

**Making Banks Resilient:
Basel III Framework's Capital Composition,
Buffers and Leverage**

Seminar on Crisis Management and Bank Resolution

Abuja, Nigeria

16-20 January 2017

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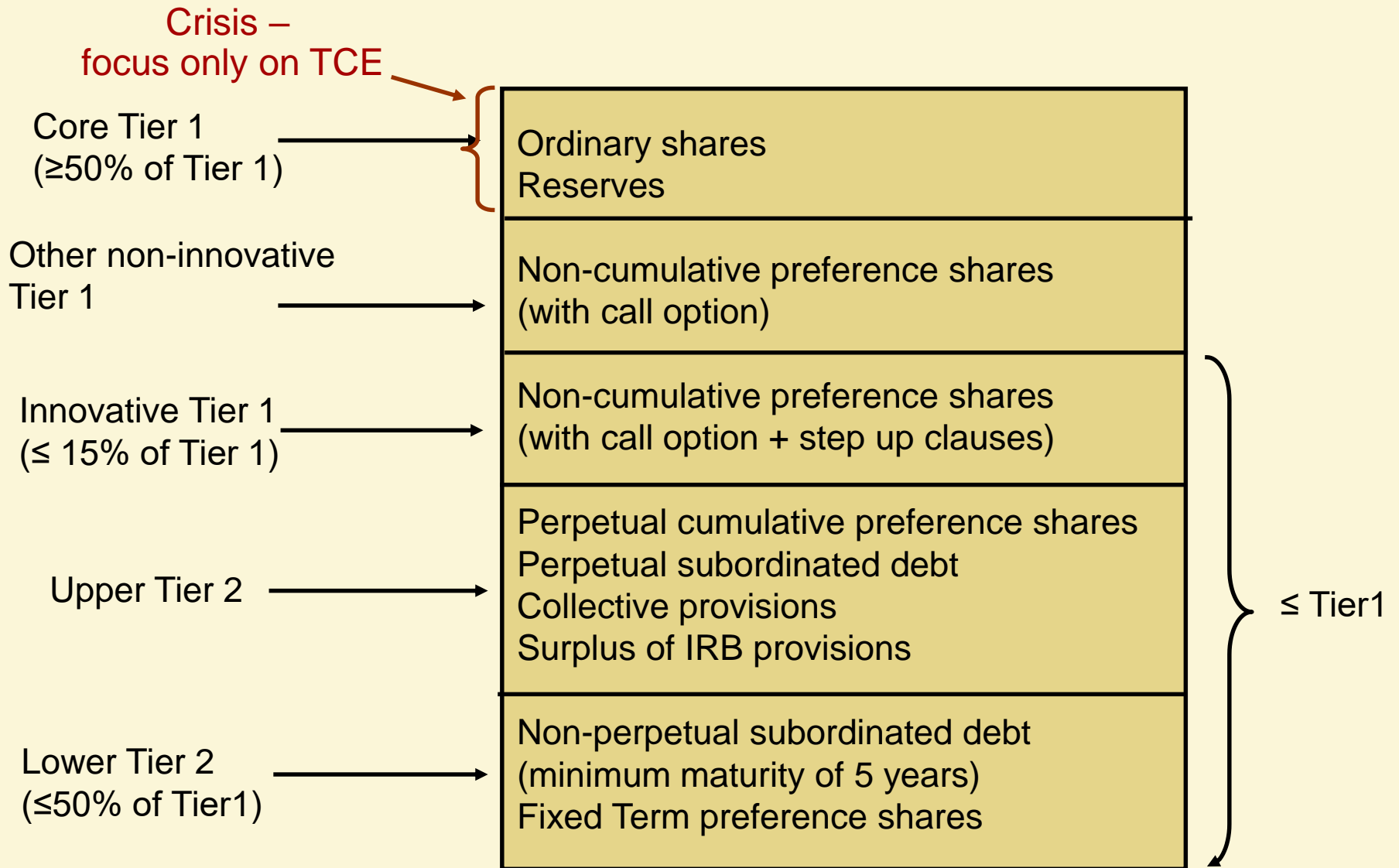
Agenda

