid bail-outs
  - — Avoid bail-ins
- ✓ Our CoCos are designed to convert only rarely, if ever

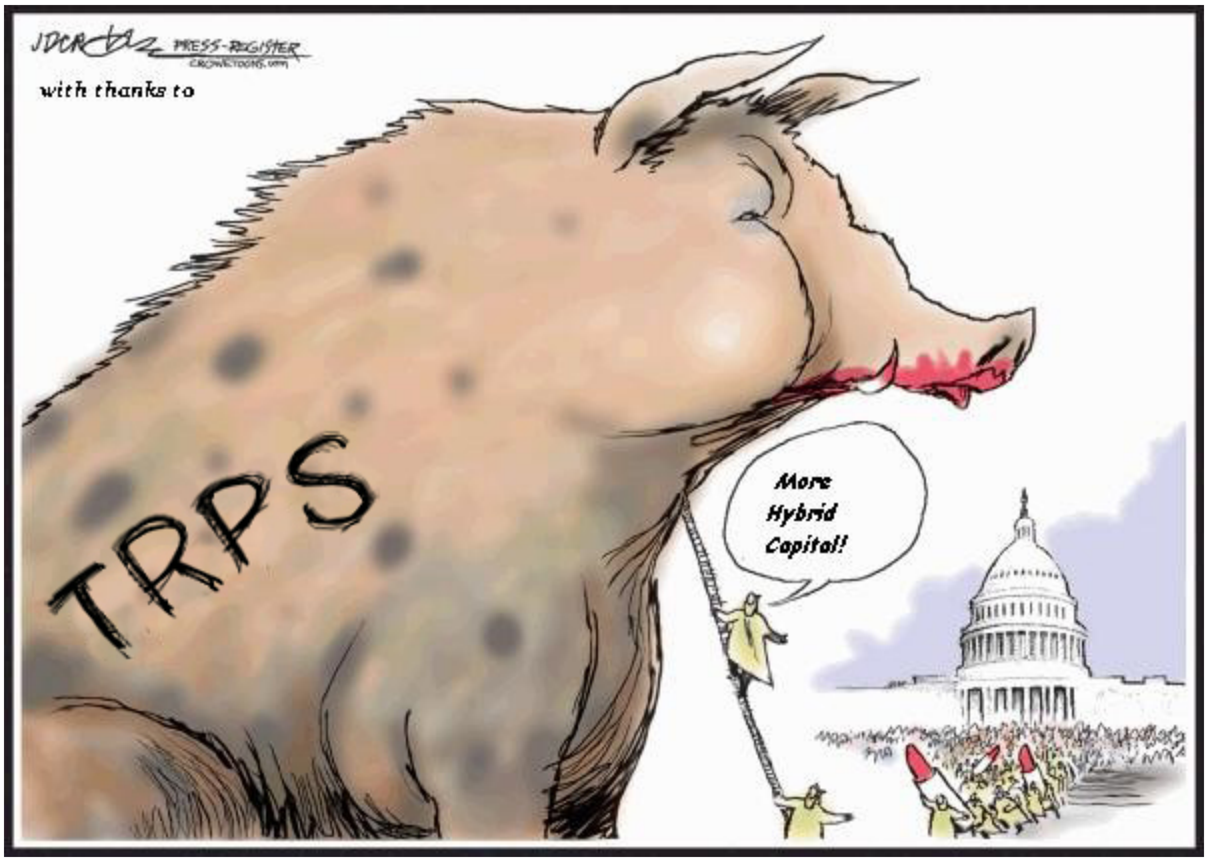
C/H CoCo Structure in Broad Strokes

- ✓ To incentivize timely repair of capital structure
  - — Rely on timely, easily verifiable conversion trigger that cannot be manipulated by bank or supervisory authorities
  - — Set conversion trigger high, well above PoNV, so that bank still has access to capital markets and time to restructure long before hitting PoNV
- ✓ Pose serious threat of dilution to heighten incentives for voluntary recapitalization
  - — Require issuance of large amount of CoCos
  - — Require conversion of full amount when trigger breached

CoCos are not 1st Hybrids in Regulatory Capital Disappointment w. earlier hybrids drove rules for CoCos

- ✓ Basel I defined two kinds of regulatory capital
  1. Tier 1: mainly equity, retained earnings and non-cumulative perpetual preferreds.
  2. Tier 2: preferred shares, subordinated debt and a variety of idiosyncratic items such as loan loss provisions, unrealized capital gains, etc.
- ✓ Basel I definitions retained under **Basel II**
  - — Bankers view Tier 1 capital as most expensive
  - — Virtually all tax systems treat debt more favorably than equity
  - — These factors create strong incentives to design instruments that
    - Regulatory authorities will count as Tier 1 capital and
    - Tax authorities will treat as debt and permit deduction of interest payments
- ✓ Basel Committee faced as series of requests to rule whether a series of innovative hybrid instruments could qualify as regulatory capital

Over Time Decisions To Accept Some Innovative Hybrids Degraded Quality of Tier 1



Permitted Instruments with Features of Debt to Comprise as Much as 50% of Tier 1

- TruPS were popular in the US, Step-up Perpetuals were popular in Europe
  - Equity proportion of Tier 1 permitted to fall to 2% of RWA ➔
  - RWA/Equity = 50:1
- But as conventionally measured, implicit permissible expansion of leverage was even more reckless
  - Assume RWAs are roughly 50% of Total Assets*
  - Permissible leverage (Equity / Total Assets) increased to 100:1!
  - Basel Committee lacked clarity re: role of Tier 1 as going concern capital
- Most hybrids proved worthless in sustaining banks as going concerns or in protecting tax payers in the crisis

