



New EBA Guidelines for Interest Rate Risk in the Banking Book (IRRBB)

EBA/GL/2018/02

Deloitte Tax & Consulting, Luxembourg June 2019

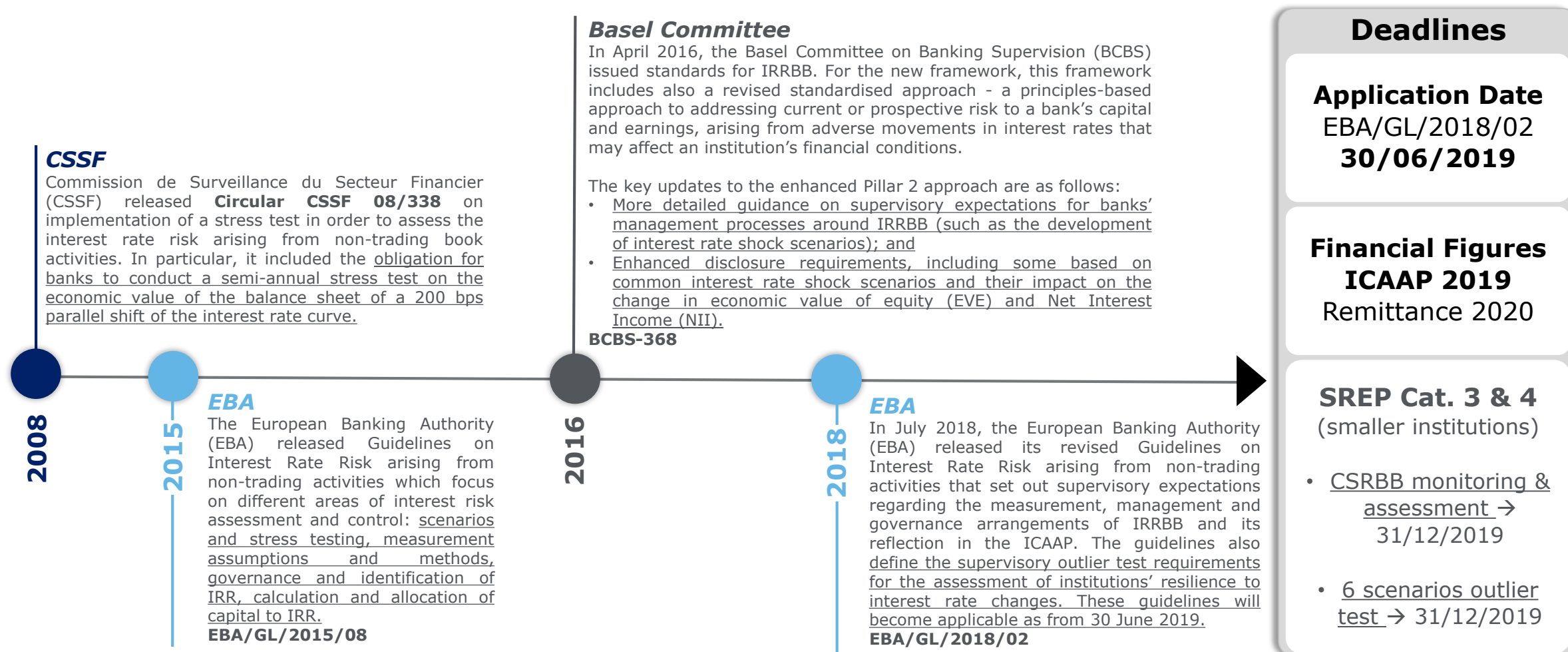
The new regulatory requirements for the management of IRRBB

EBA Guidelines [EBA/GL/2018/02](#)

A new set of guidelines enforcing several new IRRBB quantitative measures based on an ever more robust risk framework