- **Basel III definition of Capital**
- Capital buffers
- Leverage ratio

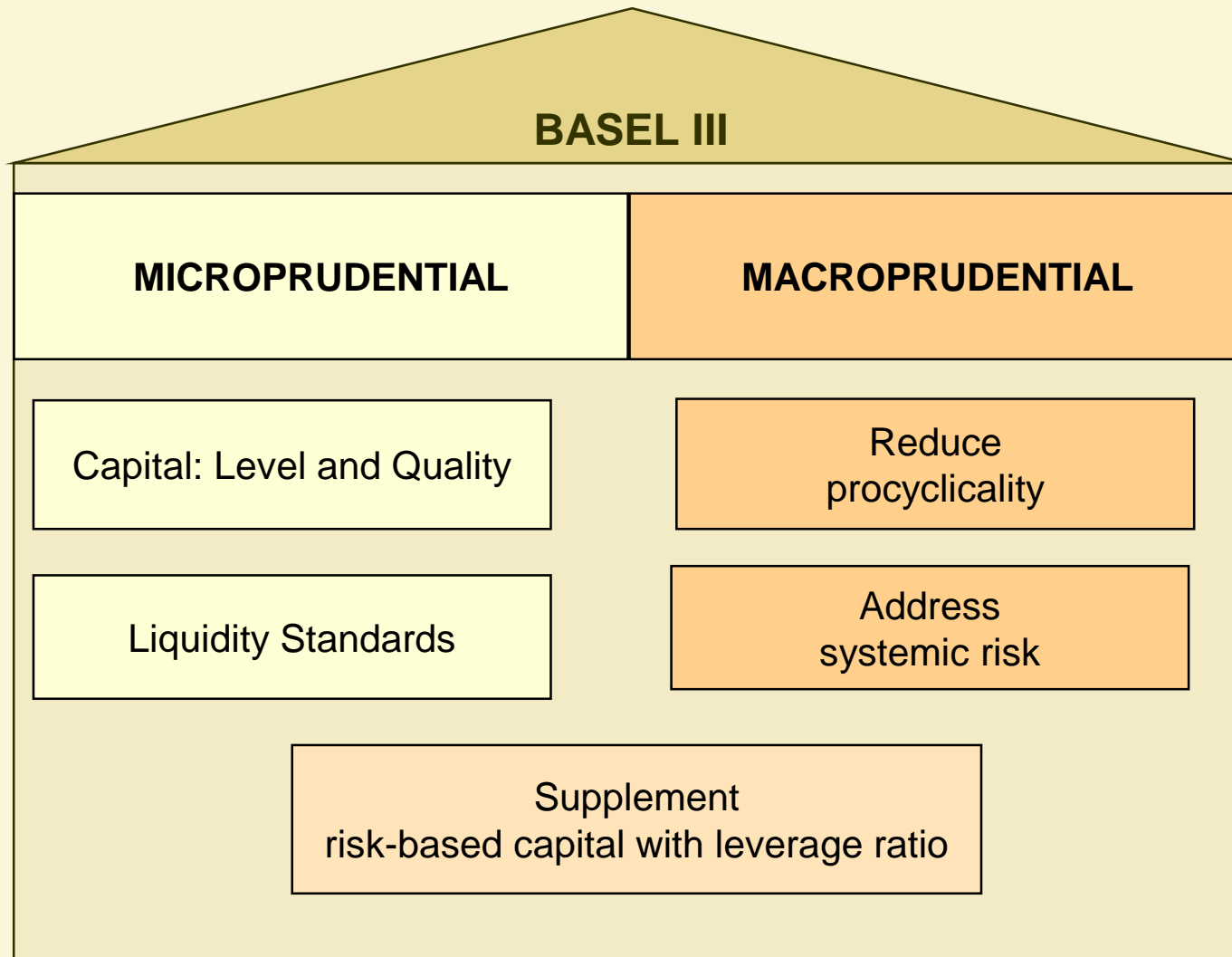
Issues in definition of capital under Basel II

- Problems with Basel II definition of capital –
 - Common equity can be just 2% of RWA
 - Deductions generally not applied to common equity
 - No harmonised list of prudential deductions or regulatory adjustments and filters undermining consistency of regulatory capital base
 - Weak transparency
- During the crisis, banks could report high Tier 1 ratios but with low levels of common equity.
 - Lack of confidence in tier 1?
 - Market started focussing on tangible common equity

Basel II capital components



Basel III – Main building blocks (December 2010)



Basel III Regulatory Capital

New capital ratios

- CET 1
- Tier 1
- Total capital
- Capital conservation buffer

Raising the quality of capital

- Focus on CET1
- Criteria for CET1, AT1, T2
- Harmonised deductions from CET1

Macroprudential overlay

Leverage ratio

Mitigating procyclicality
Countercyclical buffer

Mitigating systemic risk

- HLA for SIFIs
- TLAC
- Recovery & Resolution frameworks

$$\text{Capital ratio} = \frac{\text{Capital}}{\text{Risk-weighted assets}}$$

- Credit risk
- Counterparty risk
- Securitisation products
- Market risk
- Operational risk

Basel III capital requirements

Basel III Capital and buffers						
	Common Equity Tier 1 <i>after deductions</i>		Addl Tier 1	Tier 1 capital	Tier 2 capital	Total capital
	Level	Total (1)	(2)	3=(1+2)	4	(3+4)
Minimum	4.5%	4.5%	1.5%	6%	2.0%	8.0%
Conservation buffer	2.5%	7.0%	1.5%	8.5%	2.0%	10.5%
Countercyclical buffer range	0-2.5%	9.5%	1.5%	11%	2.0%	13.0%
G-SIB Buffer (D-SIB Buffer could be higher)	0-2.5% (empty top bucket of 3.5%)	12%	1.5%	13.5%	2.0%	15.5%

- Pre-Basel III minimum common equity = 2%, Min Tier 1= 4%
- 8% under Basel I ≠ 8% under Basel II ≠ 8% under Basel III

Rationale for new capital definition

- T1 capital – absorb losses on a *going concern* basis (*BRAKES*)
- T2 capital – absorb losses on a *gone concern* basis (*AIRBAGS*)
 - *What is a Going Concern? (able to continue in business)*
 - Can meet obligations as they fall due, assets > liabilities
 - Confidence of creditors and other market participants
 - Confidence of regulators
 - *What does absorbing losses on a going concern basis mean?*
 - Capital Instrument -
 - Subordinated to all liabilities
 - Availability/permanence (perpetual nature)
 - Dividend/coupon flexibility / no mandatory costs
 - *What does absorbing losses on a gone concern basis mean?*
 - Absorb losses in liquidation- protect depositors/senior creditors
 - Coupon payments (deferral/non-cumulative) alone do not make a difference between gone or going concern