**Actual among G-SIBs varied from 22.93% to 73.66% at yearend 2014.*

Basel III Emphasized More and Higher Quality Capital

- ✓ Required higher levels of CET1
  - — Much higher minimum
  - — Plus additional series of CET1 buffers
- ✓ Excluded most earlier hybrids, demanding phase-out beginning January 1, 2013
- ✓ Established requirements for a new kind of hybrid: CoCos*
  - — Must include as trigger event
    - Regulatory judgment that bank would reach PoNV in absence of conversion or
    - Decision to make public sector injection of capital
  - — All CoCos must permit relevant authorities option to write-off or convert to equity upon occurrence of trigger event

*Basel Committee Press Release, 13 January 2011.

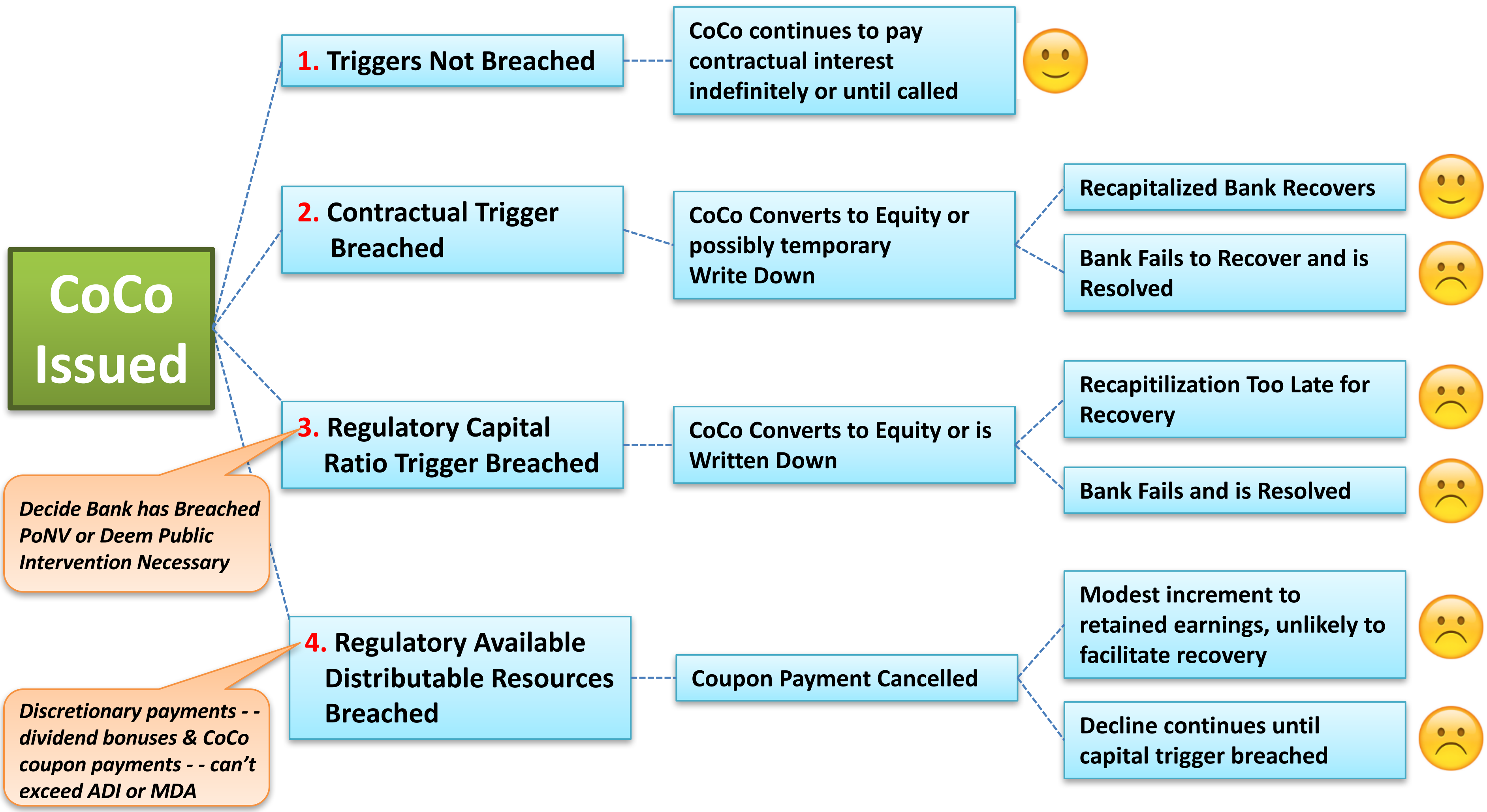
Swiss finma (2011), 1st national authority to provide CoCo framework

- ✓ Swiss SIFI framework permits CoCos that are fully loss-absorbing without triggering default
- ✓ Permit trigger based on CET1
  - If trigger is at least 7% CET1/RWA may constitute up to 3% of Swiss Capital Conservation Buffer of 8.5% of RWA
  - If trigger is 5%, then classed as Tier 2 CoCo, but may be used to meet SIFI surcharge
    - Only the Swiss give regulatory credit for Tier 2 CoCos
- ✓ Write-down CoCos authorized if comparable terms
  - Intended for institutions without public shareholders