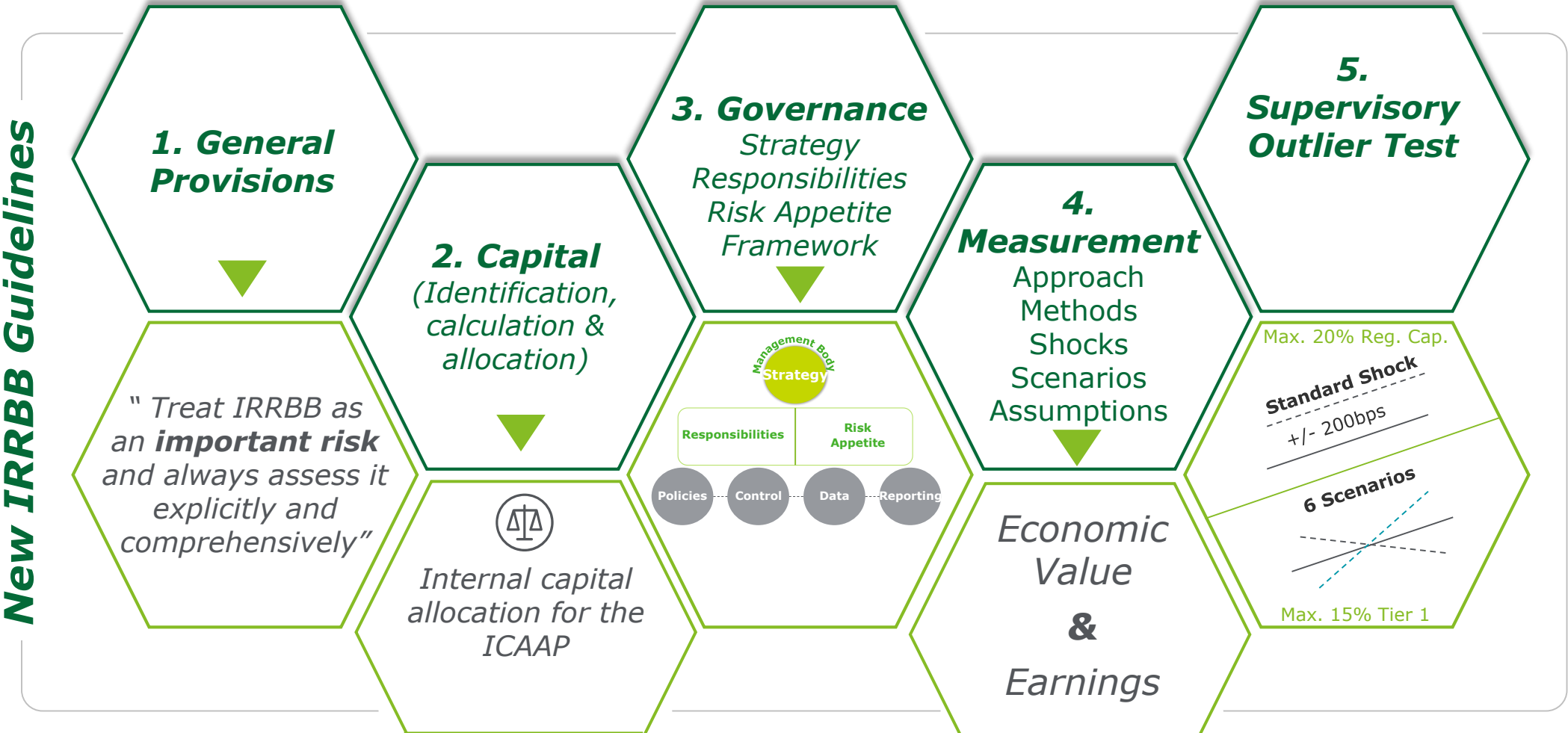
A little history of interest rate risk regulations

The regulatory framework for interest rate risk has been profoundly enhanced during the last decade, significantly increasing the weight of requirements for banks



