

Global trends in banking regulation and supervision

Vahe Vardanyan

Lead Financial Sector Specialist

The World Bank

April 19, 2017



WORLD BANK GROUP

Finance & Markets

Short history of Basel Committee regulatory developments for banking supervision

- End of 1992 - Introduction of Basel I
- Jan 1996 – Introduction of Market risk component in CAR calculation
- Oct 1998 – Defining the components of capital under Basel I
- Jun 2004 – Release of Basel II (improved measurement of credit risk and included capture of operational risk). Was due to be implemented from year-end 2006.
- Jul 2009 – Basel 2.5 enhanced the measurements of risks related to securitization and trading book exposures and was due to be implemented no later than End 2011.
- Dec 2010 – Release of Basel III which sets higher levels of capital requirements and introduced a new global liquidity framework. Committee members agreed to implement Basel III from 1 January 2013, subject to transitional and phase-in arrangements.

The Capital Adequacy calculation under Basel I

$$\frac{\text{REG.CAP}}{\text{RWA} + 12.5 * R_m} \geq 8\%$$

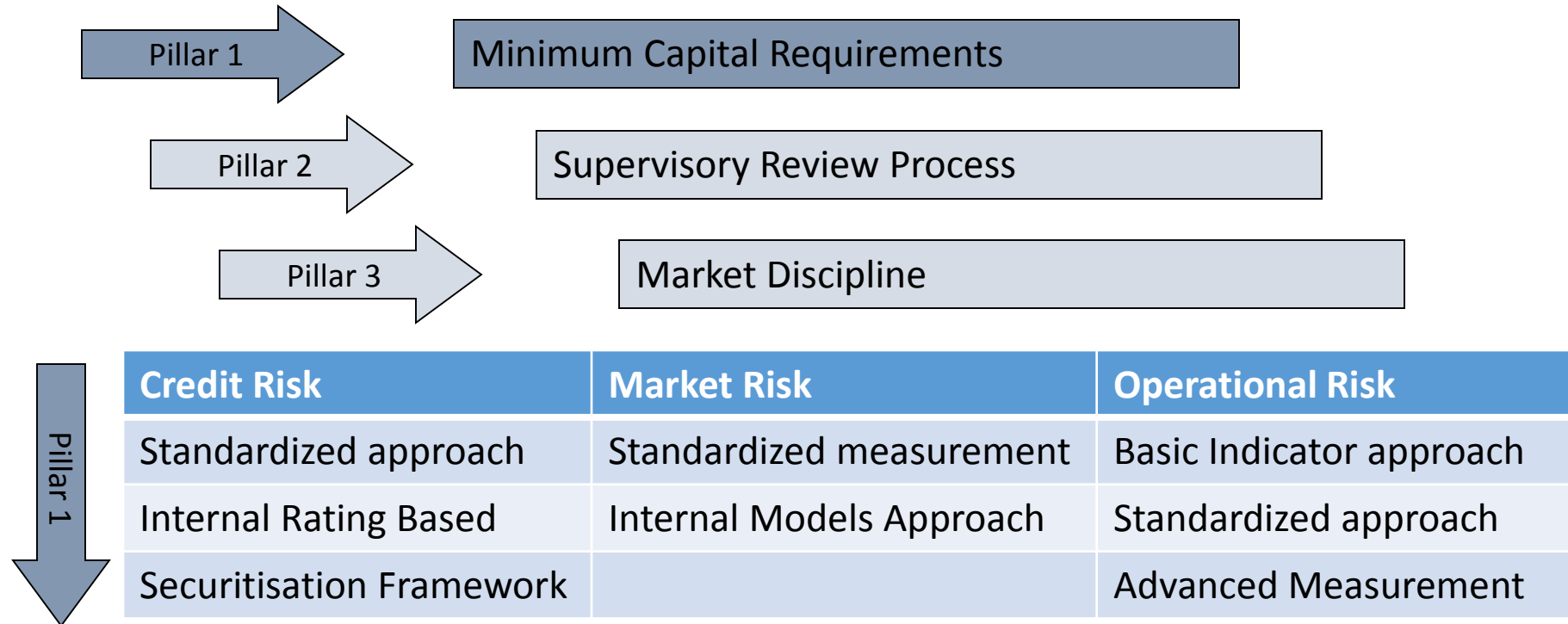
The main weaknesses of Basel I were

- Banks risk-management practices were disregarded
- Few risk weight for assets were set by regulators (0%, 10%, 20%, 50%, 100%)
- Only credit and market risks were covered
- Portfolio diversification was disregarded
- Limited acceptance of collateral and guarantees
- Credit risk mitigation new instruments were not included