A comparison of elements of capital

	CET1	Addl. T1	T2
Components	<p>14 criteria</p> <ul style="list-style-type: none"> -Common shares -Stock surplus (share premium) from issue of CET1 -Retained earnings -Other comprehensive income & disclosed reserves incl. interim P&L - Common shares issued by consolidated subsidiaries & held by third parties (ie minority interest) -subject to certain criteria & thresholds <p style="color: red;">Minus regulatory adjustments</p>	<p>14 criteria</p> <ul style="list-style-type: none"> - Stock surplus (share premium) from addl T1 issues - Addl T1 instruments issued by consolidated subsidiaries and held by third parties (ie minority interest) <p style="color: red;">Minus regulatory adjustments</p> <p>Limited to max.1.5% of RWA (T1=6%, CET1=4.5%) or max. 25% of T1 after regulatory adjustments</p>	<p>9 criteria</p> <ul style="list-style-type: none"> -Stock surplus (share premium) from T2 issues - T2 instruments issued by consolidated subsidiaries & held by third parties (ie minority interest) - Certain loan loss provisions (eg, general prov. up to 1.25% of RWA- Std App.) <p style="color: red;">Minus regulatory adjustments</p>

A comparison of elements of capital

	CET1	Addl. T1	T2
Issued & paid-in	yes	yes	yes
Subordination	Most subordinated Ranks after all senior claims	Subordinated to Depositors, general creditors, subordinated debt	Subordinated to Depositors and general creditors
Principal	Perpetual, never paid outside of liquidation	Perpetual, no maturity date, no step-ups, no incentives to redeem	Min. original maturity of at least 5 years Residual maturity-amortised on straight line basis No step-ups or other incentives to redeem

A comparison of elements of capital

	CET1	Addl. T1 and T2
Callable	NO	<p>Callable by issuer <u>only after 5 yrs</u> –</p> <ul style="list-style-type: none">● Prior supervisory approval reqd.● no expectation of call exercise <p>Call not to be exercised unless –</p> <ul style="list-style-type: none">– replace instrument with same/better quality capital– capital position well above minimum (<i>national</i> minimum, which could be higher than Basel III Pillar 1 minimum requirements)

A comparison of elements of capital

	CET1	Addl. T1	T2
Distributions	NOT Obligatory - non payment is not an event of default	Dividend/coupon discretion: <ul style="list-style-type: none"> ● Bank has full discretion at all times to cancel distributions/ payments ● non-payment not an event of default ● Bank has full access to cancelled payments to meet obligations as they fall due 	CET1 & Addl. T1 restrictions on distributions not specifically mentioned <ul style="list-style-type: none"> ● investor- no rights to accelerate repayment of future scheduled payments (coupon or principal) except in bankruptcy or liquidation
		<ul style="list-style-type: none"> ● No credit sensitive dividend feature (coupon/dividend is reset based on credit rating of issuer) 	

A comparison of elements of capital

	CET1	Addl. T1	T2
Accounting treatment & other features	Classified as Equity Not a liability for determining balance sheet solvency	Instruments classified as liability in a/cing, must have <u>principal loss-absorption</u> by- (i) conversion to common shares at an objective pre-specified trigger point (5.125% in EU) (ii) write-down mechanism: losses allocated to instrument at a pre-specified trigger point.	Dec 2010 text - No specific mention, but addl. criteria prescribed in 13 Jan 2011 press release

All non-CET1 (AT1 & T2) instruments require point of non-viability provisions

- Objective: To avoid/ minimize bailout by government
- Terms of issue must ensure investors incur losses at point of non-viability (bail-in instruments, contingent capital)
 - Or alternatively: domestic laws require full loss absorption
- Mechanism
 - Write-down or permanent conversion to common equity
 - Must occur prior to any public sector capital injection
- Relevant authority determines whether and at what point firm is non-viable

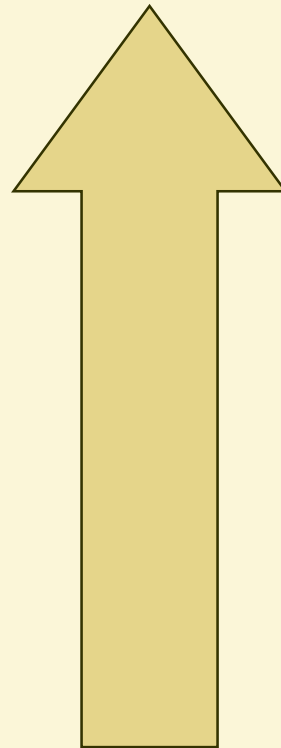
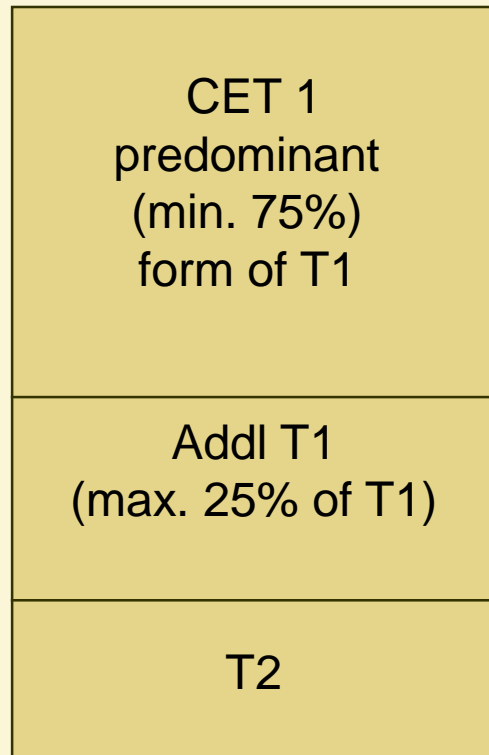
Point of Non-Viability PONV – An Illustration

