

4. Main Trends in International Banking Regulation

4.1. Basel II

4.1.1. Introduction

Origins of Basel II

■ Basel I

- **Published in 1988** to provide uniform rules in the calculation of own funds of FIs based in the countries belonging to the BCBS (initially the G10, currently Germany, Belgium, Canada, Spain, USA, France, Netherlands, Italy, Japan, Luxemburg, UK, Sweden and Switzerland, with the EU Commission and the ECB as observers), having been **implemented in over 100 countries (including the EU, with directives published since 1989)**.
- **These rules imposed a minimum own funds' requirement of 8% of the assets, weighted by their credit risk level, according to the exposure class:**
 - Cash and sovereign debt of OECD countries - 0%
 - Credit to banks and local public entities - 20%, with residual maturity ≤ 1 year
 - Residential mortgage loans - 50%, if LTV $\leq 75\%$
 - Other assets - 100 %

Origins of Basel II

■ Basel I

- As Japanese banks had much lower capital levels than their US and European counterparts, they had to increase their capital levels, helping to trigger the Japanese banking crisis at the end of the 80s.

- Basel I ignored all other risks, besides credit risk.



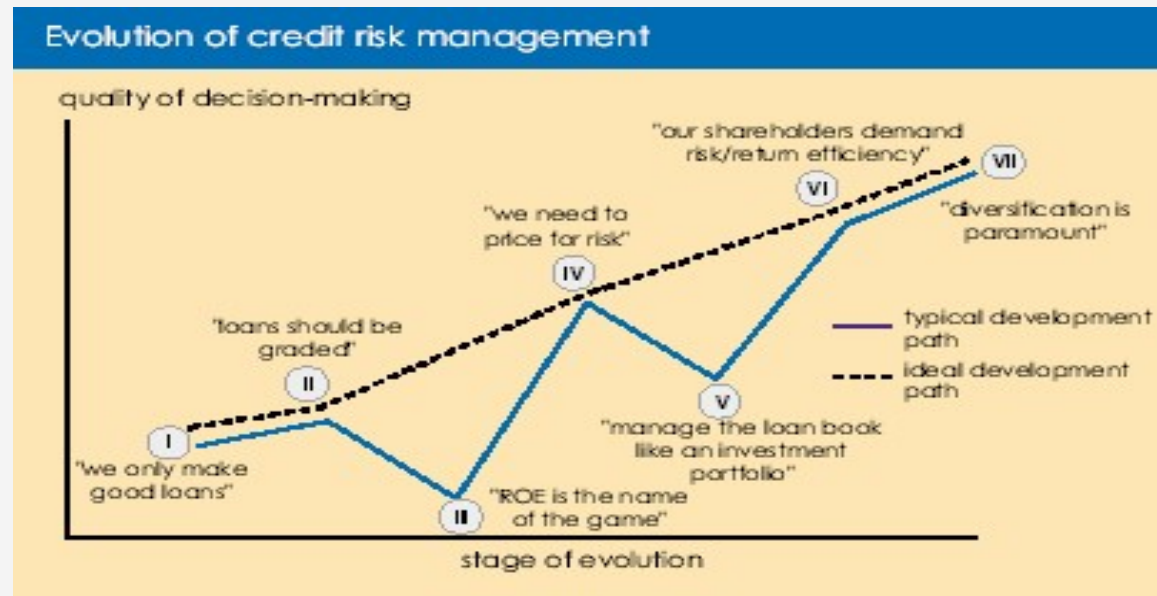
- The agreement was revised in 1996, to incorporate market risk (trading and currency portfolios), allowing FIs to use internal models (VaR).

Origins of Basel II

- Development of finance theory towards the application to credit risk of methodologies tested in asset management and option pricing.
- Shortcomings of traditional credit risk models.
- Increase of:
 - **loan portfolios**, demanding more rigorous analysis of risk to minimize losses, pricing and asset securitization;
 - **credit derivatives market**, allowing companies, investors and FI to manage and invest in credit risk.
 - **private debt market**, requiring better estimates of credit risk components, namely for pricing purposes.
 - **number and size of defaults worldwide** (e.g. Barings, LTCM, Russia).

Goals

1. Improvement of capital adequacy rules of banking institutions, in order to bridge the gap between regulatory and economic capital, namely by allowing banks to use internal models.
2. Motivate the adoption of the most modern credit risk analysis methodologies:



Source: E-Risk (1999), "The Seven Stages of Risk Management", www.erisk.com

Main changes

- **2 approaches in the calculation of capital requirements for credit risk:**
 - (i) **Standardized** – corresponds roughly to Basel I, added by the differentiation of capital requirements as a function of the external ratings of counterparties:
 - non-rated companies kept a risk weight of 100%;
 - preferential treatment of mortgage loans was also kept (now with a risk weight of 35%, vis-à-vis 50% before);
 - the differentiation between OECD member countries and others was eliminated.
 - (ii) **IRB** – involves the validation of internal credit risk models for the several portfolios, with these models supplying adequate estimates to PD and LGD (for the corporate segment, there are two IRB sub-approaches – basic and advanced, with the former requiring only the PD estimation).

Main changes

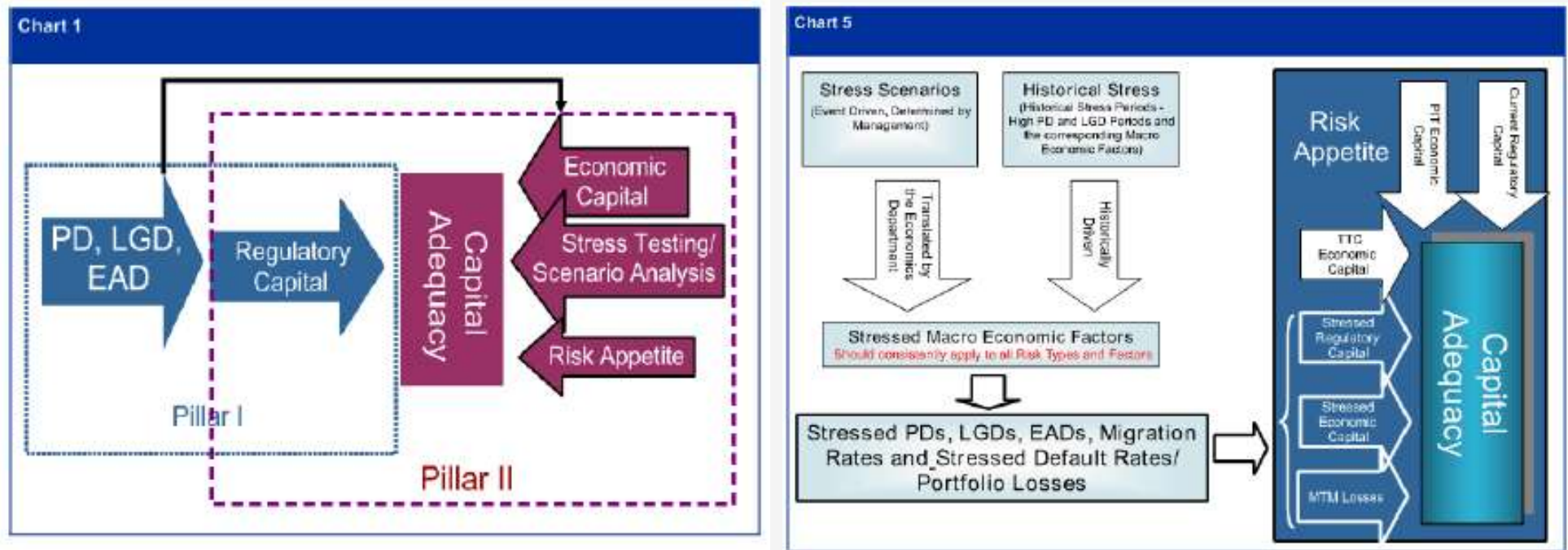
- Better recognition of collaterals in calculating capital requirements
- Capital requirements for operational risk
- 3 Pillars – capital requirements can be increased due to other risks and by supervisory decision.

3 Pillars

- 3 pillars:
 - (i) **Pillar 1** – minimum capital requirements for credit, market and operational risks;
 - (ii) **Pillar 2** – supervisory assessment of capital adequacy in addition to pillar 1 requirements, covering all risks, in order to enhance the link between an institution's risk profile, its risk management and risk mitigation systems, and its capital planning - ICAAP (Internal Capital Adequacy Assessment Process), including stress testing exercises;
 - (iii) **Pillar 3** – market discipline – larger detail in information released publicly (including risk models), namely through a market discipline annual document.

3 Pillars

- The calculation of capital requirements became more comprehensive and subjective with Basel II, namely due to pillar 2, which comprises *stress tests*.



Source: Standard and Poors (2008), "Implications For Capital Management Under Pillar II".

4.1.2. Pillar I

Standardized approach

- Risk weights for sovereigns, banks and non-financial companies (corporate) in Basel II:

	Sovereigns	Banks	Non Financial Companies
AAA to AA	0%	20%	20%
A+ to A-	20%	50%	50%
BBB+ to BBB-	50%	100%/50%	100%
BB+ to B-	100%	100%	100%
<B-	150%	150%	150%
Non-rated	100%	100%/50%	100%

- Ratings below B- => capital requirements >100%

Notes:

Risk weights to regional and local governments and banks may be calculated according two alternative methodologies:

- Risk weights immediately above the one applicable to the respective central government (100% if non-rated or central banks from countries rated between BB+ and B-);

- Specific Risk weights as a function of the rating (20%, 50%, 100% and 150%, with exposures to non-rated counterparties assuming a risk weight of 50%).

Since Jan19, at national discretion, a lower risk weight may be applied to banks' exposures to their sovereign (or central bank) of incorporation denominated in domestic currency and funded in that currency. Where this discretion is exercised, other national supervisory authorities may also permit their banks to apply the same risk weight to domestic currency exposures to this sovereign (or central bank) funded in that currency.

Standardized approach

- Some changes in these coefficients were done later with Basel III, with entry into force in 1.1.2022, trying to decrease excessive variability of RWAs (e.g. BCBS (2017), “Basel III: Finalising post-crisis reforms”, Dec.).

Corporate exposures:

External rating of counterparty	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to BB-	Below BB-	Unrated
"Base" risk weight	20%	50%	75%	100%	150%	100%

100% previously

- Corporate SME (annual consolidated sales \leq 50M€ for the most recent year) – risk weight = 85%

Interbank exposures:

External rating of counterparty	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-
"Base" risk weight	20%	30%	50%	100%	150%
Risk weight for short-term exposures	20%	20%	20%	50%	150%

50% previously

Standardized approach

- Banks must perform due diligence to ensure that the external ratings appropriately reflect the creditworthiness of the bank counterparties:
 - If the due diligence reflects higher risk than that implied by the external rating bucket of the exposure, the bank must assign a risk weight at least one bucket higher than the “base” risk weight determined by the external rating.
 - Due diligence analysis must never result in the application of a lower risk weight than that determined by the external rating.

Standardized approach

- For unrated bank exposures, the Standardized Credit Risk Assessment Approach (SCRA) applies.
- SCRA requires bank to classify bank exposures into one of three risk-weight buckets - Grades A, B and C - and assign the corresponding risk weights.

Risk weight table for bank exposures

Standardised Credit Risk Assessment Approach

Table 7

Credit risk assessment of counterparty	Grade A	Grade B	Grade C
"Base" risk weight	40% ¹⁸	75%	150%
Risk weight for short-term exposures	20%	50%	150%

Standardized approach

- **Grade A** - the counterparty bank has adequate capacity to meet their financial commitments in a timely manner, irrespective of the economic cycles and business conditions, having to meet or exceed the minimum regulatory requirements and buffers established by its national supervisor.
- **Grade B** - the counterparty bank meets or exceeds the published minimum regulatory requirements established by its national supervisor, but is subject to substantial credit risk, such as repayment capacities that are dependent on stable or favorable economic or business conditions.

Standardized approach

- **Grade C** - the counterparty bank has material default risks and limited margins of safety, with adverse business, financial, or economic conditions very likely leading to an inability to meet their financial commitments.
 - A bank must classify the exposure into Grade C when the external auditor has issued an adverse audit opinion or has expressed substantial doubt about the counterparty bank's ability to continue as a going concern in its financial statements or audited reports within the previous 12 months.

Standardized approach

- **Specialised lending** - if some or all of the following characteristics are found:
 - The exposure is not related to real estate;
 - The exposure is typically to an entity (often a special purpose vehicle (SPV)) that was created specifically to finance and/or operate physical assets;
 - The borrower has few or no other material assets or activities, and therefore little or no independent capacity to repay the obligation, apart from the income that it receives from the asset(s) being financed; and
 - The terms of the obligation give the lender a substantial degree of control over the asset(s) and the income that it generates.

Standardized approach

■ **Subcategories of Specialised lending:**

- (i) **Project finance** - the lender looks primarily to the revenues generated by a single project, both as the source of repayment and as security for the loan, being usually for large, complex and expensive installations such as power plants, chemical processing plants, mines, transportation infrastructure, environment, media, and telecoms.
- (ii) **Object finance** - funding of the acquisition of equipment (eg ships, aircraft, satellites, railcars, and fleets) where the repayment of the loan is dependent on the cash flows generated by the assets that have been financed and pledged or assigned to the lender;
- (iii) **Commodities finance** - short-term lending to finance reserves, inventories, or receivables of exchange-traded commodities (eg crude oil, metals, or crops), where the loan will be repaid from the proceeds of the sale of the commodity and the borrower has no independent capacity to repay the loan.

Standardized approach

- **Specialised lending – risk weights:**

- Object and commodities finance - 100%;
- Project finance - 130% during the pre-operational phase, 100% during the operational phase, and 80% during the operational phase of projects deemed to be high quality, i.e. able to meet their financial commitments in a timely manner and its ability to do so is assessed to be robust against adverse changes in the economic cycle and business conditions.

Standardized approach

- **Additional conditions to be met by high quality project finance exposures:**
 - (i) the project finance entity is restricted from acting to the detriment of the creditors (e.g. by not being able to issue additional debt without the consent of existing creditors);
 - (ii) The project finance entity has sufficient reserve funds or other financial arrangements to cover the contingency funding and working capital requirements of the project;

Standardized approach

- (iii) The revenues are availability-based or subject to a rate-of-return regulation or take-or-pay contract;
 - (a) Availability-based revenues - once construction is completed, the project finance entity is entitled to payments from its contractual counterparties (eg the government), as long as contract conditions are fulfilled.
 - (b) Availability payments are sized to cover operating and maintenance costs, debt service costs and equity returns as the project finance entity operates the project.
 - (c) Availability payments are not subject to swings in demand, such as traffic levels, and are adjusted typically only for lack of performance or lack of availability of the asset to the public.

Standardized approach

- (iv) The project finance entity's revenue depends on one main counterparty and this main counterparty shall be a central government, PSE or a corporate entity with a risk weight of 80% or lower;
- (v) The contractual provisions governing the exposure to the project finance entity provide for a high degree of protection for creditors in case of a default of the project finance entity;
- (vi) The main counterparty or other counterparties which similarly comply with the eligibility criteria for the main counterparty will protect the creditors from the losses resulting from a termination of the project;
- (vii) All assets and contracts necessary to operate the project have been pledged to the creditors to the extent permitted by applicable law; and
- (viii) Creditors may assume control of the project finance entity in case of its default.

Standardized approach

- Risk weights for commercial real estate in Basel II – 100%.
- Countries with well-developed and long-established markets, mortgages on office and/or multi-purpose commercial premises and/or multi-tenanted commercial premises may have the potential to receive a preferential risk weight of 50% for the tranche of the loan that does not exceed the Min(50% of the market value; 60% of the mortgage lending value of the property securing the loan), subject to the following conditions:
 - (i) losses from commercial real estate lending up to the Min(50% of the market value; 60% of LTV based on mortgage-lending-value) \leq 0.3% of the outstanding loans in any given year;
 - (ii) overall losses from commercial real estate lending \leq 0.5% of the outstanding loans in any given year.

Standardized approach

- Risk weights for commercial real estate, if repayment doesn't depend on cash-flows generated by the property:

	LTV ≤ 60%	LTV > 60%
Risk weight	Min (60%, RW of counterparty)	RW of counterparty

- Risk weights for commercial real estate, if repayment depends on cash-flows generated by the property:

	LTV ≤ 60%	60% < LTV ≤ 80%	LTV > 80%
Risk weight	70%	90%	110%

Source: BCBS (2017), "Basel III: Finalising post-crisis reforms", Dec.

Standardized approach

- Land acquisition, development and construction (ADC) exposures:

risk-weight = 150%, unless the following criteria are met:

- (1) **Finished property**: the property securing the exposure must be fully completed.
 - This requirement does not apply to forest and agricultural land;
 - Subject to national discretion, loans to individuals that are secured by residential property under construction or land upon which residential property would be constructed can be included, provided that:
 - (i) the property is a one-to-four family residential housing unit that will be the primary residence of the borrower and the lending to the individual is not indirectly financing land acquisition, development and construction exposures; or
 - (ii) where the sovereign or PSEs involved have the legal powers and ability to ensure that the property under construction will be finished.

Standardized approach

- (2) **Legal enforceability**: any claim on the property taken must be legally enforceable in all relevant jurisdictions.
- (3) **Claims over the property**: the bank has to hold a first lien over the property.
- (4) **Ability of the borrower to repay**: the borrower must meet the requirements imposed by national supervisors regarding underwriting policies implemented by banks, including the metrics to use, e.g. debt service to income ratio.

Standardized approach

- (5) **Prudent value of property**: the value of the property must not depend on the performance of the borrower and the following conditions have to be met:
- (i) Amount of the loan for the LTV: includes the outstanding loan amount and any undrawn committed amount of the mortgage loan.
 - (ii) Value of the property:
 - the valuation must be appraised independently and conservatively, excluding expectations on price increases.
 - the valuation must be adjusted to take into account the potential for the current market price to be significantly above the value to be sustainable over the life of the loan.
 - national supervisors should provide guidance setting out prudent valuation criteria where such guidance does not already exist under national law.
 - If a market value can be determined, the valuation should not be $>$ the market value.

Standardized approach

- Retail exposures - risk weight = 75%
- Retail exposures definition:
 - (i) revolving credits and lines of credit (including credit cards, charge cards and overdrafts), personal term loans and leases (eg instalment loans, auto loans and leases, student and educational loans, personal finance) and small business facilities and commitments.
 - (ii) exposure \leq 1M€
 - (iii) granularity requirement - aggregated exposure to a counterparty cannot exceed 0.2% of the overall regulatory retail portfolio (unless national supervisors have determined another method to ensure satisfactory diversification of the regulatory retail portfolio).

Standardized approach

- **Risk weights for residential mortgage loans** (after Basel III, which brought a set of several risk weights, instead of the former differentiation between LTV $>$ or $<$ 75%, with risk weights of 75% and 35%, respectively), if repayment doesn't depend on cash-flows generated by the property:

	LTV \leq 50%	50% < LTV \leq 60%	60% < LTV \leq 80%	80% < LTV \leq 90%	90% < LTV \leq 100%	LTV > 100%
Risk weight	20%	25%	30%	40%	50%	70%

- Risk weights for residential mortgage loans if repayment depends on cash-flows generated by the property (riskier assets \Rightarrow higher risk weights):

	LTV \leq 50%	50% < LTV \leq 60%	60% < LTV \leq 80%	80% < LTV \leq 90%	90% < LTV \leq 100%	LTV > 100%
Risk weight	30%	35%	45%	60%	75%	105%

Source: BCBS (2017), "Basel III: Finalising post-crisis reforms", Dec.

IRB Approach

- Basel II allowed banks to estimate Capital Requirements by using **pre-established formulas** in the Agreement, based on the parameters for the expected loss: **$EL = PD \times LGD \times EAD$**
 - PD – Probability of Default
 - LGD – Loss Given Default (or Severity of Loss)
 - EAD – Exposure at Default (the balance sheet value for non-revolving exposures and a % of the credit limit for revolving exposures).
- **Purpose: to ensure that regulatory and economic capital are consistent, reflecting namely the diversification effect of credit portfolios, through lower capital requirements to SME and retail exposures.**

IRB Approach

- To use the pre-established formulas, Basel II allowed banks to use internal models to estimate PD, LGD and EAD.
- For corporate exposures, there are two IRB approaches:
 - **Foundation** – only the PD (and the EAD, for revolving exposures) has to be estimated
 - **Advanced** – PD, LGD and EAD have to be estimated

IRB Approach

- In IRB Foundation, the LGD is pre-defined according to the type of exposure:
 - Loans with receivables as collaterals - 20%
 - Loans with real estate collaterals - 20%
 - Loans with other eligible physical collaterals – 25%
 - Non-collateralized loans to non-financial companies – 40%
 - Subordinated assets – 75%
 - Other assets - 45%

IRB Approach

- The LGD applicable to a collateralized transaction (LGD*) must be calculated as the exposure weighted average of the LGD applicable to the unsecured part of an exposure (LGD_U) and the LGD applicable to the collateralized part of an exposure (LGD_S):

$$LGD^* = LGD_U \cdot \frac{E_U}{E \cdot (1 + H_E)} + LGD_S \cdot \frac{E_S}{E \cdot (1 + H_E)}$$

E - current value of the exposure (in the case of securities lent, the exposure value has to be increased by applying the appropriate haircuts - H_E).

E_S – collateralized part of the exposure, i.e. the current value of the collateral received after the application of the haircut applicable for the type of collateral (H_C) and for any currency mismatches between the exposure and the collateral. E_S is capped at the value of $E \cdot (1 + E_H)$.

E_U – uncollateralized part of the exposure.

IRB Approach

- For different types of collaterals:

$$LGD^* = LGD_U \cdot \frac{E_U}{E \cdot (1 + H_E)} + \sum_i LGD_{Si} \cdot \frac{E_{Si}}{E \cdot (1 + H_E)}$$

E_{Si} – the current value of the collateral i received after the application of the haircut applicable for that type of collateral (H_c)

LGD_{Si} – LGD applicable to that type of collateral (H_c)

IRB Approach

- Haircuts (H_C):

Type of collateral	LGD _s	Haircut
Eligible financial collateral	0%	As determined by the haircuts that apply in the comprehensive formula of the standardised approach for credit risk (paragraph 163 for jurisdictions that allow the use of ratings for regulatory purposes and paragraph 164 for jurisdictions that do not). The haircuts have to be adjusted for different holding periods and non-daily remargining or revaluation according to paragraphs 169 to 172 of the standardised approach.
Eligible receivables	20%	40%
Eligible residential real estate / commercial real estate	20%	40%
Other eligible physical collateral	25%	40%
Ineligible collateral	N/A	100%

IRB Approach

Floors for LGD in IRB Advanced:

LGD parameter floors		
	LGD	
	Unsecured	Secured
Corporate	25%	Varying by collateral type: <ul style="list-style-type: none"> • 0% financial • 10% receivables • 10% commercial or residential real estate • 15% other physical

- The LGD floor for a partially secured exposure is calculated as a weighted average of the unsecured LGD floor for the unsecured portion and the secured LGD floor for the secured portion:

$$\text{Floor} = \text{LGD}_{U \text{ floor}} \cdot \frac{E_U}{E \cdot (1 + H_c)} + \text{LGD}_{S \text{ floor}} \cdot \frac{E_S}{E \cdot (1 + H_c)}$$

PDs

- PDs are usually estimated by econometric models, based on the FI's credit experience or external databases representative of that experience.
- For non-financial companies 3 techniques are usually employed:
 - *middle market* (non-listed medium to large size companies) – models relate past loan behavior to financial ratios.
 - **listed companies** – structural models based on stock prices, also using data from financial statements (for a shadow PD or to get data on the liabilities)
 - **small business** – similar to middle market, but including variables close to those considered in credit risk models for individuals.
- Given the difficulty in assessing *start-ups*, holdings, real estate brokers and non-profit organizations by quantitative models, credit risk assessment of these entities are usually done manually, by specialized analysts.

PDs

- **Overrides:**
 - (i) **Credit analysts are allowed to override internal ratings** in the corporate segment, following the qualitative assessment of management, business perspectives or quantitative information still to be reflected on financial statements.
 - (ii) This information may result from the customer relationship with the bank (e.g. sudden increase in the utilization of credit lines), or from external sources (e.g. commercial information, central credit risk database).
 - (iii) Overrides are much more limited for individual loans, as relevant information is scarcer than for companies.

LGD

- Different LGDs are usually associated with different collateral types or debt seniority.
- However, LGD may also be considered as correlated to PD.
- Therefore, the PD estimation must be independent from LGD, but the reverse doesn't tend to occur.

Exposure classes for IRB

- Corporate – includes specialized credit:
 - (i) project finance - cash-flows generated by a single project;
 - (ii) object finance - cash-flows generated by a single asset;
 - (iii) commodity finance - cash-flows generated by the sale of goods whose acquisition is financed;
 - (iv) income-producing real estate
 - (v) high-volatility commercial real estate
- Sovereign
- Banks

Exposure classes for IRB

- Retail
 - (i) Residential Mortgage Loans
 - (ii) Revolving Loans:
 - credit lines
 - credit cards
 - overdrafts
 - (iii) Other:
 - Small business with exposure $\leq 1\text{M€}$
 - Consumer loans.

Corporate

Risk-weights:

$$\text{Correlation (R)} = 0.12 \cdot \frac{(1 - e^{-50 \cdot PD})}{(1 - e^{-50})} + 0.24 \cdot \left(1 - \frac{(1 - e^{-50 \cdot PD})}{(1 - e^{-50})} \right)$$

$$\text{Maturity adjustment (b)} = [0.11852 - 0.05478 \cdot \ln(PD)]^2$$

$$\text{Capital requirement}^{13,14}(K) = \left[LGD \cdot N \left[\frac{G(PD)}{\sqrt{1-R}} + \sqrt{\frac{R}{1-R}} \cdot G(0.999) \right] - PD \cdot LGD \right] \cdot \frac{(1 + (M - 2.5) \cdot b)}{(1 - 1.5 \cdot b)}$$

$$\text{Risk-weighted assets (RWA)} = K \cdot 12.5 \cdot EAD$$

being $N[x]$ the standardized normal distribution value in x , $G(z)$ the inverse of $N[x]$, R the correlation coefficient between exposures and M the maturity (in years).