The need for transition to Basel II

The need of new capital accord	Aims of Basel II
Capital requirement under Basel I were much higher than the level of risks	Enhance financial stability of the banking system
Growing distortion between regulatory and economic capital	Capital coverage in line with bank's risk profile
Growing possibility for capital arbitrage by banks	To cover all important risks
To cover new developments of financial markets (new risks, new risk mitigation factors)	Provide more flexible systems (internal models)

Structure of Basel II, Pillar 1



Under Basel II the Capital Adequacy calculation formula is the following

$$\frac{\text{REG.CAP}}{\text{RWA} + 12.5 * (\text{R}_m + \text{R}_o)} \geq 8\%$$

Structure of Basel II, Pillar 2



The supervisory review process is intended not only to ensure that banks have adequate capital to support all the risks in their business, but also to encourage banks to develop and use better risk management techniques in monitoring and managing their risks.

The Basel Committee has identified four key principles of supervisory review:

Principle 1: Banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels.

Principle 2: Supervisors should review and evaluate banks' internal capital adequacy assessments and strategies, as well as their ability to monitor and ensure their compliance with regulatory capital ratios. Supervisors should take appropriate supervisory action if they are not satisfied with the result of this process.

Structure of Basel II, Pillar 2



Principle 3: Supervisors should expect banks to operate above the minimum regulatory capital ratios and should have the ability to require banks to hold capital in excess of the minimum.

Principle 4: Supervisors should seek to intervene at an early stage to prevent capital from falling below the minimum levels required to support the risk characteristics of a particular bank and should require rapid remedial action if capital is not maintained or restored.

Structure of Basel II, Pillar 3



I. General Considerations

- Disclosure requirements
- Guiding principles
- Achieving appropriate disclosure
- Interaction with accounting disclosures
- Materiality
- Frequency
- Proprietary and confidential information

II. The disclosure requirements

- General Disclosure requirements
- Scope of application
- Capital
- Risk exposure and assessment

G20 Financial Regulatory Reform agenda after the crisis ...

- Following the global financial crisis international authorities have worked out a range of regulatory reforms aimed at avoiding the circumstances that could lead to the crisis in the future.
- These reforms have been coordinated at the Financial Stability Board (established in April 2009) and G20, and designed by the relevant Standard Setting Bodies and authorized FSB working groups.
- The reforms that apply to banks include the new regulations by Basel Committee on Banking Supervision (BCBS), the FSB reforms on Systemically Important Financial Institutions (SIFIs) and new Bank Resolution Regimes.

BCBS, introduction of Basel III

- In December 2010 the BCBS issued the Basel III framework, a comprehensive set of reform measures to strengthen the regulation, supervision and risk management of the banking sector. These measures aimed to improve the banking sector's ability to absorb shocks arising from financial and economic stress, improve risk management and governance, and strengthen banks' transparency and disclosures.
- The Basel III involve two dimensions:
 - **bank-level** (or microprudential regulation), which help raises the resilience of individual banking institutions to periods of stress.
 - **macroprudential level**, the system wide risks that can build up across the banking sector as well as the procyclical amplification of these risks over time.
- And covers two main components:
 - Strengthening the **global capital framework**, based on the three pillars of the Basel II
 - Introducing a **global liquidity standard**

BCBS, Basel III – Global Capital Framework

- The global capital framework includes the Basel III capital ratio, the Basel 2.5 reform, the capital conservation buffer, countercyclical buffer and the leverage ratio.

