

## Focus Liquidity Risk Management (LRM) Design of an integrated LRM framework to achieve compliance with new LRM regulation

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Senior Manager, Deloitte Austria

Vienna, 24 May 2011



# Agenda

## 1. Introduction & Regulatory Background

2. Integrated Liquidity Risk Management Framework

3. ICAAP versus ILAAP

4. Outlook

# 1. Introduction & Regulatory Background

Liquidity is being established as a second regulatory pillar in addition to capital. The liquidity pillar consists of two key cornerstones that complement each other.

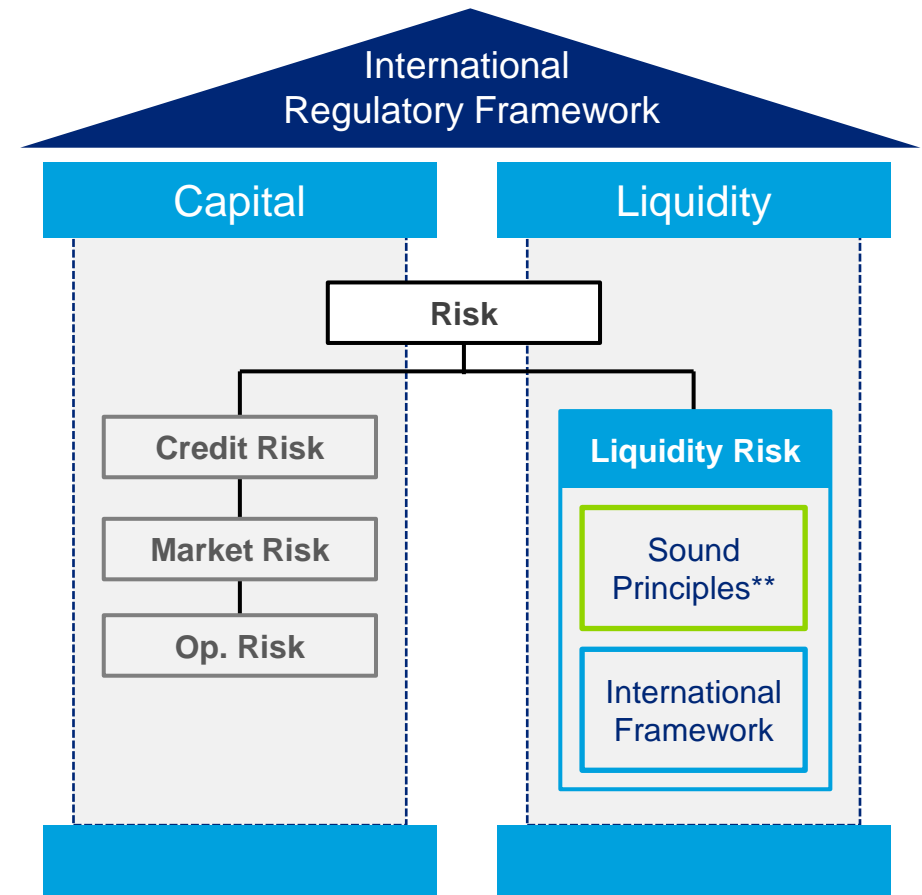
## Sound Principles

- Best Practice guidelines for the governance, measurement and management of liquidity risk
- Principles-based framework for an integrated, bank-wide liquidity risk management
- **Binding in Europe through CRD II from 1<sup>st</sup> January 2011 onwards**

## International Framework

- Liquidity framework is part of comprehensive reform package proposed by BIS (“Basel III”)
- First internationally harmonized and binding minimum (!) standards for liquidity risk
- Rules-based approach similar to Basel II

Liquidity on an equal standing with capital,  
no regulatory capital requirements for funding liquidity risk

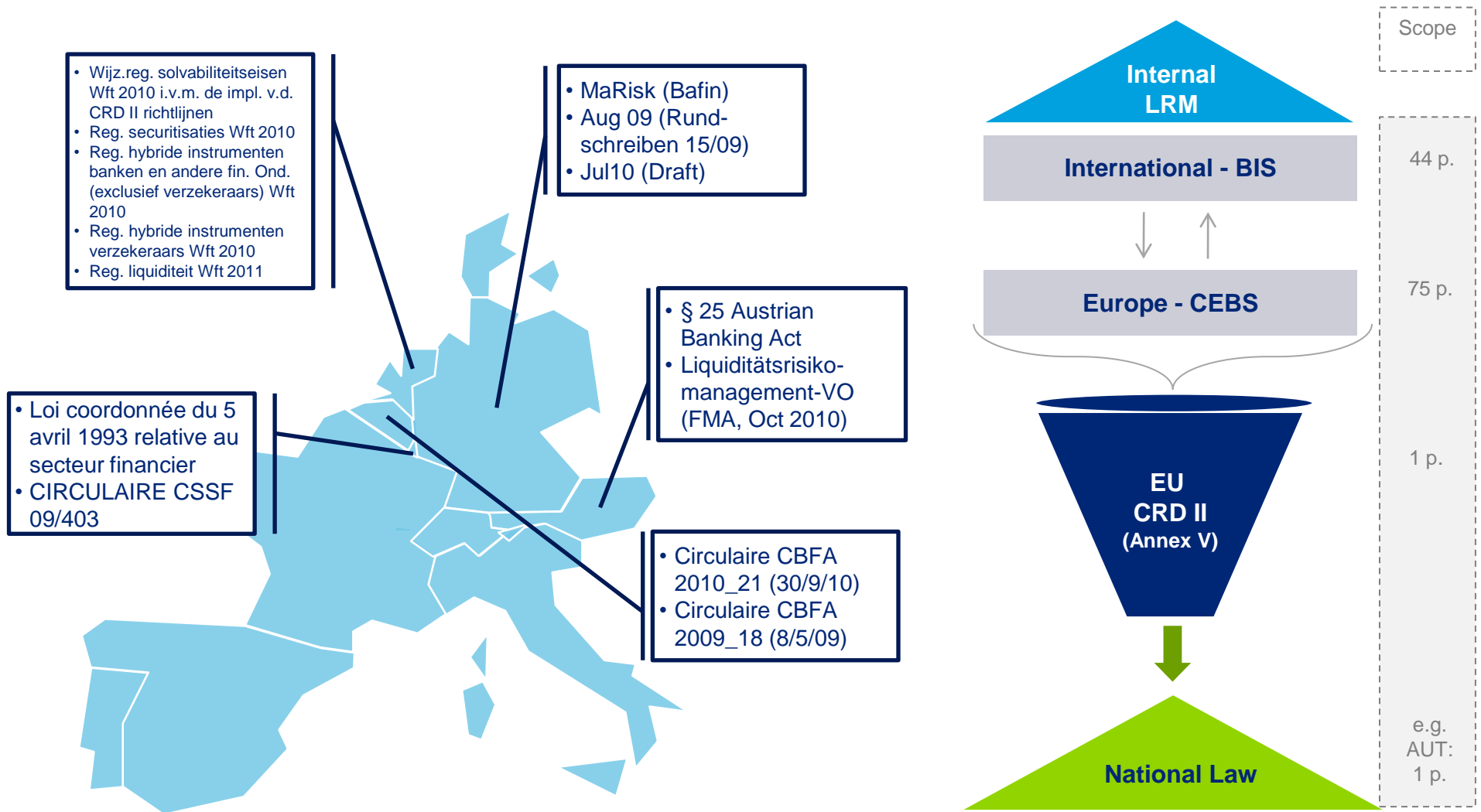


\* “International framework for liquidity risk measurement, standards and monitoring” of the BIS / December 2010

\*\* “Principles for Sound Liquidity Risk Management and Supervision” of the BIS / September 2008

# 1. Introduction & Regulatory Background

The CEBS best practice principles were transformed into EU law via CRD II, which had to be adopted into national law by end of October 2010.



# 1. Introduction & Regulatory Background

The CEBS LRM Best Practice Guidelines are comprehensive. You tend not to see the wood for the trees.