New guidelines from a bird's eye view

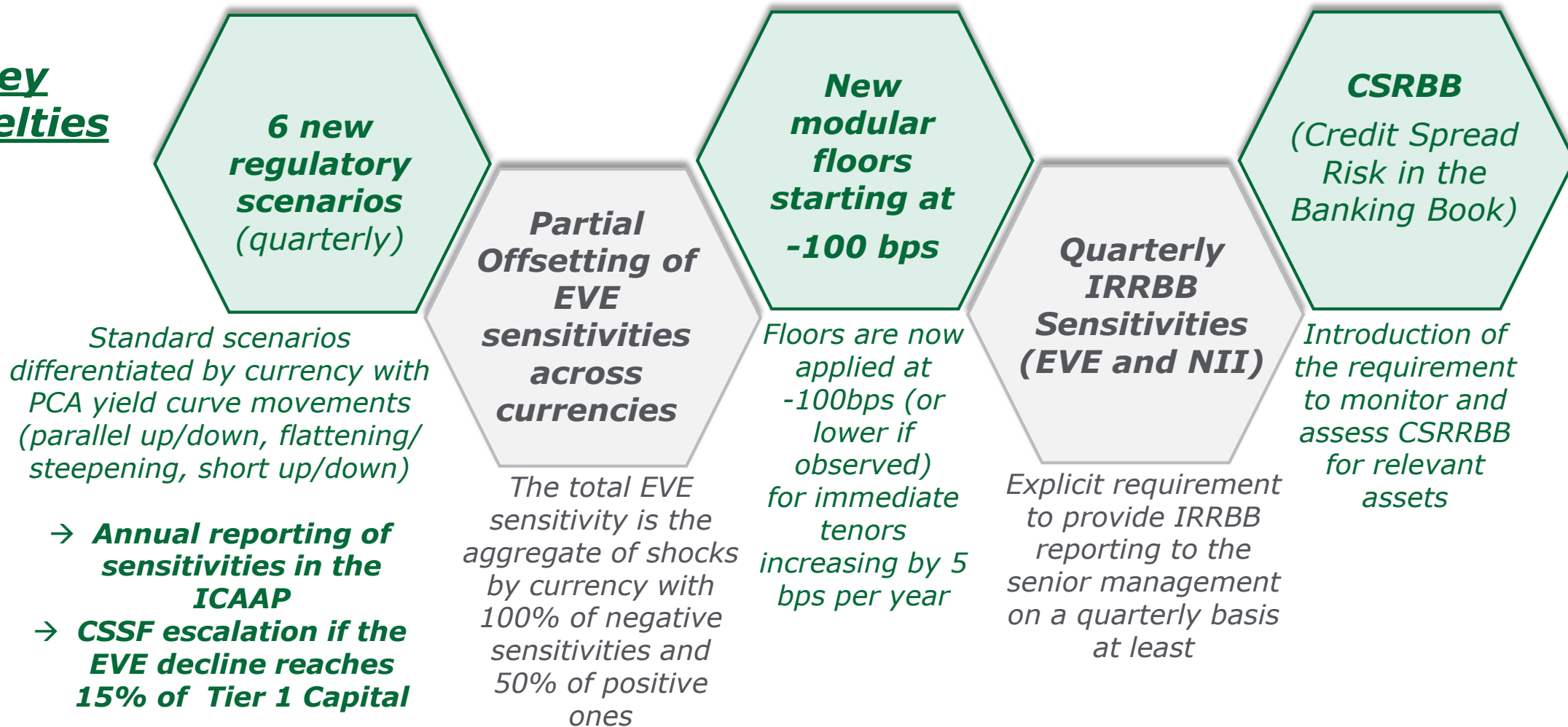
IRRBB requirements cover all aspects of risk framework design, requiring a great amount of internal documentation and estimation processes



New guidelines' key novelties

Specific new requirements apply to the 'regulatory standard shocks' with new scenarios and measurement hypotheses

Key Novelties



IRRBB 1. General Provisions

General provisions set the overall scope of IRRBB that must be the starting point for the construction of a comprehensive risk framework

IRRBB is an important risk, to be assessed explicitly and comprehensively in risk management processes and internal capital assessment processes

IRRBB exposure identification

Interest rate sensitive instruments
Assets, liabilities and off-balance-sheet items (including derivatives) in the non-trading book (excluding assets deducted from CET 1).

Gap Risk
Risk resulting from the term structure of interest rate sensitive instruments that arises from difference in the timing of their rate changes.