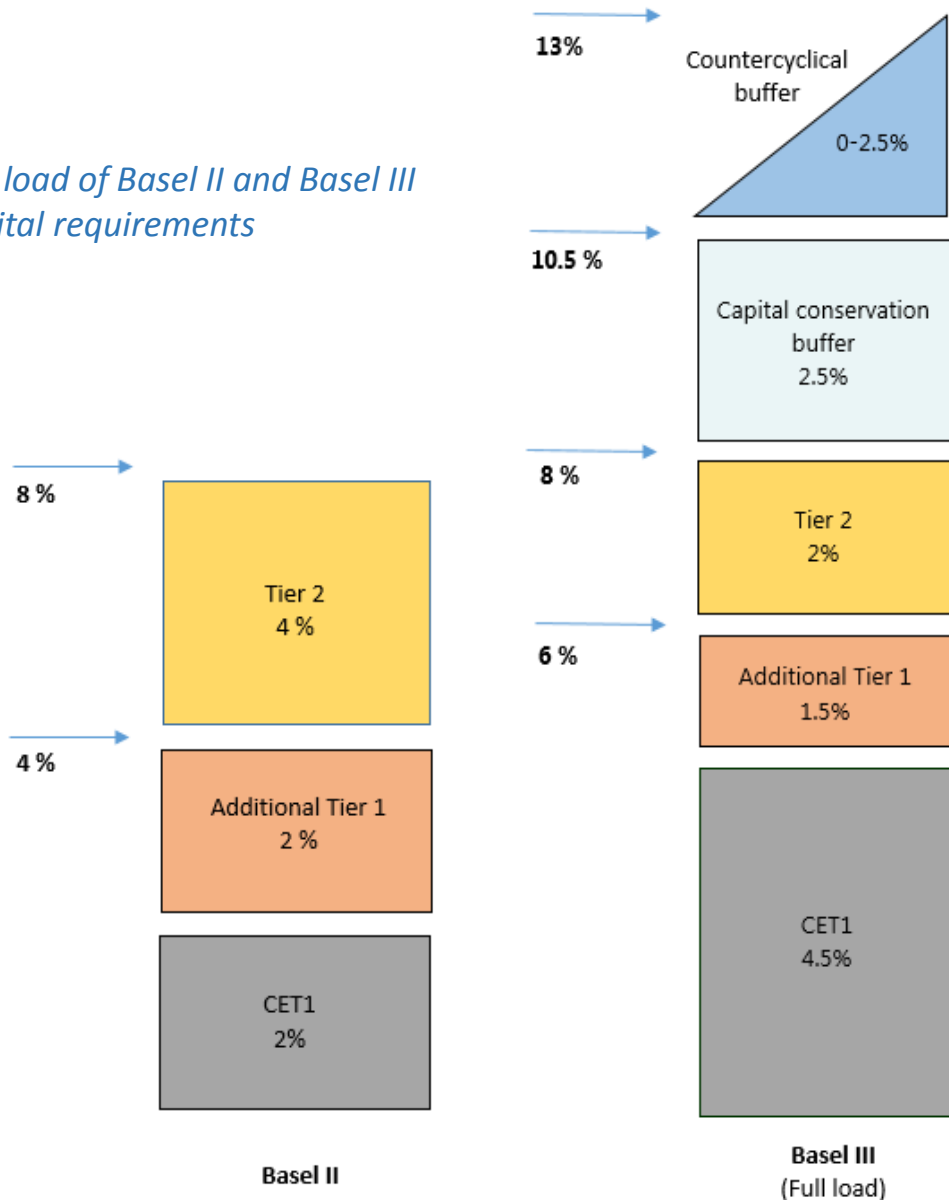
- 1. Quality of capital.** The definition of eligible capital instruments became stricter, innovative hybrid capital instruments with a previous limit of 15% of Tier 1 capital must be phased out and all capital instruments must fully absorb losses (at the discretion of the relevant authority – write-off or conversion to common shares if the bank is judged to be non-viable).
- 2. Quantity of capital.** The minimum for Common Equity Tier 1 (CET1) is raised to 4.5% of risk-weighted assets, in comparison with minimum 2% under Basel II. Minimum Tier 1 ratio is increased from 4% of RWA to 6%.
- 3. Measurement on markets risk.** Risk-weights for assets were also modified earlier in 2009 with Basel2.5 and later in 2016 to improve measurement on markets risk. Before the financial crisis, there was regulatory arbitrage between the banking and trading books, as well as between on- and off-balance sheet exposures. Therefore, Basel2.5 aimed to even the capital charges between instruments held in each of the books.

BCBS, Basel III – Global Capital Framework

4. **Capital conservation buffer.** Comprising CET1 of 2.5% of risk-weighted assets, bringing the total common equity standard to 7%. Banks will be subject to constraints on discretionary earnings distributions (e.g. dividends, share buybacks, bonus payments) whenever this buffer is drawn down, and the constraints become more severe the closer capital ratio approaches the minimum requirement.
5. **Countercyclical buffer.** Imposed within a range of 0-2.5% comprising CET1 (or other fully loss absorbing capital), that aims to ensure that banking sector capital requirements take account of the macro-financial environment. This ratio will be deployed when excess aggregate credit growth is judged to be associated with a build-up of system-wide risk. BCBS provided a common reference for the activation of the buffer using the deviation of credit-to-GDP ratio from its long-term trend, but it recognized that a mechanistic implementation of this buffer may not be the best approach for emerging countries.
6. **Leverage Ratio.** A non-risk-based leverage ratio that includes off-balance sheet exposures will serve as a backstop to the risk-based capital requirement. Also helps contain system wide build up of leverage. The measure is intended to be a supplementary measure and therefore is calibrated at a moderate 3%. The transition to adopt the leverage ratio started in 2011 and must be fully adopted by 2018.