Size adjustment for corporates:

$$\text{Correlation (R)} = 0.12 \cdot \frac{(1 - e^{-50 \cdot PD})}{(1 - e^{-50})} + 0.24 \cdot \left(1 - \frac{(1 - e^{-50 \cdot PD})}{(1 - e^{-50})} \right) - 0.04 \cdot \left(1 - \frac{(S - 5)}{45} \right)$$

Banks

- Risk weights similar to Corporate, but with a multiplier of 1.25 applied to the correlation parameter:

$$\text{Correlation (R_FI)} = 1.25 \cdot \left[0.12 \cdot \frac{(1 - e^{-50 \cdot PD})}{(1 - e^{-50})} + 0.24 \cdot \left(1 - \frac{(1 - e^{-50 \cdot PD})}{(1 - e^{-50})} \right) \right]$$

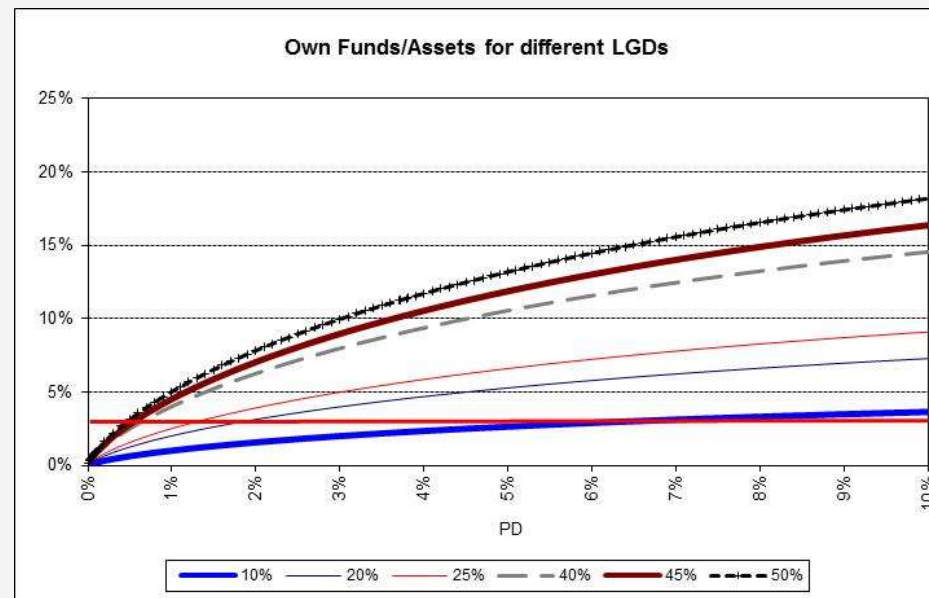
Residential Mortgages

Risk-weights:

Correlation (R) = 0.15

$$\text{Capital requirement (K)} = \left[\text{LGD} \cdot N \left[\frac{G(PD)}{\sqrt{1-R}} + \sqrt{\frac{R}{1-R}} \cdot G(0.999) \right] - PD \cdot \text{LGD} \right]$$

Risk-weighted assets = $K \cdot 12.5 \cdot \text{EAD}$



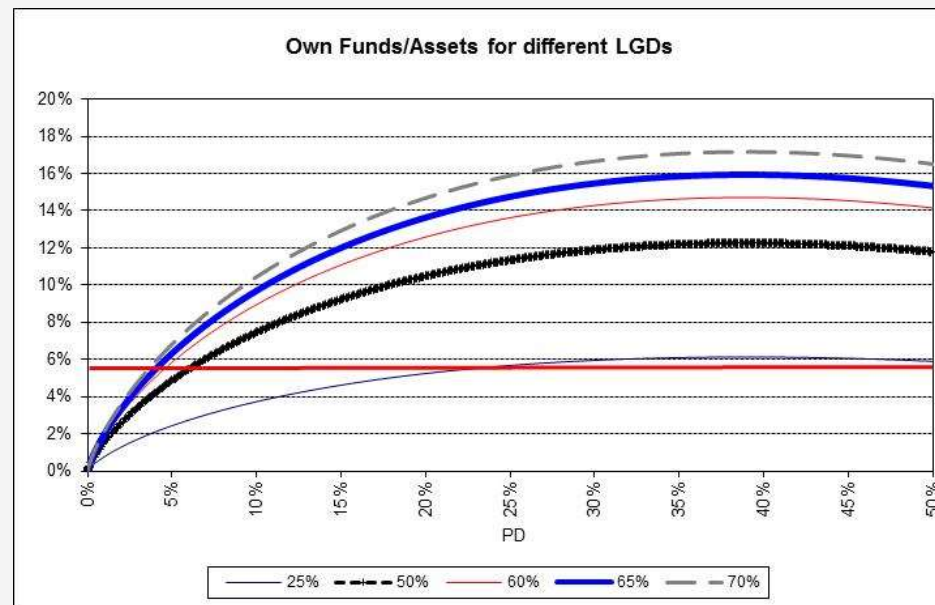
Retail Revolving

Risk-weights:

Correlation (R) = 0.04

$$\text{Capital requirement (K)} = \left[\text{LGD} \cdot N \left[\frac{G(PD)}{\sqrt{1-R}} + \sqrt{\frac{R}{1-R}} \cdot G(0.999) \right] - PD \cdot \text{LGD} \right]$$

Risk-weighted assets = $K \cdot 12.5 \cdot \text{EAD}$



Other Retail

Risk-weights:

$$\text{Correlation (R)} = 0.03 \cdot \frac{(1 - e^{-35 \cdot PD})}{(1 - e^{-35})} + 0.16 \cdot \left(1 - \frac{(1 - e^{-35 \cdot PD})}{(1 - e^{-35})} \right)$$

$$\text{Capital requirement (K)} = \left[LGD \cdot N \left[\frac{G(PD)}{\sqrt{(1-R)}} + \sqrt{\frac{R}{1-R}} \cdot G(0.999) \right] - PD \cdot LGD \right]$$

$$\text{Risk-weighted assets} = K \cdot 12.5 \cdot EAD$$

Risk Weight Floors

- Floors to credit risk weights will be imposed to banks using IRB, to avoid that capital requirements fall below a certain percentage of capital requirements derived under the standardised approach.
- Total RWA cannot be lower than 72,5% of the RWA calculated according to the standardised approach, with a phasing-in period, between 2022 and 2027, starting with a floor of 50%.

	Pre-floor RWAs	Standardised RWAs	72.5% of standardised RWAs
Credit risk	62	124	89.9
- of which Asset Class A	45	80	58
- of which Asset Class B	5	32	23.2
- of which Asset Class C (not modelled)	12	12	8.7
Market risk	2	4	2.9
Operational risk (not modelled)	12	12	8.7
Total RWA	76	140	101.5

Date	Output floor calibration
1 Jan 2022	50%
1 Jan 2023	55%
1 Jan 2024	60%
1 Jan 2025	65%
1 Jan 2026	70%
1 Jan 2027	72.5%

Source: BCBS (2017), “Basel III: Finalising post-crisis reforms”, Dec.

Credit Risk Mitigation

- Exposures may be collateralised by cash or securities, a guarantee provided by a third party or a credit derivative:

(1) Collateralized transactions:

- (i) **simple approach** - replaces the risk weight of the counterparty by the risk weight of the collateral for the collateralised portion of the exposure (with a 20% floor), for a set of eligible collateral;
- (ii) **comprehensive approach** - more precise reduction of exposures by the collateral, considering a volatility-adjusted value of the collateral.

(2) On-balance sheet netting - capital requirements based on credit exposures, net of the collateral value.

(3) Guarantees and credit derivatives - replaces the risk weight of the debtor by the risk weight of the guarantor or the credit derivative counterparty.

Credit Risk Mitigation

■ Simple approach - Eligible collaterals:

(i) Cash

(ii) Gold

(iii) Debt securities

- Government Debt: rating \geq BB-

- Other entities: rating \geq BBB-

- Short-term debt: rating A-3/P-3

- Non-rated debt: senior debt issued by a bank, listed on a recognized exchanged, with similar debt issued with an investment grade rating and liquidity considered by the supervisor as adequate.

Credit Risk Mitigation

- Comprehensive approach – exposure amount after risk mitigation:

$$E^* = \max \{0, E \cdot (1 + H_e) - C \cdot (1 - H_c - H_{fx})\}$$

E^* = the exposure value after risk mitigation

E = current value of the exposure

H_e = haircut appropriate to the exposure

C = the current value of the collateral received

H_c = haircut appropriate to the collateral

H_{fx} = haircut appropriate for currency mismatch between the collateral and exposure

Credit Risk Mitigation

■ Supervisory haircuts (H_c and H_e):

Issue rating for debt securities	Residual maturity	Sovereigns ⁷³			Other issuers ⁷⁴		Securitisation exposures ⁷⁵	
		0%	20% or 50%	100%	Non-securitisation exposures	Senior securitisation exposures with risk weight < 100%		
AAA to AA-/A-1	≤ 1 year	0.5			1		2	
	> 1 year, ≤ 3 years	2			3		8	
	> 3 years, ≤ 5 years				4			
	> 5 years, ≤ 10 years	4			6		16	
	> 10 years				12			
A+ to BBB-/A-2/A-3/P-3 and unrated bank securities per para. 148(c)(ii)	≤ 1 year	1			2		4	
	> 1 year, ≤ 3 years	3			4		12	
	> 3 years, ≤ 5 years				6			
	> 5 years, ≤ 10 years	6			12		24	
	> 10 years				20			
BB+ to BB-	All	15			Not eligible		Not eligible	
Main index equities (including convertible bonds) and gold					20			
Other equities and convertible bonds listed on a recognised exchange					30			
UCITS/mutual funds		Highest haircut applicable to any security in which the fund can invest, unless the bank can apply the look-through approach (LTA) for equity investments in funds, in which case the bank may use a weighted average of haircuts applicable to instruments held by the fund.						
Cash in the same currency ⁷⁶					0			

■ $H_{fx} = 8\%$

	Residual maturity	Issuer's risk weight (only for securities issued by sovereigns ⁷⁷)			Other investment-grade securities, consistent with paragraphs 148(d)(iii) ⁷⁸	
		0%	20% or 50%	100%	Non-securitisation exposures	Senior securitisation exposures with risk weight < 100%
Debt securities	≤ 1 year	0.5	1	15	2	4
	> 1 year, ≤ 3 years	2	3	15	4	12
	> 3 years, ≤ 5 years				6	
	> 5 years, ≤ 10 years	4	6	15	12	24
> 10 years				20		
Main index equities (including convertible bonds) and gold				20		
Other equities and convertible bonds listed on a recognised exchange				30		
UCITS/mutual funds		Highest haircut applicable to any security in which the fund can invest, unless the bank can apply the look-through approach (LTA) for equity investments in funds, in which case the bank may use a weighted average of haircuts applicable to instruments held by the fund.				
Cash in the same currency ⁷⁹				0		
Other exposure types				30		

Capital Requirements for Market Risk

Quantitative Requirements to use VaR:

- Daily calculation
- 99%, 10-day period VaR
- Minimum sample of 1 year, except when higher price volatility justifies a shorter period
- Minimum monthly data update
- Minimum weekly frequency for stressed VaR
- VaR is scaled up by a multiplication factor = 3 + additional factor (addend) between 0 and 1, depending on the number of loss excesses observed in the previous 250 business days.

Number of overshootings	addend
Fewer than 5	0,00
5	0,40
6	0,50
7	0,65
8	0,75
9	0,85
10 or more	1,00

Source: European Parliament (2013), CRR.

Capital Requirements for Market Risk

■ **Qualitative requirements:**

- Models integrated in bank's daily risk management and internal reports to top management;
- Risk control unit independent from trading and reporting directly to top management, liable for the development, implementation and validation of internal models, producing and analyzing daily reports on model results and presenting proposals on trading limits;
- Board and top management actively involved in risk control processes and daily reports;
- Adequate human resources in trading, risk control, auditing and back-office;
- Internal models with good track record;
- Stress tests - Rigorous and frequent program, with reverse stress tests;
- Internal independent auditing process;
- Minimum yearly internal assessment of the global risk management system.

Capital Requirements for Operational Risk

- 3 approaches:
 - (i) basic indicator
 - (ii) standardized
 - (iii) advanced measurement (AMA)

Capital Requirements for Operational Risk

- (i) basic indicator approach
 - Operational risk capital = 15% of annual gross income in the previous 3 years.

- (ii) Standardized
 - Bank's activities are divided into 8 business lines and the average gross income in the last 3 years for each business line is multiplied by a “beta factor” for that business line and the result summed to get the total capital.

TABLE 23.1 Beta Factors in Standardized Approach

Business Line	Beta Factor
Corporate finance	18%
Trading and sales	18%
Retail banking	12%
Commercial banking	15%
Payment and settlement	18%
Agency services	15%
Asset management	12%
Retail brokerage	12%

Source: Hull, John (2015), “Risk management and financial institutions”, 4th Edition, Wiley finance series.

Capital Requirements for Operational Risk

(iii) AMA

- It is based on a 1-year 99.9% VaR, calculated empirically from banks' historical records:

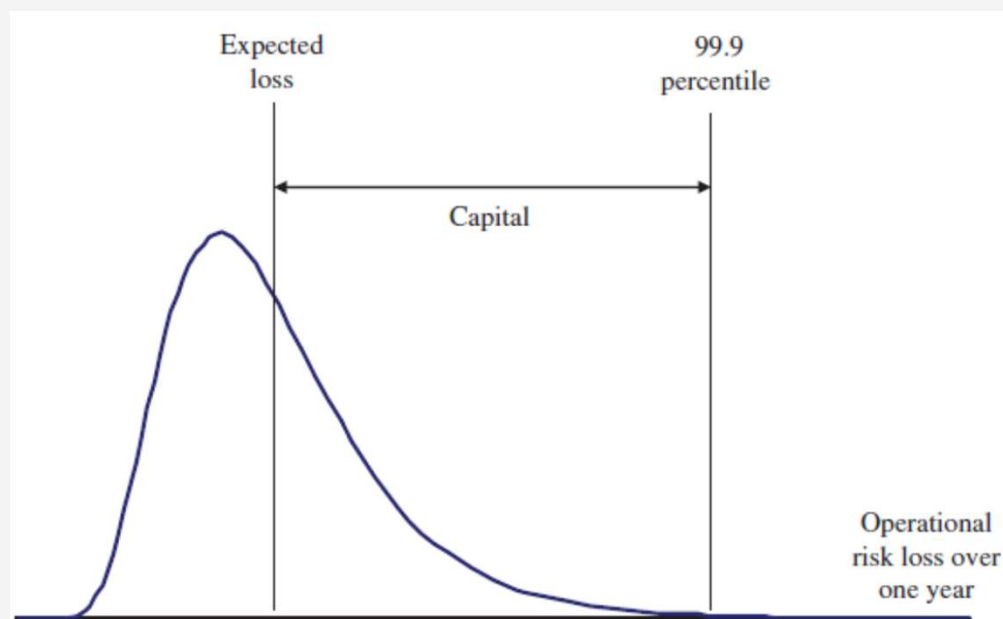


FIGURE 23.1 Calculation of Capital for Operational Risk

Source: Hull, John (2015), "Risk management and financial institutions", 4th Edition, Wiley finance series.

4.1.3. Pillars II and III

Pillar II

■ ICAAP – requirements:

- “Institutions shall have in place sound, effective and comprehensive strategies and processes to assess and maintain on an ongoing basis the amounts, types and distribution of internal capital that they consider adequate to cover the nature and level of the risks to which they are or might be exposed” - art.73 of Directive 2013/36/EU, 26.06 (CRD IV).
- EBA/GL/2016/10 - “Guidelines on ICAAP and ILAAP information collected for SREP purposes”, 3 Nov.
- Instruction No.3/2019 (revoked Instruction 15/2007) => annual report to be submitted by credit institutions to the supervisor until 31 Mar..

Pillar II

■ ICAAP Goals - to ensure:

- (a) Adequate organizational and technological structure, as well as governance and risk control practices, considering internal capital planning and risks;
- (b) Robust management and monitoring processes for the internal capital and risks, according to the strategies implement and the activity plan defined;
- (c) Risks are properly identified and assessed;
- (d) Correct internal risk profile definition, as well as sensitivity to recession risks (stress tests);
- (e) Identification of existing controls and correct assessment of the risk mitigation effects;
- (f) Adequate business continuity plans.

Pillar II

■ **Stress Tests – Goals:**

- Identification of possible events or future changes in economic conditions that could have unfavorable effects on a bank's capital and assessment of the bank's ability to withstand such changes, namely:
 - (i) economic or industry downturns;
 - (ii) market-risk events;
 - (iii) liquidity conditions.

Pillar II

■ **Stress Tests - Requirements:**

- (i) Scope - all types of material risk, both on- and off-balance-sheet:
- (ii) Frequency - appropriate to the scope and type of the stress test, the nature, scale, size and complexity of the institution (proportionality principle), portfolio characteristics as well as changes in the macroeconomic environment or the institution's business activities;
- (iii) Sensitivity and Scenario analyses;
- (iv) Reverse stress tests.

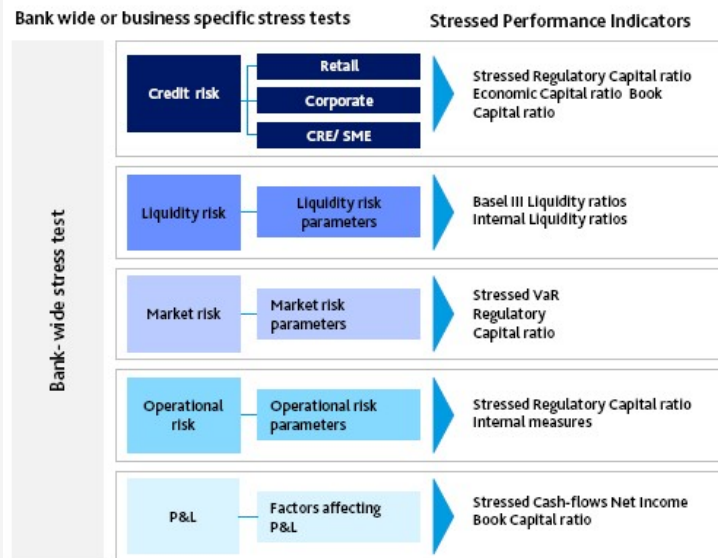
Pillar II

- **Stress Tests - Risks to be covered** (EBA/GL/2018/04, 19 Jul.):
 - (i) credit and counterparty
 - (ii) securitization
 - (iii) market
 - (iv) operational
 - (v) conduct-related
 - (vi) liquidity
 - (vii) interest rate (non-trading activities)
 - (viii) concentration
 - (ix) foreign exchange lending

Pillar II

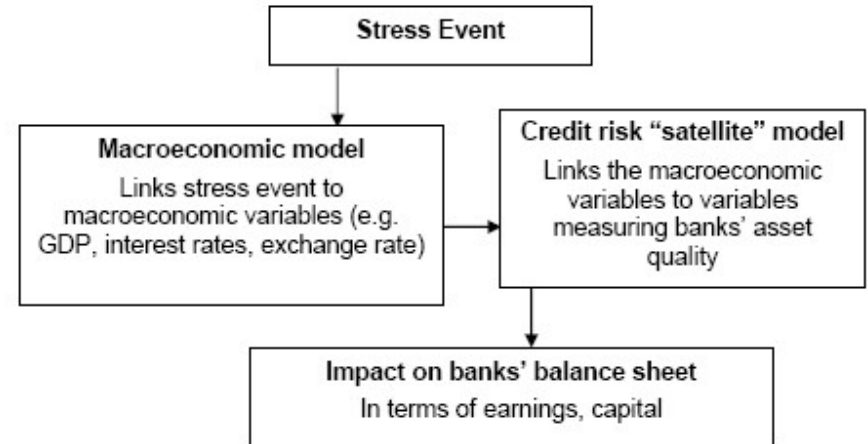
- Stress tests on credit risk are typically based on macroeconomic scenarios, impacting on impairments (via PDs) and NII (via interest rates).

Figure 4. Scope of Stress Testing



Source: Moody's (2011), "Moody's Analytics 2011 Banking Industry Survey on Stress Testing".

Figure 1: Credit risk - a typical macro stress testing process⁴



Source: Foglia, A (2008), "Stress testing credit risk: a survey of authorities' approaches:", Banca d'Italia Occasional Paper.

Pillar III

- Banks must release public information about:
 - (i) Capital Structure and Adequacy;
 - (ii) Risk Exposures and Assessment:
 - risks to which banks are exposed and the techniques that banks use to identify, measure, monitor and control those risks;
 - credit risk mitigation, hedging and asset securitization techniques used.

4.2. Regulation in the post-subprime

Summary

- Main Goals
- Basel III
 - Leverage ratio (LR)
 - Countercyclical Capital Buffers
 - SIFIs
 - Liquidity
- European Regulatory Initiatives
- European Supervision Model
- European Banking Union
- EU Basel III Package

Main Goals

- **Increase the resilience of financial institutions**, taking into account systemic risk (macroprudential regulation), by:
 - (i) increasing capital and liquidity requirements;
 - (ii) improving supervision and stress testing;
 - (iii) introducing structural reforms (trying to insulate banks from capital market activities); and
 - (iv) making shadow banking and derivatives markets safer.
- **Implement appropriate resolution procedures for banks** (“no more bailouts”).
- **Strengthen the corporate governance** of financial firms and the regulation of banks’ executive compensation.
- **Reinforce consumer and investor protection.**

Basel III

- Once again, regulation exhibited **procyclicality**, as after a severe crisis, it turned much more conservative, after an upswing period, when it became very permissive and generated perverse incentives.



- BIS and European authorities adopted a very comprehensive and strict set of rules to overcome the pitfalls evidenced by the subprime crisis.



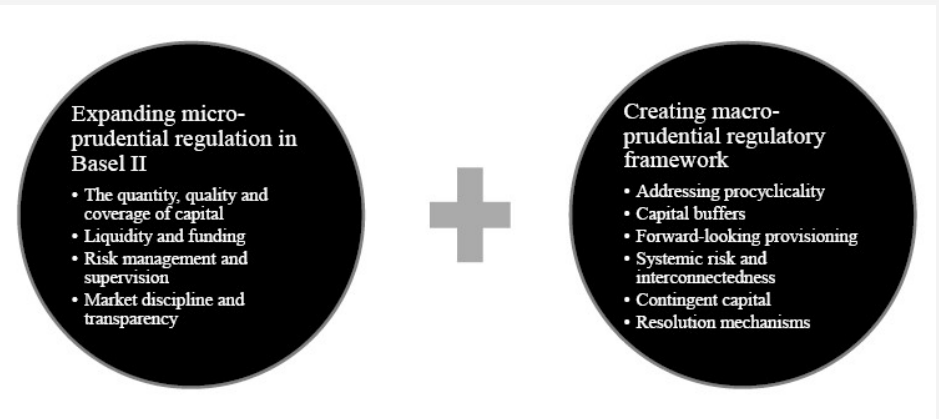
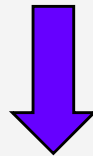
- **Main impositions from the new regulation:**

- (i) higher capital requirements
- (ii) liquidity requirements
- (iii) strengthening of macroprudential role

Basel III

■ Main Goals:

- (i) reduce the probability of bank failures
- (ii) ensure that no bank is TBTF



Source: GARP (2010), “Basel III - Remaining Mandates”, Webcast.

■ Improve micro-prudential framework + create a macroprudential, by:

- Increasing quality and quantity of banks’ capital
- Improving risk measurement and management
- Increasing discretion of supervisors to set individual capital requirements
- Decreasing procyclicality of capital requirements
- Increasing transparency

Basel III

■ **BIS action points:**

(1) Banks – taxation of the systemic risk pollution:

- **Capital** - Improve capital adequacy rules, e.g. by establishing a maximum leverage ratio, reducing the cyclical nature of capital requirements and reducing incentives for TBTF banks.
- **Liquidity** – set international rules on liquidity risk and stress testing
- **Governance:**
 - Implement governance principles of Basel Committee
 - Implement rules on business models and remuneration
 - Increase banks' disclosure level (e.g. SIVs and ABS)

(2) Supervisors - Change supervision model

(3) Rating agencies - Regulate rating agencies' activity

Basel III

- After the G20 meeting in Nov.10, several additional changes were decided, e.g. more flexible capital definition and liquidity requirements, as well as larger transition periods, leading to “**Basel III: A global regulatory framework for more resilient banks and banking systems**”, Dec.2010 (rev Jun11).

Annex 2: Phase-in arrangements (shading indicates transition periods)
(all dates are as of 1 January)

	2011	2012	2013	2014	2015	2016	2017	2018	As of 1 January 2019
Leverage Ratio	Supervisory monitoring		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%	4.5%	4.5%	4.5%
Capital Conservation Buffer						0.625%	1.25%	1.875%	2.50%
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 (including amounts exceeding the limit for DTAs, MSRs and financials)				20%	40%	60%	80%	100%	100%
Minimum Tier 1 Capital			4.5%	5.5%	6.0%	6.0%	6.0%	6.0%	6.0%
Minimum Total Capital			8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Minimum Total Capital plus conservation buffer			8.0%	8.0%	8.0%	8.625%	9.125%	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 coverage ratio	Observation period begins				Introduce minimum standard				
Net stable funding ratio		Observation period begins						Introduce minimum standard	

Source: BIS (2010), “Press Release - Group of Governors and Heads of Supervision announces higher global minimum capital standards”, 12 Sep.

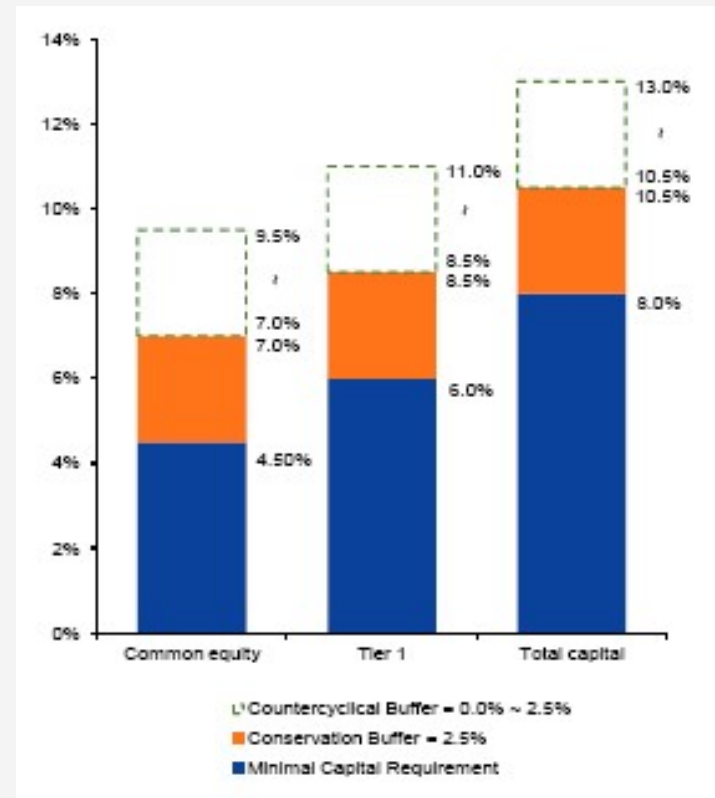
Basel III

- Minimum CT1 ratio was increased to a level between 7% and 9.5% (10.5% to 13% for total pillar I capital).