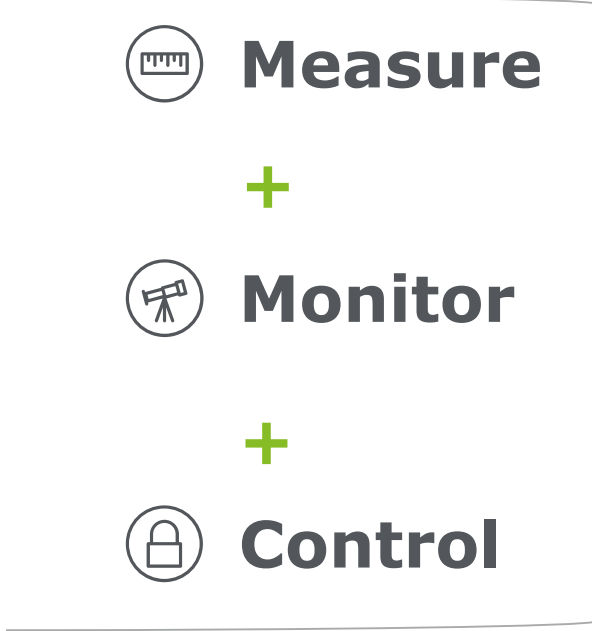
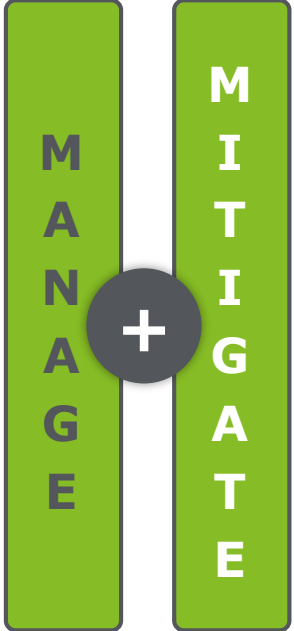
Basis Risk
Risk arising from the impact of relative changes in interest rates on instruments that have similar tenors but are priced using different rate indices.

Option Risk
Risk arising from options (embedded and explicit), where the bank/customer can alter the level and timing of their cash flows.

+ Credit Spread Risk from the Banking Book (CSRBB) = *The risk driven by changes in the market perception about the price of credit risk, liquidity premium and potentially other components of credit-risky instruments inducing fluctuations in the price of credit risk, liquidity premium and other potential components, which is not explained by IRRBB or by expected credit/(jump-to-)default risk.*
CSRBB-affected exposure on the non-trading book asset-side, should be monitored and assessed (where CSRBB is relevant for the bank)

Economic Value
Measures of changes in the NPV of interest rate sensitive instruments over their remaining life resulting from interest rate movements.

Earnings
Interest income and interest expenses, as well as market value variations impacting the P&L or Other Comprehensive Income (OCI)

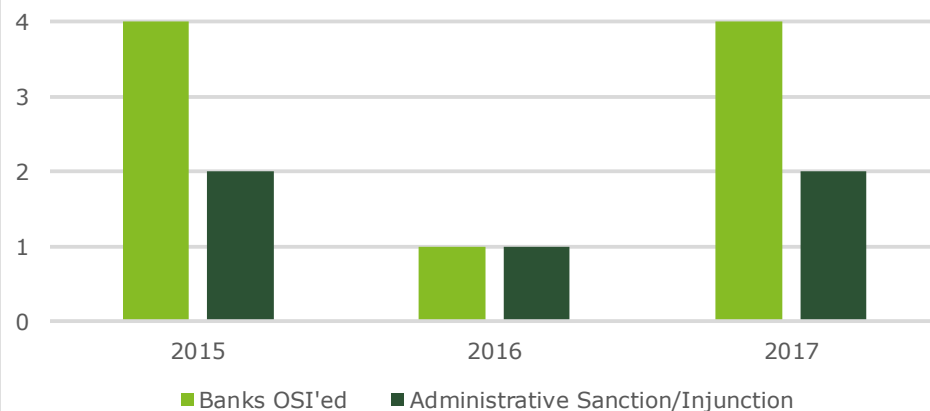


CSSF IRRBB On-Site Inspections

IRRBB is part of the focus of CSSF's on-site inspections, historically 56% of inspected banks received administrative sanctions and or injunctions

IRRBB is an important risk, and the CSSF performs regular on-site inspections on this topic

CSSF IRRBB On-Site Inspections (2015-2017): 56% of inspections lead to administrative sanctions/injunctions



Commonly observed CSSF observations

- Inadequate identification of sources of interest rate risk and the sub-components of IRRBB
- Inadequate measurement and monitoring processes;
- Inadequate IRRBB strategy definition and risk appetite formulation supported by an adequate escalation process;
- Flaws in the calculation of the economic value sensitivity under the regulatory standard parallel shock of +/- 200 bps, and particularly the application the 0% floor;
- Absence of IRRBB Early Warning Indicators;
- Lack of documentation with respect to governance arrangements and assumption formulation

Source of regulatory risk

56% of IRRBB inspections lead to administrative sanctions and or injunctions. IRRBB is an unnecessary exposure to regulatory risk