CRD IV (2014) Established EU Framework for CoCos

- ✓ To be eligible for treatment as AT1, CoCos must
  - — Be a perpetual bond, with 1st call option no earlier than 5 years and no incentives to call
  - — Enable bank to suspend coupon at its discretion and non-cumulative
  - — Have contractual terms describing circumstances under which conversion takes place
  - — Must have a trigger of at least 5.125 CET1/RWA
    - Bank of England now requires minimum trigger of 7% CET1/RWA
- ✓ CRD gives regulators statutory power to convert CoCos at PoNV
    - Thus, need not have a contractual PoNV clause included in most earlier CoCos

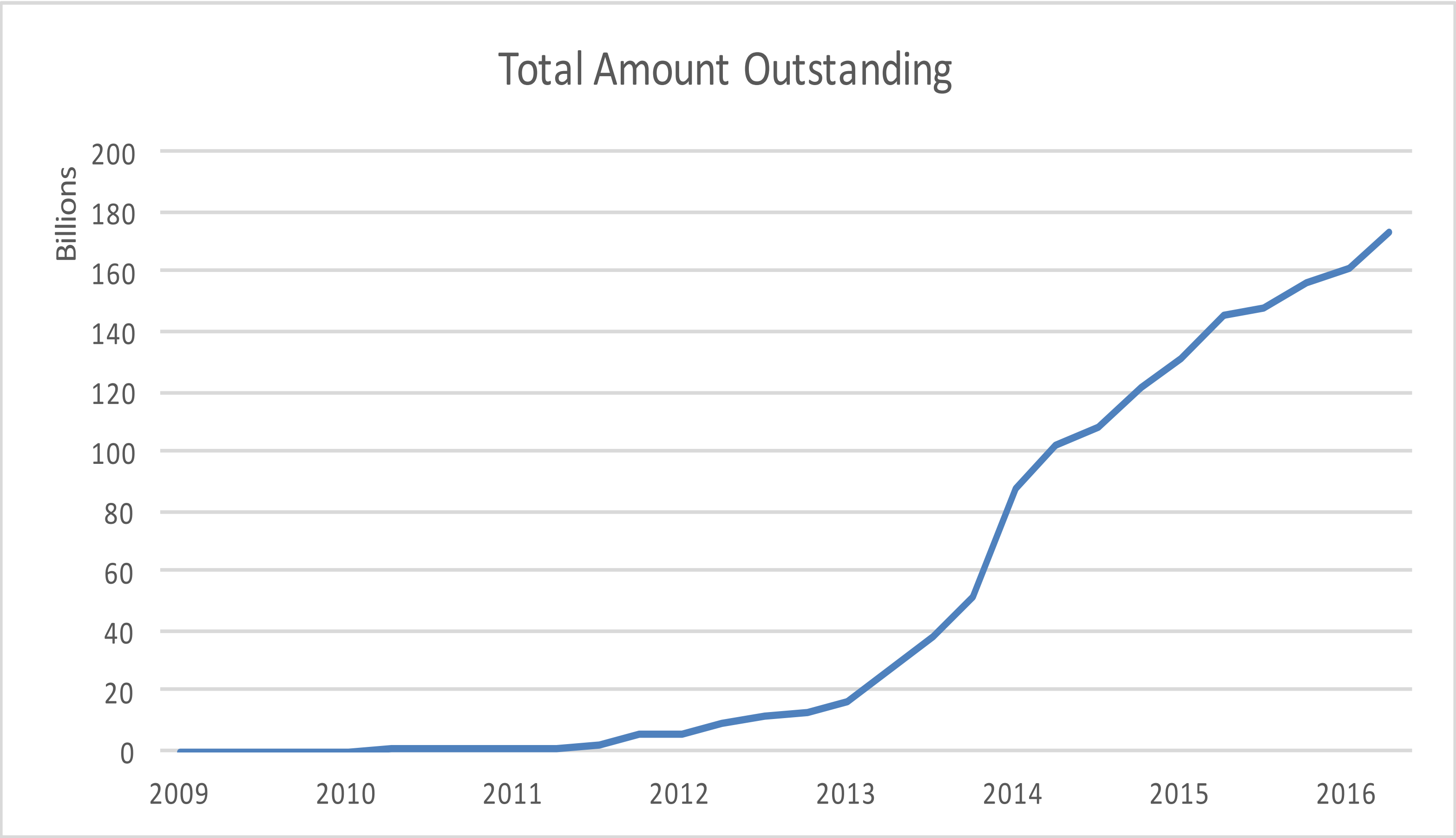
Alternative Futures for a Newly Issued CoCo