The 30 CEBS Principles

## Governance of Liquidity Risk

1. Liquidity risk strategy / risk appetite
2. Internal liquidity cost allocation
3. Segregation of duties
4. Awareness of liquidity risk
5. IT systems and processes

## Liquidity Management

6. Liquidity-generating capacity
7. Factors for netting arrangements
8. Liquidity risk due to documentation risk
9. Collateral management
10. Cash and collateral intraday management
11. Intraday liquidity management
12. Short-term liquidity within structural liquidity risk

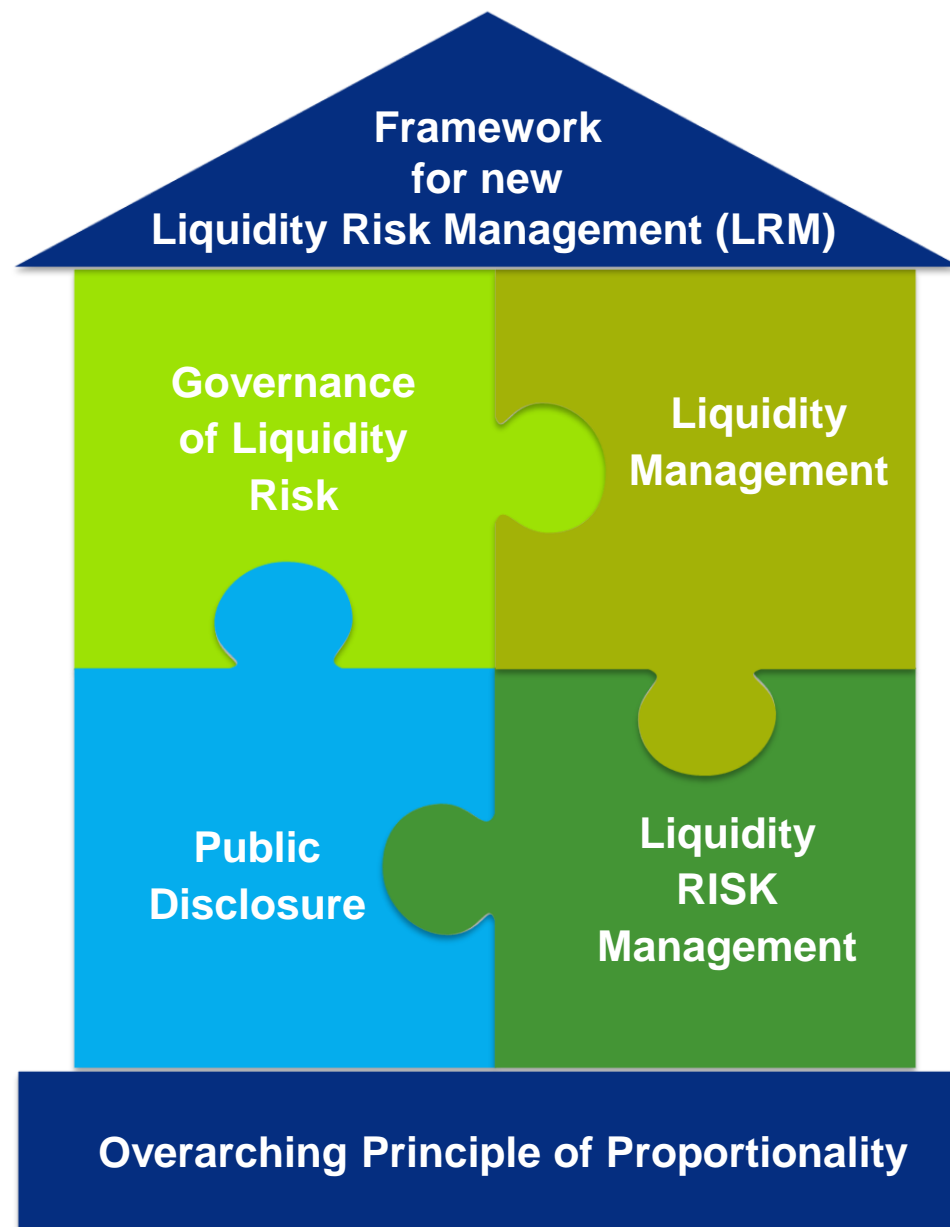
## Liquidity RISK Management

13. Cash flow planning
14. Liquidity stress tests
15. Liquidity Contingency Plans
16. Liquidity buffers/Counterbalancing Capacity
17. Monitoring of funding sources

## Public Disclosure

18. Disclosure of adequate information

+ 12 recommendations for supervisors



# 1. Introduction & Regulatory Background

Compared to the international Best Practice Standards national regulation tends to be very short. So what are the key topics?

## Annex V of CRD II

2006/L0048 — EN — 07.12.2009 — 007.001 — 124

**▼B**

ANNEX V

TECHNICAL CRITERIA CONCERNING THE ORGANISATION AND TREATMENT OF RISKS

- 1. GOVERNANCE**  
1. Arrangements shall be defined by the management body described in Article 11 concerning the segregation of duties in the organisation and the prevention of conflicts of interest.
- 2. TREATMENT OF RISKS**  
2. The management body described in Article 11 shall approve and periodically review the strategies and policies for taking up, managing, monitoring and mitigating the risks the credit institution is or might be exposed to, including those posed by the macroeconomic environment in which it operates in relation to the status of the business cycle.
- 3. CREDIT AND COUNTERPARTY RISK**  
3. Credit-granting shall be based on sound and well-defined criteria. The process for approving, amending, monitoring, and re-financing credits shall be clearly established.  
4. The ongoing administration and monitoring of their various credit risk-bearing portfolios and exposures, including for identifying and managing problem credits and for making adequate value adjustments and provisions, shall be operated through effective systems.  
5. Diversification of credit portfolios shall be adequate given the credit institution's legal nature and overall credit strategy.
- 4. RESIDUAL RISK**  
6. The risk that recognised credit risk mitigation techniques used by the credit institution prove less effective than expected shall be addressed and controlled by means of written policies and procedures.
- 5. CONCENTRATION RISK**  
7. The concentration risk arising from exposures to counterparties, groups of connected counterparties, and counterparties in the same economic sector, geographic region or from the same activity or commodity, the application of credit risk mitigation techniques, and including in particular risks associated with large indirect credit exposures (e.g. in a single collateral issuer), shall be addressed and controlled by means of written policies and procedures.
- 6. SECURITISATION RISK**  
**▼B**  
8. The risks arising from securitisation transactions in relation to which the credit institution is investor, originator or sponsor, including reputational risks (such as arise in relation to complex structures or products) shall be evaluated and addressed through appropriate policies and procedures, to ensure in particular that the economic substance of the transaction is fully reflected in the risk assessment and management decisions.
- ▼B**  
**7. LIQUIDITY RISK**  
9. Liquidity plans to address the implications of both scheduled and early amortisation shall exist in credit institutions which are originators of revolving securitisation transactions involving early amortisation provisions.
- 7 MARKET RISK**  
10. Policies and processes for the measurement and management of all material sources and effects of market risk shall be implemented.
- 8. INTEREST RATE RISK ARISING FROM NON-TRADING ACTIVITIES**  
**▼B**  
11. Systems shall be implemented to evaluate and manage the risk arising from potential changes in interest rates as they affect a credit institution's non-trading activities.

Implementation  
to national law

## LRMV

1 von 2

**BUNDESGESETZBLATT**  
FÜR DIE REPUBLIK ÖSTERREICH

Jahrgang 2010      Ausgegeben am 29. Oktober 2010      Teil II

338. Verordnung:      Liquiditätsrisikomanagementverordnung – LRMV

338. Verordnung der Finanzmarktaufsichtsbehörde (FMA) betreffend die Mindestanforderungen an das Liquiditätsrisikomanagement (Liquiditätsrisikomanagementverordnung – LRMV)

Auf Grund des § 25 Abs. 2 des Bankwesengesetzes – BWG, BGBl. Nr. 532/1993, zuletzt geändert durch das Bundesgesetz BGBl. I Nr. 72/2010, wird verordnet:

**Liquiditätspuffer**

§ 1. (1) Kreditinstitute haben über geeignete Strategien, Vorschriften, Verfahren und Systeme für die Identifizierung, Messung, Steuerung und Überwachung des Liquiditätsrisikos über eine angemessene Zahl von Zeiträumen, einschließlich innerhalb eines Geschäftstages, zu verfügen, um sicherzustellen, dass sie über angemessenen Liquiditätspuffer verfügen.