Calibration of the Capital Framework			
Capital requirements and buffers (all numbers in percent)			
	Common Equity (after deductions)	Tier 1 Capital	Total Capital
Minimum	4.5	6.0	8.0
Conservation buffer	2.5		
Minimum plus conservation buffer	7.0	8.5	10.5
Countercyclical buffer range*	0 – 2.5		

* Common equity or other fully loss absorbing capital

Source: BIS (2010), “Press Release - Group of Governors and Heads of Supervision announces higher global minimum capital standards”, 12 Sep.



Source: Deutsche Bank (2010), “Basel Agreement on Capital Requirements”.

Basel III

- According to these Basel III rules, **banks exhibit total capital ratios around 18%**, decreasing to around 15% after the phasing-in of Basel III rules that are expected to be fully implemented in 2027.

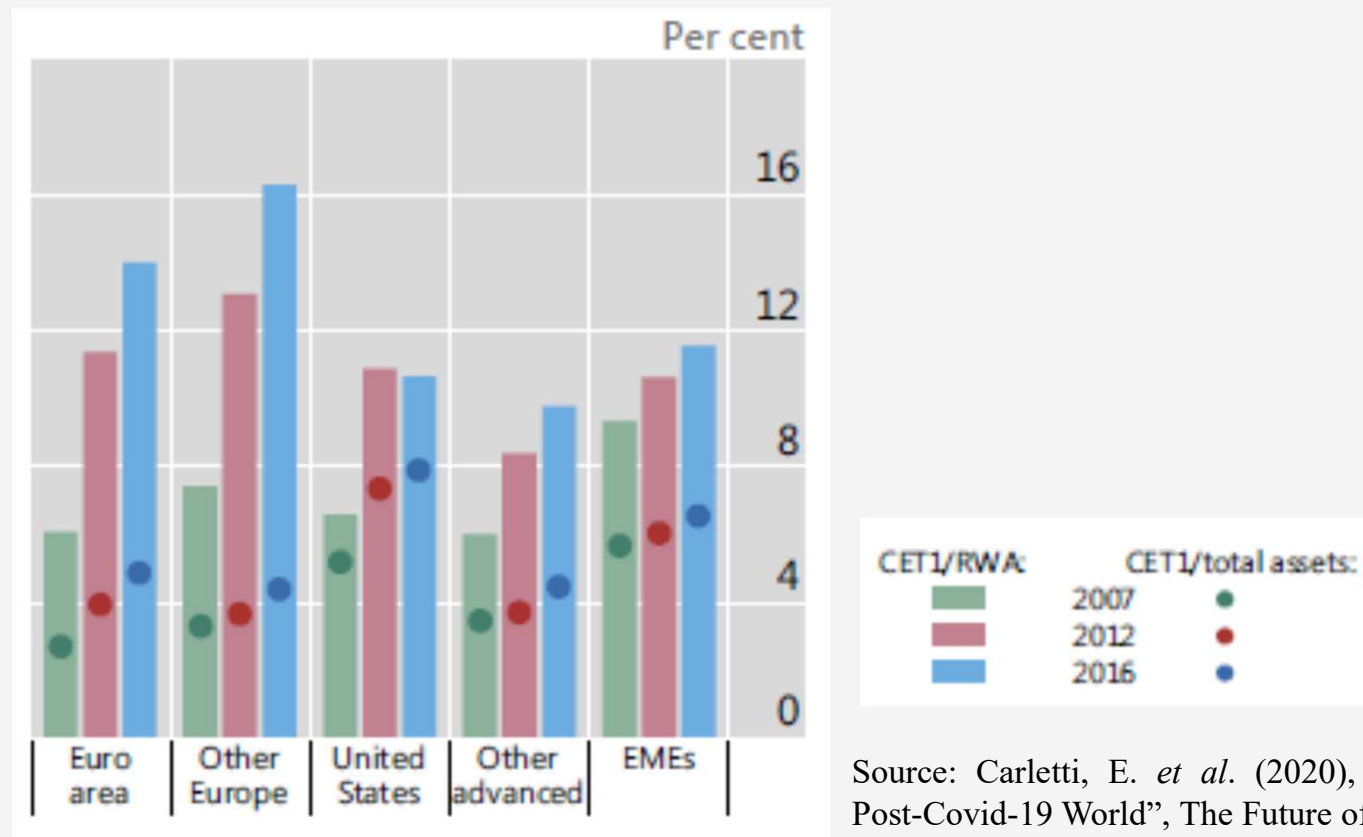
Bank group	Capital ratios — CRR/CRD IV (fully phased in)				Capital ratios — Basel III framework (2028)			
	CET1	Tier 1	Total capital	LR	CET1	Tier 1	Total capital	LR
All banks	14.2	15.5	18.1	5.1	11.6	12.7	14.8	5.1
Group 1	14.0	15.5	18.1	5.0	11.4	12.6	14.7	5.0
Of which: G-SIIs	13.3	14.9	17.4	4.7	10.8	12.1	14.1	4.7
Group 2	15.4	16.0	18.1	5.5	12.9	13.4	15.2	5.4

Source: EBA (2020), “Basel III Monitoring Exercise”, Apr.

Note: Group 1 comprise banks with capital above 3B€ and internationally active

Basel III

- Capital ratios increased by more than 50% since 2011 in EU, as well as in other economies:



Source: Carletti, E. *et al.* (2020), “The Bank Business Model in the Post-Covid-19 World”, The Future of Banking 2, CEPR.

Basel III

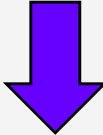
- However, the increase in capital ratios was also achieved by the reduction of the RWAs, involving reduction in loans to some groups of customers, namely SMEs, reducing investment and employment.
- Covid-19 may reverse the trend of stricter requirements on banks, as firms are in need of massive liquidity support.
- Actually, the ECB already decided to suspend pillar 2 guidance capital buffers.

Basel III

New Basel III requirements:

- (1) Leverage Ratio (LR)
- (2) Countercyclical Capital Buffer
- (3) Systemically Important Financial Institutions (SIFIs)
- (4) Liquidity

Leverage ratio

- LR is a **non-risk based measure** to supplement the already existing risk-based capital ratios: $LR = \text{Tier 1 Capital}/\text{Assets} > 3\%$
 - **It's like a risk-weighted capital ratio, with all weights = 1.**
 - Public disclosure started in 1 January 2015.
 - Parallel run in 2013-2016, final adjustments to the definition and calibration of the leverage ratio in 2017, having migrated to a Pillar 1 treatment on 1 Jan.18.
 - The Group of Governors and Heads of Supervision (GHOS) agreed on 10 Jan.2016 that additional requirements for G-SIBs should be discussed.
- 
- In Dec.2017, the BCBS introduced a leverage ratio buffer requirement for G-SIBs = 50% of the risk-weighted capital buffer, to come into effect in 2023.

Leverage ratio

- Purpose: to reduce regulatory arbitrage opportunities through RWA optimization.
- As the risk in the balance sheet is difficult to measure, authorities decided to impose a minimum on a non-risk-weighted capital ratio (otherwise, only a capital ratio would exist).
- Leverage Ratio tends to become a binding constraint when banks have low risk weights.
- There is ample evidence in the literature that a non-risk-based Leverage Ratio helps to reduce the financial fragility of individual FIs and the financial system as well:
 - Jarrow (2013) - VaR-based methods and the LR basically control for the same risks, with the LR being preferential due to simplicity.

Leverage ratio

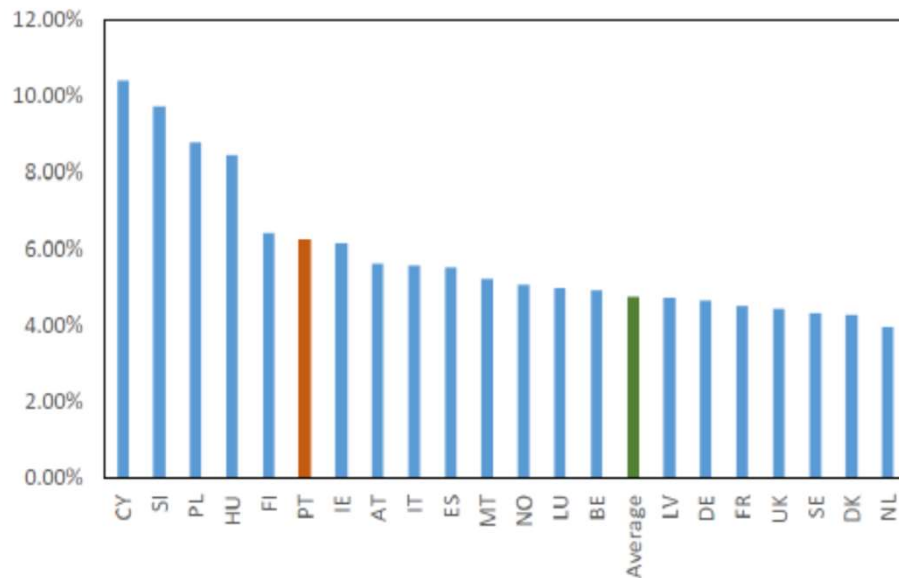
- Mayes and Stremmel (2014) - the LR performs better in predicting the distress of FIs, in particular when such distress is very complex or opaque;
- Mariathasan and Merrouche (2012) - risk weights are informative about bank stability but may also be subject to arbitrage, namely without carefully supervision => LR may be better at predicting financial stability in times of financial stress.
- Dermine (2015) - depositors, when faced with imperfect information about the value of financial institutions' assets, may start a bank run => being simple and transparent, a regulatory LR requirement may create a floor on the equity-to-assets ratio and limit the risk of those bank runs.

Leverage ratio

- In 2016, EBA released a report on the impact of the implementation of the LR in EU: EBA (2016), "EBA Report on the Leverage Ratio Requirements Under Article 511 of the CRR", EBA-Op-2016-13, 03 August, with the following main conclusions:
 - (i) The minimum LR of 3% is "generally consistent with the objective of a backstop measure which supplements risk-based capital requirements".
 - (ii) That 3% minimum LR is a higher capital requirement than a risk-based Tier 1 capital requirement of 8.5% for around 33% of the analysed credit institutions.
 - (iii) Conversely, a minimum level of 2% or 2.5% would be insufficient, as it would be a higher capital requirement than a risk-based Tier 1 capital requirement of 8.5% only for around 15% to 25% of the analysed banks, respectively.
 - (iv) LR is somewhat more sensitive to the economic cycle than risk-based capital requirements => the LR would be a relatively tighter constraint in booms and a relatively looser constraint in recessions.

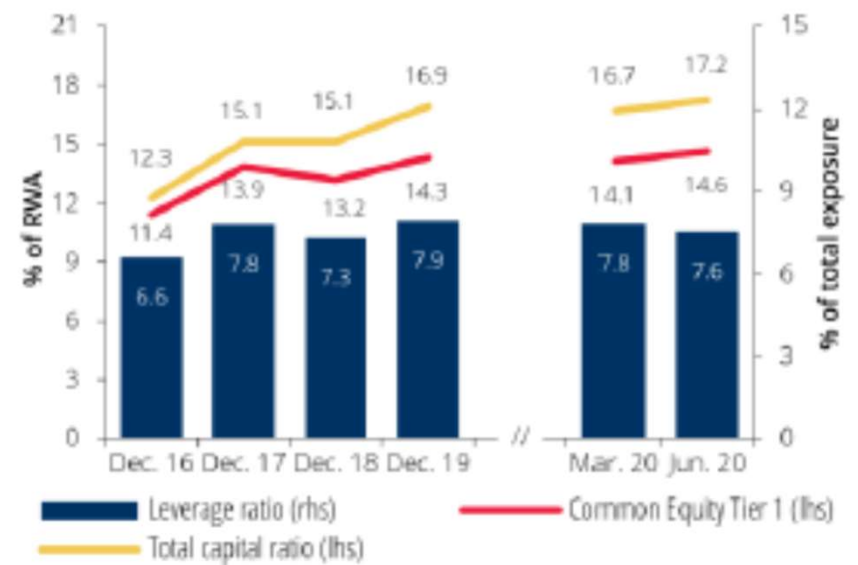
Leverage ratio

- LR has been increasing in Portugal and was already above the EU average in 2015:



Source: 2015 EBA transparency exercise. Leverage ratio computed as the quotient between Tier I capital and Total Exposure.

Chart 6 • Own funds ratios and leverage ratio



Source: Banco de Portugal (2020), "Portuguese Banking System: Recent Developments - 2Q20".

Countercyclical Capital Buffer

- **BCBS promoted countercyclical provisions** - “Guidance for national authorities operating the countercyclical capital buffer”, Dec.2010:
 - **A capital buffer between 0% and 2,5% of RWA to be built up when credit growth is judged to be associated with a build-up of systemic risk, and drawn down during stressed periods;**
 - every Member State designated an authority to settle quarterly this buffer since 2016, considering the credit growth and changes to the ratio of credit/GDP and other variables and qualitative information that make sense for purposes of assessing the sustainability of credit growth and the level of system-wide risk, e.g.;
 - various asset prices;
 - funding spreads and CDS spreads;
 - credit condition surveys;
 - real GDP growth;

Countercyclical Capital Buffer

- according to BIS preparatory works,* **credit related variables perform very well, e.g. credit-to-GDP ratio, that tends to rise smoothly above trend before the most serious episodes**, with several advantages over credit growth or other variables:
 - (i) as a ratio to GDP, the indicator is normalised by the size of the economy;
 - (ii) being a ratio of levels, it is smoother than a variable calculated as differences in levels (e.g. as credit growth);
 - (iii) deviations of property and equity prices from trend can help to identify the build-up phase, but tend to decrease much before way ahead of the emergence of financial strains, suggesting that authorities should start releasing the buffer too early.
 - (iv) the performance of bank profits as a signal for the build-up in good times appears to be uneven, as it works very well for US and UK in the subprime crisis and for Spain in the early 1990s, performing poorly otherwise.
 - (v) credit spreads performed well in the subprime crisis, as they fell below their long-term average ahead of it and rose very quickly when strains emerged. However, their performance over multiple cycles is less satisfactory, as indicated by data for the US.

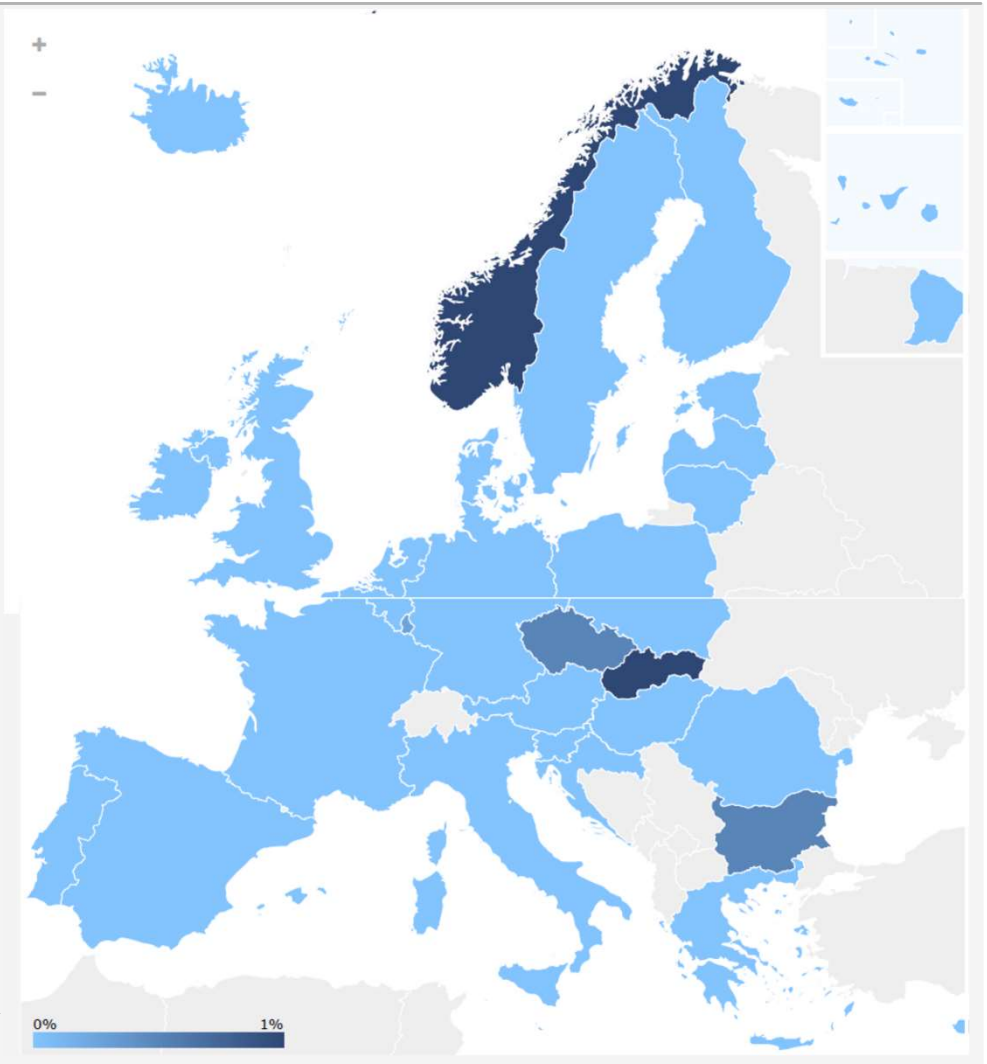
* Drehmann, Borio, Gambacorta, Jimenez and Trucharte (2010) "Countercyclical capital buffers: Exploring options", BIS Working Paper 317.

Countercyclical Capital Buffer

- **the gap between the credit/GDP ratio (Basel gap) and its trend was taken as the key indicator.**
- as the long-term trend of the credit/GDP ratio is a purely statistical measure that does not capture turning points well, **authorities should form their own judgments about the sustainable level of credit in the economy and use this trend simply as a starting point in their analysis**, to determine whether a countercyclical buffer requirement should be imposed and should increase or decrease over time (between 0% and 2.5% of risk weighted assets).
- **alternative tools** – such as loan-to-value limits, income gearing limits or sectoral capital buffers – may be deployed in situations where excess credit growth is concentrated in specific sectors but aggregate credit growth is judged not to be excessive.
- any increases in the countercyclical buffer must be preannounced by up to 12 months to give banks time to meet additional capital requirements, while reductions would take effect immediately to help to reduce the risk of the supply of credit being constrained by regulatory capital requirements.

Countercyclical Capital Buffer

- In EU, the buffers are set quarterly at a national level, being reported to the ESRB.
- Most European Countries (including Portugal) set their Countercyclical Capital Buffer (CCyB) at 0%.



Source: ECB (2020), ecb.europa.eu

SIFIs

- Until the subprime crisis, SIFIs were not seen as a problem and were even considered as safer than smaller banks, given that SIFIs are typically very diversified institutions and losses in one area of their activities were expected to be offset by profits in other areas.

- Since then, SIFIs are perceived to increase:
 - (i) Systemic risk;
 - (ii) Incentives for Government bail-outs, as they are TBTF.

SIFIs

- **TBTF** - visible in the differences between standalone and support ratings (ratings considering the implicit Government support), which are higher for larger banks (Haldane (2010)).
- ESRB Recommendation 2013/1 - reducing moral hazard is an intermediate objective of macroprudential policies in EU.
- **Consequences of TBTF policies** (Squam Lake Report (2010)):
 - (i) **stakeholders claim all the profits but only bear some of the losses** => TBTF FI have an incentive to take extra risk, shared by shareholders, creditors, employees and management => increasing risks to society as a whole.
 - (ii) **encourage smaller FI to expand or to become more closely interconnected with other firms, to become under the TBTF umbrella** => FI have an incentive to do whatever it takes to make **policymakers fear their failure** => TBTF FI also benefit from lower cost of funding, allowing it to offer better prices to their customers.

SIFIs

- In Apr.09, a new set of rules and supervision procedures for G-SIBs was agreed in the G20 => “Global systemically important banks: assessment methodology and the additional loss absorbency requirement - Rules text”, BCBS No.207, Nov.11 (later updated by “Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement”, BCBS No.25, Jul.13):
 - (i) Ex-ante measures – strengthening G-SIBs’ capital, in order to reduce the probability and impact of a G-SIB’s default, as well as the systemic relevance of the institutions;
 - (ii) Ex-post measures - ensuring that a G-SIB’s default can be resolved adequately, restricting the impact on the financial system.
- Additional capital requirements to be met with tier I and II (excluding *common equity*).
- Resolution plans requirements by end-2012.

SIFIs

■ **Goal:**

“Turn large banks into public utilities by forcing them to hold so much capital they virtually can’t fail, with regulation akin to that of a nuclear power plant”, Neel Kashkari, President of the

Minneapolis Federal Reserve (in Patrick Jenkins (2016), “Banks: Too dull to fail?”, Financial Times, Sept. 6)

Table 2. Measures to Reduce the Systemic Risk Contribution of SIFIs

Measures to reduce the probability and impact of failure of SIFIs	<ul style="list-style-type: none"> • Capital and/or liquidity surcharges based on measure of systemic importance • More intense supervision of SIFIs • Risk-based levies on non-core funding (based on systemic risk contribution)
Measures to improve the capacity to resolve SIFIs	<ul style="list-style-type: none"> • Living wills (resolution plans to map out how to safely wind-down institutions in case of failure) • Financial stability contribution linked to a credible and effective resolution scheme • Special resolution schemes that give power to the supervisors to break up banks • Contingent capital and bail-in proposals—as means of providing further going-concern loss absorbency and reducing government bailouts • Cross-border resolution frameworks and burden-sharing arrangements • Subsidiarization/ring-fencing domestic financial institutions from cross-border risks (especially if the previous option proves unviable)
Measures to strengthen the core financial market infrastructure to reduce contagion	<ul style="list-style-type: none"> • Requiring OTC derivatives to be traded through central counterparties
Structural measures	<ul style="list-style-type: none"> • Narrow banking that would restrict deposit taking institutions to invest in a limited set of safe assets • Other limits or restrictions on the size and/or scope of banks (e.g., in the United States, the Volcker rule, restrictions on derivative activities of banks).

Source: Ötker-Robe *et al* (2010), “Impact of Regulatory Reforms on Large and Complex Financial Institutions”, IMF, SPN/10/16.

SIFIs

- **Financial Stability Board (FSB)* plays a key role** (in consultation with the BCBS):
2011 - an initial group of G-SIBs and additional capital requirements were announced (“Policy Measures to Address Systemically Important Financial Institutions”, 4 Nov.):
 - (i) Additional capital requirements (over Basel III) for G-SIFIs - 1%-2.5% of RWA, with an empty bucket of 3.5%, to discourage further systemicness to be met with common equity;
 - (ii) More intensive and effective supervision of all G-SIFIs, including stronger supervisory mandates, resources and powers, and higher supervisory expectations for internal control functions, data aggregation capabilities and risk governance;
 - (iii) Mandatory recovery and resolution plans, subject to review by a high-level FSB Resolvability Assessment Program;
 - (iv) List of G-SIBs to be updated every November.

* The FSB was established in Apr.2009 as the successor to the Financial Stability Forum (FSF), at the Pittsburgh Summit of G20, to assume a key role in promoting the reform of international financial regulation. The FSF was founded in 1999 by the G7 Finance Ministers and Central Bank Governors, for enhancing cooperation among the various national and international supervisory bodies and international financial institutions so as to promote stability in the international financial system.

SIFIs

2012 - G-SIBs started to be allocated to buckets corresponding to higher capital buffers.

2013 - report on *Progress and Next Steps Towards Ending “Too-Big-To-Fail”*, September)

=> there must be sufficient loss-absorbing and recapitalisation capacity available to implement an orderly resolution that minimises impacts on financial stability, ensures the continuity of critical functions, and avoids exposing public funds to loss.

2015 - term sheet implementing these principles as an internationally agreed standard on the adequacy of total loss absorbing capacity (TLAC) for G-SIBs – “Total Loss-Absorbing Capacity (TLAC) Principles and Term Sheet”, 9 Nov.:

- Authorities should determine a firm-specific TLAC for each G-SIB ;
- Minimum TLAC of 16% of RWA, since 1 Jan.19 and 18% from 1 Jan.22, for G-SIBs annually identified by the FSB, with phasing-in since Jan.16 (this requirement does not include any Basel III buffers, which must be met in addition to the TLAC).

SIFIs

- The additional capital requirements were initially applied to the banks identified in Nov. 14 as G-SIBs, phased in starting in Jan.16 with full implementation by Jan.19.
- In 2012, BCBS extended the G-SIBs principles to D-SIBs, after releasing “A framework for dealing with domestic systemically important banks”, Oct., stating that national authorities should begin to apply requirements to D-SIBs in line with the phase-in arrangements for the G-SIB framework.

Timetable for implementation		
2013	Mar:	Collection of end-2012 data
	Nov:	Publish updated draft list of G-SIBs Publish cutoff scores, bucket sizes and denominators
2014	Jan:	Implementation of national reporting and disclosure requirements
	Mar:	Collection of end-2013 data
	Nov:	Publish updated list of G-SIBs to be subject to HLA requirement from 1 Jan 2016, and updated denominators
2015	Mar:	Collection of end-2014 data
	Nov:	Publish updated list of G-SIBs to be subject to HLA requirement from 1 Jan 2017, and updated denominators
2016	Jan:	HLA requirement applied to banks designated as G-SIBs published in Nov 2014
	Mar:	Collection of end-2015 data
	Nov:	Publish updated list of G-SIBs to be subject to HLA requirement from 1 Jan 2018, and updated denominators
2017	Jan:	HLA requirement applied to banks designated as G-SIBs published in Nov 2015
	Mar:	Collection of 2016 data
	Nov:	Complete first methodology review and announce changes Publish updated list of G-SIBs to be subject to HLA requirement from 1 Jan 2019, and updated denominators

Source: BCBS (2013), “Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement”, Jul.