BCBS, Basel III - Global Capital Framework

Full load of Basel II and Basel III capital requirements



- The capital framework has a long phase-in period to limit the impact of the new requirements on lending to the real economy.
- The risk-based capital requirements will be phased in between January 1 2013 (capital conservation and countercyclical capital buffers starting January 1 2016) and January 1 2019.
- The transition to adopt the leverage ratio started in 2011 and will be migrated to minimum requirement by 2018.
- Capital instruments that no longer qualify for regulatory capital will be phased out over a 10-year period beginning 2013.
- Also worth mentioning that recently the BCBS started the revision of the Standardized Approach for assessing capital requirements for credit risk under its Basel II framework. The BCBS seeks to substantially improve the standardized approach by reducing reliance on external credit ratings; increasing risk sensitivity; reducing national discretions and enhancing comparability of capital requirements across banks. The second public consultation concluded in March 2016 and the BCBS is currently working on the final version.



Basel III phase-in arrangements

(All dates are as of 1 January)

Phases		2013	2014	2015	2016	2017	2018	2019	
Capital	Leverage Ratio	Parallel run 1 Jan 2013 – 1 Jan 2017 Disclosure starts 1 Jan 2015				Migration to Pillar 1			
	Minimum Common Equity Capital Ratio	3.5%	4.0%	4.5%				4.5%	
	Capital Conservation Buffer				0.625%	1.25%	1.875%	2.5%	
	Minimum common equity plus capital conservation buffer	3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	7.0%	
	Phase-in of deductions from CET1*		20%	40%	60%	80%	100%	100%	
	Minimum Tier 1 Capital	4.5%	5.5%	6.0%				6.0%	
	Minimum Total Capital			8.0%				8.0%	
	Minimum Total Capital plus conservation buffer		8.0%		8.625%	9.25%	9.875%	10.5%	
	Capital instruments that no longer qualify as non-core Tier 1 capital or Tier 2 capital		Phased out over 10 year horizon beginning 2013						
Liquidity	Liquidity coverage ratio – minimum requirement			60%	70%	80%	90%	100%	
	Net stable funding ratio						Introduce minimum standard		

* Including amounts exceeding the limit for deferred tax assets (DTAs), mortgage servicing rights (MSRs) and financials.

-- transition periods

BCBS, Basel III – Global Liquidity Standard

- 1. Liquidity coverage ratio (LCR).** The liquidity coverage ratio seeks that banks are able to meet liquidity demands under severe stress. The LCR was created to ensure that banks have enough unencumbered high-quality liquid assets to cover net cash outflows in a 30-day period under a significantly severe liquidity stress scenario. The range of assets eligible as HQLA was expanded in 2013 and the run-off rates of various sources of funding were significantly reduced. This expansion allows authorities to add certain assets to the HQLA at their discretion as long as those assets do not comprise more than 40% of the overall HQLA after haircuts. The LCR has phased in starting January 1 2015 at 60% and increased by 10 percentage points per year to reach 100% in 2019.
- 2. The Net Stable Funding Ratio (NSFR).** The NSFR seeks to ensure banks' long-term assets are funded by adequate stable funding over a one-year period in an extended firm-specific stress scenario. Therefore, the NSFR is defined as the amount of available stable funding, which is the portion of capital and liabilities expected to be reliable over one year, relative to the amount of required stable funding. The NSFR will become a minimum standard by 1 January 2018 and should be equal to at least 100% on an ongoing basis.

Basel Committee on Banking Supervision reforms - Basel III

Strengthens microprudential regulation and supervision, and adds a macroprudential overlay that includes capital buffers.