(2) Diese Strategien, Vorschriften, Verfahren und Systeme sind auf die betreffenden Geschäftsfelder, Währungs- und Funktionsbereiche anzupassen und unter anderem Mechanismen für eine angemessene Allokation der Liquiditätskosten, -vorteile und -risiken.

(3) Die Strategien, Vorschriften, Verfahren und Systeme nach Abs. 1 haben der Komplexität, dem Risikoprofil und dem Geschäftsbereich des Kreditinstituts sowie der von dem Geschäftsfeldern vorgegebenen Risikotoleranz angemessen zu entsprechen und die Belegung des Kreditinstituts in jedem Mitgliedstaat, in dem es tätig ist, widerzuspiegeln. Die Geschäftsfelder haben alle relevanten Geschäftsbereiche des Kreditinstituts über die Risikotoleranz zu informieren.

**Überwachung von Finanzierungspositionen**

§ 2. Kreditinstitute haben über Methoden für die Identifizierung, Messung, Steuerung und Überwachung von Finanzierungspositionen zu verfügen. In diese Methoden sind die aktuellen und erweiterten wesentlichen Zahlungsströme in und aus Vermögenswerten, Passivpositionen, außerbilanziellen Positionen, einschließlich Eventualverbindlichkeiten, sowie die möglichen Auswirkungen des Reputationsrisikos einzubeziehen.

**Überwachung von Vermögenswerten**

§ 3. (1) Kreditinstitute haben zwischen belasteten und unbelasteten Vermögenswerten, die jederzeit, insbesondere in Krisensituationen, verfügbar sind, zu unterscheiden. Sie haben auch die rechtliche Einheit, bei der die Vermögenswerte verwahrt werden, den Staat, in dem diese mit rechtsgültiger Wirkung entweder in einem Register eingetragen oder auf einem Konto verbucht sind, sowie ihre Liquidierbarkeit zu berücksichtigen. Die Kreditinstitute haben außerdem zu überwachen, wie diese Vermögenswerte zentral mobilisiert werden können.

(2) Kreditinstitute haben den geltenden rechtlichen, regulatorischen und operativen Beschränkungen für potenzielle Übertragungen von Liquidität und unbelasteten Vermögenswerten zwischen Einheiten, sowohl innerhalb als auch außerhalb des EWR, Rechnung zu tragen.

**Liquiditätsrisikominderung**

§ 4. Kreditinstitute haben verschiedene Vorkehrungen zur Minderung des Liquiditätsrisikos, einschließlich eines Limitsystems und Liquiditätspuffern, zu treffen, um unterschiedlichen Stresssituationen standhalten zu können. Sie haben Vorkehrungen zur Sicherstellung einer hinreichend diversifizierten Finanzierungsstruktur und des Zugangs zu Finanzierungsquellen zu treffen. Diese Vorkehrungen sind regelmäßig zu überprüfen.

www.ris.bka.gv.at

# 1. Introduction & Regulatory Background

Some topics are more important than others. For building an integrated LRM framework it makes sense to start with the most important ones.

The 30 CEBS Principles

## Governance of Liquidity Risk

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## Liquidity Management

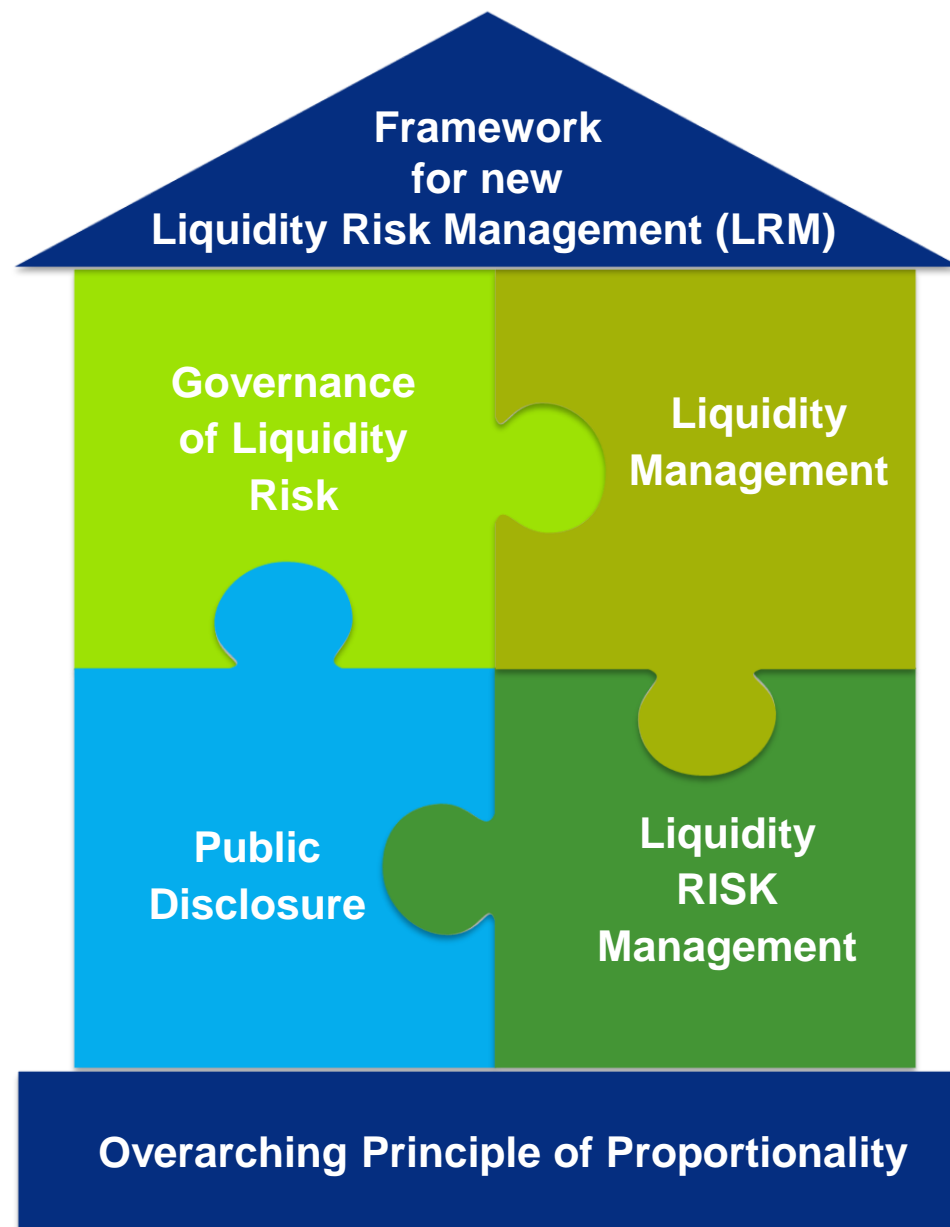
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## Liquidity RISK Management

13. Cash flow planning
14. **Liquidity stress tests**
15. **Liquidity Contingency Plans**
16. **Liquidity buffers/Counterbalancing Capacity**
17. Monitoring of funding sources