SIFIs

- BCBS methodology - provides a score for each entity, based on indicators reflecting banks' international activity, size, interconnectedness, substitutability, and complexity, with a equal weight of 20% to each:

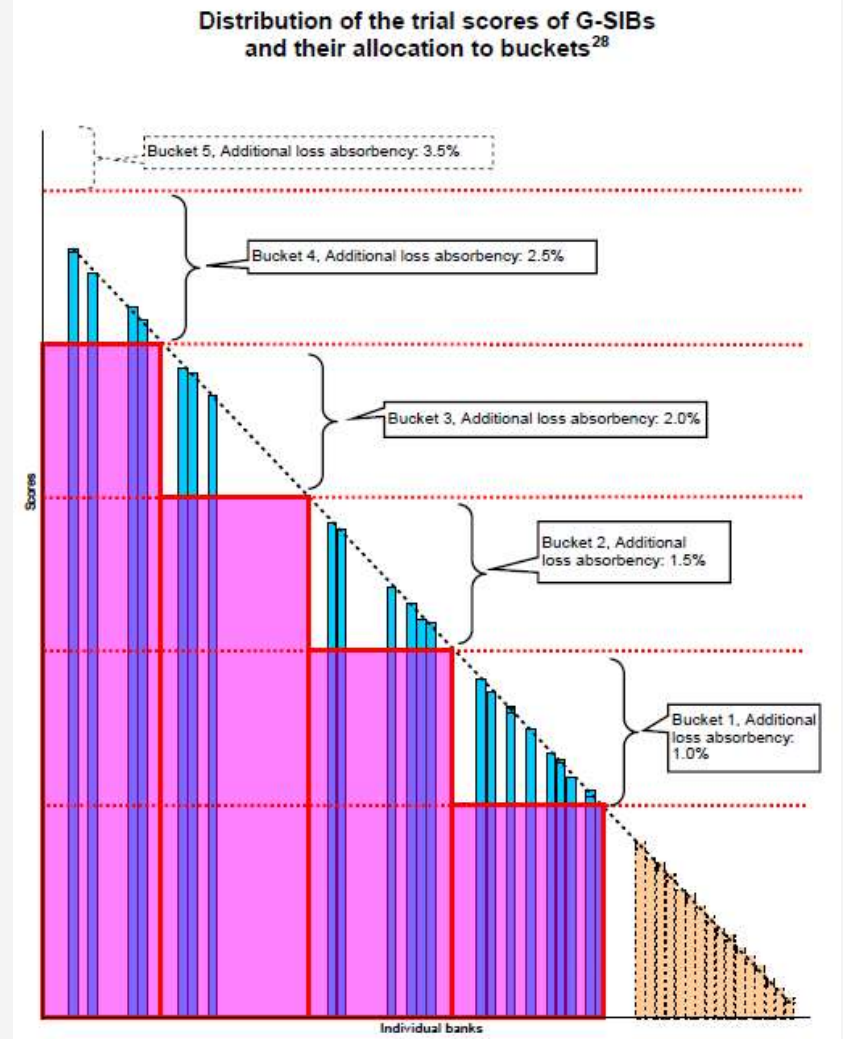
Category (and weighting)	Individual indicator	Indicator weighting
Cross-jurisdictional activity (20%)	Cross-jurisdictional claims	10%
	Cross-jurisdictional liabilities	10%
Size (20%)	Total exposures as defined for use in the Basel III leverage ratio	20%
Interconnectedness (20%)	Intra-financial system assets	6.67%
	Intra-financial system liabilities	6.67%
	Securities outstanding	6.67%
Substitutability/financial institution infrastructure (20%)	Assets under custody	6.67%
	Payments activity	6.67%
	Underwritten transactions in debt and equity markets	6.67%
Complexity (20%)	Notional amount of over-the-counter (OTC) derivatives	6.67%
	Level 3 assets	6.67%
	Trading and available-for-sale securities	6.67%

BCBS (2013), “Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement”, Jul.

SIFIs

- Banks are placed in 5 different buckets, with additional loss absorbing requirements between 1% and 3,5%.

BCBS (2013), “Global systemically important banks: updated assessment methodology and the higher loss absorbency requirement”, Jul.



SIFIs

- The group of G-SIBs is updated annually and published by the FSB each November, to be implemented 14 months after, at the beginning of the following year.
- FIs no longer designated as a G-SIFI will continue to be subject to the requirement for recovery and resolution plans if the bank is considered by national authorities to be a SIB or critical in the event of failure.
- BCBS methodology was transposed to CRD IV, article 131.

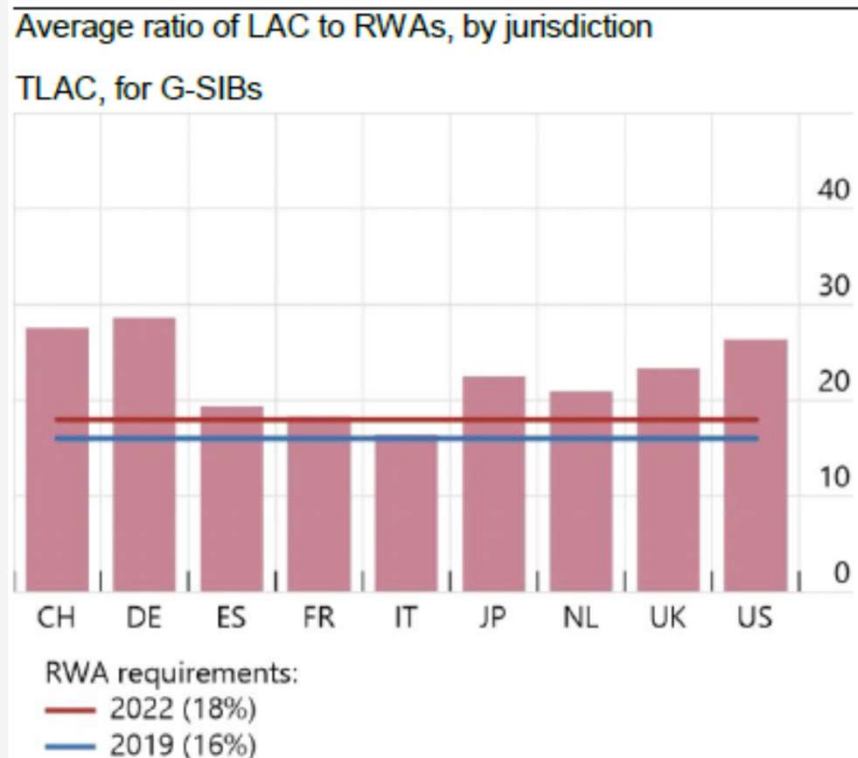
Source: FSB (2020), “2020 list of global systemically important banks (G-SIBs)”, 11 Nov.

G-SIBs as of November 2020¹³ allocated to buckets corresponding to required levels of additional capital buffers

Bucket ¹⁴	G-SIBs in alphabetical order within each bucket
5 (3.5%)	(Empty)
4 (2.5%)	(Empty)
3 (2.0%)	Citigroup HSBC JP Morgan Chase
2 (1.5%)	Bank of America Bank of China Barclays BNP Paribas China Construction Bank Deutsche Bank Industrial and Commercial Bank of China Mitsubishi UFJ FG
1 (1.0%)	Agricultural Bank of China Bank of New York Mellon Credit Suisse Goldman Sachs Groupe BPCE Groupe Crédit Agricole ING Bank Mizuho FG Morgan Stanley Royal Bank of Canada Santander Société Générale Standard Chartered State Street Sumitomo Mitsui FG Toronto Dominion UBS UniCredit Wells Fargo

SIFIs

- **G-SIBs have made important progress in building up their TLAC resources, with all G-SIBs showing at the end of 2018 ratios TLAC ratios above the 2019 transitional minimum and 21 above the 2022 full-implementation minimum:**



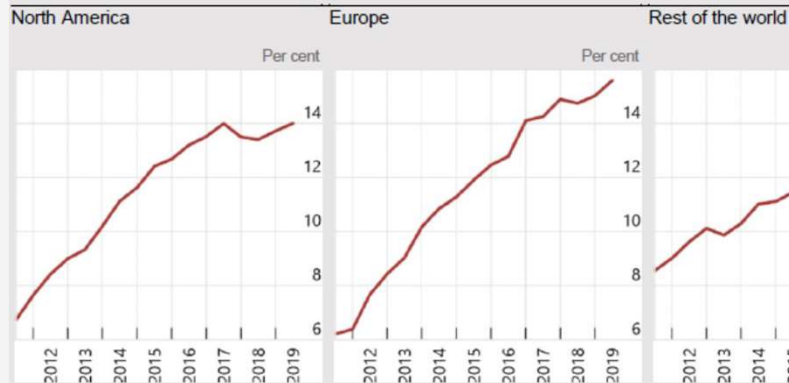
Source: FSB (2020), “Evaluation of the effects of too-big-to-fail reforms”, Consultation Report, ”, 28 Jun.

SIFIs

- The capital and liquidity ratios of G-SIBs have improved worldwide:

Initial Basel III Tier 1 risk-based capital ratio, by region

Consistent sample of G-SIBs, weighted average



Net stable funding ratio, by region

Figure A Consistent sample of G-SIBs, weighted average

Figure C



Fully phased-in final Basel III leverage ratio, by region

Consistent sample of G-SIBs, weighted average

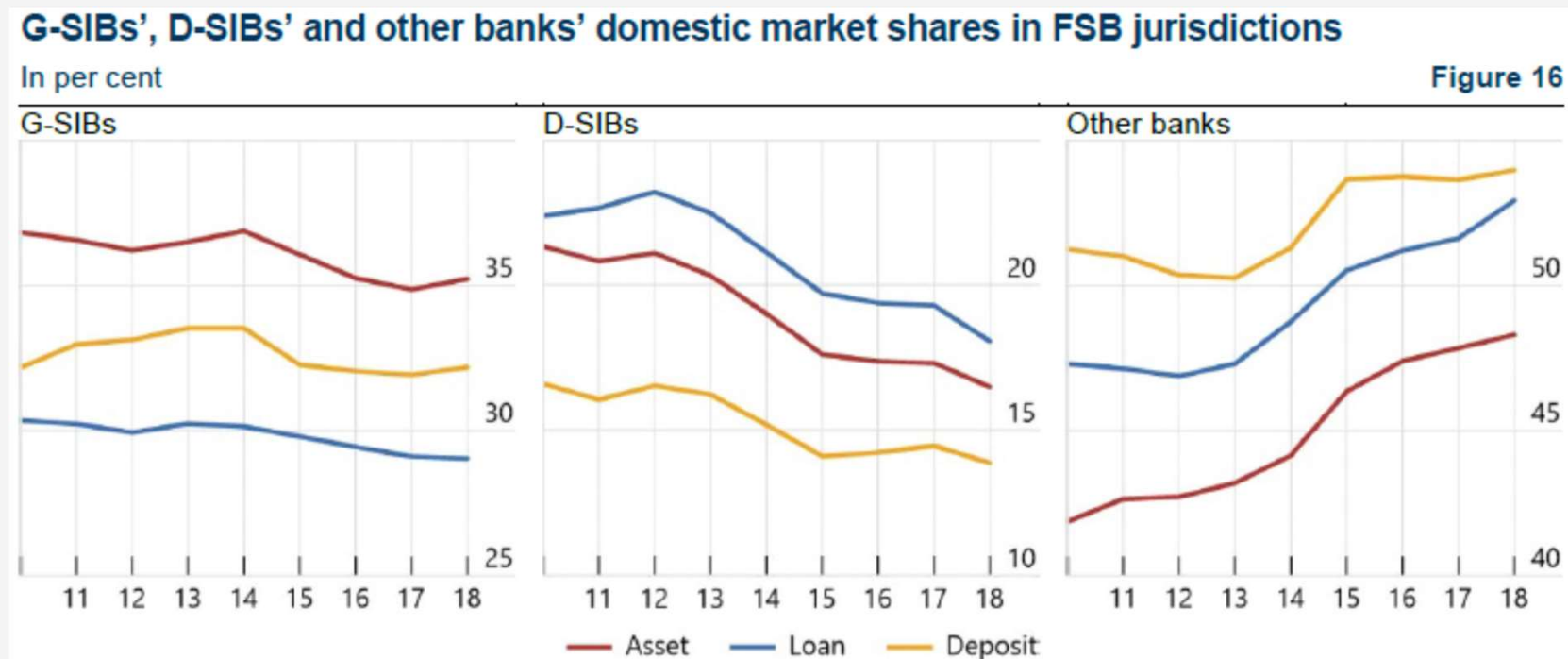
Figure B



Source: FSB (2020), "Evaluation of the effects of too-big-to-fail reforms", Consultation Report, ", 28 Jun.

SIFIs

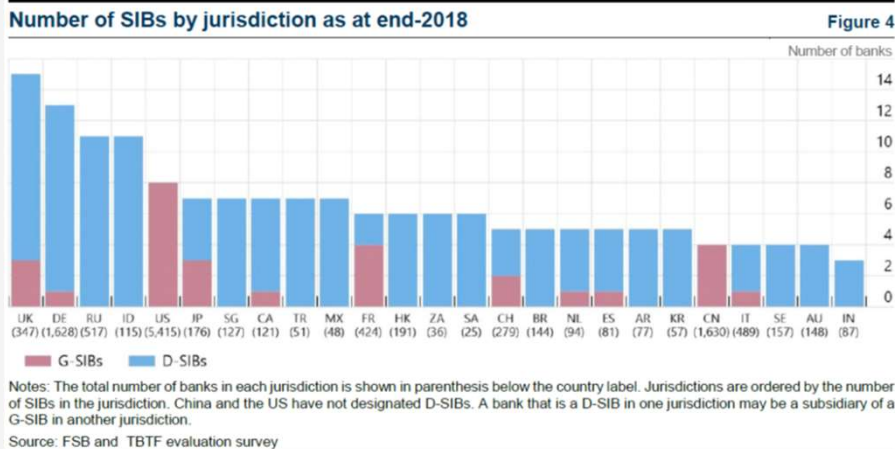
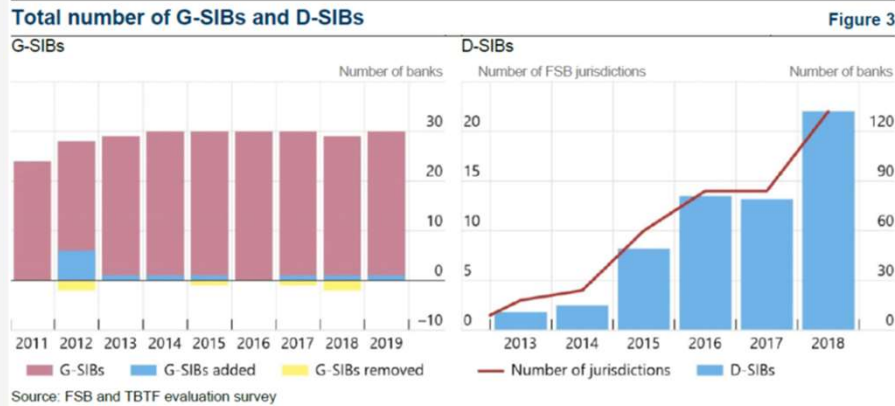
- **G-SIBs profitability and market shares have been decreasing**, namely in loans, following the higher regulatory requirements:



Source: FSB (2020), “Evaluation of the effects of too-big-to-fail reforms”, Consultation Report, ”, 28 Jun.

SIFIs

- The number of G-SIBs has been roughly stable, while D-SIBs have increased markedly, with most G-SIBs from the US:



Source: FSB (2020), “Evaluation of the effects of too-big-to-fail reforms”, Consultation Report, ”, 28 Jun.

Liquidity

- BCBS (2013), “Basel III: The Liquidity Coverage Ratio and liquidity risk monitoring tools”, W.P. 238, January):
 - Increases relevance of liquidity management, including contingency plans;
 - Include liquidity costs in pricing and decision processes
- Purpose: to ensure that banks can meet their obligations without relying on fire sales of their illiquid assets or on borrowing from the central bank, that must be the lender of *last* resort, not the lender of *first* resort.

Liquidity

- 2 separate but complementary objectives:

- (i) to promote short-term resilience of a bank's liquidity risk profile by ensuring that it has sufficient high quality liquid assets (HQLA) to survive a significant stress scenario lasting for 1 month => **Liquidity Coverage Ratio (LCR)**, phased-in from 1.Jan.15.

$$\frac{\text{Stock of high quality liquid assets}}{\text{Net cash outflows over a 30-day time period}} \geq 100\%$$

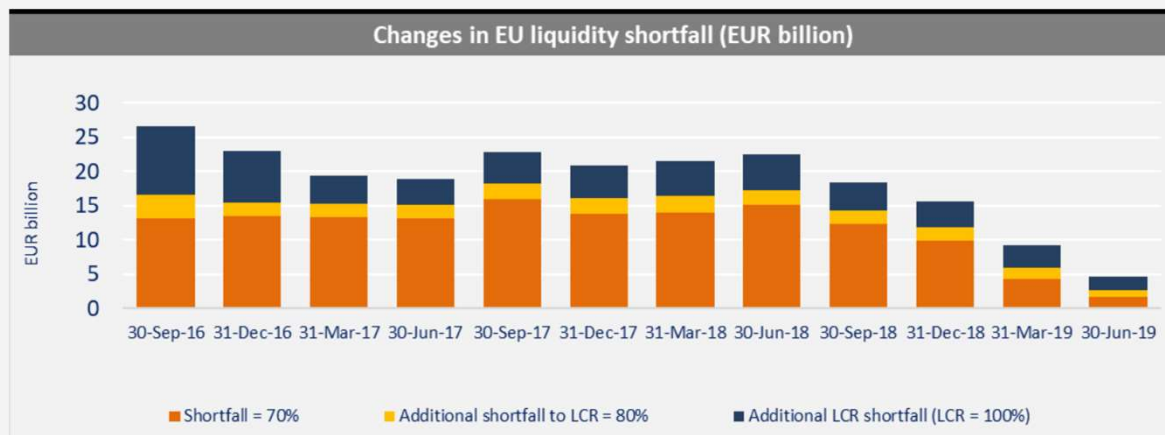
	1 January 2015	1 January 2016	1 January 2017	1 January 2018	1 January 2019
Minimum LCR	60%	70%	80%	90%	100%

- (ii) to promote resilience over a longer time horizon, by providing a sustainable maturity structure of assets and liabilities, creating additional incentives for banks to fund their activities with more stable sources of funding on an ongoing basis => **Net Stable Funding Ratio (NSFR)**, with a time horizon of 1 year, to be implemented in 28.Jun.21.

$$\frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} > 100\%$$

Liquidity

- **LCR** - shortfall of 225B€ of liquid assets identified (in the Basel III monitoring exercise published by EBA on the 26th Sep.2013), decreasing significantly afterwards to around 5B€ at the end of Jun19.
- The weighted average LCR for a sample of 134 banks monitored by EBA was around 150% in Jun19, with 78% of the banks reaching an LCR above 140%.
- The number of banks with a shortfall in liquid assets (to comply with the minimum requirement of 100%) decreased from 7 to 3 between 2016 and 2019.

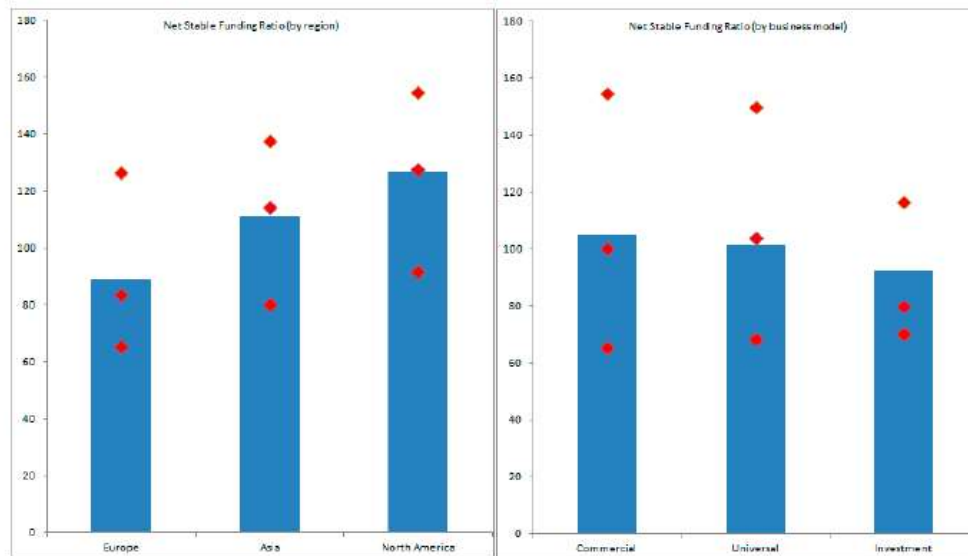


Source: EBA (2020), “ Update on the EBA Report on Liquidity Measures Under Article 509(1) of The CRR – Results Based On Data As Of 30 June 2019”, 08 April, EBA/REP/2020/13 .

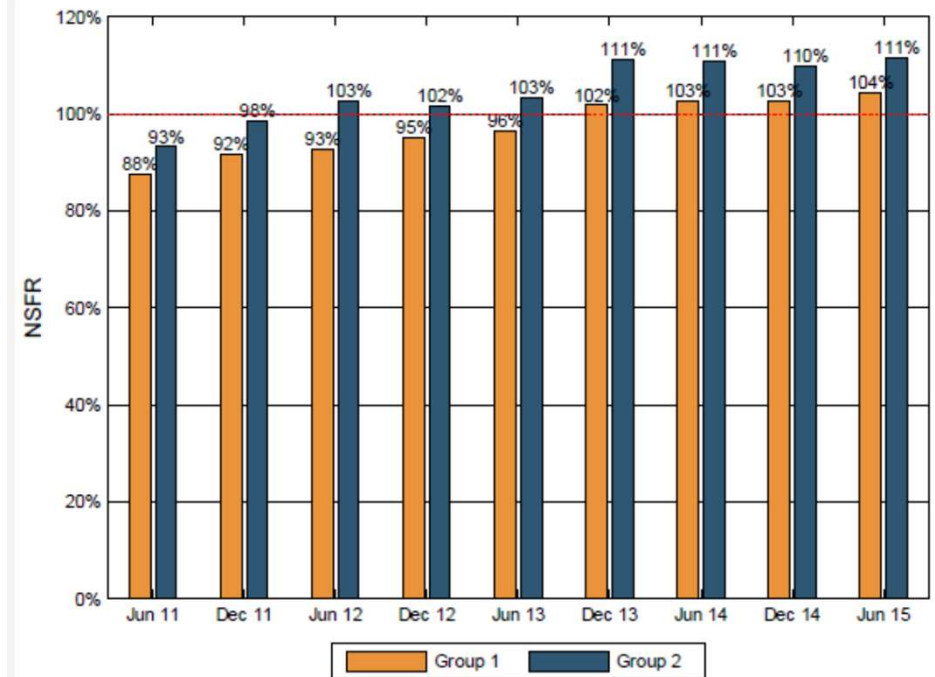
Liquidity

- NSFR - higher initial shortfall in Europe and investment banking, decreasing afterwards, with smaller banks (group 2) exhibiting higher levels..

Figure 7. Estimates of NSFR across Geographies and Business Models¹



¹The diamonds represent the minimum, median, and maximum values, respectively, for each bar. Source: Bankscope, and staff estimates based on data for sample LCFIs.



Source: Ötoker-Robe *et al* (2010), “Impact of Regulatory Reforms on Large and Complex Financial Institutions”, IMF, SPN/10/16.

Source: EBA (2016), “CRD IV – CRR/Basel III Monitoring Exercise», Results Based On Data As Of 30 June 2015, 2 Mar;

Liquidity

- In Jun19, EU banks required additional stable funding of 33.7 B€ to fulfil the minimum NSFR of 100%.

Bank group	NSFR (%)	Shortfall (EUR billion)
All banks	113.0	33.7
Group 1	111.8	29.3
Of which: G-SIIs	110.4	3.9
Group 2	119.4	4.4
Of which: large Group 2	117.9	4.3
Of which: medium-sized Group 2	123.3	0.0
Of which: small Group 2	121.5	0.1

Source: EBA (2020), “Basel III Monitoring Exercise”, Apr.

European Regulatory Initiatives

- According to Veron (2018), the events of the last 12 years in the EU banking system show primarily a home-grown European crisis, following years of dysfunctional financial supervision during the previous ‘Great Moderation’, rather than a consequence of US financial disorder.
- The US subprime crisis was not the main cause of subsequent turmoil in the European financial system, but only a trigger that revealed the extent of accumulated vulnerabilities.
- According to the same perspective, the crisis in EU was the consequence of the mismatch between nation-based banking systems on the one hand, and strong Europe-wide integration policies on the other hand, including the internal market, competition policy, and the euro itself.

European Regulatory Initiatives

- This vicious circle between banks and sovereigns was the key driver of financial deterioration and fragmentation in the euro area.
- Calomiris and Haber (2014): there are “No Banks without States, and No States without Banks”.
- However, “the conflicts of interest inherent in government-banker partnerships make the banking systems of most countries fragile by design”.
- The structural nature of the crisis in EU explains the slow pace of its resolution, in contrast to the US, other EU jurisdictions such as the UK and most Central European countries and Iceland.
- Actually, the bank-sovereign vicious circle had been neglected in pre-crisis critiques of the euro area policy framework.
- It was initially identified by IMF staff (Mody, 2009; Sgherri and Zoli, 2010) and gradually became mainstream in EU as the crisis escalated (eg Darvas et al, 2011).

European Regulatory Initiatives

- Following Veron (2018), “the understanding of the crisis as home-grown and driven by the bank-sovereign vicious circle has increasingly been adopted by scholars” (eg Smart, 2017; Raviv, 2017; Bayoumi, 2017)”.
 - It is at odds with another narrative, which has tended to dominate the media and political discourse during most of the period covered.
 - According to this more conventional narrative, a US-originated financial-sector tidal wave hit Europe as an external shock in 2007-09, was on its way to resolution by mid-2009, but was followed by a largely unrelated sequence of sovereign-debt crisis in the euro area starting with Greece in late 2009/early 2010 (eg Spiegel, 2014; Peet and La Guardia, 2014).
 - “But the conventional narrative of subprime crisis followed by Greek tragedy obscures the significance of euro-area banking sector fragility throughout the sequence”.