Capital					Liquidity	
Pillar 1			Pillar 2	Pillar 3		
Capital	Risk coverage	Containing leverage	Risk management and supervision	Market discipline		
All Banks	<p>Quality and level of capital Greater focus on common equity. The minimum will be raised to 4.5% of risk-weighted assets, after deductions.</p> <p>Capital loss absorption at the point of non-viability Contractual terms of capital instruments will include a clause that allows – at the discretion of the relevant authority – write-off or conversion to common shares if the bank is judged to be non-viable. This principle increases the contribution of the private sector to resolving future banking crises and thereby reduces moral hazard.</p> <p>Capital conservation buffer Comprising common equity of 2.5% of risk-weighted assets, bringing the total common equity standard to 7%. Constraint on a bank's discretionary distributions will be imposed when banks fall into the buffer range.</p> <p>Countercyclical buffer Imposed within a range of 0-2.5% comprising common equity, when authorities judge credit growth is resulting in an unacceptable build up of systematic risk.</p>	<p>Securitisations Strengthens the capital treatment for certain complex securitisations. Requires banks to conduct more rigorous credit analyses of externally rated securitisation exposures.</p> <p>Trading book Significantly higher capital for trading and derivatives activities, as well as complex securitisations held in the trading book. Introduction of a stressed value-at-risk framework to help mitigate procyclicality. A capital charge for incremental risk that estimates the default and migration risks of unsecuritised credit products and takes liquidity into account.</p> <p>Counterparty credit risk Substantial strengthening of the counterparty credit risk framework. Includes: more stringent requirements for measuring exposure; capital incentives for banks to use central counterparties for derivatives; and higher capital for inter-financial sector exposures.</p> <p>Bank exposures to central counterparties (CCPs) The Committee has proposed that trade exposures to a qualifying CCP will receive a 2% risk weight and default fund exposures to a qualifying CCP will be capitalised according to a risk-based method that consistently and simply estimates risk arising from such default fund.</p>	<p>Leverage ratio A non-risk-based leverage ratio that includes off-balance sheet exposures will serve as a backstop to the risk-based capital requirement. Also helps contain system wide build up of leverage.</p>	<p>Supplemental Pillar 2 requirements. Address firm-wide governance and risk management; capturing the risk of off-balance sheet exposures and securitisation activities; managing risk concentrations; providing incentives for banks to better manage risk and returns over the long term; sound compensation practices; valuation practices; stress testing; accounting standards for financial instruments; corporate governance; and supervisory colleges.</p>	<p>Revised Pillar 3 disclosures requirements The requirements introduced relate to securitisation exposures and sponsorship of off-balance sheet vehicles. Enhanced disclosures on the detail of the components of regulatory capital and their reconciliation to the reported accounts will be required, including a comprehensive explanation of how a bank calculates its regulatory capital ratios.</p>	<p>Global liquidity standard and supervisory monitoring</p> <p>Liquidity coverage ratio The liquidity coverage ratio (LCR) will require banks to have sufficient high-quality liquid assets to withstand a 30-day stressed funding scenario that is specified by supervisors.</p> <p>Net stable funding ratio The net stable funding ratio (NSFR) is a longer-term structural ratio designed to address liquidity mismatches. It covers the entire balance sheet and provides incentives for banks to use stable sources of funding.</p> <p>Principles for Sound Liquidity Risk Management and Supervision The Committee's 2008 guidance <i>Principles for Sound Liquidity Risk Management and Supervision</i> takes account of lessons learned during the crisis and is based on a fundamental review of sound practices for managing liquidity risk in banking organisations.</p> <p>Supervisory monitoring The liquidity framework includes a common set of monitoring metrics to assist supervisors in identifying and analysing liquidity risk trends at both the bank and system-wide level.</p>
	SIFIs	<p>In addition to meeting the Basel III requirements, global systemically important financial institutions (SIFIs) must have higher loss absorbency capacity to reflect the greater risks that they pose to the financial system. The Committee has developed a methodology that includes both quantitative indicators and qualitative elements to identify global systemically important banks (SIBs). The additional loss absorbency requirements are to be met with a progressive Common Equity Tier 1 (CET1) capital requirement ranging from 1% to 2.5%, depending on a bank's systemic importance. For banks facing the highest SIB surcharge, an additional loss absorbency of 1% could be applied as a disincentive to increase materially their global systemic importance in the future. A consultative document was published in cooperation with the Financial Stability Board, which is coordinating the overall set of measures to reduce the moral hazard posed by global SIFIs.</p>				

Overview of jurisdictional assessments

- Jurisdictional assessments review the extent to which domestic regulations in each member jurisdiction are aligned with the minimum regulatory standards agreed by the Committee.
- 28 jurisdictions are covering 90% of the world's banking assets