## Public Disclosure

18. Disclosure of adequate information
- + 12 recommendations for supervisors



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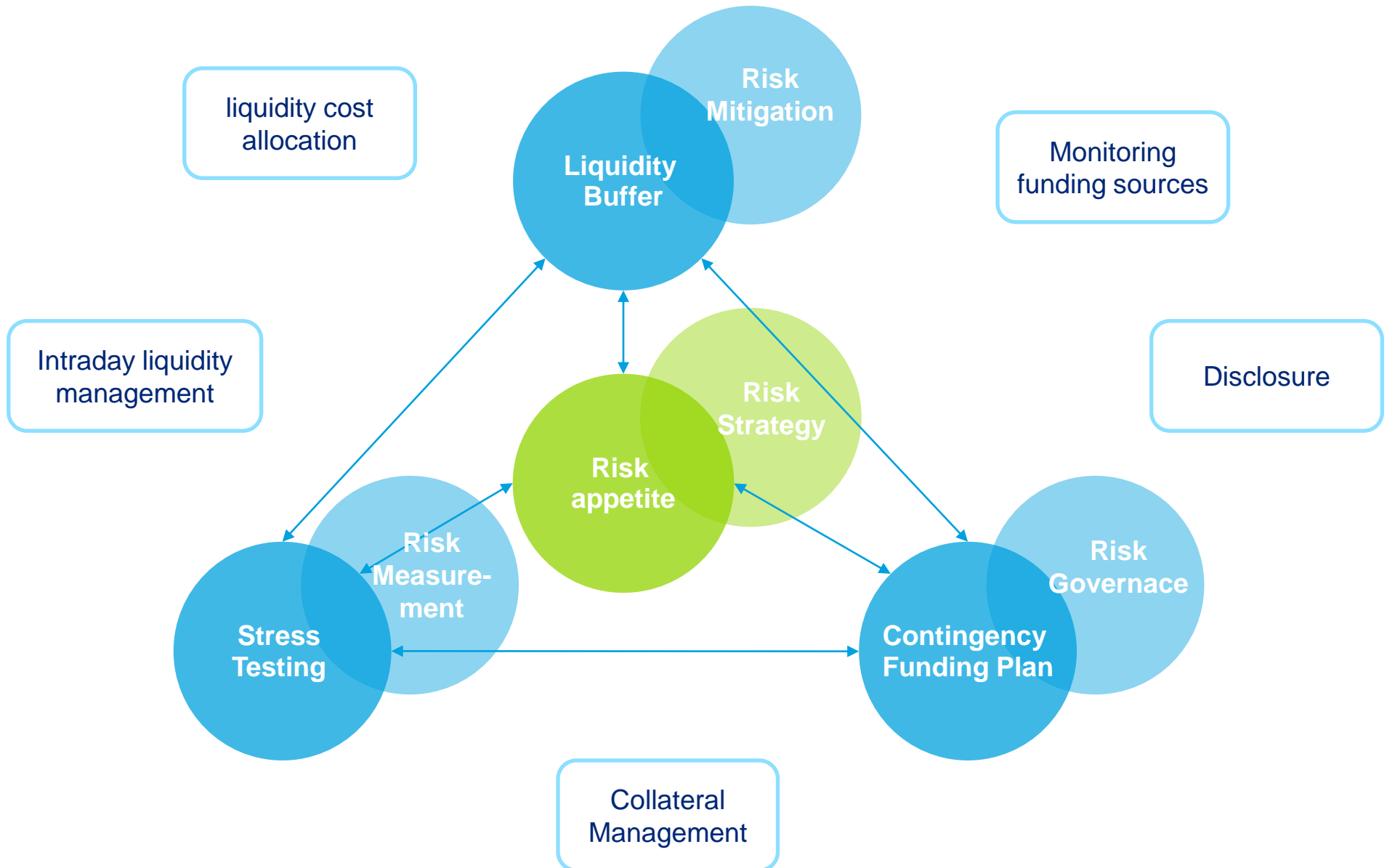
**2. Integrated Liquidity Risk Management Framework**

3. ICAAP versus ILAAP

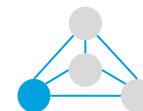
4. Outlook

## 2. Integrated LRM – Overview

The picture below shows the core of an integrated LRM framework. Consistency and reflecting interdependencies between different cornerstones is key.



## 2. Integrated LRM – Stress Testing Framework



Liquidity stress testing is the key tool used by financial institutions to measure their capacity to absorb liquidity shocks.

### General definition

- Stresstests simulate the impact of extreme, but still plausible events

### Liquidity-specific definition

- Liquidity stresstests test adequacy of liquidity buffers to ensure ability to meet payment obligations in stressed situations

### Interdependencies

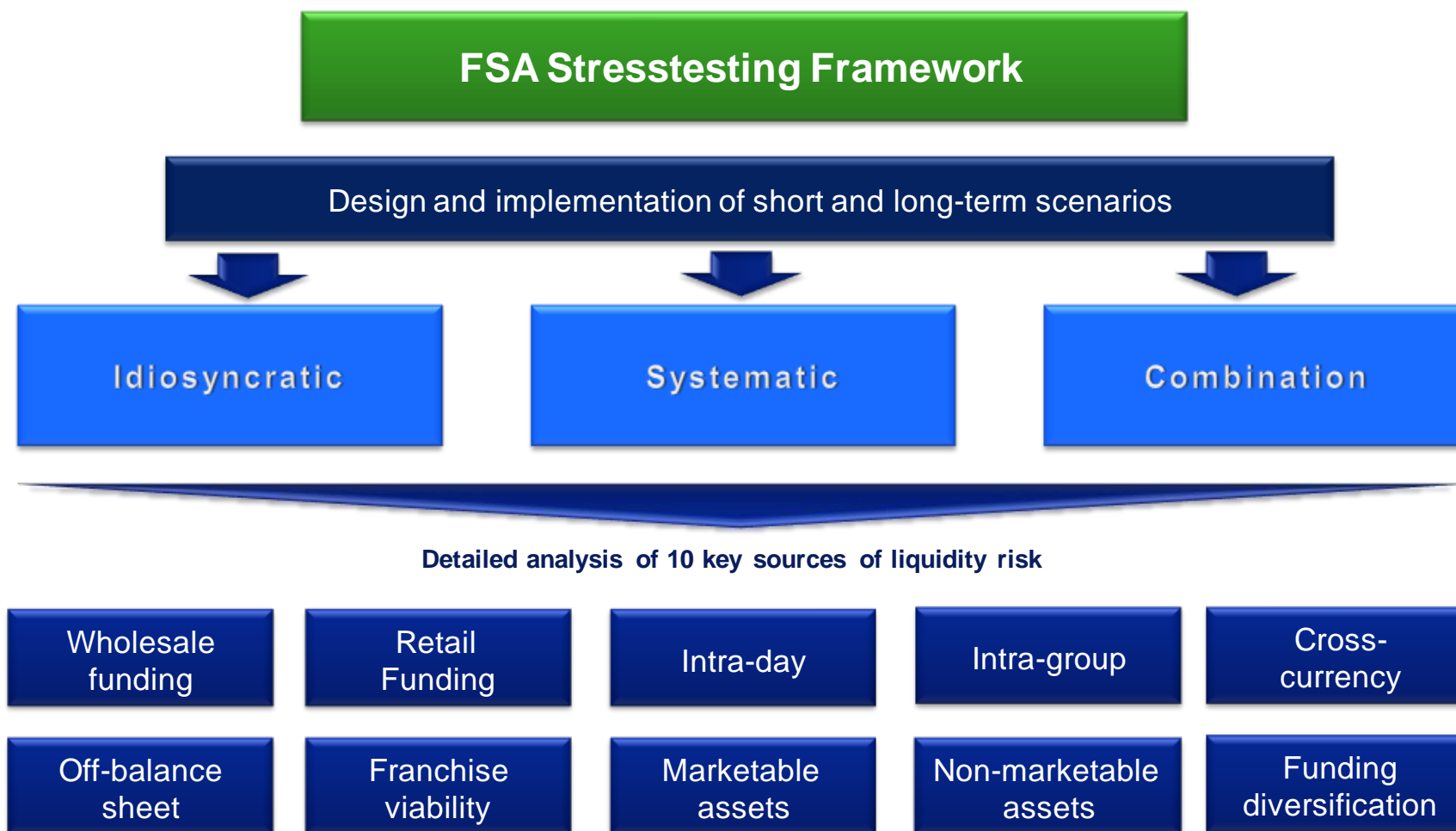
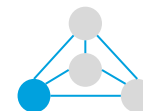
- Outcome of stresstests determines size of liquidity buffer
- Outcome of stresstests influences design of contingency funding plan
- Risk appetite can be defined and limits set based on outcome of stresstesting