For determining PONV, OSFI (Canada) considers whether:

- Assets provide adequate protection to depositors/creditors
- Institution has lost the confidence of depositors/ creditors/ public (difficulty in short-term funding)
- Erosion/level of regulatory capital may detrimentally affect depositors and creditors
- Institution failed to or will not be able to pay any due and payable liability
- Institution failed to comply with an order to increase its capital
- Any other state of affairs exists in the institution that may be materially prejudicial to the interests of depositors/ creditors
- Whether the institution is unable to recapitalize on its own (eg, no suitable investor)

EU Approach- FOLTF similar

In sum



Going Concern (the brakes)

Loss Absorption
(subordination)

Protection for depositors

- maturity
- coupon/dividends

Gone concern (the airbags)

Regulatory adjustments

- Goodwill and other intangibles
- Certain elements of cash flow hedge reserve
- Shortfall of provisions to expected losses (IRB banks)
- Gain on sale related to securitisation transactions
- Gains and losses due to the changes in own credit risk on fair valued financial liabilities
- Defined benefit pension fund assets and liabilities
- Investments in own shares
- Reciprocal cross holdings
- Investments in Bkg, Fin. and Ins. entities outside scope of regulatory consolidation - bank does not own more than 10% of issued common shares of the entity
- Former Basel II deductions (50%-50%) from T1 & T2 capital- apply 1250% RW
- **Threshold Deduction items:** (1) Deferred tax assets (2) Mortgage servicing rights (3) Significant Investments (bank owns more than 10%) in the capital of other unconsolidated financial entities
 - Deductions subject to a threshold: individual limit 10%, aggregate limit 15%.
 - Amounts reckoned in CET1 receive 250% RW

Agenda

- Basel III definition of Capital
- **Capital buffers**
- Leverage ratio

Reducing procyclicality & promoting countercyclical buffers

Four key objectives of regulatory reforms:

- a) Dampen any excess cyclicity of minimum capital requirement
- b) Promote more forward looking provisions

Buffers-

- c) Conserve capital to build buffers at individual banks and the banking sector that can be used in stress
- d) Achieve the broader macroprudential goal of protecting the banking sector from periods of excess credit growth
 - Capital buffer framework: also extended to cover-
 - G-SIBs
 - Capital under Stress Tests (by jurisdictions)
 - Leverage ratios (by jurisdictions)

Capital Conservation Buffer: Best Practice

- Build buffers, as a part of *capital planning* process, by –
 1. reducing discretionary distributions of earnings
 - Dividend payments
 - Share buy-backs
 - Staff bonus payments
 2. and/or raising new capital from private sector
- Greater efforts to rebuild buffers, the more depletion there is
- Future recovery projections do not justify present generous distributions
- Distribution of capital not to be used to signal financial strength

Best Practices vs. Observed Practices Citigroup- compensation & benefits statistics (USD million)

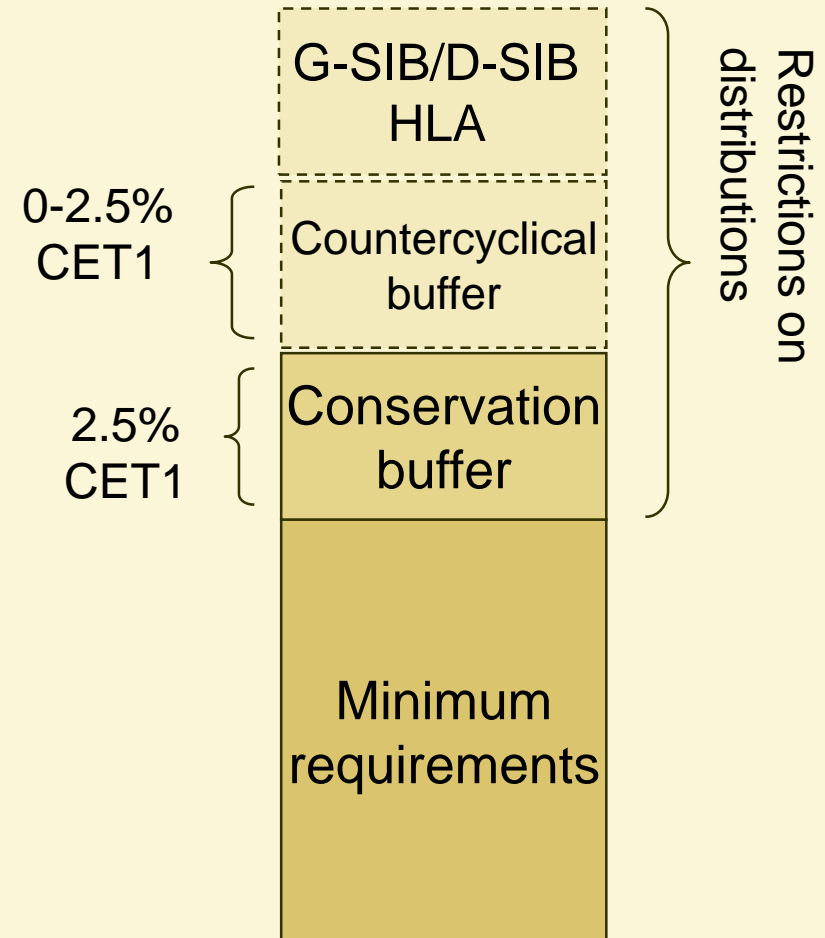
Year	Net Income	Compensation & benefits
2003	17,853	20,719
2005	24,589	25,772
2006	21,538	30,277
2007	3,617	34,435
2008	(27,684)	32,440