European Regulatory Initiatives

- The nation-based banking system was illustrated by the fact that **most previous EU regulatory initiatives were in the form of Directives, which required national transposition.**
- Conversely, EU regulations, which apply directly without a need for national transposition, were the exception prior to 2007.
- For instance, regarding the IAS Regulation of 2002, which mandated the use of IFRS since 2006, member states retained considerable autonomy in setting financial regulatory policies.
- Supervisory philosophies and practices could thus differ considerably among member states, leading to multiple opportunities for regulatory arbitrage within the EU.

European Regulatory Initiatives

- For instance, several German banks developed major exposures to the US property markets through legal entities in Ireland, which were technically supervised by the Irish authorities, but did not contribute to systemic risk in Ireland as long as the German banks guaranteed them.
- Conversely, they contributed to systemic risk in Germany but were not supervised from there.
- The EU single market led most member states to give priority to the protection and/or promotion of their national banking ‘champions’ (“banking nationalism”), which expanded aggressively during the early 2000s, both in the EU and abroad, including by building up significant exposures in the United States and Asia.
- The initial EU legislative response to the crisis was largely focused on issues which seem currently as peripheral.

European Regulatory Initiatives

- In October 2008, the European Commission introduced proposals for **amendments to the CRD of 2006 (CRD II)**, applying higher capital requirements to asset securitisations.
- In the following few months, the Commission targeted credit rating agencies, through 3 successive proposals, respectively in Nov2008, Jun10, and Nov11 (respectively enacted in Nov09, May11 and Jun13).
- Afterwards, EU issued regulations on securitisation products and financial executives' remuneration (**CRD III**).

European Regulatory Initiatives

- Following the successful execution of the ‘stress tests’ of the 19 largest US banks (Supervisory Capital Assessment Program) in the spring of 2009, member states asked CEBS in May09 to coordinate a multinational exercise of stress-testing covering “22 major European cross-border institutions representing 60% of the total assets of the EU banking sector on a consolidated basis” (aggregate findings published in early Oct09).
- But in contrast to the US, there was no identification of the individual banks that were stress-tested.
- As this initiative failed to restore confidence, new waves of EU-wide stress tests were launched with results published in July 2010 and again in July 2011, this time with identification of individual banks and increasingly detailed disclosures of findings.

European Regulatory Initiatives

- The 2010 exercise was again coordinated by CEBS, and the one in 2011 already by its successor, the EBA, though the underlying balance sheet assessments still remained fully under national authorities, with the EU level having neither the means nor a mandate to double-check their findings.
- Any credibility gained through additional transparency was ruined by subsequent developments, as banks that had been given as resilient collapsed shortly afterwards, eg Allied Irish Banks in Nov10 or Spain's Bankia in Apr12.
- Eventually, these stress tests only contributed to underline the inefficiency of EU and euro-area supervisory framework, and “the incentives for national banking supervisors to hide and deny problems in banks under their purview” (Veron (2018)).

European Regulatory Initiatives

■ Larosière Report

- commissioned in late 2008 by the EC on EU financial regulation, to advise on the **future of financial regulation and supervision**, delivered by an expert group chaired by former French central banker and IMF Managing Director Jacques de Larosière in Feb09.
- presented the view of an EU financial ‘single rulebook’, implying fuller harmonisation of applicable rules and **a shift from directives to regulations**.
- **advocated the transformation of the 3 Lamfalussy Committees (CESR, CEBS and CEIOPS) into more authoritative ‘European Supervisory Authorities’, namely the EBA, the ESMA, and the EIOPA**, respectively located in London, Paris and Frankfurt like their predecessor Committees.
- A **European Systemic Risk Board (ESRB)** was also recommended to monitor ‘macro-prudential’ issues and make recommendations, to be hosted by the ECB in Frankfurt.

European Regulatory Initiatives

- After EU approved these proposals in May09 and the corresponding legislation was implemented in Nov10, the 3 ESAs were officially established on 1Jan11.
- Liikanen Report (Oct.2012):
 - High-level Expert Group on reforming the structure of the EU banking sector, established by Commissioner M. Barnier in Feb.12 to assess additional reforms.
 - Main proposal: legal separation of particularly risky financial activities from deposit-taking banks within a banking group => Proprietary trading and other significant trading activities should be assigned to a separate legal entity if the activities to be separated amount to a significant share of a bank's business, but keeping universal banking model, as the separated activities would be carried out in the same group.

European Regulatory Initiatives

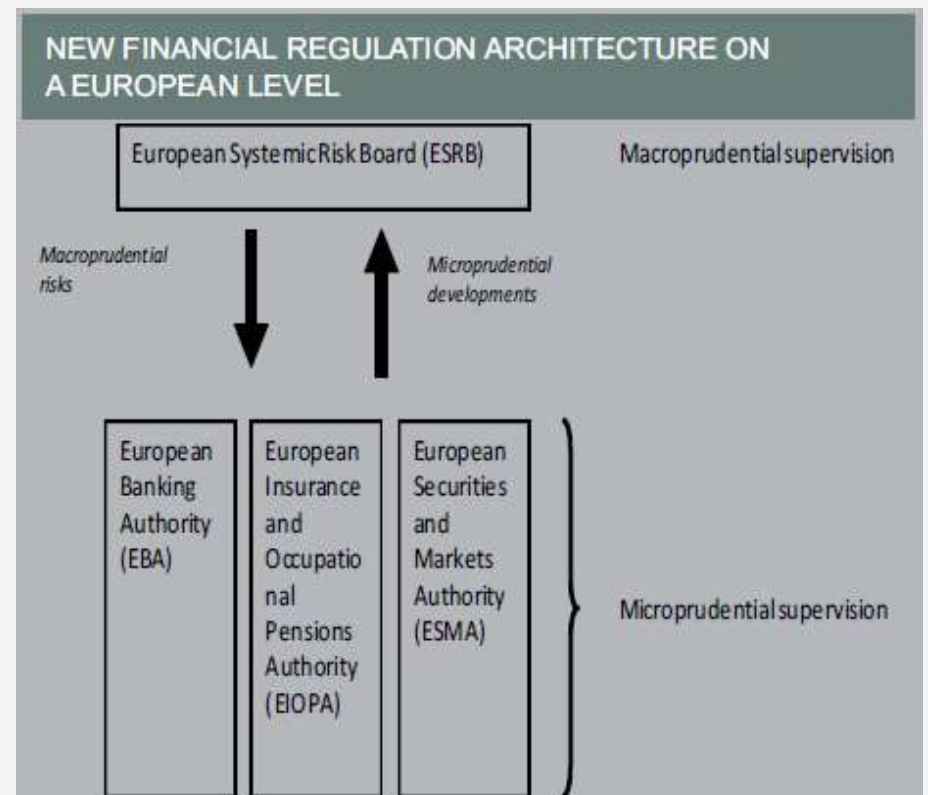
- Other proposals:
 - **more robust risk weights** in the determination of minimum capital standards and more consistent treatment of risk in internal models, namely on the trading book and real estate lending;
 - include maximum loan-to-value (and/or loan-to-income) ratios in micro- and macro-prudential supervision's instruments;
 - extend existing corporate governance reforms by specific measures to:
 - (1) strengthen boards and management;
 - (2) promote the risk management function;
 - (3) rein in compensation for bank management and staff;
 - (4) improve risk disclosure
 - (5) strengthen sanctioning powers.

European Supervision Model

■ European system of financial regulation and supervision:

(i) **3 microprudential European Supervisory Authorities (ESAs)** - focused on the banking and insurance sectors, as well as on the capital markets, coordinating the action of national authorities and imposing common rules, strengthening the role previously given to the European Committees.

(ii) **1 macroprudential authority – ESRB**



Source: Banco de Portugal (2010), "Financial Stability Report", May.

European Supervision Model

■ Main tasks of the ESRB :

- (i) collecting and analysing relevant information to identify systemic risks
- (ii) issuing warnings where systemic risks are deemed to be significant
- (iii) issuing recommendations for action in response to the risks identified
- (iv) monitoring the follow-up of warnings and recommendations
- (v) cooperating and coordinating with ESAs and international fora

■ Composition of the ESRB :

- (i) the President of the ECB is also the Chair of the ESRB.
- (ii) the ESRB brings together representatives of the national central banks of EU countries and the Chairs of the 3 ESAs.

European Banking Union

- Only after the severe financial contagion of 2011 and early 2012 the political leaders understood the necessity of banking union.

- This decision to create the Banking Union for the Euro Area was taken in the summit of 28-29 Jun12, based on **3 pillars**:
 - (1) **SSM – Single Supervisory Mechanism**
 - (2) **SRM - Single Resolution Mechanism**
 - (3) **EDIS - European Deposit Insurance Scheme**

European Banking Union

(1) SSM

- SSM was decided in Sep.12 and regulated by Reg. 1024/2013, 15.Oct, being the ECB the European supervisor for the Euro Area since 4·Nov.14.
- SSM goals:
 - (i) Separation between ECB's monetary policy and supervision roles;
 - (ii) Ensure equal representativeness of member countries in the supervision mechanism (being in or out of the Euro Area);
 - (iii) Integrated decision making process, delegating supervision tasks to national authorities (defined in Reg. 468/2014, 16 Apr.);
 - (iv) Adoption of a common set of prudential rules.

European Banking Union

■ ECB tasks:

- authorize CIs and withdraw existing authorizations
- assess qualified participations
- ensure compliance with prudential rules in EU
- assess adequacy of procedures, strategies and CI's own funds and perform stress tests
- impose additional specific capital requirements
- carry out supervisory tasks within recovery plans and early intervention measures in situations of non-compliance of prudential requirements (or risks of)
- **direct supervision of the significant banks** (currently 117 banking groups, i.e. around 85% of eurozone banks' assets)
- indirect supervision of the remaining banks.

European Banking Union

■ Significance criteria:

Size

the total value of its assets > €30 billion

Economic importance

for the specific country or the EU economy as a whole

Cross-border activities

the total value of its assets > €5 billion and the ratio of its cross-border assets/liabilities in more than one other participating Member State to its total assets/liabilities is > 20%

Direct public financial assistance

it has requested or received funding from the ESM or the European Financial Stability Facility

A supervised bank can also be considered significant if it is one of the three most significant banks established in a particular country.

Source: ECB website.

European Banking Union

- The ECB also set a list of priority less significant institutions (LSI), taking into account the risk situation and potential impact on the domestic financial system.
- **Reasons for a LSI to be deemed “high priority”:**
 - (i) being close to be classified as significant institutions due to their size;
 - (ii) a minimum of three high-priority LSIs per country applies;
 - (iii) riskiness and impact on the national economy, depending on a risk assessment by the national authority, taking into account several elements of the institution, e.g.:
 - (a) business model
 - (b) internal governance and risk management
 - (c) risks to capital
 - (d) risks to liquidity and funding.

European Banking Union

■ In order to achieve a SSM, the ECB performed in the 1Q14 an asset quality review (AQR) and balance sheet assessment of the 130 participating banks, aiming at minimizing legacy problems (announced on 23rd Oct.2013).

■ The examined banks accounted for assets of €22 T (82% of total banking assets in the euro area).

■ This exercise started in Nov.13, added by stress tests, with 3 main goals: transparency (quality of information), repair (corrective actions, 6-9 months provided) and confidence building (sound fundamentals).

Estimated Timeline For Banking Union

Date	Event	Comments
Q413	SSM directive finalised	The European Parliament needs agreement from the ECB board to separate its supervisory and monetary policy roles before voting this through. The plenary session is scheduled for 10 September 2013.
1 Jan 14	CRR and CRD IV implementation	EU wide. Once the SSM is implemented, EBA will coordinate between ECB and non-eurozone national supervisors.
Q413	BRRD finalised	We expect discussion between the European Parliament, the EC and the Council of Ministers to be finalised during Q413. The plenary session is scheduled for 19 November 2013.
Q413/Q114	ECB asset quality review and balance sheet assessment	The proposed SSM directive requests a comprehensive balance-sheet assessment of all banks the ECB will supervise.
Q2/Q314	EBA stress tests	Stress tests have been postponed until 2014 to tie in with ECB asset-quality review and balance-sheet assessment.
By 1 Jan 15	BRRD adopted into national legislation in all EU countries	The proposed BRRD requires the bail-in tool (including senior creditors) to be in place by 1 January 2018.
Unknown - 2015?	Single Resolution Authority	The EC has proposed that a single resolution board is established for all eurozone banks. There may be some legal hurdles to achieving this, so coordination of national resolution authorities either at eurozone or EU level could be an interim measure. We expect whatever mechanism is decided upon to be implemented shortly after SSM.
Unknown - 2015/2016	Central eurozone deposit and resolution funds	A single central deposit fund is off the agenda for the medium term, but the EC has proposed a single bank resolution fund. The first route will be through increased coordination of national deposit and resolution funds in eurozone countries. Resolution funds will be state backed initially, with contributions from banks replacing state financial commitments over time.
2018/2019	Full Basel III, Resolution and Banking Union Implementation	

Source: Fitch (2013), "Impact of European Banking Union on Banks", Sept.

European Banking Union

- The stress test was performed by the participating banks, the ECB and NCAs in cooperation with the EBA, that also designed the stress test methodology, while the adverse scenario was developed by the ESRB in cooperation with the NCAs, the EBA and the ECB.
- Banks were required to maintain a minimum CET1 ratio of 8% under the baseline scenario (as for the AQR) and a minimum CET1 ratio of 5.5% under the adverse scenario, with the following results (announced on the 26.10.2014):
 - Capital shortfall of €25B detected at 25 participant banks
 - Banks' asset values needed to be adjusted by €48B, €37B of which did not generate capital shortfall
 - Additional €136B found in non-performing exposures (to a total of €879B)
 - Adverse stress scenario would deplete banks' capital by €263B, reducing median CET1 ratio by 4 percentage points from 12.4% to 8.3%.

European Banking Union

Table 1 Participating banks with a shortfall

Bank Name	CET1 ratio starting point	CET1 ratio post AQR	CET1 ratio baseline scenario	CET1 ratio adverse scenario	Capital shortfall (€ billion)	Net eligible capital raised (€ billion)	Capital shortfall post net capital raised (€ billion)
Eurobank ¹	10.6%	7.4%	2.0%	-6.4%	4.63	2.86	1.76
Monte dei Paschi di Siena	10.2%	7.0%	6.0%	-0.1%	4.25	2.14	2.11
National Bank of Greece ¹	10.7%	7.5%	5.2%	-0.4%	3.43	2.50	0.93
Banca Carige	5.2%	3.9%	2.3%	-2.4%	1.83	1.02	0.81
Cooperative Central Bank	-3.7%	-3.7%	-3.2%	-8.0%	1.17	1.50	0.00
Banco Comercial Português	12.2%	10.3%	8.8%	3.0%	1.14	-0.01	1.15
Bank of Cyprus	10.4%	7.3%	-7.7%	1.5%	0.92	1.00	0.00
Oesterreichischer Volksbanken-Verband	11.5%	10.3%	7.2%	2.1%	0.86	0.00	0.86
permanet tb	13.1%	12.8%	8.8%	1.0%	0.85	0.00	0.85
Vereito Banca	7.3%	5.7%	5.8%	2.7%	0.71	0.74	0.00
Banco Popolare	10.1%	7.9%	6.7%	4.7%	0.69	1.76	0.00
Banca Popolare di Milano	7.3%	6.9%	6.5%	4.0%	0.68	0.52	0.17
Banca Popolare di Vicenza	9.4%	7.6%	7.5%	3.2%	0.68	0.46	0.22
Piraeus Bank	13.7%	10.0%	9.0%	4.4%	0.66	1.00	0.00
Credito Valtellinese	8.8%	7.5%	6.9%	3.5%	0.38	0.42	0.00
Deixa ²	16.4%	15.8%	10.8%	5.0%	0.34	0.00	0.34
Banca Popolare di Sondrio	8.2%	7.4%	7.2%	4.2%	0.32	0.34	0.00
Hellenic Bank	7.6%	5.2%	6.2%	-0.5%	0.28	0.10	0.18
Münchener Hypothekbank	6.9%	6.9%	5.8%	2.9%	0.23	0.41	0.00
AXA Bank Europe	15.2%	14.7%	12.7%	3.4%	0.20	0.20	0.00
C.R.H. - Caisse de Refinancement de l'Habitat	5.7%	5.7%	5.7%	5.5%	0.13	0.25	0.00
Banca Popolare dell'Emilia Romagna	9.2%	8.4%	8.3%	5.2%	0.13	0.76	0.00
Nova Ljubljanska banka ³	16.1%	14.6%	12.8%	5.0%	0.05	0.00	0.05
Liberbank	8.7%	7.8%	8.5%	5.6%	0.03	0.64	0.00
Nova Kreditna Banka Maribor ⁴	19.6%	15.7%	12.8%	4.4%	0.03	0.00	0.03
Total	10.0%	8.4%	7.2%	2.1%	24.62	18.59	9.47

Figure 1 Gross AQR adjustment by country of participating bank

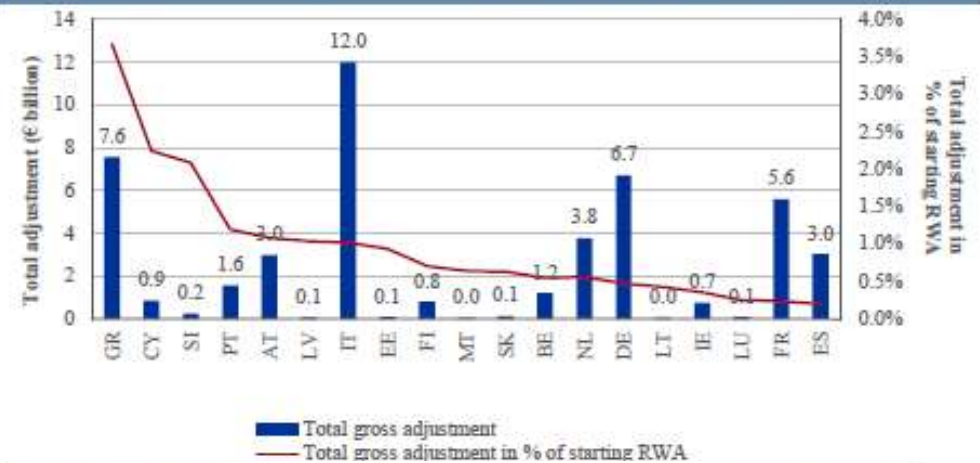
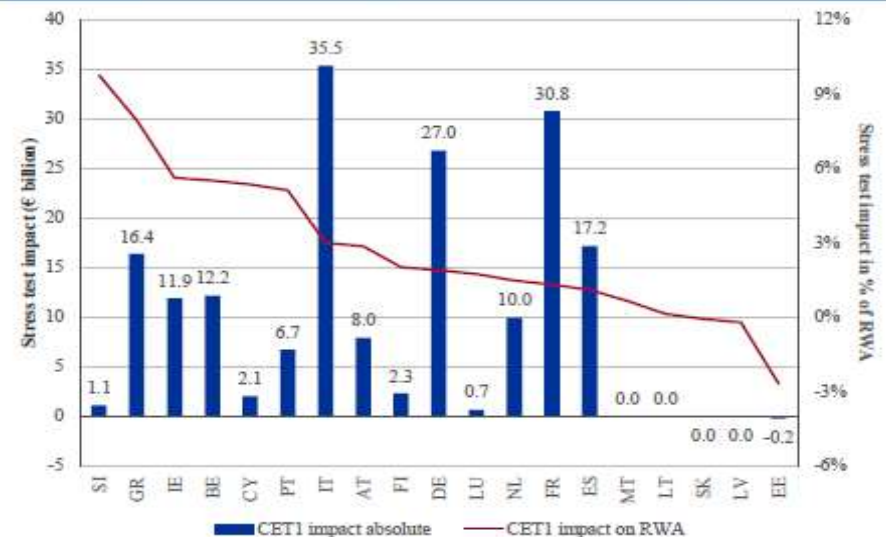


Figure 52 Impact of the stress test on the aggregate CET1 capital by country under the adverse scenario in € billion and in percentage of RWA



Source: ECB (2014), "Aggregate Report on the Comprehensive Assessment", Oct.

European Banking Union

(2) SRM - Single Resolution Mechanism

- in charge of the application of the EU uniform rules and a uniform procedure for the resolution of banks, along with the national resolution authorities.
- includes the Single Resolution Board (SRB) and the Single Resolution Fund (SRF), leading to the merger of national resolution funds into a single European fund by 2024;
- the use of the SRF depends on the entry into force of an agreement among the participating Member States on transferring the funds raised at national level to the SRF, as well as on a progressive merger of the different funds raised at national level to be allocated to national compartments of the Fund.
- established by Regulation 806/2014, 15 July (SRMR, amended by Regulation 2019/877, 20 May – SRMR II), entered into force in 01.01.2016.

European Banking Union

(i) Single Resolution Board (SRB)

- the European Resolution Authority, set-up to decide if, when and how a bank must be resolved, as well as to appoint a special manager to a failing bank for a limited period;
- responsible for set-up of the MREL (Minimum Requirements for Own Funds and Eligible Liabilities for Bail-ins), the resolution plans and all decisions related to the resolution of banks subject to the direct supervision of the ECB.

(ii) Single Resolution Fund (SRF)

- owned by the SRB, to break the link between the risk of the sovereigns and the banks and facilitate the resolution of cross-border EU-based banks;
- to be built over 8 years (2016-2023);
- provides capital support to banks, by reaching at least 1% of the covered deposits;

European Banking Union

- The SRB had its 1st test in Jun17 - the resolution of Banco Popular (Spain's 6th largest bank), whose operations were absorbed by Santander.
- In Dec18, it was agreed at the Euro Summit that the **European Stability Mechanism (ESM) would act as a common backstop for the SRF**, from 2024 onwards at the latest, with a credit line of at least 1% of covered deposits in the Banking Union (with a cap of 68 B€), doubling the resources of the SRF and ensure their immediate availability, reaching an amount of around 120B€.
- This safeguard can reassure markets and block contagion, even though in the last crisis governments injected around €360 billion into banks' capital.

European Banking Union

- For the introduction of this backstop, the Eurogroup requested an extended version of the “Risk Reduction Report”, prepared jointly by the European Commission, the ECB) and the SRB.
- This report showed that all risk reduction indicators improved significantly, e.g. NPLs and the MREL capacity.
- Consequently, the Eurogroup agreed to advance the entry into force of the common backstop to the SRF by the beginning of 2022.

European Banking Union

- **The SRF may make a contribution for loss absorption only where:**
 - (a) a contribution to loss absorption and recapitalization equal to an amount not less than 8 % of the total liabilities including own funds of the institution under resolution, has been made by shareholders and creditors; and
 - (b) the contribution from the Fund does not exceed 5 % of the total liabilities including own funds of the institution under resolution.

- (3) **EDIS - European Deposit Insurance Scheme**, proposed in Nov15, in order to break the link between sovereign and banking system's risks, usually named as the 'third pillar' of the EU banking union (alongside the SSM and SRM).

European Banking Union

ESM:

- Set up in Oct.2012 as a permanent solution to provide funding to Euro Area countries that lose access to the bond markets.
- Its forerunner was the European Financial Stability Facility (EFSF), which had been set up in Jun10 as a temporary solution.
- The EFSF still exists as a legal entity and a big issuer of bonds, but it can no longer make new loans.
- The EFSF and ESM remain separate legal entities but share staff, facilities, and operations. Together, the EFSF and the ESM had €700 billion in firepower.

European Banking Union

- **The coordination of the SRM and the EU competition authority, which handles state aid, is complex:**
 - the decision to resolve a bank typically starts with the communication of the bank's imminent failure from the ECB to the SRB, the Commission, and the national resolution authorities.
 - the SRB then decides on a resolution scheme and the use of the SRF if the competition authority's assessment about state aid rules is favorable.
 - the competition authority may agree with the scheme, oppose on competition grounds, or object to the failing bank entering the resolution regime for reasons of public interest.
 - In case of disagreement, the European Council is asked to intervene.
 - If the resolution scheme is approved, the national resolution authorities implement it in accord with national law and the BRRD.

EU Basel III package

1. **CRD IV and CRR**
 - (1) Pillar I capital requirements;
 - (2) Additional capital buffers;
 - (3) Leverage ratio;
2. **BRRD**
3. **Regulatory technical standards for credit rating agencies**
4. **Requirements on Remuneration of staff**
5. **Stress Testing**
6. **SREP**
7. **ILAAP**

EU Basel III package

1. CRD IV and CRR

- CRD IV - Directive 2013/36/EU, 26.06, amended by Directive 2019/878, 20.05 (CRD V).
- CRR – Regulation 575/2013, 26.06.2013, amended by Reg. 876/2019, 20.05 (CRR II).
- **CRR II implemented the leverage ratio and the NSFR, entering into force in 28.06.2021.**

(1) Pillar I capital requirements

- Common Equity Tier 1 (CET1) $\geq 4,5\%$
- T1 (CET1+Additional Tier1) $\geq 6\%$
- Solvency Ratio (T1+T2) $\geq 8\%$

(all % of RWA)

EU Basel III package

(2) **Combined Capital Buffer Requirement (CBR)**

- (i) Capital Conservation Buffer (CCoB) = 2,5%
- (ii) Countercyclical Capital Buffer (CCyB) – 0% to 2,5%
- (iii) Systemic Risk Buffer (SyRB) – multiples of 0,5%, with no limit
- (iv) Global Systematically Important Institutions (G-SII) capital buffers – no limit;
- (v) Other Systematically Important Institutions (O-SII) capital buffers $\leq 3\%$

EU Basel III package

(i) Capital Conservation Buffer (CCoB)

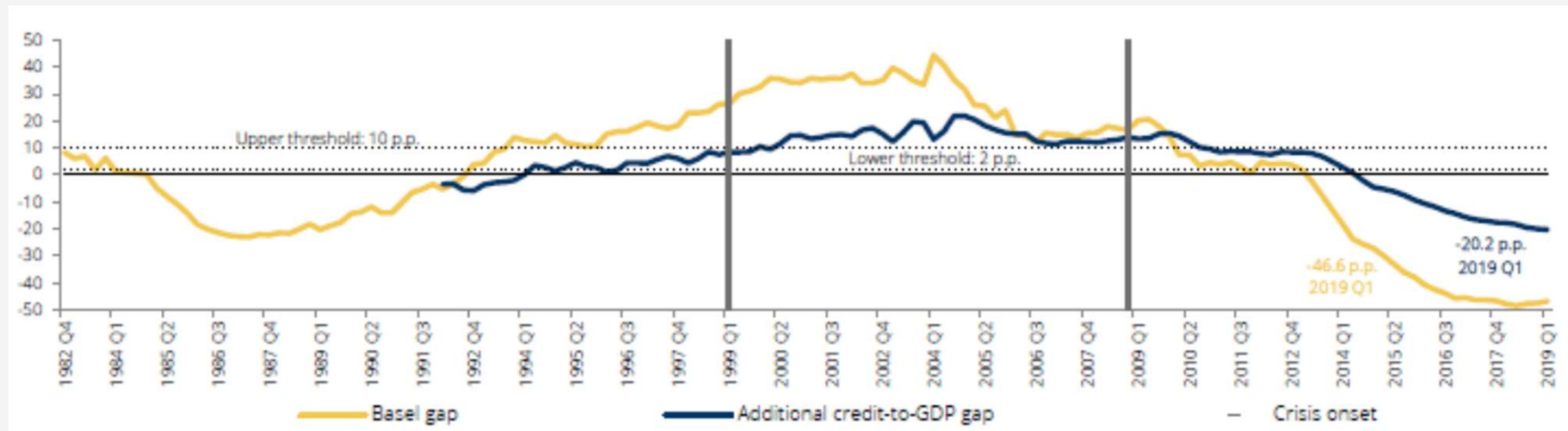
- constant over time, aiming to accommodate losses in a potentially adverse scenario.