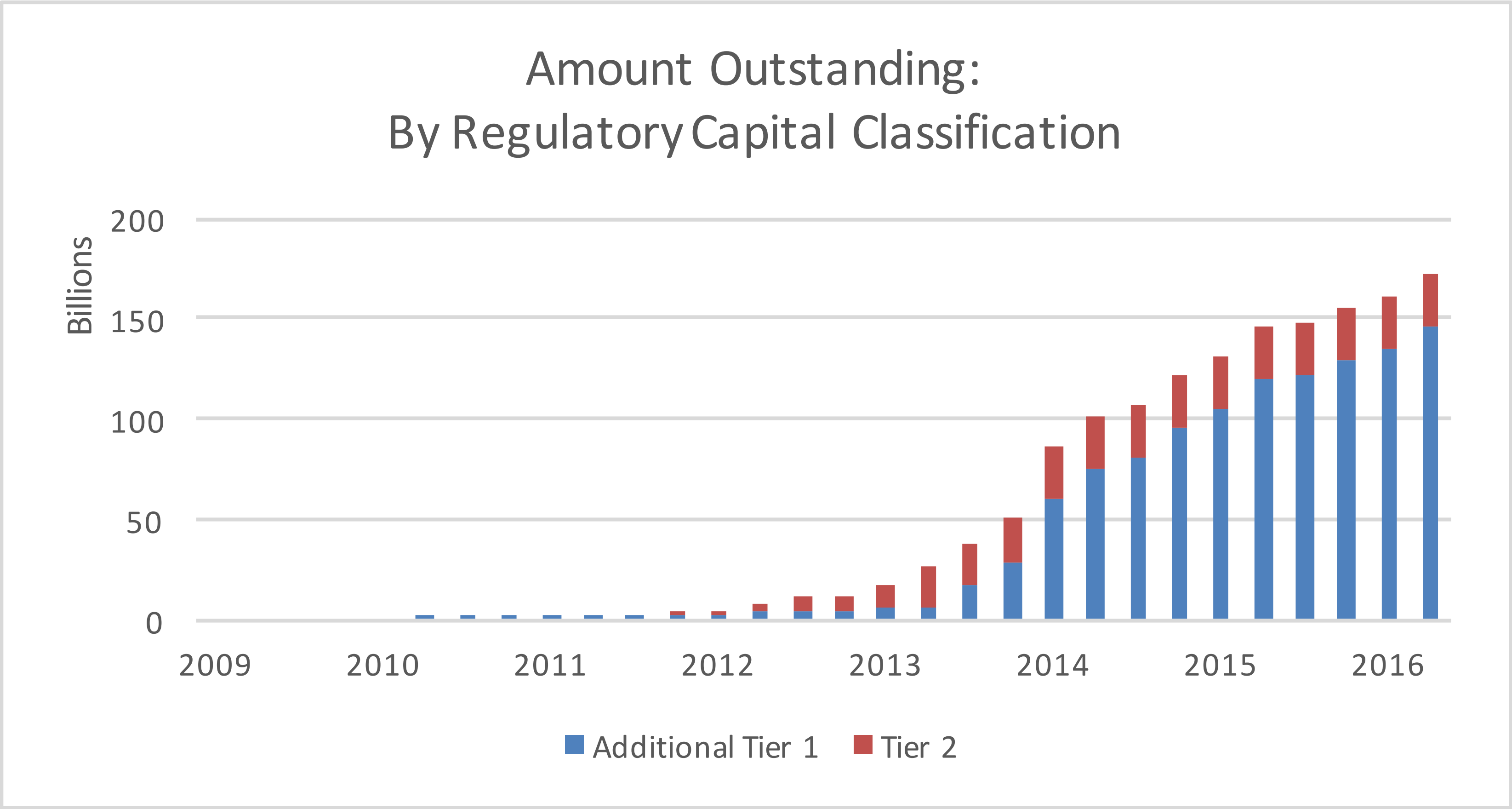
Outcomes Depend On

- ✓ Timeliness, accuracy and objectivity of trigger
- ✓ Level at which trigger set
- ✓ Amount of additional loss absorbing capacity upon conversion
- ✓ Incentive structure implicit in CoCo design
  - Does it encourage prompt, voluntary replacement of lost capital and sharpen incentives for enhancing risk management? Or
  - Does it maintain status quo incentives to delay recapitalization as long as possible?

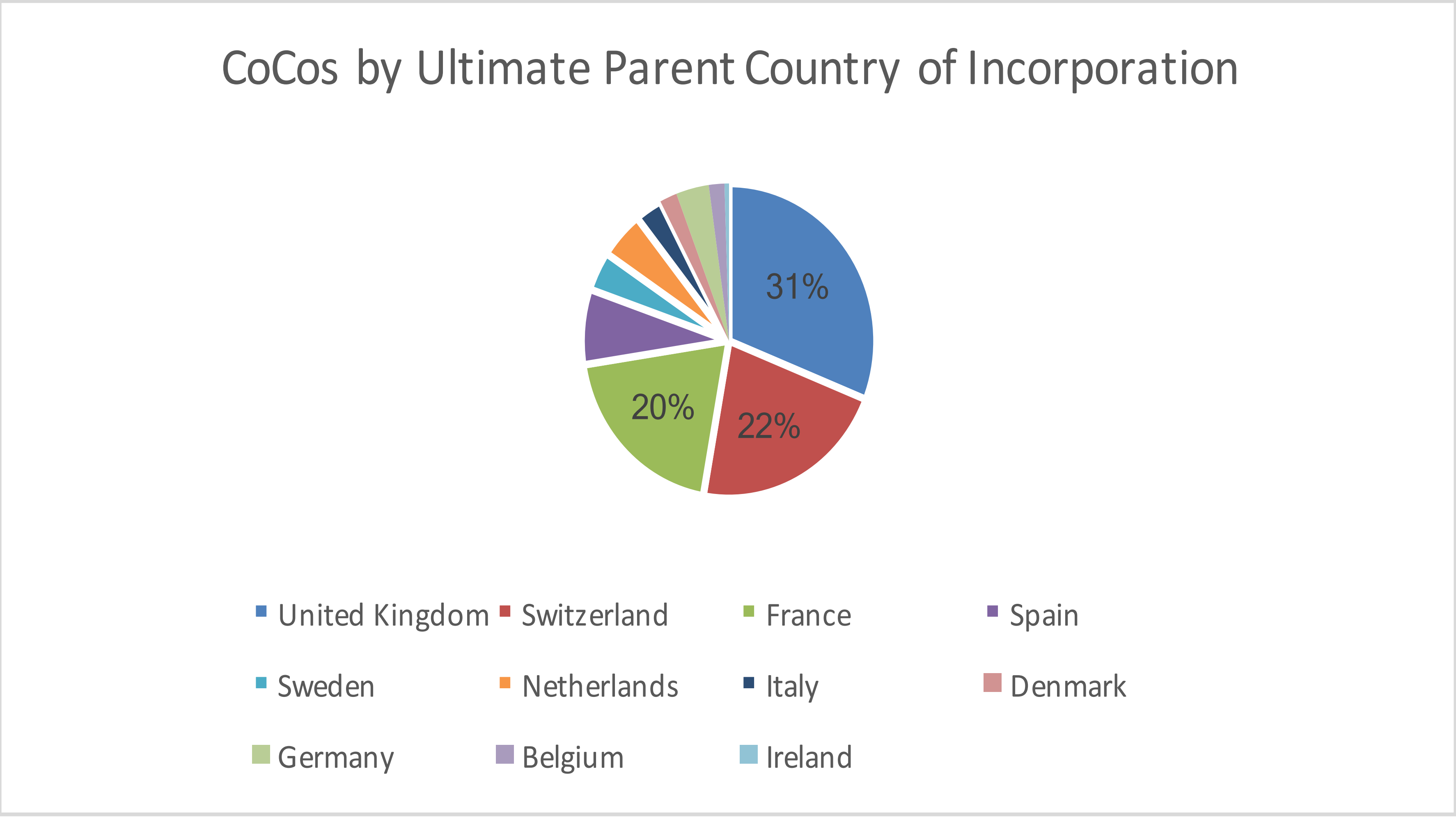
Total Outstanding: $122.5 bn
(2016.III)