IRRBB is an essential risk

Although often disregarded due to its absence from Pillar I capital requirements, it should not be forgotten that IRRBB is by essence the first risk derived from banking, i.e. taking deposits and granting loans

Reputation of the Risk Control Function

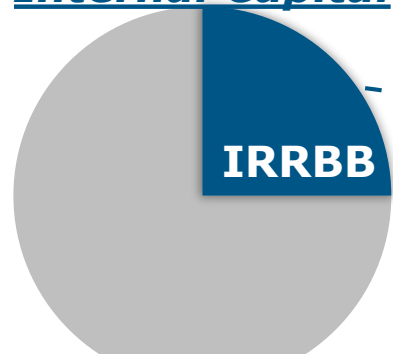
IRRBB is one of the field where a bank's risk control function can deliver best practices and build a solid reputation

IRRBB 2. Capital Identification, Calculation and Allocation

IRRBB must be internally covered by sufficient capital derived from both measurements and risk appetite, in terms of EVE and EaR based on regulatory and own scenarios

Internal capital required for IRRBB → risks to economic value that could arise from adverse movements of interest rates and impact on future earnings capacity

Internal Capital



Documented in the ICAAP

Proportionate to



Measured risks



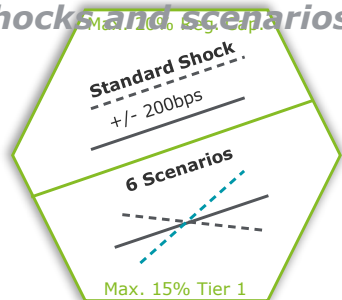
Risk Appetite

At the levels of

**Economic Value
&
Earnings**

**Not expected to
double-count**

Supervisory standard shocks and scenarios



Own methodologies for capital allocation

- Risk appetite (size and tenor of internal IRRBB limits)
 - Expected cost of hedging positions
 - Sensitivity of internal IRRBB measures
 - Basis risk impact
 - EVE and earnings impact of mismatched positions in different currencies
 - Impact of embedded losses/gains
 - Risk drivers and risk materialisation circumstances
- + adequate distribution of internal capital across entities (applicable at individual entity level)