(ii) Capital Countercyclical Buffer (CCyB) – 0% to 2,5% (multiples of 25 bp)

- to strengthen the resilience of the banking sector in periods when cyclical systemic risk increases due to excessive credit growth, being defined based on the analysis of a set of macroeconomic and financial indicators, providing information on cyclical systemic risk developments.
- the ESRB gave guidance to national authorities on setting countercyclical buffer rates (Recommendation ESRB/2014/1), following BCBS recommendations, e.g. on the measurement and calculation of the deviation from long term trends of ratios of credit/GDP, variables that indicate the build-up of systemic risk due to excessive credit growth in a financial system (e.g. the relevant credit/GDP ratio and its deviation from the long-term trend) and variables that indicate that the buffer should be maintained, reduced or released.
- In Portugal, according to DL No. 157/2014, BdP establishes this buffer since the end of 2015 for the following quarter, keeping it at 0% since then (according to the methodology presented in BdP (2015), “Countercyclical Capital Buffer in Portugal: How will it work?”, 29 Dec.).

EU Basel III package

- Actually, the Basel and the BdP indicators of cyclicality are still significantly below the long-term mean:



Source: BoP (2019), “Countercyclical Capital Buffer”, Sept.

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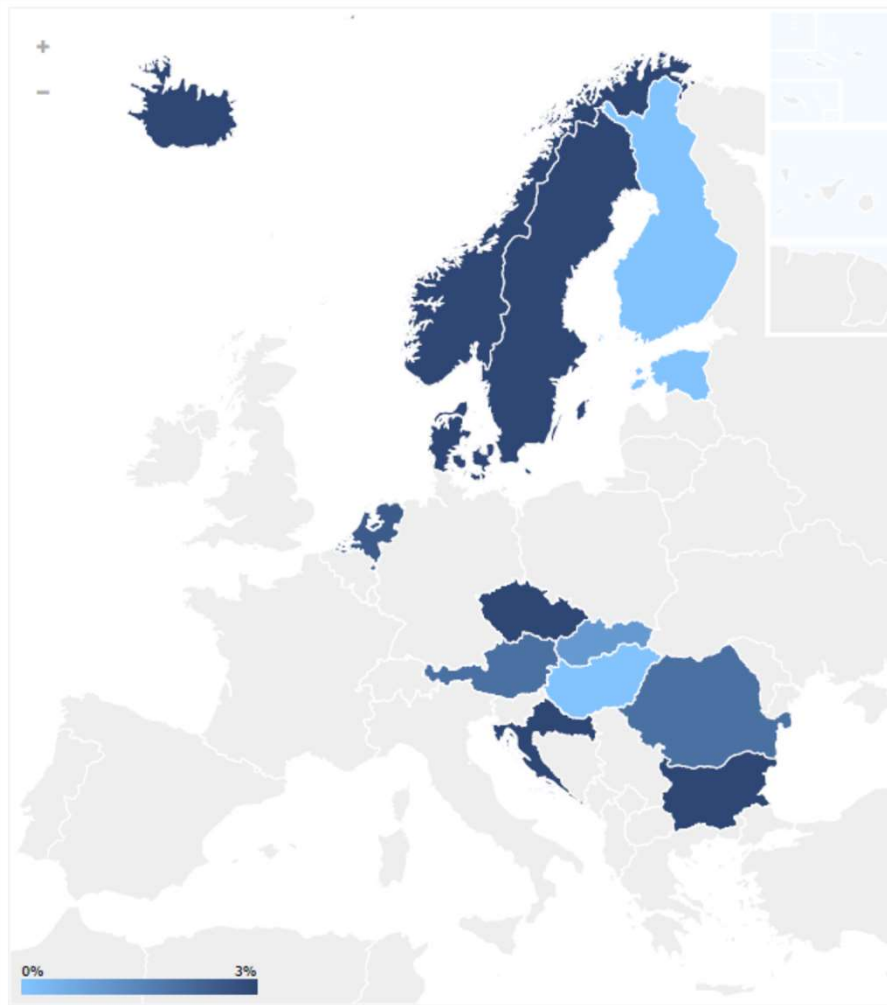
- **As additional information to the Basel gap, BdP considers the following indicators:**
 - (a) Overvaluation of property prices - year-on-year growth rate of the real house price index and its four-quarter moving average
 - (b) Credit developments
 - (c) External imbalances – current account deficit
 - (d) Strength of bank balance sheets - loan-to-deposit ratio and its 4-quarter moving average
 - (e) Private sector debt burden - year-on-year growth rate of the debt-service-to-income ratio of the private non-financial sector and its 4-quarter moving average.
 - (f) Potential mispricing of risk - spread applied by banks to new loans granted to non-financial corporations

EU Basel III package

(iii) systemic risk (SyRB)

- aims to address systemic risks of a long-term, non-cyclical nature that are not covered by other macroprudential instruments of the CRR and the CRD.
- the systemic risk buffer rate may apply to all exposures or a subset of exposures, thus allowing SyRB to be applied, on a sectoral basis, to all institutions or one or more subsets of those institutions.
- the buffer level may vary across institutions, being updated monthly, by each country.
- this buffer has not been applied yet in Portugal.

EU Basel III package



Country	ByRB	Exposures
Austria	1-2%	All exposures
Bulgaria	3%	Domestic exposures
Croatia	1.5-3%	All exposures
Czech Republic	1-3%	All exposures
Denmark	1-3%	All exposures
	3%	Domestic (Faroe Islands)
Estonia	0%	Domestic exposures
Finland	0%	All exposures
Hungary	0%	Domestic exposures
Iceland	3%	Domestic exposures
Liechtenstein	1-2%	All exposures
Netherlands	1.5-2.5%	All exposures
Norway	3%	All exposures
Romania	1-2%	All exposures
Slovakia	1%	Domestic exposures
Sweden	3%	All exposures

Source: ESRB (updated on the 25th May 2020).

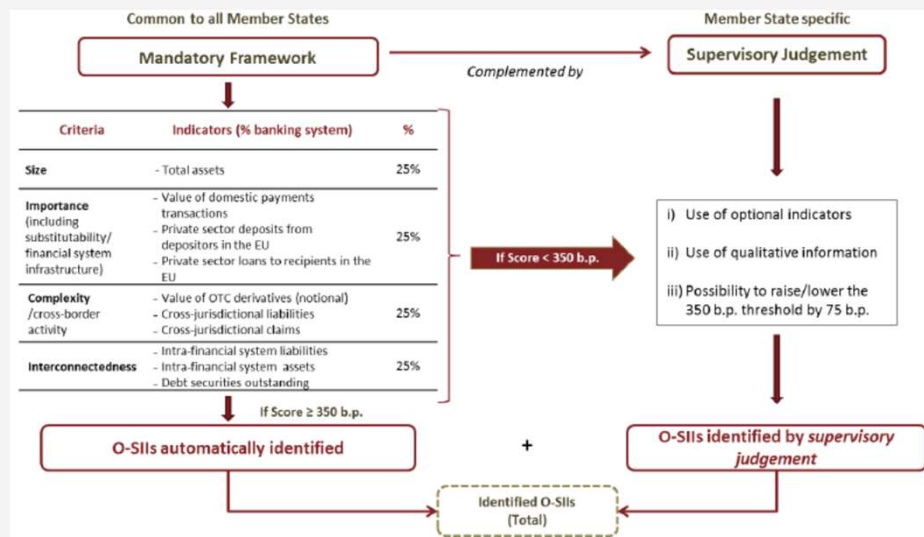
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(iv) Global Systematically Important Institutions (G-SII) capital buffers

- Identified by the FSB

(v) Other Systemically Important Institutions (O-SIIs)

- O-SIIs criteria defined by EBA in 2014 (EBA/CP/2014/19 - “Guidelines on the criteria to determine the conditions of application of **Article 131(3) of Directive 2013/36/EU (CRD)** in relation to the assessment of other systemically important institutions (O-SIIs)”).



Source: BdP (2016), “Identification of O-SIIs and Calibration of O-SIIs Capital Buffers”, July.

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- In Portugal, according to the Notice No. 4/2015 of the BdP, the supervisor announces every year until 1 Dec. the O-SIIs and their capital surcharge (up to 2% of CET1), phased-in since 2020, with the 2021 target postponed by 1 year due to the pandemic (according to BdP decision on 07.04.2020).
- the buffer currently applied is between 0.188% and 0.75% of total RWA and will increase to a buffer between 0.25% and 1% as from 01.01. 2022.

O-SIIs	O-SII buffer	Implementation date			
		1 January 2020	1 January 2021	1 January 2022	1 January 2023
Caixa Geral de Depósitos	1.000	0.750	0.750	1.000	1.000
Banco Comercial Português	1.000	0.563	0.563	0.750	1.000
LSF Nani Investments	0.500	0.375	0.375	0.500	0.500
Santander Totta	0.500	0.375	0.375	0.500	0.500
Banco BPI	0.500	0.375	0.375	0.500	0.500
Caixa Económica Montepio Geral	0.250	0.188	0.188	0.250	0.250

Source: BdP (2020), Financial Stability Review, June.

Clusters	Scores	O-SII buffer
5	≥ 2800	2.00 %
4	2100-2799	1.00 %
3	1400-2099	0.75 %
2	700-1399	0.50 %
1	350-699	0.25 %

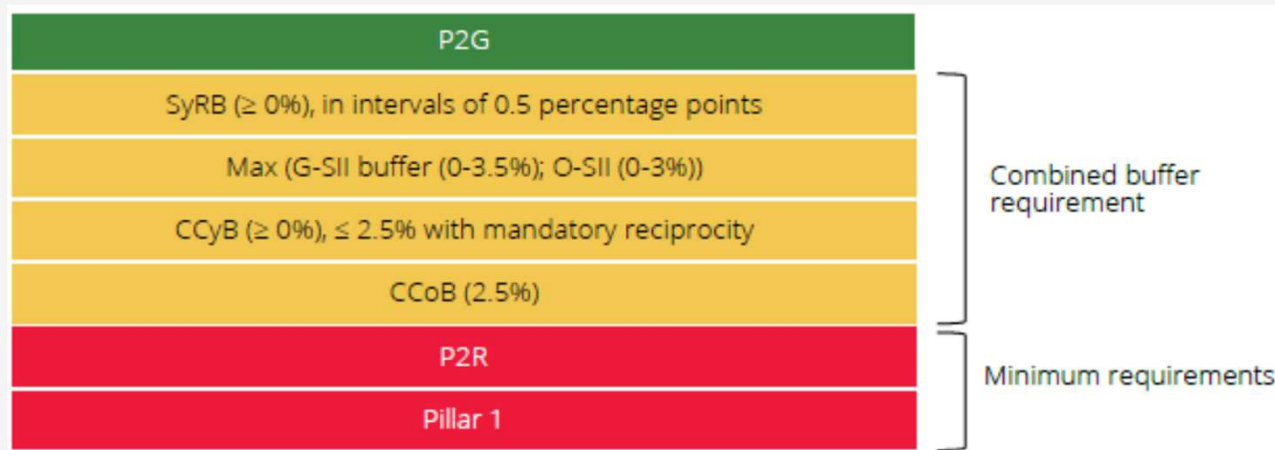
Source: BdP (2016), “Identification of O-SIIs and Calibration of O-SIIs Capital Buffers”, July.

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- CBR is intended to increase the financial system's capacity to absorb losses, as to preserve financial stability.
- The buffers are available to be used during adverse periods, following a decision by the macroprudential authority to release them (except the CCoB).
- Institutions that fail to meet the combined buffer requirement (CBR) are subject to automatic restrictions on dividend distribution.
- For G-SII, the buffer can be replaced by the O-SII if the latter is larger.
- A cap is established on the aggregate value of G-SII/O-SII and SyRB buffers of 5% of total RWA, which can only be exceeded upon authorization of the European Commission.

EU Basel III package

■ Total capital requirements:



Source: Banco de Portugal (2020), “Financial Stability Report”, June.

- **Pillar 1 + P2R have to be met on an ongoing basis, including adverse scenarios.**
- For the determination of P2R, microprudential authorities shall assess the institution's specific risks and the corresponding control mechanisms implemented and, based on this assessment, may decide to impose specific measures on the institution, including additional capital requirements.
- CRD V => P2R should be met with at least 75% of T1.

EU Basel III package

- P2G provides a 'safety margin' for prudential requirements, that is calculated considering the expected reduction in own funds in the event of a very adverse and very unlikely scenario.
- A bank that fails to meet the P2G shall be the object of increased attention by the microprudential authority, but doesn't have the same type of consequences of the non-compliance with minimum requirements and capital buffers.
- However, where a bank repeatedly fails to comply with P2G, the microprudential authority may take additional measures, including the conversion of the P2G into an additional own funds requirement under P2R.

EU Basel III package

(3) Leverage ratio

- As in the case of risk-based capital requirements (pillar I and P2R), the leverage requirement includes the Pillar 1 and P2R components.
- Pillar 1 corresponds to a minimum level requirement for the leverage ratio of 3%, as a % of the total exposure measure and should be met with Tier 1 capital.
- Banks shall also comply with the P2R leverage ratio requirement (P2R-LR) specific to the institution, as determined by the microprudential supervisory authority.
- As with risk-based capital requirements, the supervisor may also introduce a guidance on the leverage ratio (P2G-LR).
- According to CRR II, the LR will enter into force in Jan22 (postponement to Jan23 under discussion).

EU Basel III package

2. BRRD

- Directive 2014/59/EU, 15.05, amended by Directive 2019/879, 20.05 (BRRD II):
 - establishes the framework for the recovery and resolution of banks;
 - harmonizes the rules relating to the resolution of banks across the EU;
 - provides for cooperation among resolution authorities when dealing with the failure of cross-border banks;
 - leaves discretion to national authorities in the application of the tools and in the use of national financing arrangements in support of resolution procedures.

EU Basel III package

- Besides allowing new tools for resolution and imposing capital buffers for banks to cushion losses in case of resolution, **BRRD imposes banks to set-up:**
 - (1) **Recovery plans** - to be set-up by banks, defining the early actions to restore long term viability;
 - (2) **Resolution plans** - to be set-up by banks and to be approved by the resolution authorities in cooperation with supervisors;

EU Basel III package

- **BRRD is specially relevant in EU, as Government bail-ins were the rule until the subprime crisis and the resolution of SIBs was hampered by cross-border issues and lack of harmonization of different national regulations:**
 - (1) requires that **banks meet MREL, expressed as a percentage of their Total Liabilities and Own Funds (TLOF) set-up by resolution authorities**, ensuring that shareholders and creditors bear losses regardless of which resolution tool is applied;
 - (2) extends the powers of supervisors to intervene at an early stage;
 - (3) harmonises the triggers for the application of resolution measures, ensuring that authorities are able to take an action without being required to establish that an institution is insolvent.

EU Basel III package

- **The main resolution measures include:**

- (1) sale of (part of) a business;
- (2) establishment of a bridge institution (the temporary transfer of good bank assets to a publicly controlled entity);
- (3) asset separation (the transfer of impaired assets to an asset management vehicle);
- (4) bail-in measures (imposition of losses, by order of seniority, on shareholders and unsecured creditors) - eligible deposits from individuals and micro, small and medium-sized enterprises, as well as liabilities to the EIB, will have preference over the claims of ordinary unsecured, non-preferred creditors and depositors from large corporations.

EU Basel III package

- The BRRD requires 3 basic conditions for a resolution to be undertaken:
 - (i) the bank is failing or likely to fail, which is based on the ECB's assessment;
 - (ii) there is no alternative private solution; and
 - (iii) it is necessary for the public interest.

- The last 2 requirements are decided by the SRB.

- Resolution authorities shall determine an appropriate transitional period, which is as short as possible.

- They shall also communicate to the institution a planned MREL for each 12 month period during the transitional period.

EU Basel III package

- **MREL entered into force in 2019, corresponding to TLAC established by the FSB for the G-SIBs**, even though TLAC is a Pillar 1 capital requirement, while MREL is set-up by the resolution authority for each individual bank, based on the resolution plan, to ensure that:

- (a) the institution can be resolved by the application of the resolution tools;
- (b) in case of bail-in, losses can be absorbed and the CET1 ratio could be restored to a level necessary to enable it to continue to comply with the minimum levels;
- (c) the Deposit Guarantee Scheme can contribute to the financing of resolution.



Source: BdP (2019), “Financial Stability Review”, June.

EU Basel III package

- The MREL must be expressed in two ratios to be met simultaneously:
 - (i) **MREL-RW** - as a percentage of total risk-weighted exposure amount; and
 - (ii) **MREL-LR** - as a percentage of the total exposure measure.
- Consequently, from 2022 onwards, 3 capital ratios will have to comply with minimum levels.

Regulatory requirement	Entry into force
Minimum leverage ratio requirement	June 2021
Leverage ratio buffer	January 2022 (legislative proposal to be deferred to January 2023)
MREL	January 2022 (intermediate objectives)
MREL	January 2024 (end of phase-in period)

Source: Banco de Portugal (2020), “Interaction between regulatory minimum requirements and capital buffers”, in Financial Stability Report, June 2020.

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- These capital ratios are calculated on the basis of total RWA or total exposure (Total Assets).

Regulatory requirement	Purpose	Requirement ratio denominator
Risk-based capital requirements (RW)	Prevent institutions from taking on more risk to increase their profitability, without having an adequate level of own funds to cover this risk	Total risk-weighted exposure amount
Leverage ratio requirements (LR)	Restrain the accumulation of excessive leverage in the expansionary phase of the cycle and mitigate the risks emerging from underestimated capital requirements determined through internal approaches	Total exposure measure
Requirements for own funds and eligible liabilities (MREL)	Allow institutions and entities to absorb expected losses in case of resolution or at the point of non-viability, as appropriate, and to be recapitalised after the implementation of the actions provided for in the resolution plan	Total risk-weighted exposure amount (MREL-RW) and total exposure measure (MREL-LR)

Source: Banco de Portugal (2020), “Interaction between regulatory minimum requirements and capital buffers”, in Financial Stability Report, June 2020.

EU Basel III package

- BRRD II distinguishes between various types of banks, subject to different requirements and timelines for MREL implementation, in line with the principle of proportionality:
 - (i) G-SII - minimum requirements for Pillar 1 MREL of 18% of RWA and 6,75% of Total Assets from the beginning of 2022 onwards (16% and 6% until 2021)
 - (ii) top-tier banks - minimum requirements for Pillar 1 MREL of 13.5% of RWA and 5% of Total Assets
 - (iii) smaller banks, but considered by resolution authorities as likely to constitute a systemic risk in insolvency – similar to top-tier banks
 - (iv) all other institutions – only Pillar 2 MREL-RW and Pillar 2 MREL-LR are required.

EU Basel III package

- Pillar 2 MREL-RW =

loss absorption amount (LAA) in resolution = total capital ratio of 8% (Pillar 1 req.) + P2R

+

a recapitalization amount (RCA) enabling the institution resulting from the resolution to restore compliance with Pillar 1 and P2R requirements after the implementation of the resolution strategy.

- Pillar 2 MREL-LR =

amount of losses to be absorbed in resolution (Pillar 1 requirement for the 3% leverage ratio)

+

a recapitalization amount allowing the institution resulting from the resolution to restore compliance with the Pillar 1 requirement for the leverage ratio after implementation of the resolution strategy

EU Basel III package

- **The bail-in tool must be applied to all banks' liabilities except:**
 - (a) deposits covered by the Deposit Insurance Scheme;
 - (b) secured liabilities, including covered bonds;
 - (c) liabilities to other banks, excluding entities that are part of the same group, with an original maturity of less than 7 days;
 - (d) liabilities to:
 - (i) an employee, including salaries and pension benefits or other fixed remuneration;
 - (ii) a commercial or trade creditor, including IT services, utilities and the rental, servicing and upkeep of premises;
 - (iii) tax and social security authorities, provided that those liabilities are preferred under the applicable law;
 - (iv) deposit guarantee schemes.

EU Basel III package

- **MREL – EBA regulatory instruments:**

- EBA/RTS/2015/05 (3 Jul.) - *regulatory technical standards* about the MREL calculation for each institution, under Directive 2014/59/EU, to further specify the common criteria set out in the BRRD to define MREL.
- EBA/ITS/2017/06 (5 Sept.) - Draft Implementing Technical Standards on procedures and templates for the identification and transmission of information by resolution authorities to the EBA on MREL.

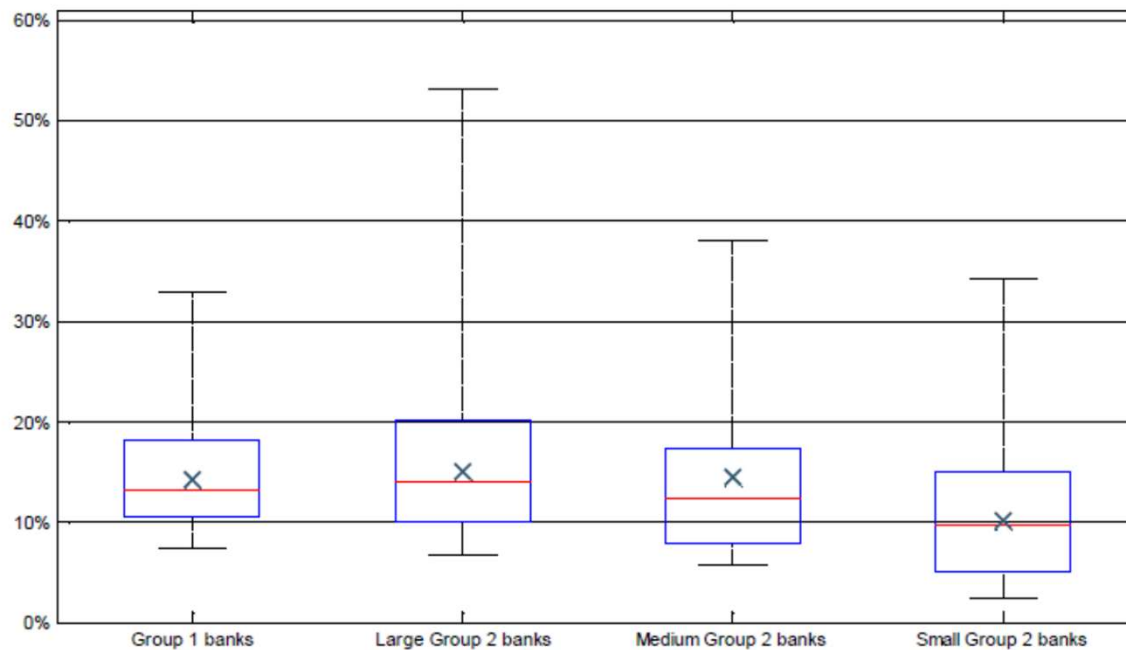
EU Basel III package

- The BRRD principle of senior bond bail-in has not been fully established yet and was circumvented by the Italian authorities in the liquidation of 2 medium-sized banks, Banca Popolare di Vicenza and Veneto Banca in Jun17.
- Moreover, bail-ins are efficient for idiosyncratic shocks, but for macro-systemic shocks a monetary and fiscal backstop is necessary.
- In Portugal, Decree-Law 31-A/12, 10 Feb. established the resolution law, with the Notice 18/12, 18 Dec. defining the info required from FIs for the setting-up of the Resolution Plans by the BdP.

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- According to the Final Report on MREL by EBA (Op-2016-21, 14 Dec.) and based on the current MREL eligibility criteria, the average MREL ratio of a sample of 133 EU banks (as of end-Dec.2015) stood at around 15% of TLOF, ...