Most CoCos are AT1
Classified as Going Concern Capital



British Banks Have Issued Almost One-Third of Outstanding CoCos



Are the outstanding CoCos likely to incentivize a bank to restructure while still a going concern?
[How do they measure up to the C/H criteria?]

Is the trigger timely, objectively verifiable and difficult to manipulate?

- ✓ No. Virtually all rely on CET1/RWA trigger
  - Minor defect: Defined in a remarkable variety of ways
  - Major defects:
    - Updated Infrequently and with a lag
      - Quarterly or semi-annually at best
    - Long history of manipulation
      - By banks
      - By regulators
    - Even if not manipulated, book values are a lagging measure of a bank's condition, particularly in a down-turn
    - Regulators continue to redefine RWA denominator and can make adjustments to calculation of numerator, thus a bank's ratio may change even if it does not increase exposure to risk
- ✓ Unfortunately trigger is likely to be least reliable when need for additional CET1 may be greatest

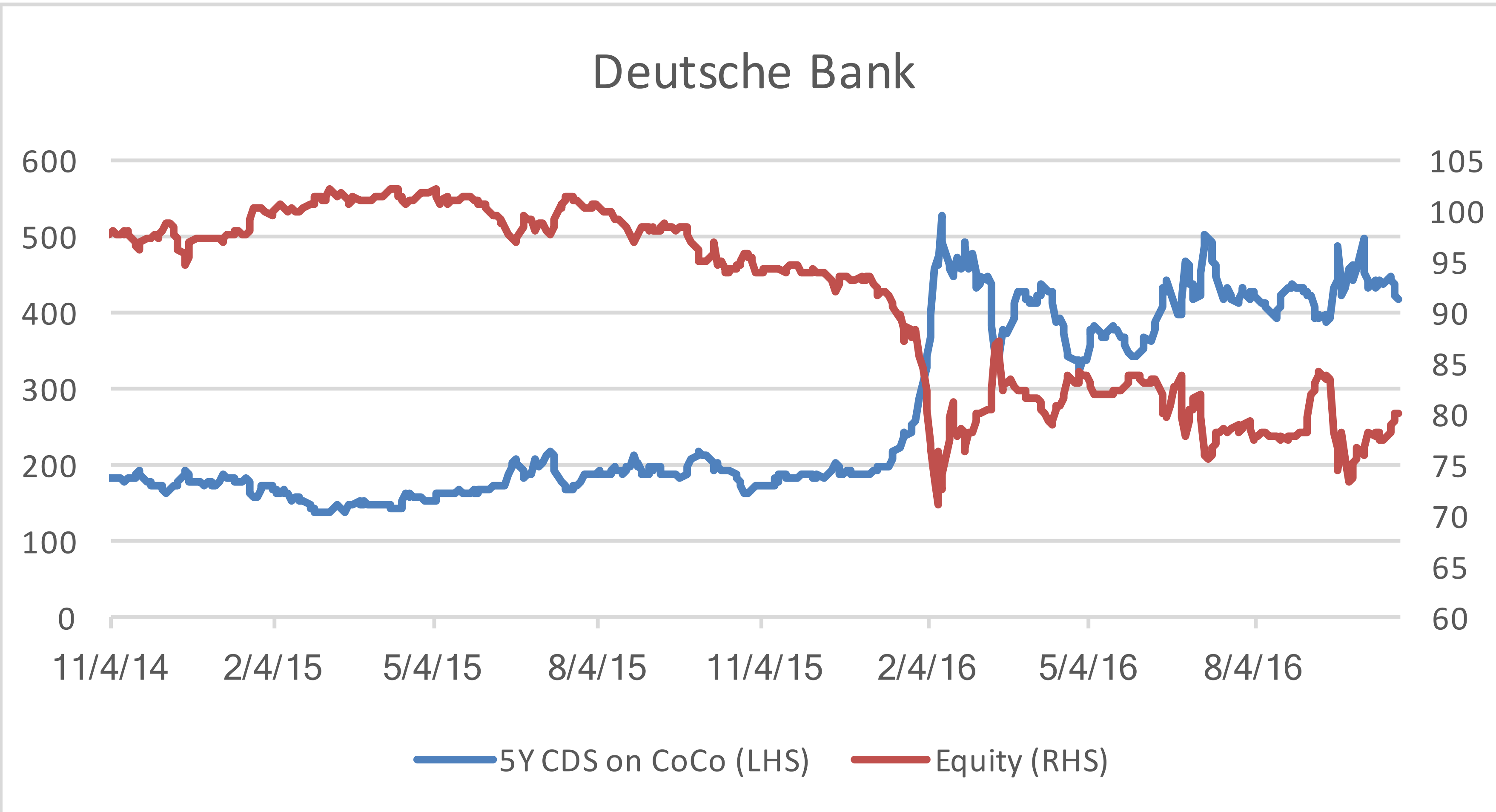
Uncertainty Heightened by PoNV trigger

- ✓ Contractual trigger may be irrelevant if regulators deem bank is near PoNV or believe public sector support is necessary
  - — Note most interventions during crisis occurred when Tier 1 ratios were far above regulatory minimums
- ✓ Definition of PoNV is excessively vague*
  - — Subject to interpretation in each country
  - — Inherently discretionary and thus difficult to price
- ✓ Uncertainty about MDA constraint on coupon payments

*FSB (2011a, p.7) “Resolution should be initiated when a firm is no longer viable or likely to be no longer viable, and has no reasonable prospect of becoming so.”

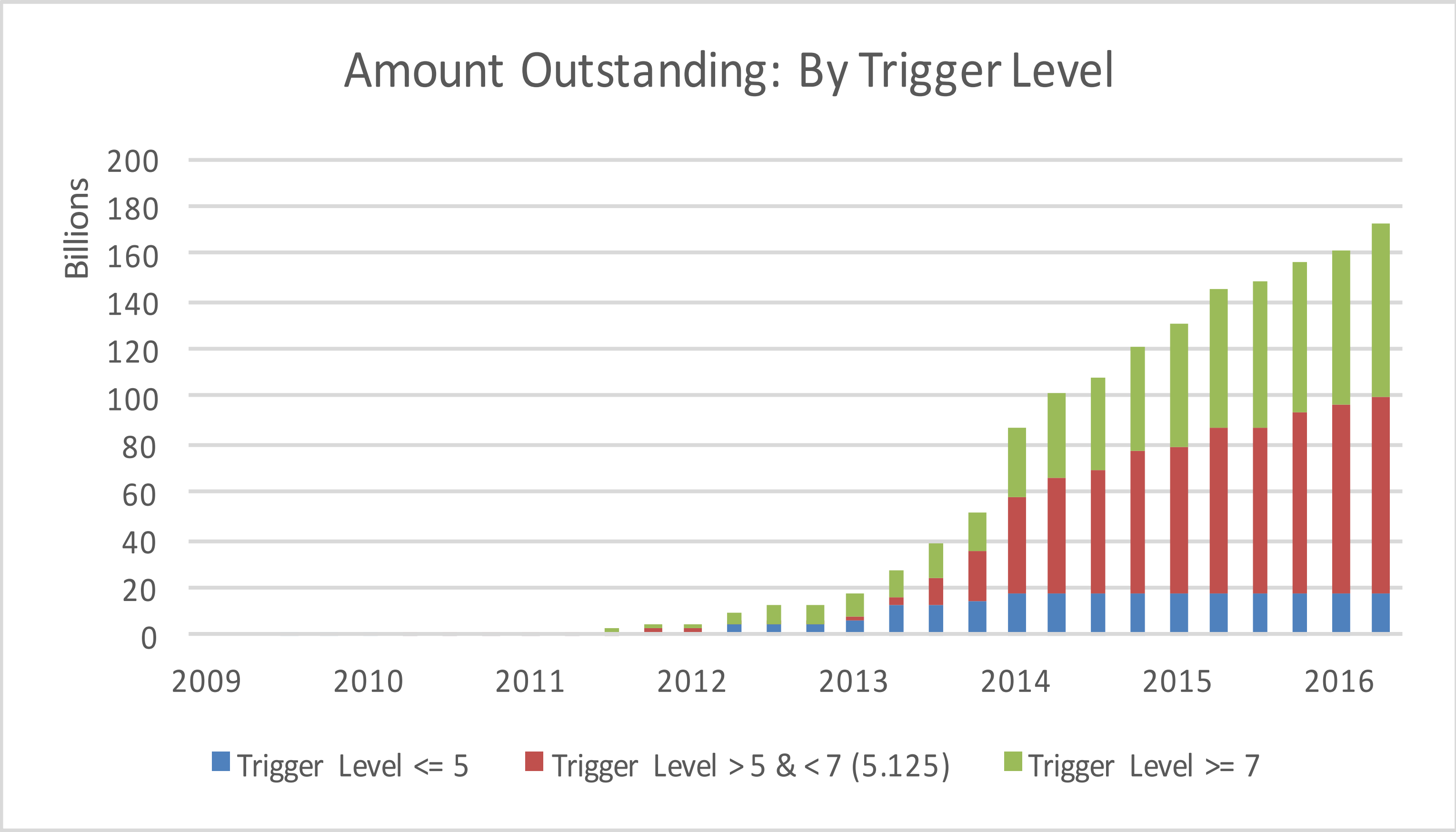
CoCos are a "bad product"