### Dimensions of Stresstesting

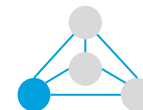
<b>Type</b>	<ul style="list-style-type: none"><li>• Idiosyncratic</li><li>• Systematic</li><li>• Combination</li></ul>
<b>Methods</b>	<ul style="list-style-type: none"><li>• Hypothetical scenarios (preferred)</li><li>• Historical scenarios</li></ul>
<b>Number</b>	<ul style="list-style-type: none"><li>• Regulatory minimum: 3 scenarios</li><li>• Industry practice: Up to 6 to 7</li></ul>
<b>Scope</b>	<ul style="list-style-type: none"><li>• Scenario analysis (required) vs. sensitivity analysis</li><li>• OBS items/implicit support, inter-risk effects, behaviour market peers</li></ul>
<b>Time Horizon</b>	<ul style="list-style-type: none"><li>• Intraday, short term</li><li>• Medium- to long-term</li></ul>
<b>Examples</b> <small>(systematic &amp; idiosyncratic)</small>	<ul style="list-style-type: none"><li>• Rating Downgrade, withdrawal of deposits, tightening of credit lines</li><li>• Funding restrictions, drying up of markets, withdrawal of major player</li></ul>

## 2. Integrated LRM – Stress Testing Framework

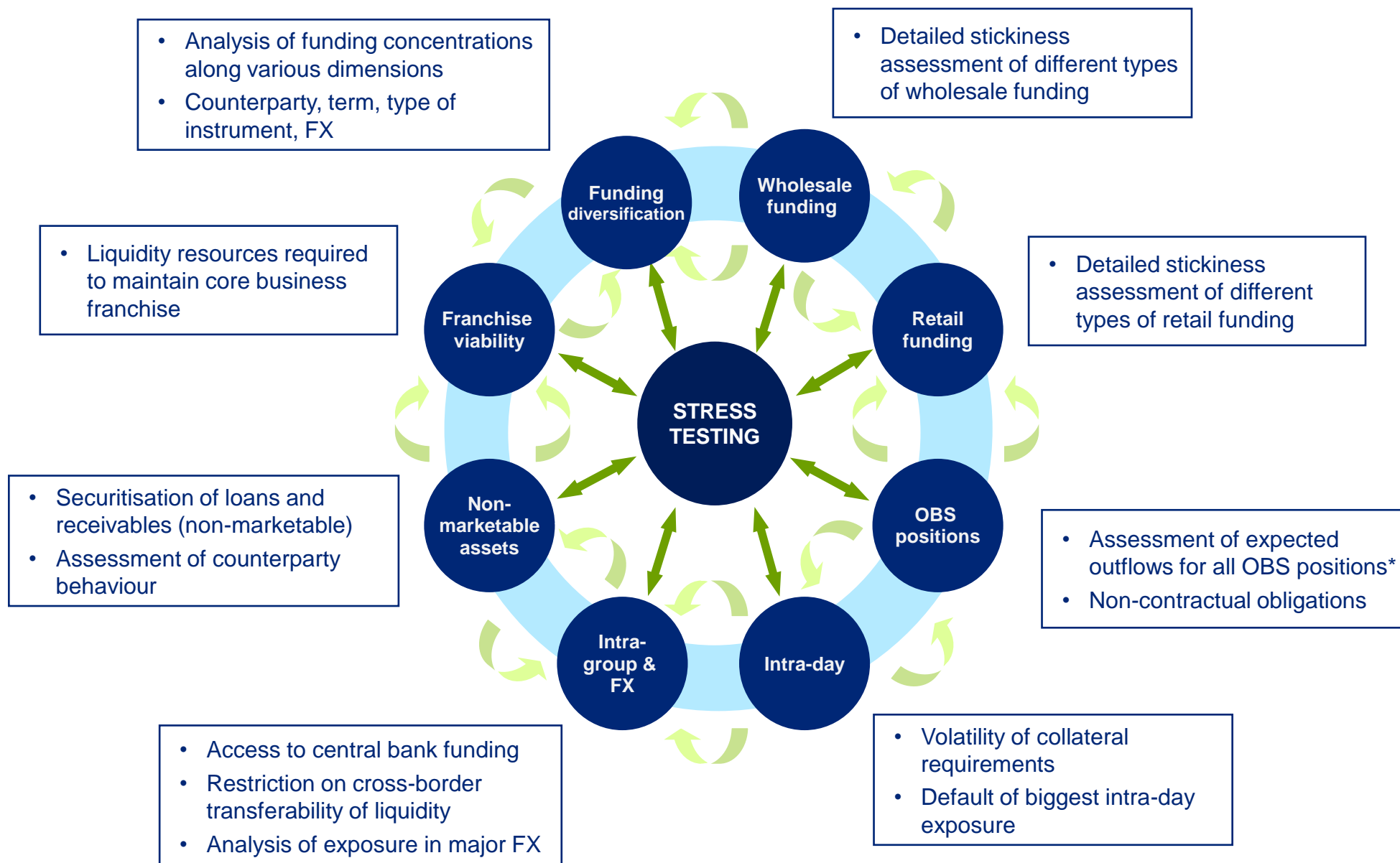
The comprehensive liquidity stress testing framework of the FSA includes the lessons learnt from the financial market crisis.



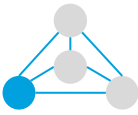
## 2. Integrated LRM – Stress Testing Framework



The FSA stresstesting framework requires banks to assess in detail 10 key sources of liquidity risk under three different stress scenarios.



# 2. Integrated LRM – Stress Testing Framework



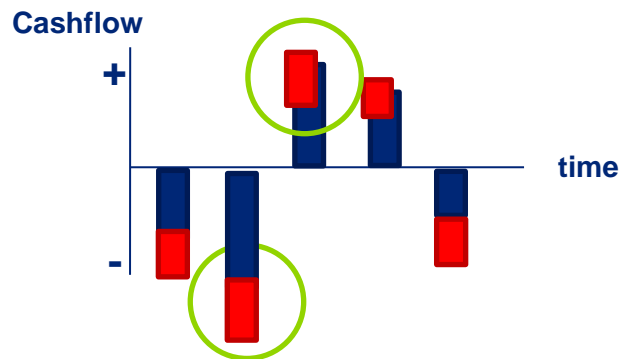
“Cooking recipe” for performing liquidity stress tests using the FSA framework.

1. Define liquidity **stress scenarios** (incl. stress levels) and **dimensions** of liquidity risk

Scenarios

## Liquidity Stress Tests

**Stress Scenarios** lead to **higher** cash outflows and **lower** cash inflows than expected compared to the base case



### Dimensions of liquidity risk

	Wholesale Funding	Retail Funding	...	Franchise viability	Funding diversification
<b>Base Case – Ordinary course of business</b>	—	—		—	—
<b>Idiosyncratic</b>					
Mild stress	↓	↓		↓	↓
Severe stress	↓↓	↓↓		↓↓	↓↓
<b>Systematic</b>					
Mild stress	↓	↓		↓	↓
Severe stress	↓↓	↓↓		↓↓	↓↓
<b>Combined</b>					
Mild stress	↓	↓		↓	↓
Severe stress	↓↓	↓↓		↓↓	↓↓