Overview of jurisdictional assessments					
Status	Jurisdiction	Publication date of assessment	Overall assessment grade		
Risk-based capital standards	Japan	Oct 2012/Dec 2016	Compliant		
	Singapore	Mar 2013	Compliant		
	Switzerland	Jun 2013	Compliant		
	China	Sep 2013	Compliant		
	Brazil	Dec 2013	Compliant		
	Australia	Mar 2014	Compliant		
	Canada	Jun 2014	Compliant		
	European Union*	Dec 2014	Compliant		Materially non-compliant
	United States	Dec 2014	Compliant	Largely compliant	
	Hong Kong	Mar 2015	Compliant		
	Mexico	Mar 2015	Compliant		
	India	Jun 2015	Compliant		
	South Africa	Jun 2015	Compliant		
	Saudi Arabia	Sep 2015	Compliant		
	Russia	Mar 2016	Compliant		
	Turkey	Mar 2016	Compliant		
	Argentina	Sep 2016	Compliant		
Korea	Sep 2016	Compliant	Largely compliant		
Indonesia	Dec 2016	Compliant	Largely compliant		
Liquidity (LCR)	Hong Kong	Mar 2015	Compliant		
	Mexico	Mar 2015	Compliant		
	India	Jun 2015	Compliant	Largely compliant	
	South Africa	Jun 2015	Compliant		
	Saudi Arabia	Sep 2015	Compliant	Largely compliant	
	Russia	Mar 2016	Compliant		
	Turkey	Mar 2016	Compliant		
	Argentina	Sep 2016	Compliant		
	Korea	Sep 2016	Compliant		
	Indonesia	Dec 2016	Compliant		
	Japan	Dec 2016	Compliant		
	Singapore	Dec 2016	Compliant		
G-SIB / D-SIB requirements	China	Jun 2016	Compliant		
	European Union*	Jun 2016	Compliant		
	Japan	Jun 2016	Compliant		
	Switzerland	Jun 2016	Compliant		
	United States	Jun 2016	Compliant		

* Nine EU Member States participate in the Basel Committee: Belgium, France, Germany, Italy, Luxembourg, the Netherlands, Spain, Sweden and the United Kingdom.

BCBS, current improvements to Basel III ...

- Currently, the BCBS is working in various areas to improve existing approaches in the regulations to complete Basel III.

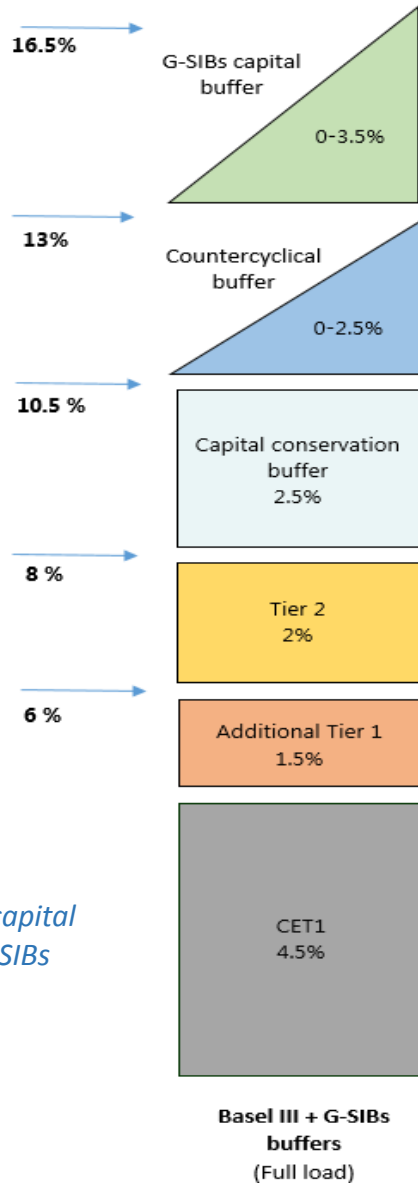
1. **Improvements in IRB.** Changes to IRBs permit banks to use internal models as inputs for determining their regulatory capital requirements for credit risk (subject to certain constraints) to improve comparability and address excessive variability . These constrains are output floors which will prevent banks from using risk estimates in their IRB that are too far below the outputs of a standardized model devised by regulators.
2. BCBS is also developing a **Standardized Measurement Approach (SMA)**, which will provide a single non-model-based method for the estimation of *operational risk* capital and a review of the **Credit Valuation Adjustment** treatment to introduce a new standardized approach for *counterparty risk*.
3. In April 2016, the BCBS issued standards for *interest rate risk in the banking book* that provide greater guidance on development of shock and stress scenarios and increased disclosure on the impact of interest rate shocks on their change in economic value of equity.
4. In April 2017, the BCBS issued final guidance on the *Prudential treatment of problem assets - definitions of non-performing exposures and forbearance*.
5. BCBS is also reviewing the regulatory treatment of *sovereign risk* and assessing the *role of stress testing* in the regulatory framework in the light of national developments.