John Cryan, CEO Deutsche Bank



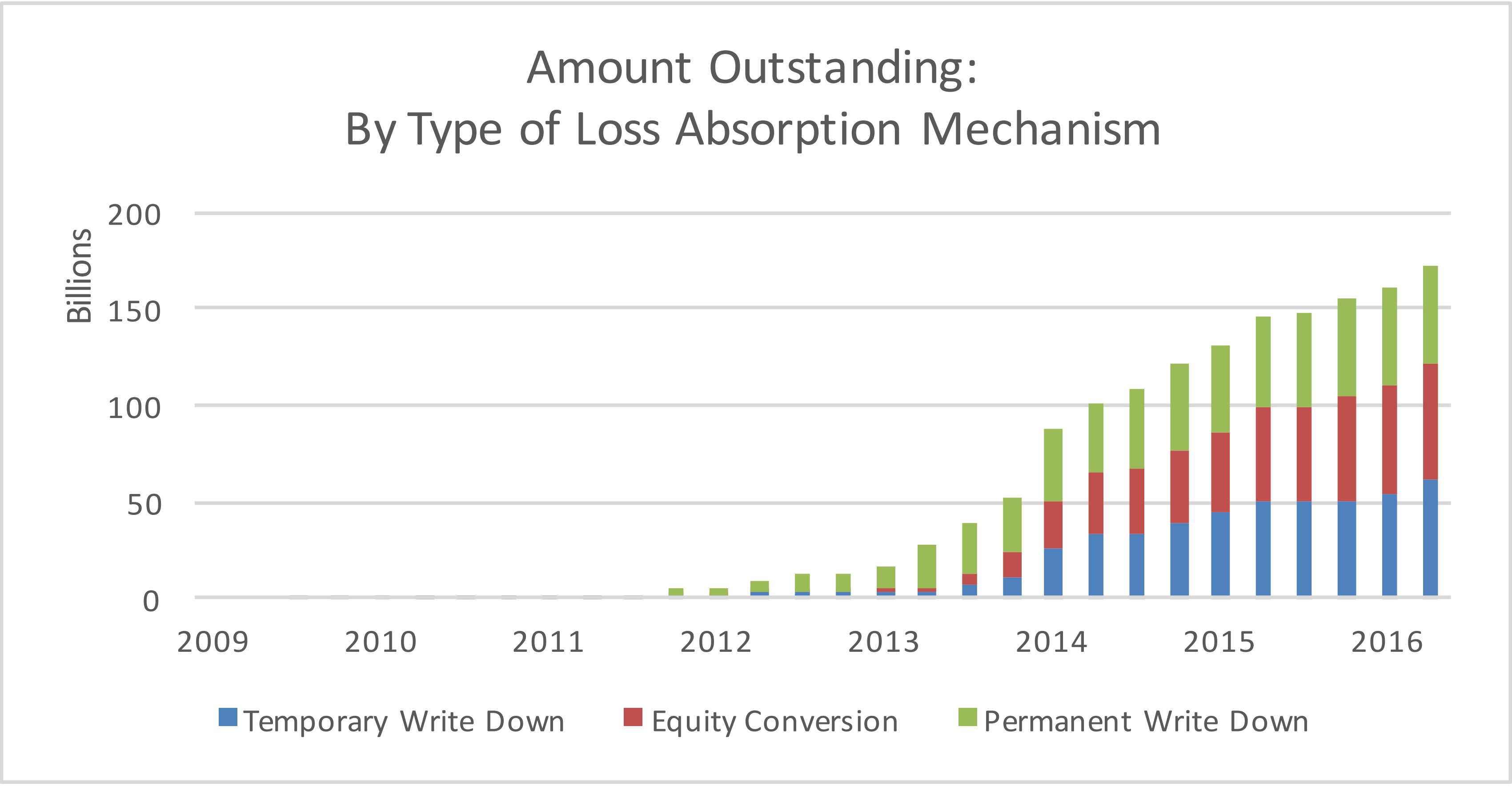
Is the level of the trigger high enough to enable bank to restructure as going-concern? Unlikely

Fewer than one-third have a trigger greater than or equal to 7% of RWA
For SIFI, CET1 requirement with buffers would be 7% plus GSIB surcharge



Will the conversion mechanism encourage voluntary recapitalization?

Equity Conversion CoCos about one-third of Write-Down CoCos



Most CoCos Protect Shareholders from Risk of Dilution

- ✓ Write-down CoCos, which account for over half the outstanding stock create a wealth transfer from holders of CoCos to shareholders
  - — But no dilution of ownership share or control rights
  - — Does not provide an incentive for voluntary recapitalization, but facilitates delays in voluntary recapitalization
  - — Temporary write-downs give creditors a stake, but no influence in recovery
  - — Permanent write-downs simply seem to be a bad deal for creditors
- ✓ Equity conversion
  - — More incentive compatible, but depends on terms of conversion

Terms of Conversion

- ✓ The strength of the incentive to recapitalize voluntarily depends on the size of the dilution threat
- ✓ Varies from contract to contract
  - —Sometimes conversion price set in contract
    - Sometimes, give shareholders opportunity to buy shares at contractual price and provide cash to creditors
  - —Sometimes set at average of market prices at conversion
    - But invariably limited by lower limit on price to limit amount of dilution
- ✓ Amount of dilution depends not only on conversion price but amount of CoCos converted

Is Size of Conversion Sufficient to Provide a Meaningful increase in CET1?