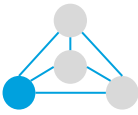
Scenarios

„Our worst case wasn't as bad as it really got.“

Liquidity risk manager on major liquidity events

# 2. Integrated LRM – Stress Testing Framework

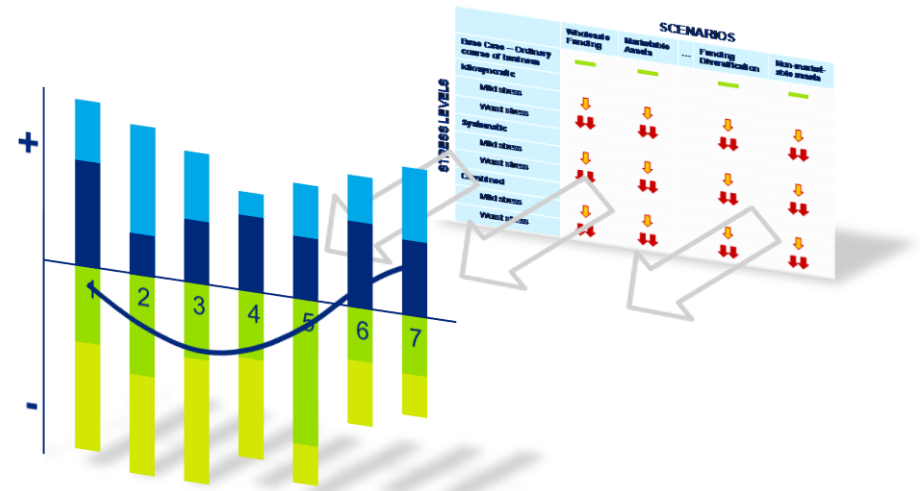
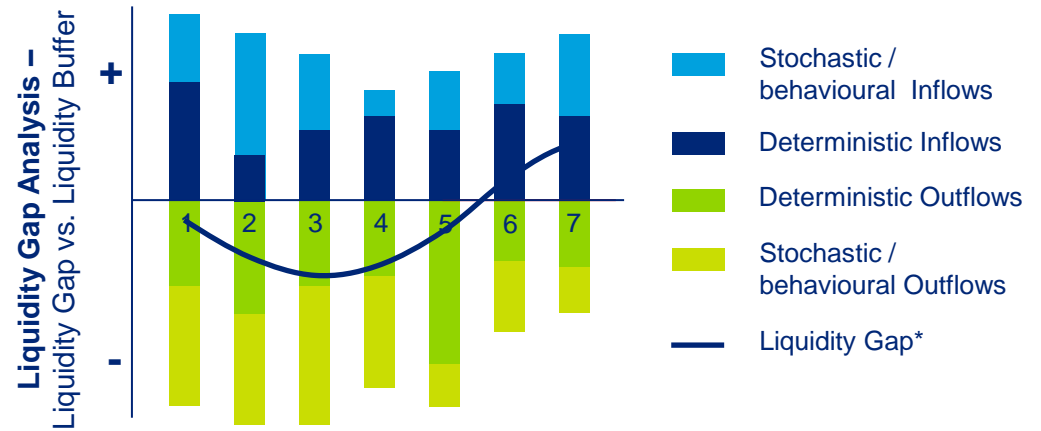
“Cooking recipe” for performing liquidity stress tests using the FSA framework. (cont’d)



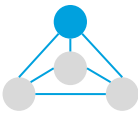
2. Identify **contractual (deterministic)** cash in- and outflows
3. Estimate **stochastic and behavioural** cash inflows and outflows
4. Sum up all cash inflows and outflows to forecast **net funding requirements (liquidity gap)** for each stress scenario over predefined time horizon

Impact on Liquidity Gap Analysis

## Liquidity Gap Analysis under defined stress scenarios – Contractual (deterministic) vs. stochastic/behavioural (assumption-based) CFs



\* Liquidity Gap: Net funding requirement before any management-driven actions are incorporated (= counterbalancing capacity including liquidity buffer)



## 2. Integrated LRM – Liquidity Buffer

A bank should maintain a cushion of unencumbered, high quality liquid assets to be held as insurance against liquidity stress scenarios.

### General Remarks

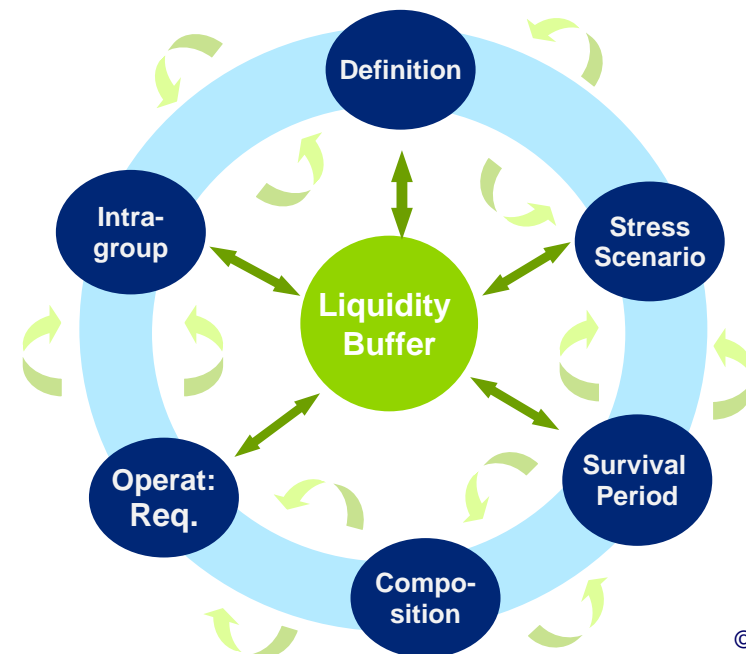
- Single most important measure to mitigate funding liquidity risk
- Analogous function to capital for other risk categories – no capital required to back short-term funding liquidity risk
- Liquidity buffer is the short end of the “counterbalancing capacity”

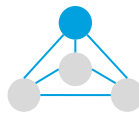
### Interdependencies

- Size and composition of the liquidity buffer determined through stresstests
- Size and composition of the liquidity buffer is a function of a bank’s risk appetite



The CEBS Guidelines on Liquidity Buffers and Survival Periods provide a flexible framework to derive and manage liquidity buffers



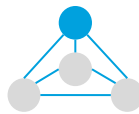


## 2. Integrated LRM – Liquidity Buffer

The liquidity buffer is the excess liquidity available to be used in liquidity stress situations within a defined short period of time.\*

Date	Currency					
Flow Type	Position/Source	Up to 1 day	1 to 7 days	7 to 30 days	1 to 3 months	> 3 months
Cash Inflows						
	<b>Sum of cash inflows</b>					
Cash Outflows						
	<b>Sum of cash outflows</b>					
	<b>Net Funding Gap</b>					
<b>Counterbalancing Capacity</b>	<b>Liquidity buffer</b> - Highly liquid assets Cash Central bank reserves - Liquid assets					
	<b>Counterbalancing measures</b> Other liquefiable assets Intragroup liquidity support Committed/received credit lines New issuance Securitization ...					
	<b>Sum of Counterbalancing Capacity</b>					
<b>Sum of Net Funding Gap &amp; Counterbalancing Capacity</b>						