- Compensation & benefits increased during bull market years: 2003-2006
-But remained at old levels even during losses

Source- Andrew M Cuomo, Attorney General, State of New York

The functioning of the capital buffers

- The capital conservation buffer establishes a fixed range above the minimum CET1 requirement. When a bank's CET1 ratio falls into this range it becomes subject to restrictions on distributions (by way of dividends, bonus payment, share buybacks)
 - Applied at the consolidated level
 - Host can apply at solo level
 - Supervisory discretion to impose time limits (for capital raising) on banks operating within the buffer range
- The countercyclical capital buffer works by extending size of capital conservation buffer during periods of excess credit growth



Capital conservation buffer - framework

Individual bank minimum capital conservation standards		
Amount by which a Bank's capital exceeds the minimum requirement in terms of a percentage of the size of the conservation range	Common Equity Tier 1 Ratio	Minimum Capital Conservation Ratios (as % of earnings)
Within first quartile of buffer [$< 25\%$]	4.5% - 5.125%	[100%]
Within second quartile of buffer [25% - 50%]	$> 5.125\%$ - 5.75%	[80%]
Within third quartile of buffer [50% - 75%]	$> 5.75\%$ - 6.375%	[60%]
Within fourth quartile of buffer [75% - 100%]	$> 6.375\%$ - 7.0%	[40%]
Above top of buffer [$> 100\%$]	$> 7.0\%$	[0%]

Quartile = $(2.5 / 4 = 0.625)$

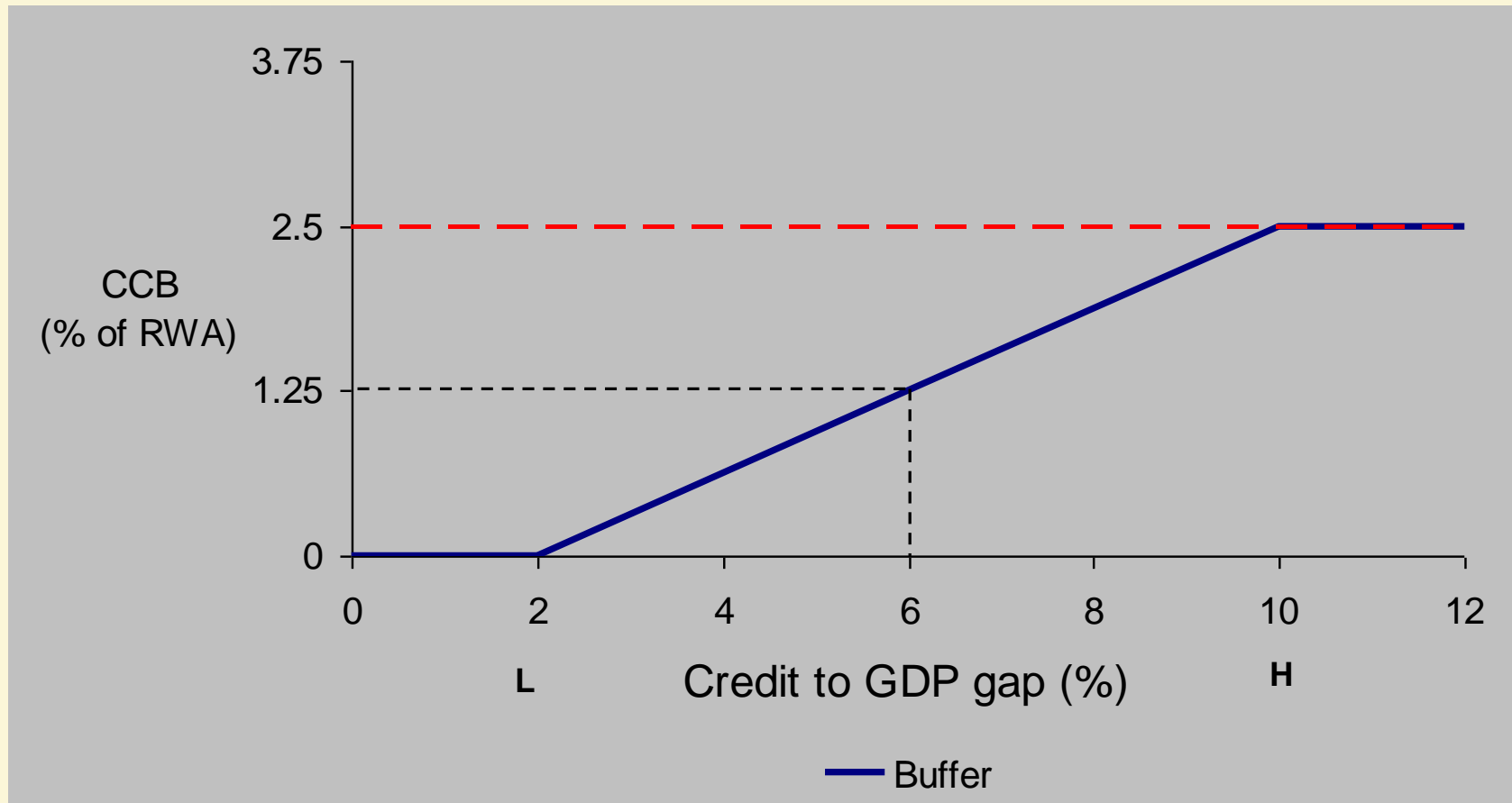
Countercyclical buffer (CCyB) - objective