FSB, Reforms on Systemically Important Financial Institutions

- The FSB has been leading the development of a framework to reduce the moral hazard posed by the so-called systemically important financial institutions (SIFIs)

- 1. G-SIBs designation.** In the case of banks, the terminology used for SIFIs is Global Systemically Important Banks (G-SIBs) . Currently, 30 banks have been designated as G-SIBs with the list to be updated annually. The methodology developed to select these banks is reviewed every three years and it is based on five categories of indicators: ***size, interconnectedness, lack of readily available substitutes or financial institution infrastructure, cross-jurisdictional activity and complexity***. In 2011, G20 members asked the FSB to extend, in consultation with the Basel Committee, the G-SIBs framework to domestic systemically important banks (D-SIBs). This framework ensures compatibility and is designed as a minimum framework that allows national discretion.
- 2. G-SIBs are subject to higher capital buffer requirements.** The higher capital buffer requirements are to be met with CET1 capital ranging from 1% to 2.5% of RWA depending on a bank's systemic importance. These buffer requirements began to be phased in from 1 January 2016 for G-SIBs that were identified in November 2014 (with full implementation by 1 January 2019).
- 3. The BCBS is also considering to introduce a higher Basel III leverage ratio requirement for G-SIBs** to maintain the relative roles of the risk-based ratio and the leverage ratio.

FSB, G-SIBs buffers



Full load of Basel III capital requirements and G-SIBs buffers

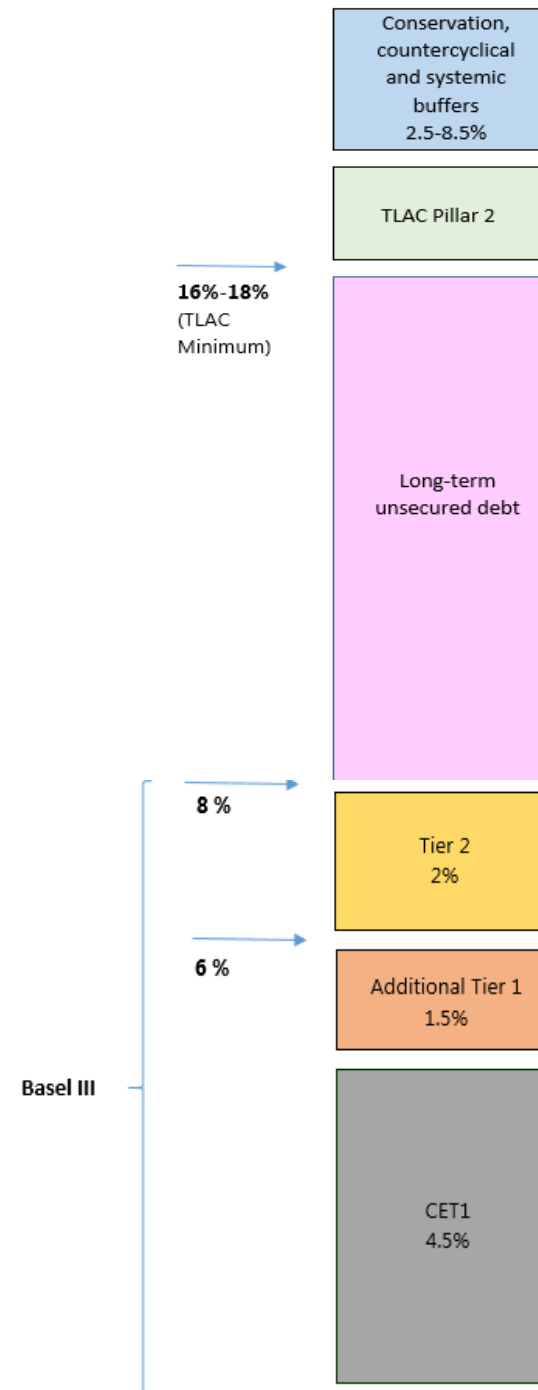
G-SIBs as of November 2016⁹ allocated to buckets corresponding to required levels of additional capital buffers