- ✓ In some cases, full amount of CoCos will be converted but
  - —Sometimes only enough CoCos will convert to restore CET1/RWA ratio to, say, 7%
- ✓ But stock of outstanding CoCos can be no more than 1.5% of RWA
- ✓ Is that enough to make a significant difference?
  - —When rely on CET1/RWA trigger that lags in a downturn, it may be too little too late
  - —During crisis, after losses were realized, shortfalls in Tier 1 were significantly larger than 1.5% of RWA

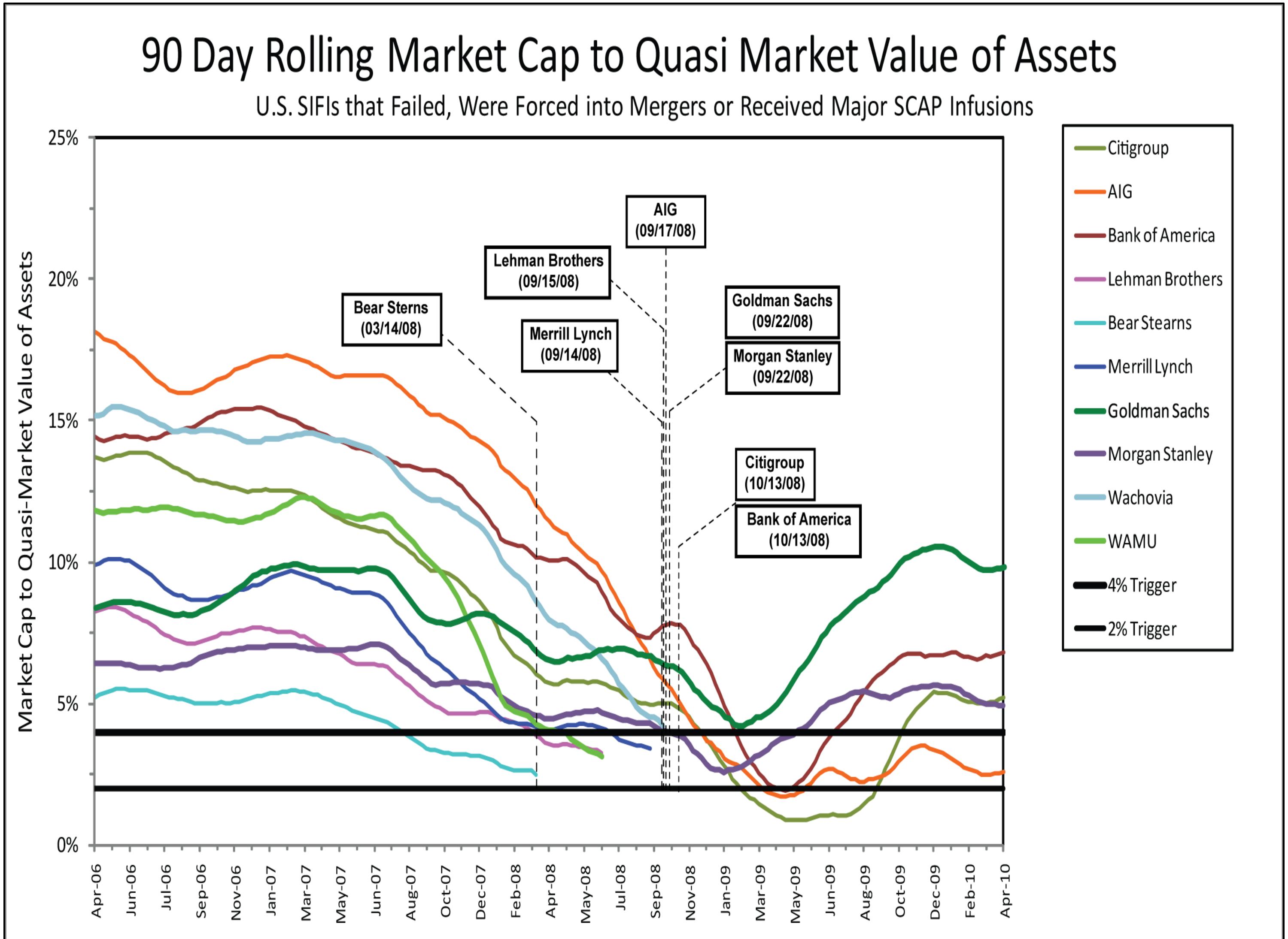
As currently designed, are CoCos really AT1?

- ✓ Unambiguously help cushion taxpayers against loss, just as other elements of TLAC
- ✓ Will triggers be breached in time to provide cushion for bank to restructure while still a going concern?
- ✓ Will amount of CoCos converted be enough to provide meaningful additional resources to facilitate a going-concern restructuring?
- ✓ Will CoCos motivate banks to voluntarily recapitalize to avoid dilution?
  - If not, why enable shareholders to delay issuing new shares, a key problem in earlier crisis
  - Maintaining a prudent capital structure should be the responsibility of shareholders
    - They have the control rights
    - Their reluctance to do so has been a fundamental problem

Fundamental Problem:
Reluctance of Banks and Regulators to Factor Market Signals into Decisions Regarding Appropriate Capital Ratios

Yet prior evidence suggests
the information has great value

The Big Separator between Banks that Needed Government Support



And Those That Did <u>Not</u>