\* CEBS Guidelines on Liquidity Buffer, December 2009



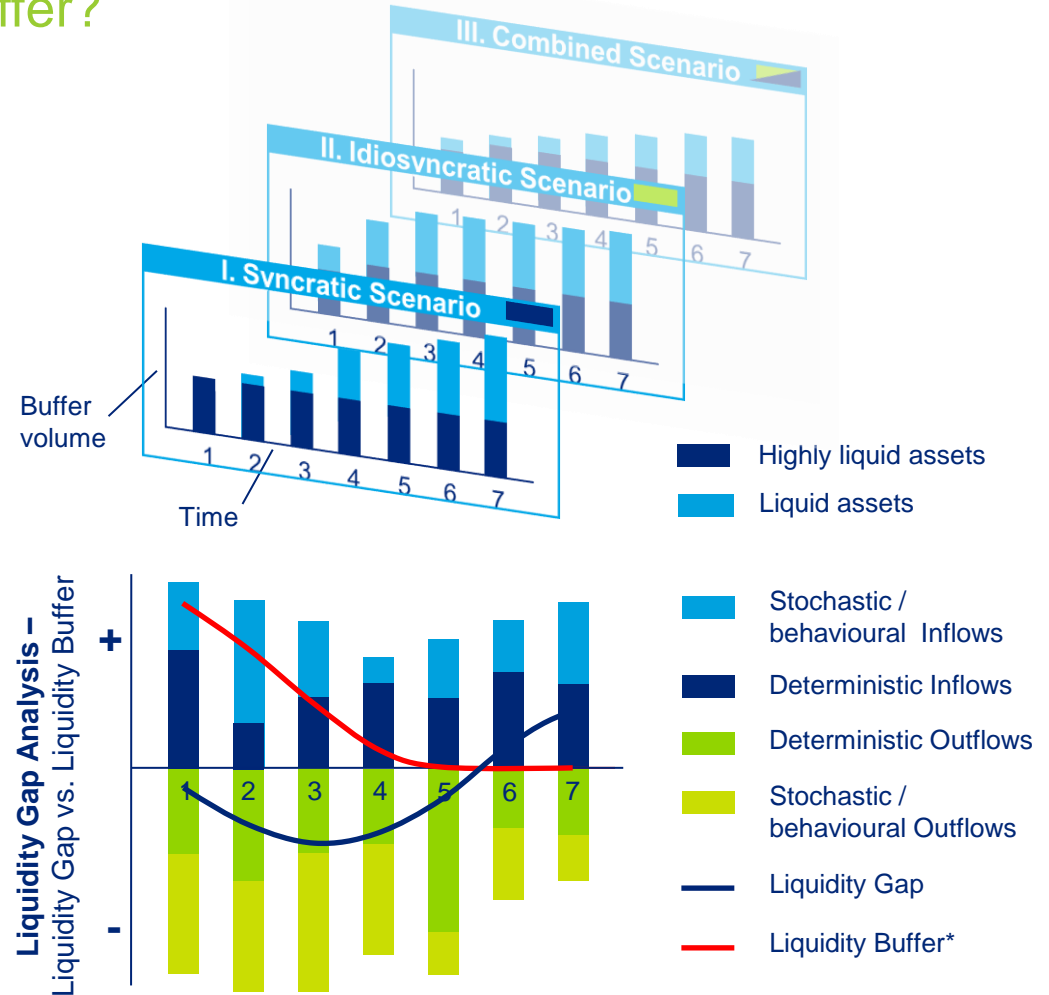
## 2. Integrated LRM – Liquidity Buffer

“Cooking recipe” cont’d: How long will an institution survive under a defined stress scenario using the liquidity buffer?

Cont’d from stresstesting (slide 14)

5. Determine **liquidity buffer assets** available under assumed stress over predefined time horizon

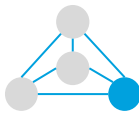
6. Compare **liquidity requirements** with available **liquidity buffer** per scenario



### „Survival horizon“:

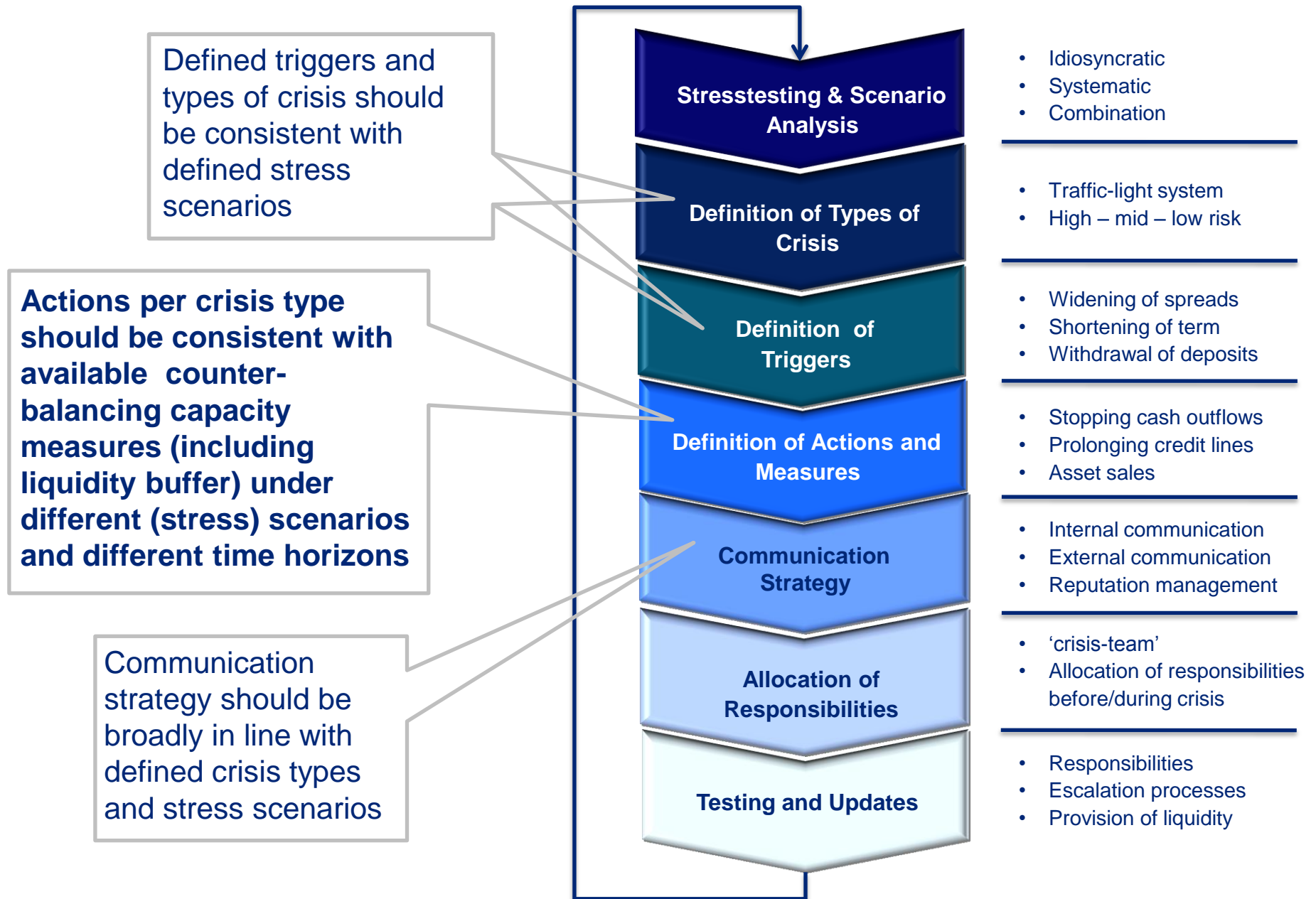


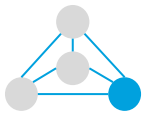
How long will the institution survive under defined stress scenario **before** management actions - other than the liquidity buffer – are taken (= counterbalancing capacity)



## 2. Integrated LRM – Contingency Funding Plan

“A contingency funding plan is the compilation of policies, procedures and action plans for responding to severe disruptions to a bank’s ability.”