Bucket ¹⁰	G-SIBs in alphabetical order within each bucket
5 (3.5%)	(Empty)
4 (2.5%)	Citigroup JP Morgan Chase
3 (2.0%)	Bank of America BNP Paribas Deutsche Bank HSBC
2 (1.5%)	Barclays Credit Suisse Goldman Sachs Industrial and Commercial Bank of China Limited Mitsubishi UFJ FG Wells Fargo
1 (1.0%)	Agricultural Bank of China Bank of China Bank of New York Mellon China Construction Bank Groupe BPCE Groupe Cr�dit Agricole ING Bank Mizuho FG Morgan Stanley Nordea Royal Bank of Scotland Santander Soci�t� G�n�rale Standard Chartered State Street Sumitomo Mitsui FG UBS Unicredit Group

FSB, G-SIBs Total Loss-Absorbing Capacity

Total Loss-Absorbing Capacity (TLAC). As of November 2014, the SIFI framework was expanded to include TLAC requirements to provide home and host authorities with confidence that G-SIBs have sufficient capacity to absorb losses, both before and during resolution, and enable resolution authorities to implement a resolution strategy (by using bail-in tool) that minimizes any impact on financial stability and ensures the continuity of critical economic functions.

- Minimum TLAC must be at least 16% of the resolution group's RWAs and 6% of the Basel III leverage ratio denominator as from 1 January 2019 .
- As from 1 January 2022, TLAC RWA Minimum must be at least 18% and the TLAC LRE Minimum at least 6.75%.
- For firms currently headquartered in an emerging market the deadlines have been extended to 1 January 2025 and 1 January 2028.
- This requirement does not include any applicable regulatory capital (Basel III) buffers, which must be met in addition to the TLAC RWA Minimum.
- In addition, the supervisor has the right to increase TLAC over the minimum (i.e. TLAC Pillar 2).



FSB, Resolution regimes for G-SIBs

- To ensure all systemic financial institutions can be orderly resolved, the FSB issued the “Key Attributes of Effective Resolution Regimes for Financial Institutions” (the Key Attributes or KAs) in October 2011.

- 1. Key Attributes.** KAs not only aim to make feasible the resolution of financial institutions without severe systemic disruption and without exposing taxpayers to loss, but also aim to protect vital economic functions of these financial institutions to the whole economy. In addition, they introduce mechanisms which make it possible impose losses on shareholders and unsecured creditors in a manner that respects the hierarchy of claims in liquidation (by bail-in of TLAC).
- 2. Set-up of Resolution Authority.** Resolution authorities should be able, among other things, to remove and replace the senior management and directors, appoint an administrator to take control of and manage the affected firm, operate and resolve the firm in combination with the timely payout or transfer of insured deposits, ensure continuity of essential services and functions, override rights of shareholders, transfer or sell assets and liabilities to a third party, establish a temporary bridge institution, establish a separate asset management vehicle and carry out bail-in.
- 3. Recovery and Resolution Plans (RRPs).** FSB framework also contains resolvability requirements and higher supervisory expectations. The resolvability requirements include group-wide resolution planning and regular resolvability assessments. G-SIBs need to draw up RRP to be presented to their home regulators. G-SIBs are required to meet higher supervisory expectations for risk management functions, data aggregation capabilities, risk governance and internal controls. G-SIBs newly designated or in subsequent annual updates will need to meet these higher expectations within three years of the designation.

FSB, Resolution regimes for G-SIBs

4. **Appropriate hierarchy of claims and effective funding mechanisms.** Resolution powers should be exercised in a way that respects the hierarchy of claims while providing flexibility to depart from the general principle of equal (pari passu) treatment of creditors of the same class. In addition, creditors should have a right to compensation where they do not receive at a minimum what they would have received in a liquidation ("no creditor worse off than in liquidation" safeguard). Moreover, jurisdictions should have in place privately-financed deposit insurance and/or resolution funds, or a funding mechanism with ex post recovery from the industry of the costs of providing temporary financing to facilitate the resolution of the G-SIBs.
5. **Setup institution-specific Crisis Management Groups (CMGs)** based on Cross border Cooperation Agreements (COAGs) which will include the home authority as well as important ("material") host authorities. The CMGs should be maintained with the objective of enhancing preparedness for, and facilitating the management and resolution of a cross-border financial crisis affecting a bank . The CMGs are required to coordinate cross-border RRPs and conduct resolvability assessments. Furthermore, home authorities of G-SIBs are obliged to set out the process for cooperation and information sharing with any host authorities that are not represented in the CMG but where local operations of a G-SIBs are systemically important to the local financial system.
6. **Review of Deposit Insurance Systems.** The FSB launched a review of deposit insurance systems in FSB member jurisdictions because of the importance they played in the last global financial crisis. The peer review took the Core Principles for Effective Deposit Insurance Systems developed by the International Association of Deposit Insurers (IADI) in 2009 as benchmark.

Thank you!

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