- “The primary aim of the countercyclical capital buffer regime is to use a buffer of capital to achieve the broader macroprudential goal of protecting the banking sector from periods of excess aggregate credit growth that have often been associated with the build up of system-wide risk
.....The aim is to ensure that the banking sector in aggregate has the capital on hand to help maintain the flow of credit in the economy without its solvency being questioned, when the broader financial system experiences stress after a period of excess credit growth
.... The potential moderating effect (of the buffer) on the build-up phase of the credit cycle should be viewed as a positive side benefit, rather than the primary aim of the countercyclical capital buffer regime.”

Countercyclical buffer (CCyB)

- CCyB- not about solvency of individual banks (min. & conservation buffer)
- National jurisdictions will monitor credit growth & other indicators signalling build up of system-wide risk
 - Common reference guide: aggregate private sector Credit-to-GDP gap (Swiss - guided discretion)
- Deploy CCyB (0 - 2.5% of RWA) during build-up of system-wide risk, release CCyB when system-wide risk dissipates
- Pre-announce decision to raise CCyB level by up to 12 months, but CCyB release to be prompt
- Each BCBS member to identify an authority for CCyB decisions
- CCyB calculation/ public disclosure- same frequency as capital req.
- For computing CCyB, credit exposures include–
 - all private sector credit (incl. non-bank financial sector) attracting a credit risk capital charge
 - The risk weighted equivalent trading book capital charges for specific risk, IRC (default & migration risk) and securitisation
- CCyB for a bank- weighted average of buffers in all jurisdictions