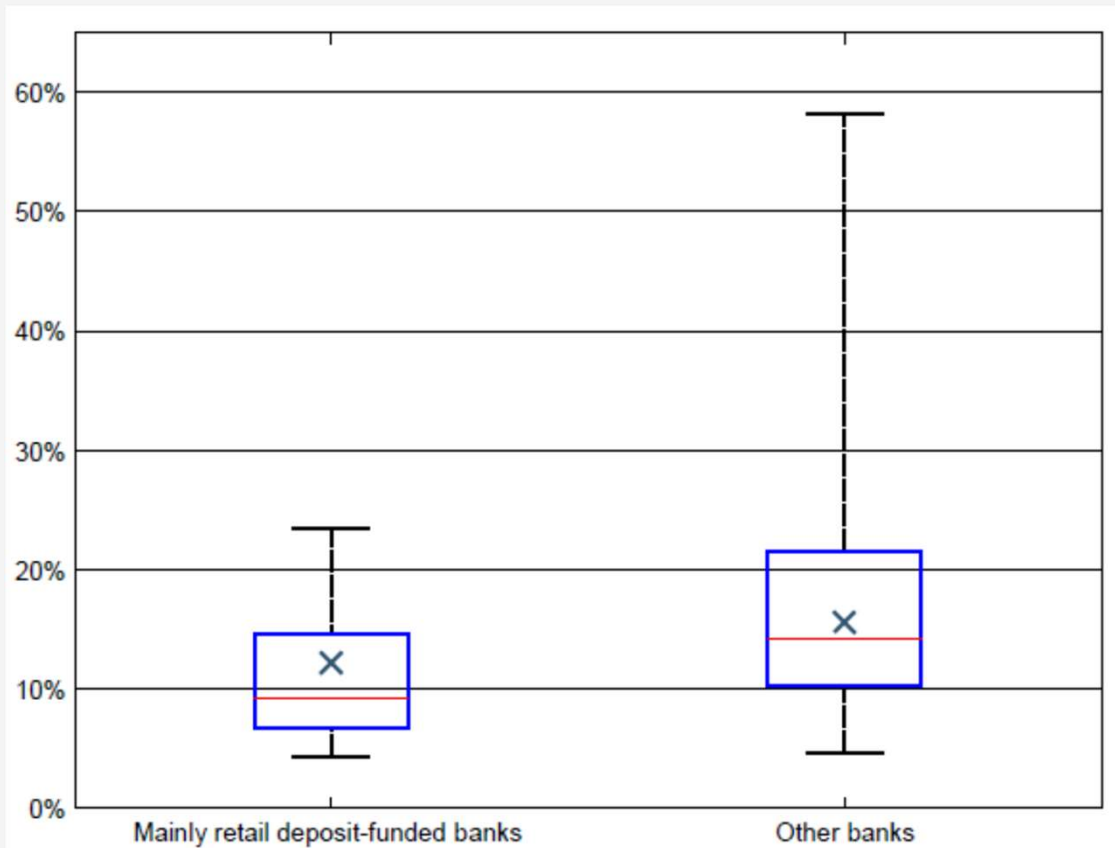
Figure 6: Distribution of MREL ratio⁴⁵ by size and cross-border activity (% of TLOF)



Source: EBA (2016) (Op-2016-21, 14 Dec.)
Notes: Group 1 comprises the largest and most internationally diversified banks. The chart shows the interquartile range (blue box), the 95th and 5th percentile, the median (red line) and 'x' average values of the distribution.

EU Basel III package

- ... with retail banks exhibiting lower MREL, due to the weight of retail deposits.

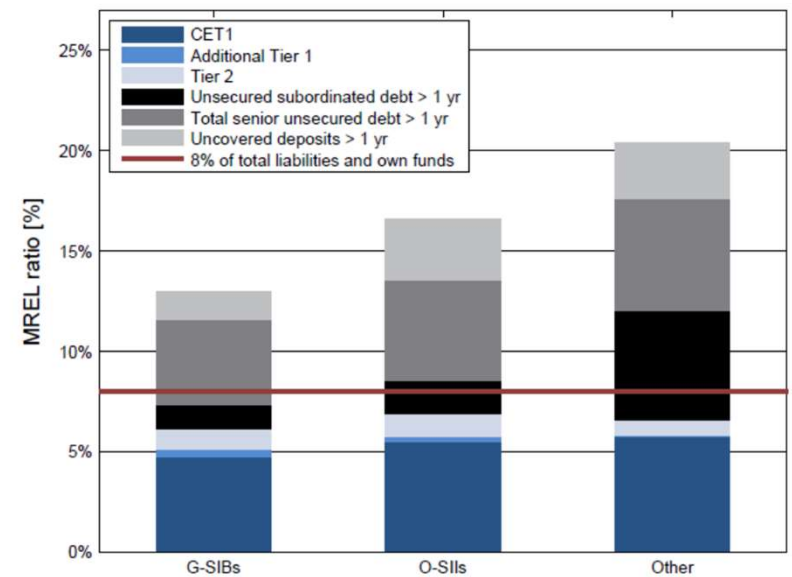


Source: EBA (2016) (Op-2016-21, 14 Dec.)

EU Basel III package

- Capital instruments represented around 43% of the total MREL, with smaller banks exhibiting higher weight of subordinated debt.
- According to the EBA, the MREL shortfall in Europe was between 67B€ and 221B€ (124 B€ and 298B€ excluding deposits), depending on the requirements to be set by resolution authorities.
- According to CreditSights, in 2015 MREL shortfall in Europe was over 13B€ if senior debt and term deposits over 1 year were included, increasing to 674B€ if only subordinated debt and capital were considered.

Figure 8: Composition⁴⁸ of MREL by banks' systemic importance (% of TLOF)



Source: EBA (2016) (Op-2016-21, 14 Dec.)

EU Basel III package

3. Regulatory technical standards for credit rating agencies

- (i) Registration of credit rating agencies to the ESMA;
- (ii) information to be provided by a credit rating agency in its application for registration to the;
- (iii) the presentation of the information to be disclosed by credit rating agencies in a central repository (CEREP), so investors can compare the performance of different CRAs in different rating segments;
- (iv) how ESMA will assess rating methodologies; and
- (v) the information CRAs have to submit to ESMA and at what time intervals in order to supervise compliance.

EU Basel III package

4. Requirements on Remuneration of staff

- (i) Directive 2010/76/EU (CRD III) introduced requirements on remuneration of staff who have a material impact on the institution's risk profile, which came into force on 1 January 2011.
- (ii) Later, several measures were approved by the EBA, following BIS recommendations ("Corporate governance principles for banks", Jul.2015), in order to improve remuneration practices, according to Articles 92 and CRD IV:
 - 2016 - "On sound remuneration policies under Articles 74(3) and 75(2) of Directive 2013/36/EU and disclosures under Article 450 of Regulation (EU) No 575/2013", EBA/GL/2015/22, 27.06.2016;
 - 2017 - "Guidelines on internal governance under Directive 2013/36/EU ", EBA/GL/2017/11, 26.09,

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■ Main issues:

- Definition of a remuneration policy, to be revised annually, including clawback arrangements for variable remuneration;
- Integration of risk in performance measurement;
- Deferment of variable remuneration, becoming more dependent on long term performance;
- Variable remuneration shall not exceed fixed remuneration (set in CRD IV, since 2014);
- Independence between the remuneration of internal control functions' staff and the performance of the activities controlled by those functions;
- Setting up a Remuneration Committee, as an advisor to the supervisory function.

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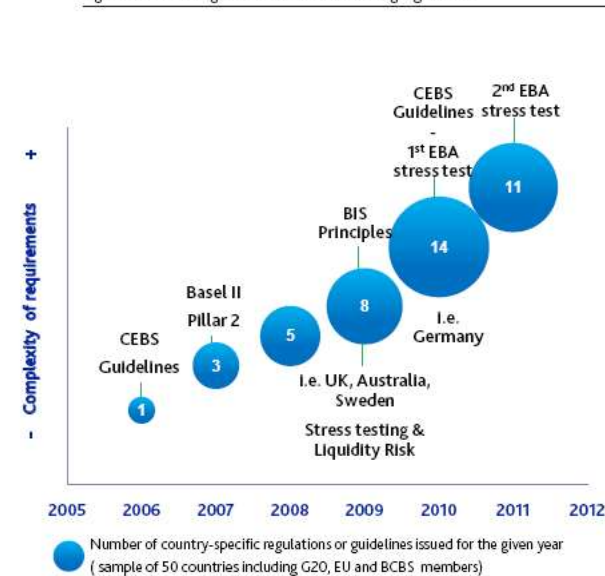
- According to CRD IV, home Member State competent authorities have to collect information on the number of individuals per credit institution in pay brackets of at least 1 M€, including the business area involved and the main elements of salary, bonus, long-term award and pension contribution.
- That information shall be forwarded to the EBA, which shall disclose it on an aggregate home Member State basis in a common reporting format.
- In 29.11.2013, the first report was published by EBA.
- In 22.07.2020, the EBA published the most recent report “Benchmarking of Remuneration Practices at the European Union Level (2017 and 2018 Data) and Data on High Earners (2018 Data)”.
- In Portugal, BdP published Notice 10/2011, later revoked by Notice 3/2020.

EU Basel III package

5. Stress Testing

- Higher relevance of stress testing exercises in banking management and capital planning since the end of the last decade, following international recommendations:
 - BCBS (2009), “Principles for Sound Stress Testing Practices and Supervision”, Jan.09.
 - IIF (2008), “Final Report of the IIF Committee on Market Best Practices: Principles of Conduct and Best Practice Recommendations”;
 - CEBS (2010), “CEBS Guidelines on Stress Testing”.

Figure 3. Growth of global and local stress testing regulations

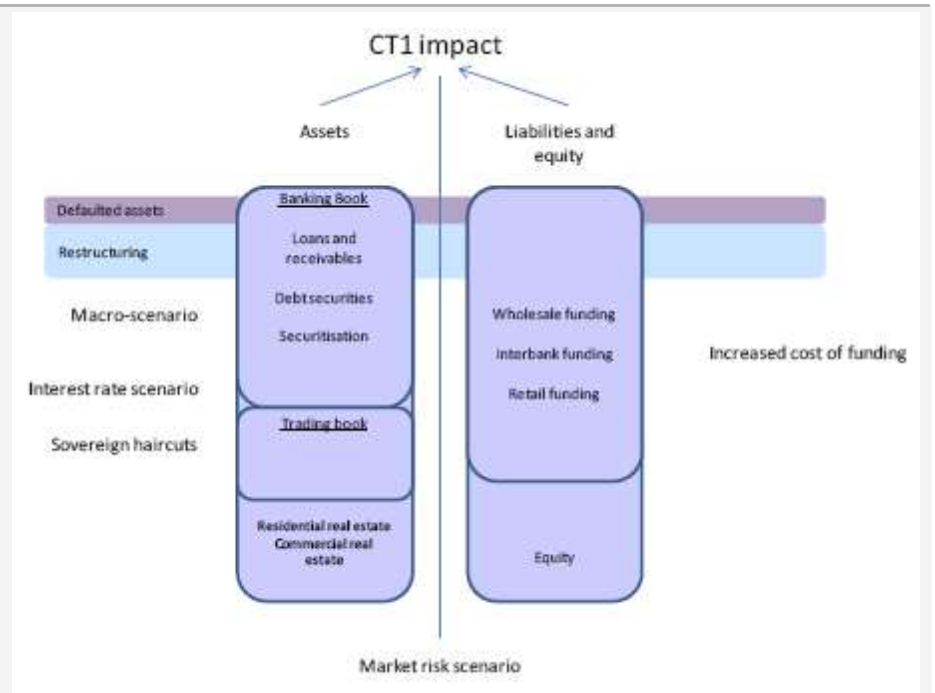


Source: Moody's (2011), “Moody's Analytics 2011 Banking Industry Survey on Stress Testing”.

EU Basel III package

■ 1st EBA/CEBS stress test

- requested by the European Council in Jul.10, for the main banks in each member country.
- additional to those performed by national authorities, covering 91 banks (65% of the asset volume of the banking system).
- forecasting horizon - end-2011, focusing mostly on credit and market risks (impairments and NII), concluding:
 - (i) 7 banks (5 from Spain, 1 from Greece and 1 from Germany) below the minimum level of 6% for the CT1 ratio.
 - (ii) CT1 ratio fell to 9,2% in the stress scenario (11.2% in the baseline).
 - (iii) **Capital shortfalls around 3.5B€.**

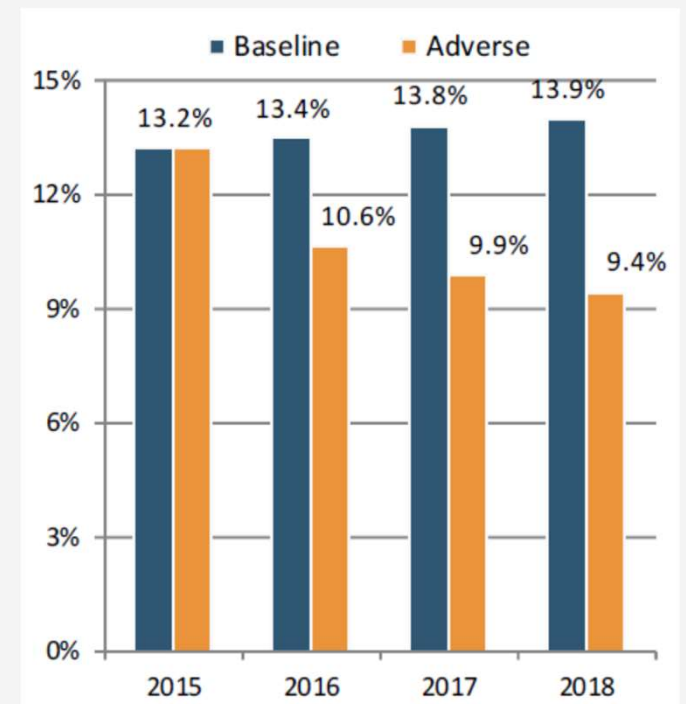


Source: EBA (2011), "2011 EU-Wide Stress Test - Objectives, outcome and recommendations", 16 July.

EU Basel III package

■ 2016 EBA stress test

- Assessed 51 banks from 15 EU and EEA countries – 37 from SSM countries and 14 from Denmark, Hungary, Norway, Poland, Sweden and the UK.
- Adverse scenario - EU real GDP growth rates over the 3 years of the exercise of -1.2%, -1.3% and 0.7% respectively – a deviation of 7.1% from its baseline level in 2018.
- **Weighted average CET1 ratio falls by -380bps, to 9.4% at the end of 2018, mostly driven by a capital depletion of €269bn, due to credit risk losses.**
- Authorities discussed the impact of the stress test with banks and assessed how credible actions could offset its impact, namely taking into account their capital plan.
- These impacts were incorporated in the SREP.

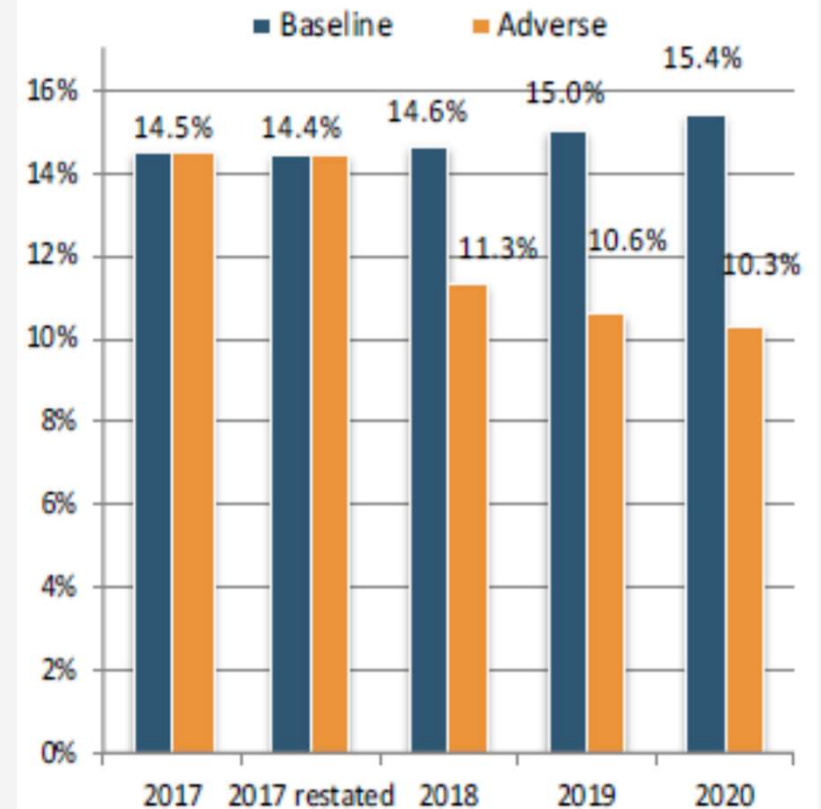


Source: EBA (2016), “2016 EU-Wide Stress Test”, 29 July.

EU Basel III package

■ 2018 EBA stress test:

- Assessed 48 banks in 15 countries from 15 EU and EEA countries.
- Adverse scenario - EU real GDP growth rates over the 3 years of the exercise of -1.2%, -2.2% and 0.7% as of 2018, 2019 and 2020 respectively - a deviation of -8.3% from its baseline level as of end-2020.
- Weighted average CET1 ratio falls by -410bps, to 10.3% at the end of 2020, mostly driven by a capital depletion of 358B€, due to credit risk losses.



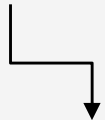
Source: EBA (2018), "2018 EU-Wide Stress Test", 2 Nov.

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- **EBA guidelines** - EBA (2018), “Guidelines on institutions’ stress testing”, EBA/GL/2018/04”, with entry into force in 01.01.2019:
 - Stress tests should be undertaken with appropriate frequency, taking into account the nature, scale, size and complexity of the bank (proportionality principle), portfolio characteristics, as well as changes in the macroeconomic environment or the bank’s business activities;
 - The stress testing program must be challenged across the organization, for instance by the risk committee and internal auditors;
 - **Stress Testing Components:**
 - (i) Scenario analyses;
 - (ii) Sensitivity analyses at the level of individual exposures, portfolios or business units, proportionate to their complexity;
 - (iii) Reverse stress tests;
 - Banks must scenarios are severe but plausible.

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- In addition to the EBA, SSM or IMF (FSAP) stress tests, the ECB developed **STAMP** - Stress-Test Analytics for Macroprudential Purposes.



top-down quantitative methodology to assess the resilience of euro area FIs to main systemic risks, covering about 100 large and medium-sized banking groups directly supervised by the ECB. - Dees, S., Henry, J. and Martin, R. (eds.), “STAMP€: Stress-Test Analytics for Macroprudential Purposes in the euro area”, ECB, February 2017; Henry, J and Kok, C. (eds.), “A macro stress testing framework for assessing systemic risks in the banking sector”, Occasional Paper Series, No 152, ECB, October 2013.

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■ Two adverse scenarios are considered:

- (1) **Abrupt repricing of global risk premia** => very strong financial contagion to the euro area, mainly via financial contagion in equity and bond markets => Yield curves steepen and credit spreads widen both in advanced and emerging economies => re-emergence of public debt sustainability concerns for countries with lower credit ratings.
- (2) **Strong economic slowdown** => negative feedback loop between the banking sector and the real economy. Lower than expected economic growth in US and emerging economies, in addition to trade disruptions due to more protectionist policies in some advanced economies, is assumed to spill over to euro area countries via trade channels => domestic demand confidence shocks, negatively affecting private consumption and investment => higher levels of risk in the non-financial corporate sector => bond yields increase sharply and unemployment also increases more abruptly than in the past due to the preponderance of flexible working contracts => households and firms face difficulties in paying back their debt, especially in countries with highly indebted private sectors => drop in property market activity, both in the residential and commercial property segments => lower collateral value of mortgages.

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	Risk	Exogenous shocks triggering the scenarios
Scenario 1	<ul style="list-style-type: none"> Spillovers from a disruptive repricing of term and other risk premia in global financial markets Public debt sustainability concerns amid historically high debt levels Liquidity risks in the non-bank financial sector, with contagion to the broader system 	<ul style="list-style-type: none"> Shock to risk-free bond yields in global markets Shock to sovereign credit spreads in the euro area Shock to stock prices in global markets Shock to Expected Default Frequencies (EDF) of the largest insurance and investment funds in the euro area Shock to household wealth in the euro area Shock to consumption Shock to foreign demand
Scenario 2	<ul style="list-style-type: none"> Lower than expected growth Impaired intermediation capacity of banks amid weak performance and structural challenges Private debt sustainability concerns amid historically high debt levels 	<ul style="list-style-type: none"> Shock to foreign demand Shock to private investment in euro area countries Shock to private consumption in euro area countries Shock to corporate bond spreads in euro area countries Shock to residential property prices in euro area countries

Source: European Central Bank (2018), “Financial Stability Review”, May.

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- Stronger macroeconomic impact of scenario 2 – GDP falls by more than 5%, with residential property prices decreasing around 22%

Overall impact of the two adverse scenarios on euro area macroeconomic variables

	Baseline 2020 - change with respect to end-2017	Scenario 1		Scenario 2	
		Total deviation from baseline level	Contribution of second-round effects	Total deviation from baseline level	Contribution of second-round effects
Real GDP	+5.9%	-2.8%	-0.3%	-5.1%	-0.6%
Unemployment rate	-1.8 p.p.	+0.5 p.p.	+0.1 p.p.	+1.8 p.p.	+0.4 p.p.
Residential property prices	+11.6%	-6.0%	-1.0%	-22.1%	-5.4%
Commercial property prices	+9.1%	0.0%	0.0%	-31.4%	-6.1%
Investment	+11.0%	-5.8%	-0.8%	-16.9%	-2.6%
Credit to the private sector	+6.2%	-2.8%	-2.8%	-5.6%	-5.6%

Source: European Central Bank (2018), “Financial Stability Review”, May.

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- Nonetheless, the impact on financial markets of scenario 1 is stronger, increasing 10-year bond yields in more than 100 bp:

Evolution of financial variables under the adverse scenarios

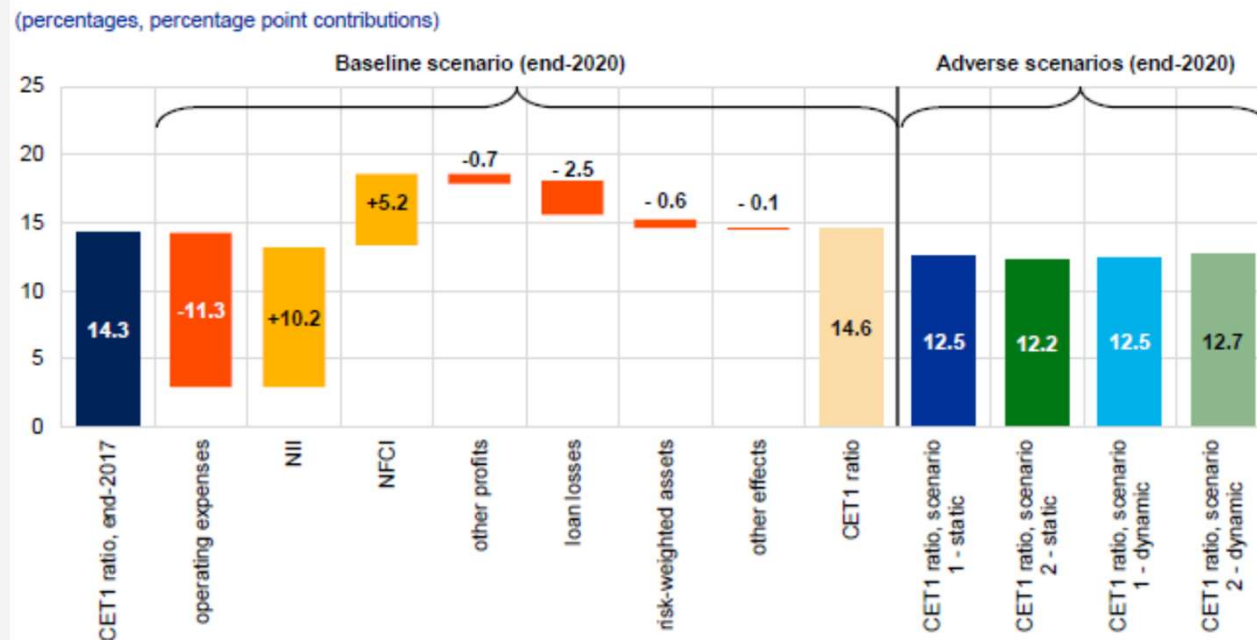
	Scenario 1 – deviation from the baseline level	Scenario 2 – deviation from the baseline level
Average euro area increase in short-term interest rates (basis points, peak deviation from baseline)	24	-6
Average euro area increase in one-year government bond yields (basis points, peak deviation from baseline)	66	-2
Average euro area increase in ten-year government bond yields (basis points, peak deviation from baseline)	116	-12
Average increase in the iTraxx non-financial index (basis points, peak deviation from baseline)	16	60
Average euro area increase in banks' CDS spreads (basis points, peak deviation from baseline)	56	80
Change in euro area equity prices (% deviation from baseline)	-36	-8

Source: European Central Bank (2018), “Financial Stability Review”, May.

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- **Conclusion:** the euro area banking sector as a whole was concluded to be resilient to the main financial stability risks, with CET1 ratio declining by just about 2 p.p. under adverse scenarios.

Average contribution of changes in profits, loan losses and risk-weighted assets to the CET1 capital ratios of euro area banking groups under the baseline and adverse scenarios
(percentages, percentage point contributions)



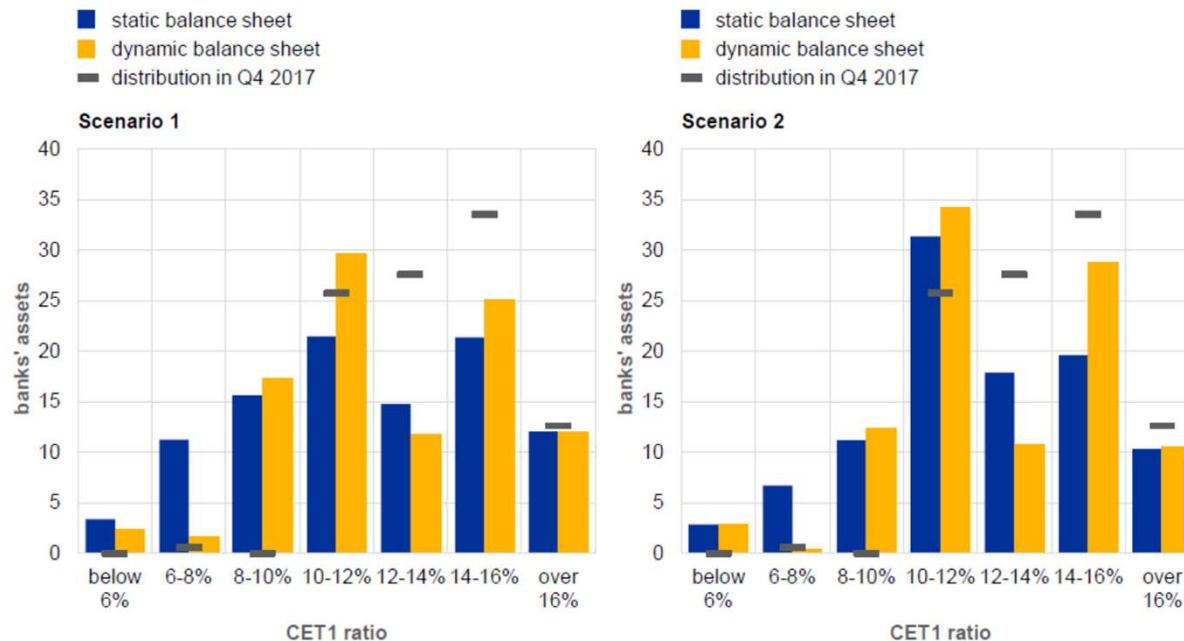
Source: European Central Bank (2018), “Financial Stability Review”, May.