Scenarios adapted to the risk profile

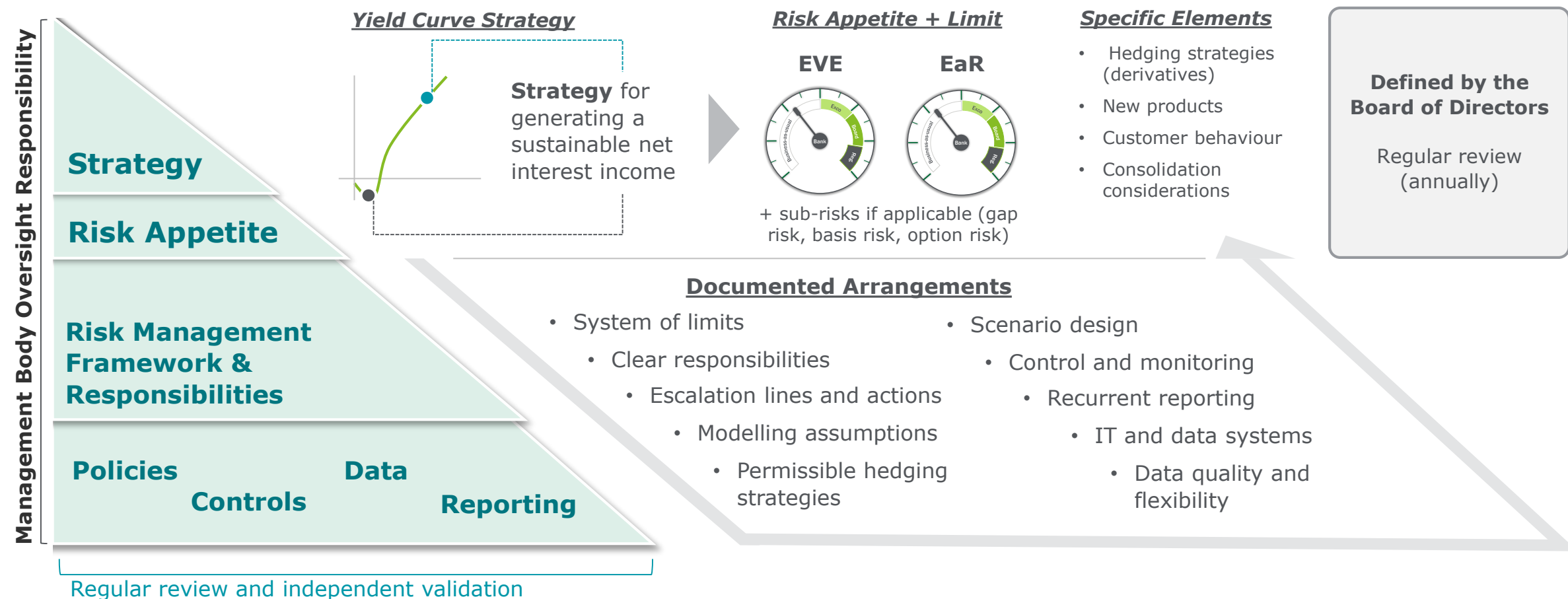
Business line allocation

Inclusion of earnings at risk?

- Materiality of net interest income in the P&L
- Inability of interest rate margins to absorb the volatility of the cost of liabilities (weak margins)
- Risk to internal capital through earnings under a plausible range of market scenarios

IRRBB 3. Governance

Strong governance arrangements, under the oversight of the management body, must be set-up to ensure a robust management of IRRBB aligned with requirements



IRRBB 3. Governance

Internal policies require extensive documentation governing all processes relating to the management of IRRBB

Risk Policies and Processes

- Robust risk policies, processes and systems (updating scenarios, measuring IRRBB, assumptions of models, documentation and controls of allowed hedging, lines of responsibility for managing IRRBB)
- Policies suited for the Bank (definition of banking book, definition of economic value and consistency of methods, definition of earnings risk and consistency of methods, interest rate shocks, pipeline transactions, multicurrency exposures, basis risk management, non-maturing assumptions, behavioural assumptions, treatment of commercial margins, assessment granularity, etc.)

Internal Controls

- Approval processes, exposure limits and reviews
- Assessment of the effectiveness of IRRBB controls
- Escalation procedures for internal limit breaches

On a regular basis
Audit (external or internal) of IRRBB processes for identification, measurement, monitoring and control

IT Systems & Data Quality

- Capable IT systems for IRRBB (capture IRRBB data to identify, measure and aggregate risk, flexibility to apply any scenario, individual transaction identification)
- Transaction data available on the repricing profile, interest rate characteristics and options (dates, reference rate options and related fees when exercised)
- Control of IT systems to prevent corruption of IRRBB data
- Reliable market and internal data, stable over time (allowing comparison)
- Reconciliation processes
- Consistency between IRRBB data and financial planning

Internal Reporting

- Timely, accurate and comprehensive IRRBB reporting (**quarterly**)
- Adequate IRRBB report provided to the management body (currency detail, sensitivity to factors, evolution of the risk profile)
- IRRBB reports regularly incorporate results of reviews and audit
- Reporting on limits
- Reporting on aggregate IRRBB exposures, assets, liabilities, cash flows and strategies
- Reporting on key modelling assumptions (non-maturing, prepayments, early redemptions, commitment drawings, currency treatment, etc.)
- Reporting on supervisory outlier test, etc.

Model Governance

- Policy for validation and assessment of measurement methods (independent validation required, policy approved by the management body or delegates)
- Review and validation results must be approved by the management body before modelling update
- Policies for model transition, etc.

Required independent validation of models and modelling assumptions

For example, the repricing frequency of a sight deposit is a modelling assumption!

IRRBB 4. Measurement

Both EVE and EaR are subject to measurement based on regulatory and own scenarios, with specific sub-risk identification

Comprehensive measurements: capture all components and sources of IRRBB

At least quarterly

Economic Value of Equity Sensitivities

- Include or exclude commercial margins
- At least 1 measure

Duration Analysis
(Modified Duration, PV01 of equity or partial durations and PV01)

Economic Value of Equity Impact

At least quarterly

Risk to Earnings

- Include commercial margins
- At least 1 measure

Gap Analysis
(Repricing Gaps)