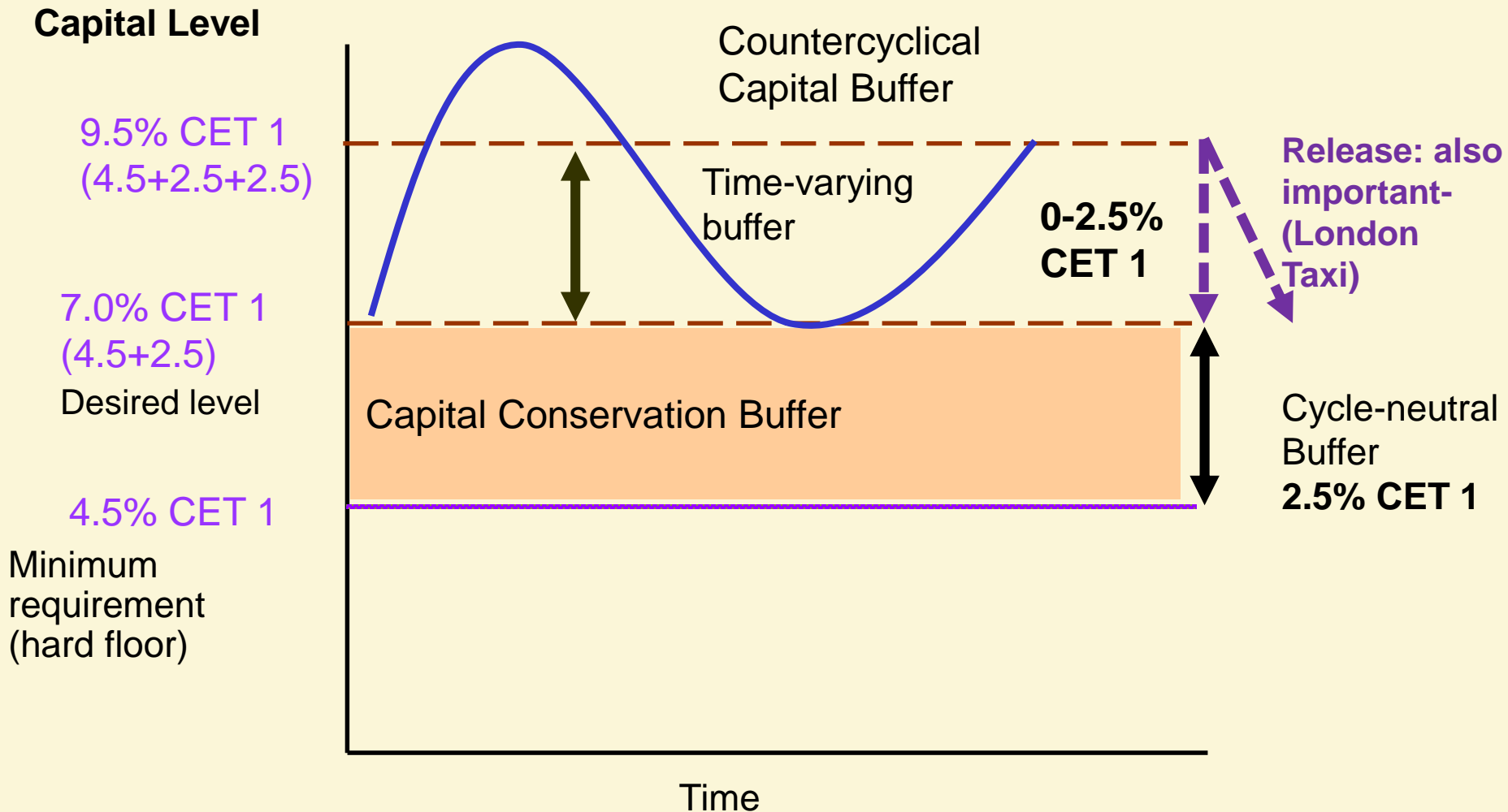
CCB and Credit to GDP Gap



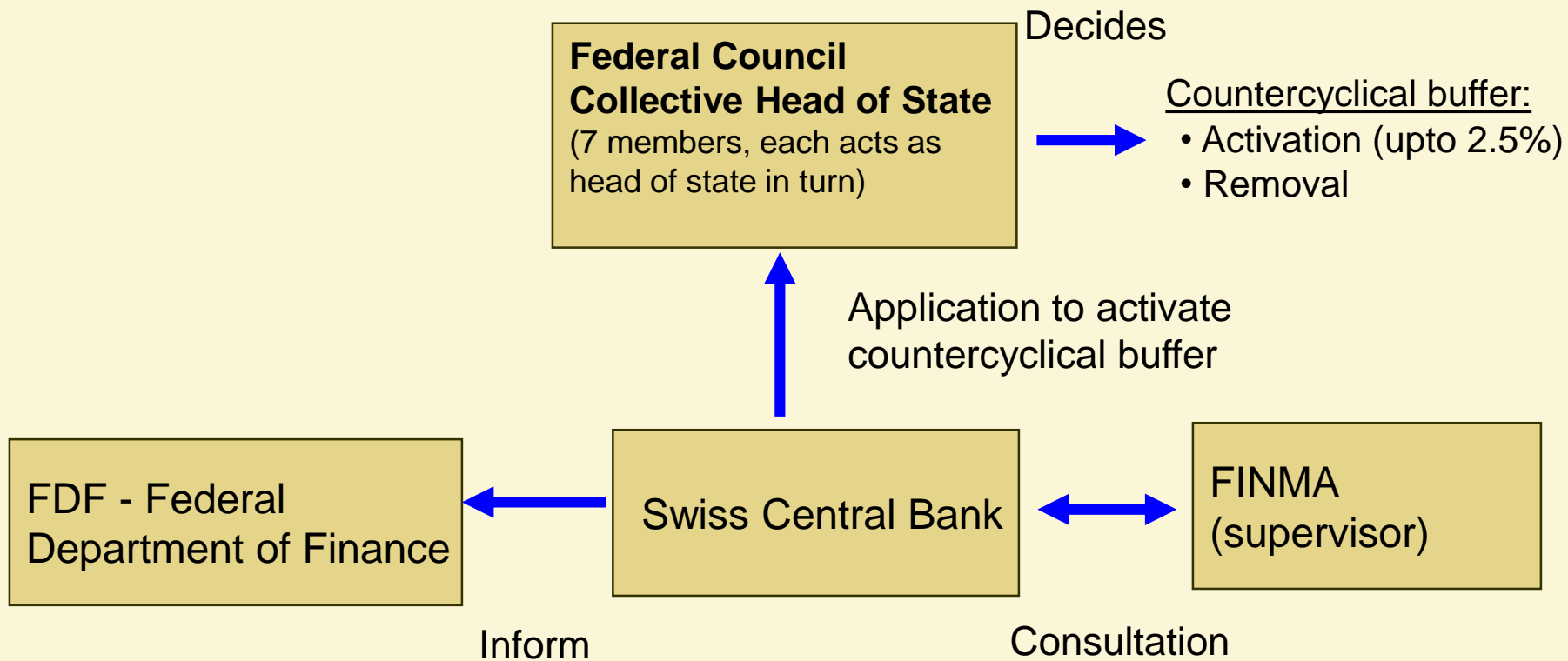
Example: Suppose the GAP = 6%
CCB = $[(6 - 2) / 8] \times 2.5 = 1.25$

CCB = 0, if credit/GDP gap is equal to/below 2; CCB = 2.5 if credit/GDP gap is equal to/above 10%. For credit/GDP gap between 2 and 10 percent the buffer is calculated as 2.5/8 times the value of the credit/GDP gap exceeding 2 per cent.