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- Nonetheless, under the static balance sheet assumption, CET1 ratio in banks representing between 20% and 30% of total assets would fall below 10% and a few small banks would face severe solvency difficulties (CET1 ratio < 6%).

Distribution of banks' assets by CET1 capital ratio

(percentages)



Source: European Central Bank (2018), "Financial Stability Review", May.

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6. SREP

■ In the Euro Area, Pillar II is divided into 2 major components:

(i) **Institutions** - expected to establish sound, effective and complete strategies and processes to assess and maintain, on an ongoing basis, the amounts, types and distribution of internal capital commensurate to their risk profiles (ICAAP), as well as robust governance and internal control arrangements

(ii) **Supervisory authorities** – SREP:

Set of procedures annually adopted by the supervisors of the SSM to ensure that institutions have adequate arrangements, strategies, processes and mechanisms, as well as capital and liquidity to ensure a sound management, internal control system and coverage of their risks, to which they are or might be exposed, including those revealed by stress testing and risks institution may pose to the financial system. (EBA/GL/2014/13, “Guidelines on common procedures and methodologies for the supervisory review and evaluation process (SREP)”, 19 Dec.2014).

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- **SREP** was initially the outcome of guidelines (GL) issued by the forerunner of **EBA** – the CEBS (Committee of European Banking Supervisors) – in 2006 (Guidelines on the Application of the Supervisory Review Process under Pillar 2 (CP03 revised), 25 Jan.).
- These GL defined a set of requirements for banks and also for the supervisors and were among several guidelines issued by CEBS on internal governance.
- While being CEBS guidelines, these were non-binding, even though supervisors were expected to implement them or to explain why they hadn't.

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- After a survey on the implementation of internal governance by institutions and supervisors in 2009, CEBS concluded that internal governance issues were identified as a crucial underlying factor of the financial crisis, often as the result of an insufficient implementation of the existing guidelines.
- Therefore, after its foundation in 2011, EBA updated all the guidelines on internal governance subjects issued by CEBS and consolidated them in the “EBA Guidelines on Internal Governance (GL 44)”, which became mandatory.

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- SREP is applied proportionally, to significant and less significant institutions, with a frequency and intensity as a function of the potential impact of each financial institution on the financial system and the respective risk profile.
- The main outcome of the SREP is the determination of a minimum capital level, above pillar I requirements.
- SREP may also imply Institution-specific quantitative liquidity requirements, e.g. LCR higher than the regulatory minimum, as well as qualitative supervisory measures, e.g.:
 - the restriction or limitation of business
 - the requirement to reduce risks
 - the restriction or prior approval to distribute dividends
 - the imposition of additional or more frequent reporting obligations

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- **SREP provides a score with 4 positive classifications (1-4) and 1 negative ('F'), suggesting the supervisory perspective that the bank is facing bankruptcy risk.**
- **Classifications must be based on the dimension, structure, internal organization and nature and complexity of the activities, reflecting the systemic risk of the FI:**
 - Classification 1 – G-SIIs, O-SIIs and, if appropriate, other FI determined by the supervisors;
 - Classification 2 – Medium/large FI not included in 1, operating domestically or with relevant international activity, in several business lines, including credit and financial products in the corporate and retail segment + FI specialized FI with significant market shares in their business lines, payment systems and markets.
 - Classification 3 – Other small/medium FI, with domestic activity or significant international operations, with presence in a limited number of business lines, offering predominantly credit products in the retail and corporate markets.
 - Classification 4 – Other.

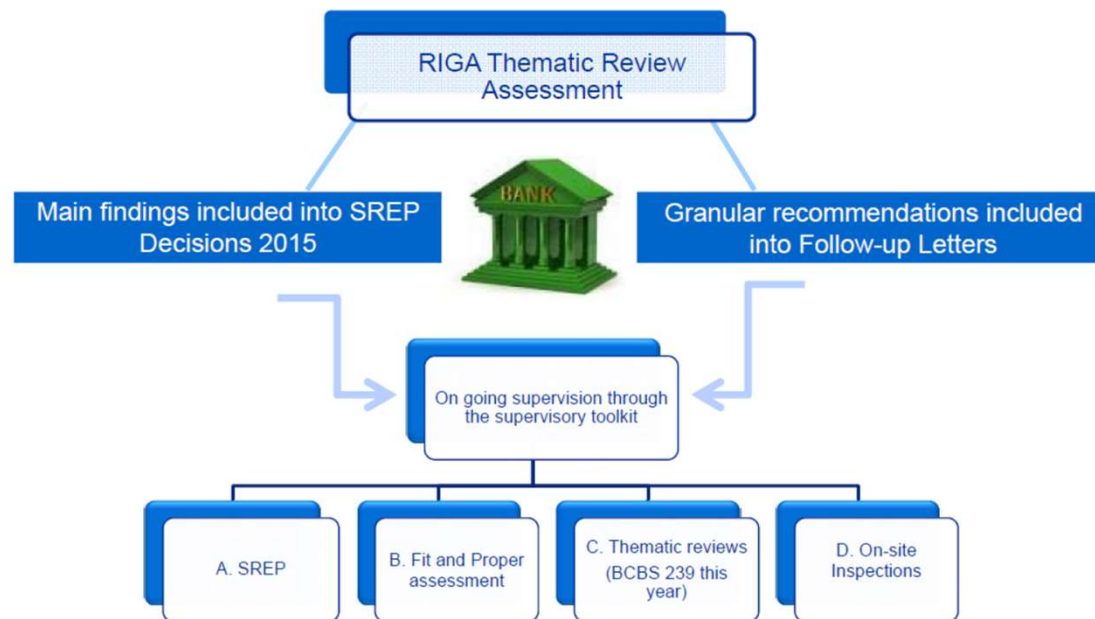
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- Supervisory authorities must monitor regularly financial and non-financial relevant indicators, to identify changes in the financial conditions and in the risk profile of FI, including:
 - a) All capital ratios and the corresponding national laws, e.g. regarding CT1, LCR and NSFR (in line with CRR and CRR II);
 - b) Minimum requirements for own funds and Minimum Requirement for Own Funds and Eligible Liabilities for bail-in (MREL);
 - c) Relevant market indicators (e.g. stock prices, CDS spreads, bond spreads);
 - d) Recovery indicators presented in the recovery plans of the FI; and
 - e) Macroeconomic indicators on the regions, sectors and markets where the FI operates.

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- SREP integrates the RIGA (Risk Governance and Appetite) assessment performed by the ECB:

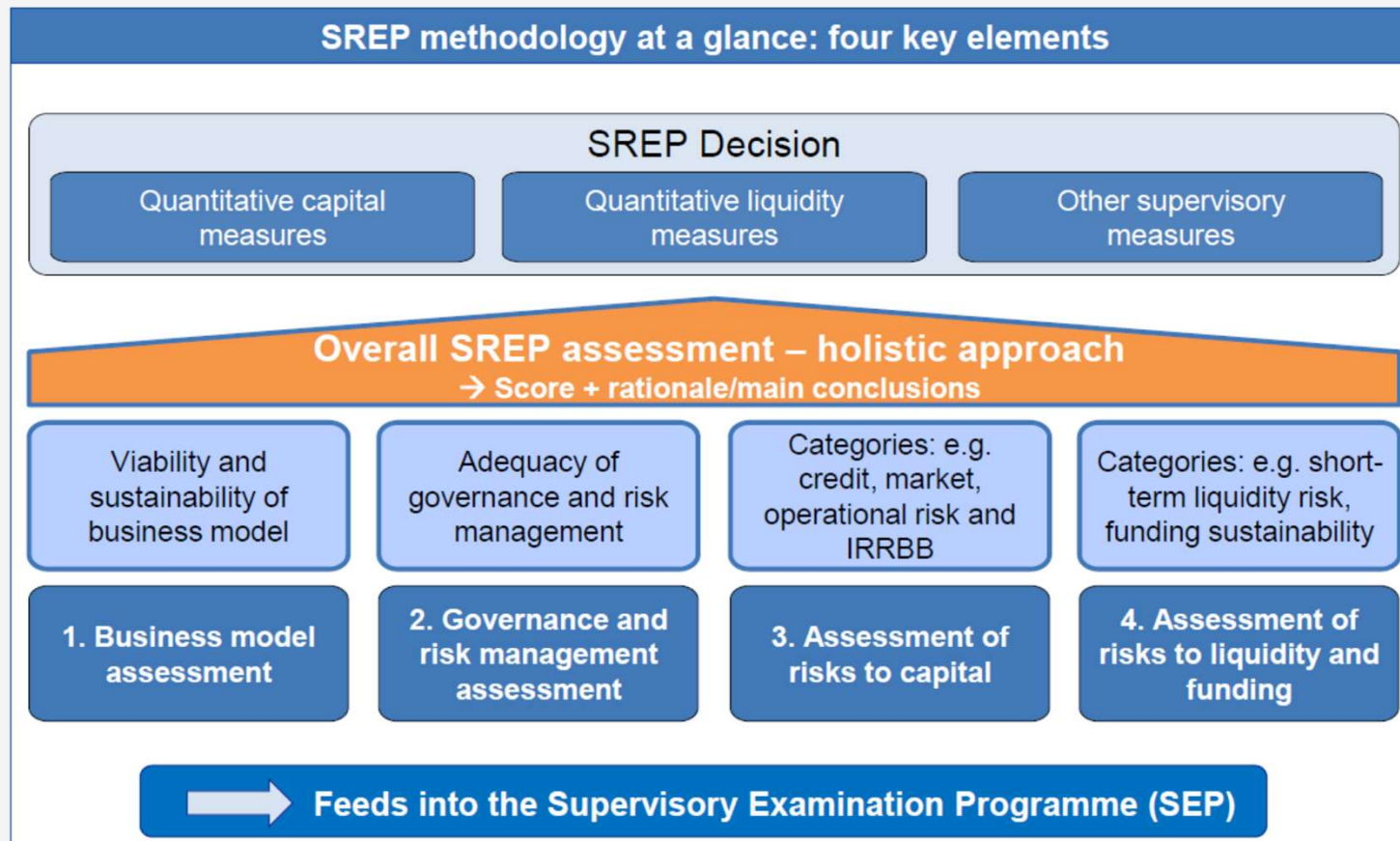
How the outcomes of the RIGA Thematic Review feed into the regular supervision



Source: ECB (2016), “European Central Bank SSM Conference on Governance and Risk Appetite”, 23 June.

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- SREP involves 4 key elements:



ECB (2016), “SSM SREP Methodology Booklet - 2016 edition - Level playing field - High standards of supervision - Sound risk assessment”

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- Provides synthetic overview of an institution's risk profile:
 - based on the assessment of all 4 elements (not the simple sum)
 - These elements are considered equally important

- Takes into account:
 - the institution's capital/liquidity planning to ensure a sound trajectory towards the full implementation of CRD IV/CRR
 - peer comparisons
 - the macro environment under which the institution operates

EU Basel III package

1. Business model assessment

- Score based on indicators – e.g. ROA, cost-to-income ratio, ...
- Assessment focus:
 - Identification of the areas of focus / main activities
 - Assessment of the business environment
 - Analysis of the forward-looking strategy and financial plans
 - Assessment of the business model
 - Viability (within one year)
 - Sustainability (within three years)
 - Sustainability over the cycle (more than three years)
 - Assessment of the key vulnerabilities

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1. Business model assessment

1. Quantitative assessment (current and potential situation)
 - a) P&L – including the detail of revenue sources, costs, impairments and main performance indicators (e.g. NII, cost-to-income), analyzing ROE vs cost of capital;
 - b) Balance sheet – including the adequacy of the funding structure to the business model and main indicators (e.g. ROE, CT1, funding gap);
 - c) P&L and balance sheet concentrations related to clients, sectors and geographies;
 - d) Risk appetite: limits implemented by risk type (e.g. credit, liquidity risks).
2. Qualitative assessment - Authorities must determine the main exogenous and endogenous factors (e.g. IT) influencing the success of the business model;

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3. Franchise – robustness of the relationships with clients, suppliers and partners:

- a) Reputational support
- b) Effectiveness of the commercial network
- c) Customers' loyalty
- d) Effectiveness of the partnerships

4. Competitive advantages:

- a) IT
- b) commercial network
- c) Business size
- d) Product offer

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2. Internal governance and risk management

- Internal governance framework (including key control functions such as risk management, internal auditing and compliance)
- Risk management framework and risk culture – e.g. are there mechanisms in place to ensure that senior management can act in a timely manner to effectively manage and mitigate material adverse risk exposures, e.g. those that are close to or exceed the approved risk appetite statement or risk limits?
Compliance with CRD provisions?
- Risk infrastructure, internal data and reporting
- Remuneration policies and practices

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2. Internal governance and risk management

- Changes in the governance and internal control may be required, including:
 - (i) Organizational structural, including report lines;
 - (ii) Risk policies;
 - (iii) Organization and composition of the management body.

EU Basel III package

3. Risks to Capital

- 3 blocks:

1. Supervisory perspective

- Scores on risk categories: credit risk, market risk, operational risk, IRRBB

2. Bank's perspective

- ICAAP (EBA (2016), “Guidelines on ICAAP and ILAAP information collected for SREP purposes”, EBA/GL/2016/10, 03.11.2016, into force in 1Jan2017).

3. Forward looking perspective

- bank internal stress tests
- supervisory stress tests

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- **Specific information to the ICAAP** - EBA (2016), “Guidelines on ICAAP and ILAAP information collected for SREP purposes”, EBA/GL/2016/10, 03 November 2016:
 - (i) overall ICAAP framework
 - (ii) risk measurement, assessment and aggregation
 - (iii) internal capital and capital allocation
 - (iv) capital planning
 - (v) stress testing

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4. Risks to Liquidity

■ 3 blocks:

1. Supervisory perspective

- scores on short-term liquidity and funding sustainability risks

2. Bank's perspective

- ILAAP - Internal Liquidity Adequacy Assessment Process:

3. Forward looking perspective

- bank internal stress tests
- supervisory stress tests

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7. ILAAP

- In addition to the new ratios imposed by Basel III, CRD IV imposed the ILAAP:

“Competent authorities shall ensure that institutions have robust strategies, policies, processes and systems for the identification, measurement, management and monitoring of liquidity risk over an appropriate set of time horizons, including intra- day, so as to ensure that institutions maintain adequate levels of liquidity buffers. Those strategies, policies, processes and systems shall be tailored to business lines, currencies, branches and legal entities and shall include adequate allocation mechanisms of liquidity costs, benefits and risks”.

- EBA defined the main ILAAP requirements: EBA (2016), “Guidelines on ICAAP and ILAAP information collected for SREP purposes”, EBA/GL/2016/10, 03 November 2016.

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- ILAAP covers the main liquidity risk management procedures:
 - (i) funding risk management framework
 - (ii) funding strategy
 - (iii) strategy regarding liquidity buffers and collateral management
 - (iv) intraday liquidity risk management
 - (v) liquidity stress testing
 - (vi) liquidity contingency plan.

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- **Common information to the ICAAP and ILAAP** - Business model and strategy:
 - (i) Risk governance and management framework
 - (ii) Risk appetite
 - (iii) Stress testing framework
 - (iv) Risk data, aggregation and IT systems

- **In Portugal, this regulation was enforced by Instruction No.2/2019** (published on the 25th Jan.), imposing that:
 - (i) Liquidity strategies must include the assessment of economic recession scenarios;
 - (ii) Reports to the supervisor are done on an annual basis.

EU Basel III package: Consequences

■ Pros:

- Banks with sounder capital and liquidity positions

■ Cons:

- Higher entry barriers
- Higher cost of equity => higher cost of funding for the economy, even though currently cancelled by the very low level of interest rates.
- Higher level of regulation => private investors move financial activity to non-regulated areas and compliance costs become unbearable for smaller banks.
- Higher concentration, aggravating the TBTF problem.

EU Basel III package: Shortcomings

■ Stress tests:

- a backstop is necessary to deal with banks that fail the test.
- euro area authorities have been reluctant to stress sovereign bonds, which are a material part of the assets of southern European banks (and which contribute to the doom loop between bank and sovereign solvency in a monetary union).
- On both sides of the Atlantic, stress tests have not yet incorporated a systemic perspective taking into account feedback effects among entities.

■ Rating agencies:

- No major changes have been made to the regulation, with the big 3 still controlling more than 95% of the market), notwithstanding the major conflicts of interest in rating ABS before the crisis.

EU Basel III package: Shortcomings

- **Separation between commercial and investment banking activities:**
 - EU - Liikanen Report proposed the separation of large trading activities within a banking group, but not much progress was made in that direction;
 - UK - recommendations by the Independent Commission on Banking (Vickers Commission) to ring-fence retail activities in a universal bank became effective since Jan19.
 - US - Dodd-Frank imposed the Volcker Rule (a lighter version of the Glass-Steagall separation between commercial and investment banking) forbidding proprietary trading by banks on their own account, but allowing securities dealing for their clients.

4.3. Regulatory reactions to the pandemics

Main Measures

- Regulatory measures to fight the impact of the pandemics have been designed to mitigate the accounting and prudential impacts of the pandemic, focusing on:
 - (i) releasing temporarily the conservation capital buffer (2,5%) until end-2021;
 - (ii) deferring compliance of pillar II capital guidance;
 - (iii) allowing pillar II capital requirement to be fulfilled with tier II capital;
 - (iv) allowing banks to avoid the classification of loans as NPEs (initially until 30.09.2020, and extended in early Dec20 to end-Mar21) if these loans benefit from general (i.e. not borrower-specific) moratoria due to the pandemic, as long as customers are perceived as likely-to-pay after the moratoria ends and only the schedule of payments is changed (e.g. interest rates are kept);
 - (v) postponing the full implementation of Basel IV, IFRS 9 and the stress tests;
 - (vi) allowing flexibility in restoring the LCR required levels.

Main Measures

Selected policy measures

Table 1

Jurisdiction	Government guarantees	Capital requirements	Asset classification	Expected loss provisioning	Dividends and other payouts
Australia	Yes	Encouragement to use buffers	New guidance	-	Expectation to limit
Canada	Yes	Lower Domestic Stability Buffer, Encouragement to use buffers	New guidance	New guidance, Introduction of transitional arrangements	Expectation to halt increases
EU/SSM	Yes (*)	Release CCyB, Encouragement to use buffers	New guidance	New guidance	Expectation to halt
Japan	Yes	Encouragement to use buffers	Adjust risk weights of certain loans	-	-
United Kingdom	Yes	Release CCyB, Encouragement to use buffers	New guidance	New guidance	Expectation to halt
United States	Yes	Encouragement to use buffers, Adjust supplementary leverage ratio	New guidance, Definition of restructured debt	Optional suspension, Extension of transitional arrangements	Expectation of prudent decisions, Smoothing of automatic restrictions

(*): conditions vary across member countries.

Source: Publications by national authorities. As of 7 April 2020.

Source: Borio, Claudio and Fernando Restoy (2020), “Reflections on regulatory responses to the Covid-19 pandemic”, FSI Briefs, No.1, BIS.

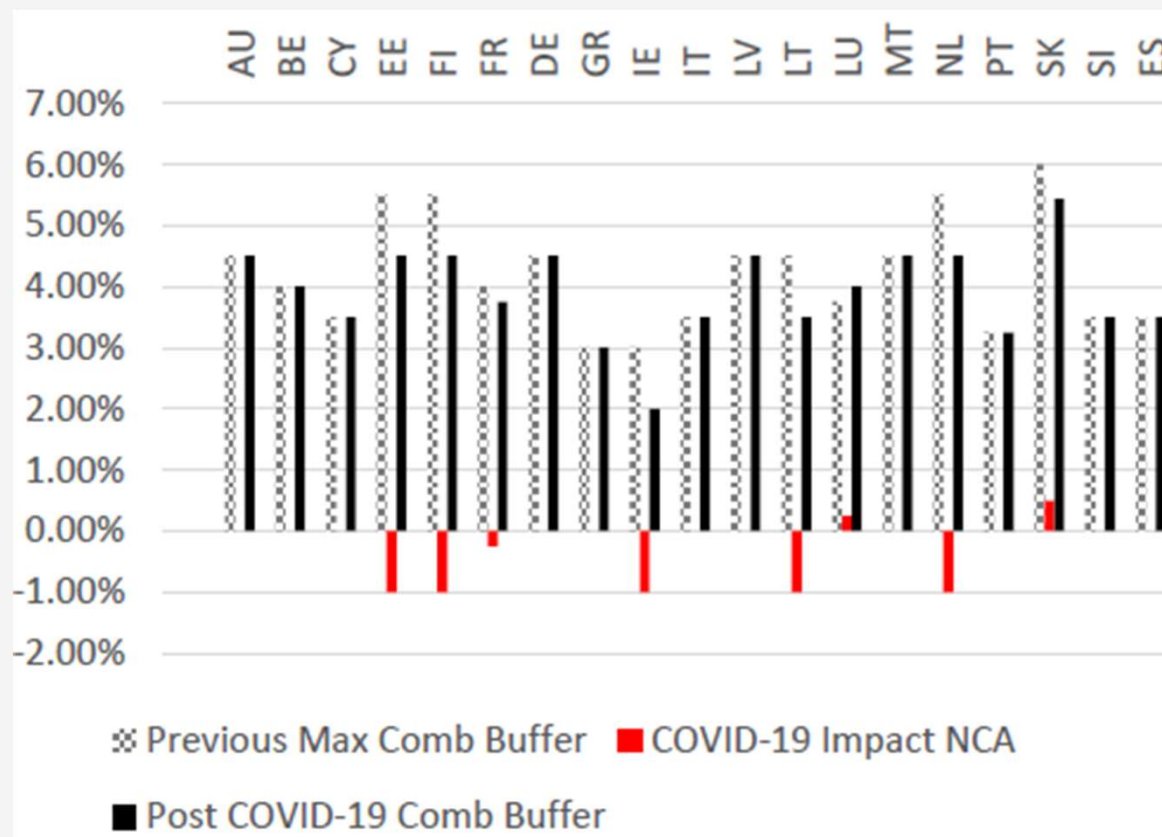
Main Measures

■ Main Decisions in EU:

- (i) **CCyB** - among the 7 euro area countries with $CCyB > 0$, 3 countries (France, Ireland and Lithuania) reduced it to 0%, while in Belgium and Germany the previously announced CCyB activations and the previously announced CCyB increase in Slovakia were revoked.
- (ii) **SyRB** – The authorities in Estonia and Finland dropped the SyRB to 0%, while the SyRB was reduced for 3 banks in the Netherlands.
- (iii) **O-SII**– In addition to the reductions in the SyRB, Finland and the Netherlands also decided to lower the O-SII buffer for 1 bank each.
- (iv) **Postponement of phase-in or introduction of announced measures** – The authorities in Cyprus, Lithuania and Portugal announced that they will delay the phase-in of O-SII buffers by 1 year either for all or for some O-SIIs.

Main Measures

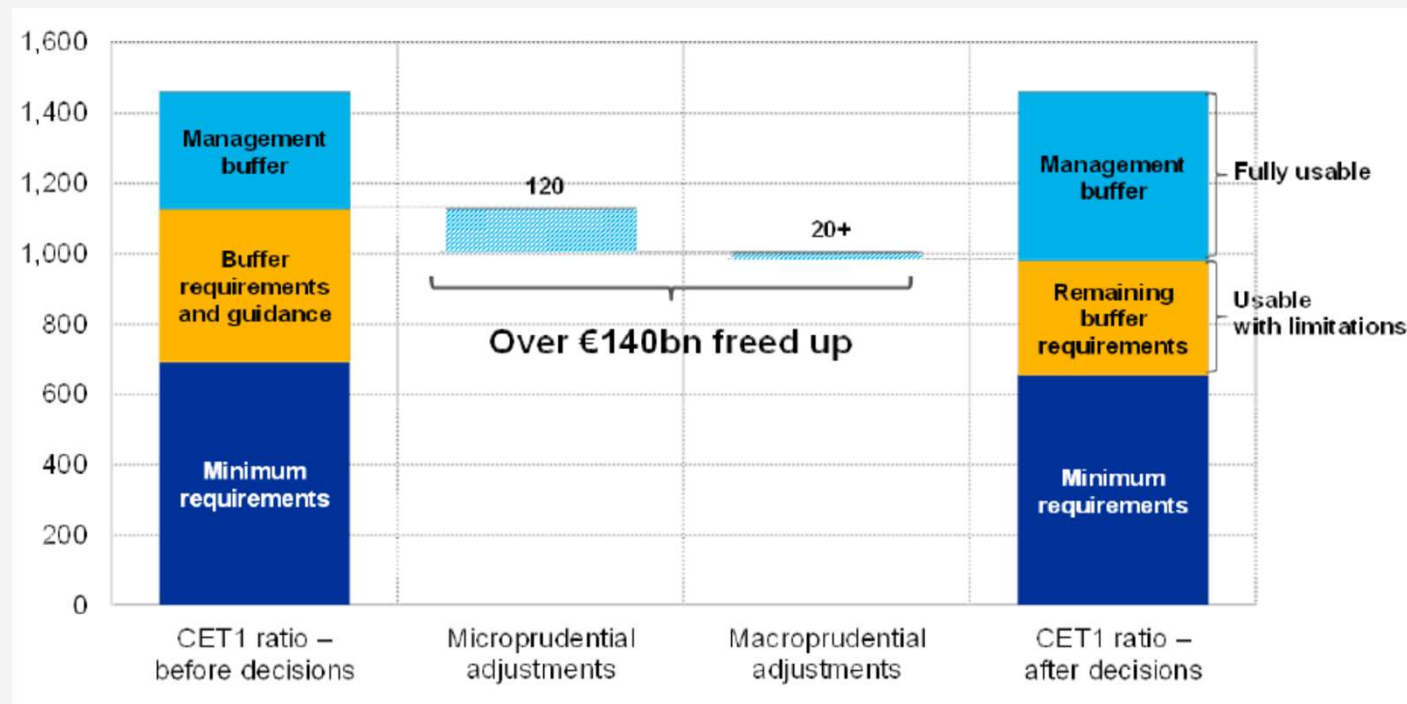
- Therefore, the combined capital buffers were reduced in several countries.



Source: EBI(2020), "Pandemic Crisis and Financial Stability", 2020.

Main Measures

- These prudential measures allowed over €140 billion of capital to be freed up, supporting an increase by 10% of total lending (around 1.3T€).



Source: ECB (2020), “Macprudential measures taken by national authorities since the outbreak of the coronavirus pandemic”.