Net Interest Income Impact

Common features

- Consider non-performing exposures as interest rate sensitive instruments, according to their expected cash flows and timing;
- Capture the complex nature of IRRBB over short-term and long-term-horizon;
- Isolate key impacts of modelling assumptions;
- Isolate the impact of derivatives in the banking book
- Supervisory outlier test (regulatory scenarios) + own assumptions and calculation methods

Identification of IRRBB sub-components

Gap Risk

Identified through gap analysis or partial durations

Basis Risk

Grouping based on the underlying interest rate

Option Risk

Inventory of transactions with embedded options (types and volumes)

IRRBB 4. Measurement

Measurement approaches must be based on documented assumptions. Stress scenarios must also be produced, at least for the annual ICAAP report

IRRBB Scenario Features for Ongoing Measurement

Cash Flow

- Unconditional (fixed)
- Conditional (varying with the level of interest rates)

Currency

- All currencies included
- Specific shocks for material currencies

Negative Interest Rates

- Negative levels
- Asymmetrical impacts (assets/liabilities)

Scenarios

- 1 Internal scenarios** (parallel/non-parallel, sudden/gradual, historical/expected)
- 2 Scenario of key market rate divergence** (basis risk)
- 3 Regulatory scenarios**

Scenario results to feed into the decision-making at appropriate management level

Including, strategic/business decisions, internal capital allocation, risk management decisions and IRRBB framework review.

Assumptions (to be fully understood, documented and reviewed annually)

Minimum perimeter of assumptions:

- Exercise of options (automatic/behavioural, puts/calls);
- Treatment of non maturing deposits;
- Treatment of fixed term deposits with early redemption risk;
- Treatment of fixed rate loans (commitments);
- Treatment of own equity (EVE);
- Accounting implications for IRRBB measurement (e.g. hedge accounting effectiveness)

Specific assumptions

+ Products with customer options + Customer accounts without repricing date + Corporate planning assumptions for own equity capital

Stress Scenarios (at least annually)

ICAAP stress testing considering severe changes in market conditions and customer behaviour (impact on EVE and/or EaR)

- Well documented assumptions and sound methodologies
- Interaction with other risks (credit risk, liquidity risk, etc.)
- Reverse stress testing
- Larger and more extreme shifts than "standard" scenarios

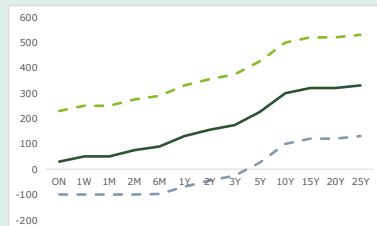
IRRBB 5. Supervisory Outlier Test

The regulatory scenarios for EVE are enhanced and diversified with the addition of 6 new scenarios. All EVE measures must be performed at least quarterly.

Standard Regulatory Shock (+/-200bps)

Parallel shock of +200 and - 200 bps

Measure: EVE
Frequency: quarterly



Regulatory Limit: 20% of total capital

Assumptions:

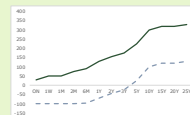
- All positions, CET 1 excluded
- Automatic and behavioural assumptions
- All cash flows to be considered (repayment of principal, repricing of principal, interest payments)
- NPE with expected cash flows, net of provisions (NPE ratio > 2%)
- Interest rate options, notably floors
- Consistent treatment of commercial margins
- Run-off balance sheet (snapshot at estimation time)
- Maturity dependent floor (ON -100 bps or lower if observed, +5bps per year to 0%)
- All material currencies (5% banking book assets) and at least 90% of A/L
- Offsetting of shocks between currencies (50% EVE+)

Six Scenarios (differentiated by currency)

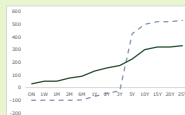
Parallel up



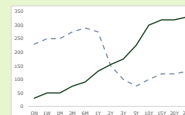
Parallel down



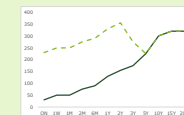
Steepener



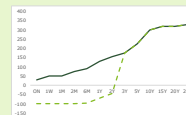
Flattener



Short up



Short down



Measure: EVE Frequency: quarterly Shock: differentiated by currency

Regulatory Limit: 15% of Tier 1 capital

Assumptions:

- All positions, CET 1 excluded
- Automatic and behavioural assumptions
- All cash flows to be considered (repayment of principal, repricing of principal, interest payments)
- NPE with expected cash flows, net of provisions (NPE ratio > 2%)
- Interest rate options, notably floors
- Consistent treatment of commercial margins
- Run-off balance sheet (snapshot at estimation time)
- Maturity dependent floor (ON -100 bps or lower if observed, +5bps per year to 0%)
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	ARS	AUD	BRL	CAD	CHF	CNY	EUR	GBP	HKD	IDR	INR	JPY	KRW	MXN	RUB	SAR	SEK	SGD	TRY	USD	ZAR
Parallel	400	300	400	200	100	250	200	250	200	400	400	100	300	400	400	200	200	150	400	200	400
Short	500	450	500	300	150	300	250	300	250	500	500	100	400	500	500	300	300	200	500	300	500
Long	300	200	300	150	100	150	100	150	100	350	300	100	200	300	300	150	150	100	300	150	300

$$\left\{ \begin{aligned} \Delta R_{short,c}(t_k) &= \pm \bar{R}_{short,c} \cdot S_{short}(t_k) = \pm \bar{R}_{short,c} \cdot e^{-\frac{t_k}{x}} \\ \Delta R_{long,c}(t_k) &= \pm \bar{R}_{long,c} \cdot S_{long}(t_k) = \pm \bar{R}_{long,c} \cdot \left(1 - e^{-\frac{t_k}{x}}\right) \\ \Delta R_{steepener,c}(t_k) &= -0.65 \cdot |\Delta R_{short,c}(t_k)| + 0.9 \cdot |\Delta R_{long,c}(t_k)| \\ \Delta R_{flattener,c}(t_k) &= +0.8 \cdot |\Delta R_{short,c}(t_k)| - 0.6 \cdot |\Delta R_{long,c}(t_k)| \end{aligned} \right.$$

IRRBB 5. Supervisory Outlier Test

The sophistication of measurement methods may be softened for smaller less complex institutions (SREP categories 3 and 4)

	Measure	Metric	SREP Category 4	3	2	1
Unconditional cash flows	EaR	Repricing Gap	Standard maturity buckets advised in Basel Committee for Banking Supervision		Gap based on evolving size and composition of the banking book due to business responses to differing interest rate environments. Including projected commercial margins consistent with the interest rate scenario	
	EVE	Modified Duration/PV01 of Equity Partial Modified Duration/Partial PV01	Time buckets advised in BCBS Standards. Application of standard shocks. Yield curve model with tenors corresponding to the time buckets.	Time buckets advised in BCBS Standards, application of partial duration weights. Application of standard shocks and other interest rate shock and stress scenarios. Yield curve model with tenors corresponding to the time buckets.	Partial duration computed per instrument type and time bucket. Application of standard and other interest rate shock and stress scenarios. Yield curve model with tenors corresponding to the time buckets	Partial duration computed per transaction and time bucket. Application of standard and other interest rate shock and stress. Yield curve model with tenors corresponding to the time buckets.
Cash Flows partially or fully conditional on interest rates	EaR	Net Interest Income	Standard shock applied to earnings under a constant balance sheet. Based on time buckets advised in the BCBS Standards.	Standard and other interest rate shock and stress scenarios for the yield curve applied to earnings, reflecting constant balance sheet or simple assumptions about future business development.	Standard and other interest rate shock and stress scenarios for the yield curve and between key market rates separately applied to earnings projected by business plan or constant balance sheet. Including projected commercial margins consistent with the interest rate scenario.	Comprehensive interest rate and stress scenarios, combining shifts of yield curves with changes in basis and credit spreads, as well as changes in customer behaviour, are applied to reforecast business volumes and earnings to measure the difference compared with the underlying business plan. Including projected commercial margins consistent with the interest rate scenario.
	EVE	EVE	Application of standard and other interest rate shock and stress scenarios for the yield curve, using time buckets as advised in the BCBS Standards; yield curve tenors corresponding to the time buckets.		Measure computed on transaction or cash flow basis. Application of standard and other interest rate shock and stress scenarios for the yield curve and between key market rates separately. Adequate tenors in yield curves. Full optionality valuation.	Comprehensive interest rate and stress scenarios, combining shifts of yield curves with changes in basis and credit spreads, as well as changes in customer behaviour. Adequate tenors in all yield curves. Full optionality valuation. Scenario analysis complemented by Monte Carlo or historical simulations on portfolios with material optionality. Daily updating of risk factors.

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