The Capital buffers: Summing Up



Operation of Countercyclical Capital Buffer: Switzerland



- 13 Feb 2013- sectoral countercyclical capital buffer (**CCyB**) of **1%** on loans against residential properties in Switzerland by 30 Sept 2013 (6 months+)

- 23 Jan 2014 - **Sectoral CCyB increased from 1% to 2%**, to be implemented by 30 June 2014 (less than six months)

- FINMA (in Feb 2013) was not in favour of buffer - supervisory measures taken

India: Countercyclical capital buffer

- Credit-to-GDP gap for CCCB framework can have limitations for emerging economies
- In a structurally transforming economy with rapid upward mobility, growth in credit demand will expand faster than GDP growth:
 - shift from services to manufacturing where the credit intensity is higher per unit of GDP
 - need to double India's investment in infrastructure which will place enormous demand on credit
 - financial inclusion programme will bring millions of low income households needing credit into formal banking system
- Lower threshold (L=3%), Basel (2%)
- Higher threshold (H=15%), Basel (10%)
- Sectoral approach also to be used
- Other indicators - Incremental C-D ratio, industrial outlook survey, interest coverage ratio

Basel III capital ratio vs. Leverage Ratio

Basel III capital ratio



Risk and capital

Leverage Ratio



Off and on-B/S Asset & Capital

Leverage Ratio

- A simple, transparent, non-risk-based leverage ratio- a credible supplementary measure to Basel II risk-based capital
- Objective:
 - restrict the build-up of leverage in the banking sector to avoid destabilising deleveraging processes that can damage the *broader financial system* and the *economy*
 - reinforce the risk-based requirements with a simple, non-risk-based “backstop” measure.
- Leverage Ratio has to be:
 - *simple* : critical & complementary to risk-based capital
 - *Credible*: ensure broad & adequate capture of both on- and off-balance sheet sources of banks’ leverage
- Public disclosure of Basel III leverage ratio started from 1 Jan 2015 based on Jan 2014 standards

Leverage Ratio

- Jan 2016, GHOS agreed for:
 - **Tier 1** definition of capital for leverage ratio
 - minimum level of **3%**
 - additional requirements for **G-SIBs**
- Finalise calibration of Basel III leverage ratio in **2016**
- Implemented as a **Pillar 1** measure by 1 Jan 2018
- April 2016: Revisions to the Basel III leverage ratio framework: Consultative Document
- July 2016: 53 comments received

calculated on a quarter-end basis

Pillar 1 - Jan 2018

Disclosures started from Jan 2015

$$\text{Leverage ratio} = \frac{\text{Capital measure (Tier1)}}{\text{Exposure Measure}} \geq 3\%$$

On-B/S Exposure

- Generally accounting values
- on-B/S, non-derivative assets net of specific provisions
- Deduct Tier 1 deductions
- Physical/ financial collateral not considered
- No netting of assets and liabilities

Off-B/S Exposure

- 10-20% CCF – retail commitments unconditionally cancellable
- 20% CCF- short-term self-liquidating trade L/C
- 50% CCF - transaction-related contingent items (eg performance bonds, bid bonds, standby L/C)
- 50–75% CCF - Note issuance facilities (NIFs) & revolving underwriting facilities (RUFs)
- 100% CCF- Direct credit substitutes, eg general guarantees of indebtedness, including standby L/Cs serving as fin. gtees. for loans/ securities

Derivatives & Securities Financing Transactions

- Complex part, lot of industry comments
- Derivatives – modified version of the Std App. for counterparty credit risk SA-CCR.
- SFTs- provide a common measure to address main differences in accounting frameworks

Leverage Ratio: G-SIBs

- G-SIBs- Higher risk-based capital, so higher leverage?
- Views sought on the following:

○ A limit on Addl. Tier 1 capital to be used to satisfy addl. Req.?

- Uniform Addl. Req. for all G-SIBs, OR
- Differential Addl. Req. - vary based on a scaling of G-SIB's higher loss absorbency requirement

- Addl. Req. - a higher min. req?
OR
- Restrictions on capital distributions if G-SIB breaches leverage ratio buffer, OR
- No automatic restrictions on capital distributions, if leverage buffer breached - supervisors take timely action to ensure breach is temporary

Leverage Buffer – US

- Enhanced Supplementary Leverage Ratio rules (From 1.1.2018), for G-SIBs (Covered BHCs- \$700bn assets, \$10Tr assets under custody)

Calculation of Maximum Leverage Payout Amount	
Leverage Buffer	Maximum leverage payout ratio (as % of eligible retained income)
> 2%	No payout ratio limitation applies
≤ 2%, >1.5%	60%
≤ 1.5%, >1.0%	40%
≤ 1.0%, >0.5%	20%
≤ 0.5%	0%

UK Leverage Ratio Requirements

Component	Nature of requirement	Level	Capital required
Minimum leverage ratio	Minimum requirement	3% minimum	Tier 1, of which at least 75% CET1 or 100% CET1 (Basel III: 4.5% CET1/6% T1 or 75% CET1 out of total T1)
Supplementary Leverage Ratio Buffer for G-SIIs/ other major domestic UK banks/Bldg. Soc.	Buffer: Cross-sectional risk	35% of corresponding RW capital buffer rate for G-SII	CET1 - 100% (as for Basel III buffers –risk based capital)
Countercyclical leverage ratio buffer	Buffer: cyclical risks	35% of corresponding RW capital buffer	CET1 – 100% (as for Basel III buffers –risk based capital)

- Breach of leverage ratio buffers- No automatic restrictions on distributions
- Firms to prepare capital plans
- PRA to assess if firm will hold CET1 capital within reasonable time

35% conversion factor – ratio of 3% min leverage req & 8.5% Tier 1 capital req. (4.5% CET1, 1.5% Addl T1, 2.5% CCB). ($3/8.5=0.35$, or 35%)

Final Remarks

- Basel III views capital adequacy from several perspectives
 - Several minima
 - Buffers
 - Leverage
 - Many countries are using Stress Tests...
- More and better quality capital should contribute to resilience of the banking system
- Supervision is also important

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