## 2. Integrated LRM – Contingency Funding Plan

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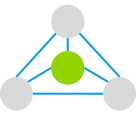
Date	Currency					
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<b>Counterbalancing Capacity</b>	<b>Liquidity buffer</b> - Highly liquid assets Cash Central bank reserves - Liquid assets					
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	<b>Sum of Counterbalancing Capacity</b>					
<b>Sum of Net Funding Gap &amp; Counterbalancing Capacity</b>						

Define counterbalancing measures over different time horizons per type of crisis and stress scenario

\* CEBS Guidelines on Liquidity Buffer, December 2009

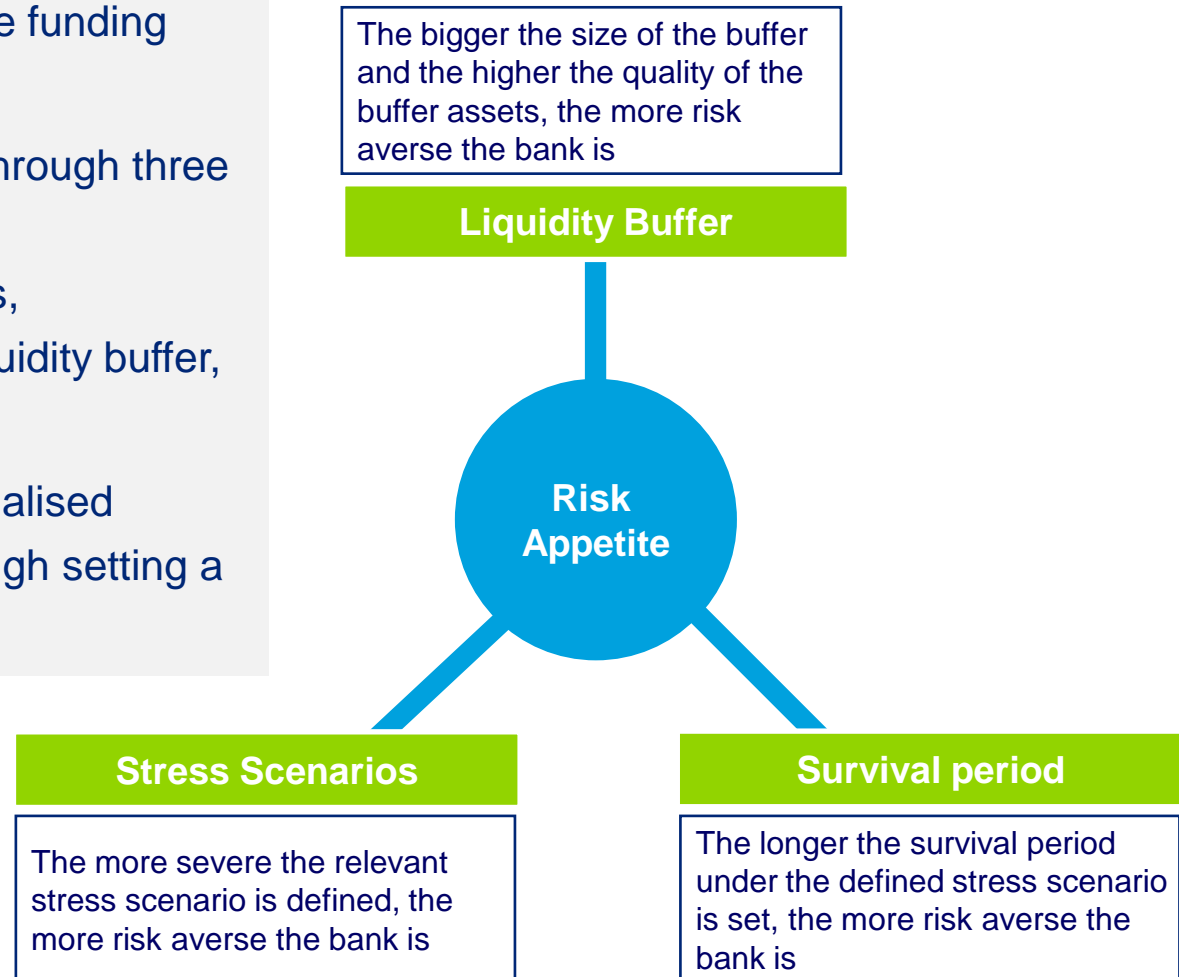


## 2. Integrated LRM – Risk Appetite



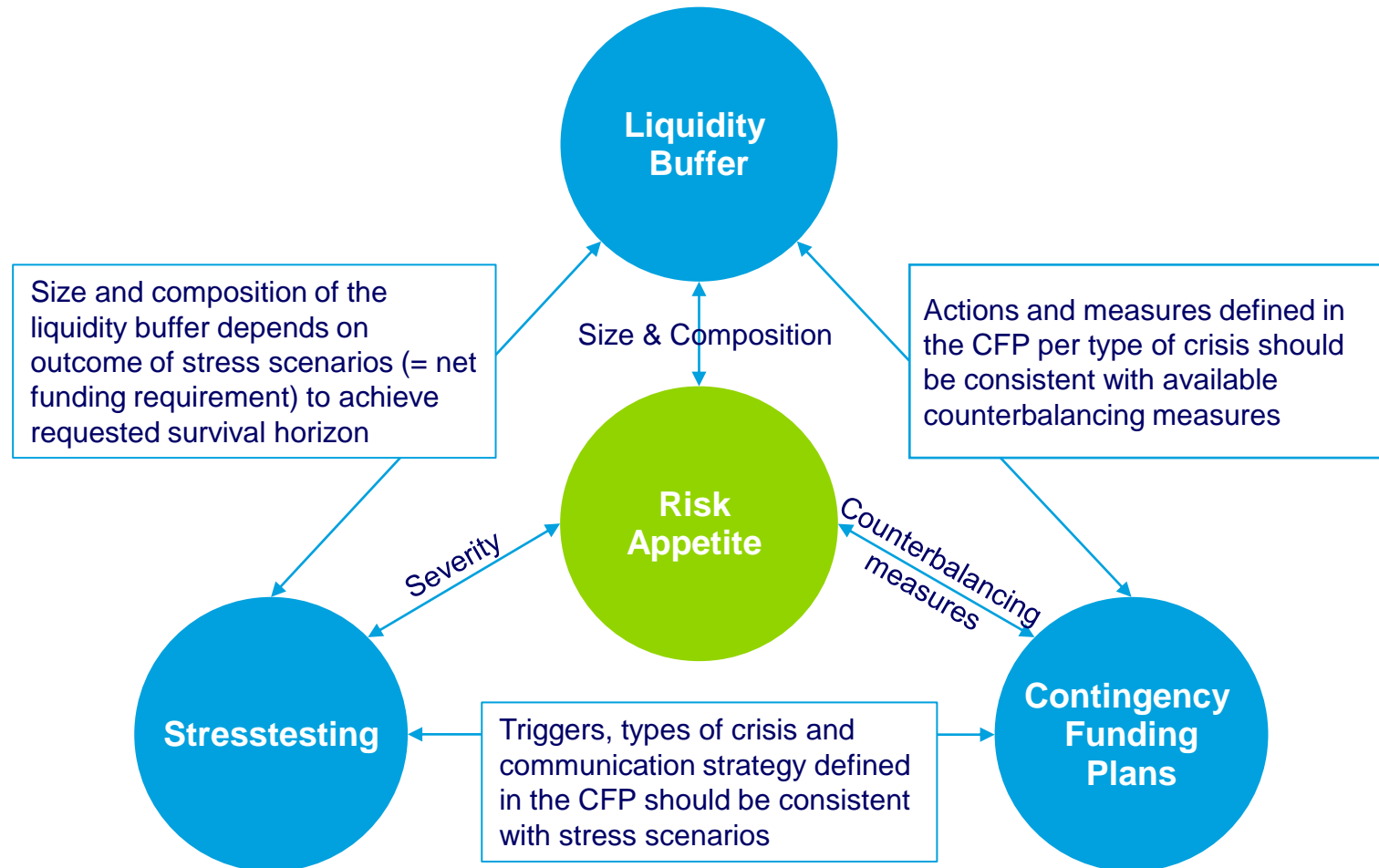
The bank can define its risk appetite by defining a stress scenario that it wants to survive by holding a liquidity buffer of appropriate size and composition.

- General aim will be to minimise funding liquidity risk (risk aversion)
- Risk appetite can be defined through three dimensions:
  - [1] Severity of stress scenarios,
  - [2] Size and composition of liquidity buffer,
  - [3] Length of survival period.
- Risk appetite can be operationalised through limit setting (e.g. through setting a minimum liquidity buffer limit)



## 2. Integrated LRM – Summary

The picture below summarizes the interdependencies between the main cornerstones that build up the core of an integrated liquidity risk management framework.



# Agenda

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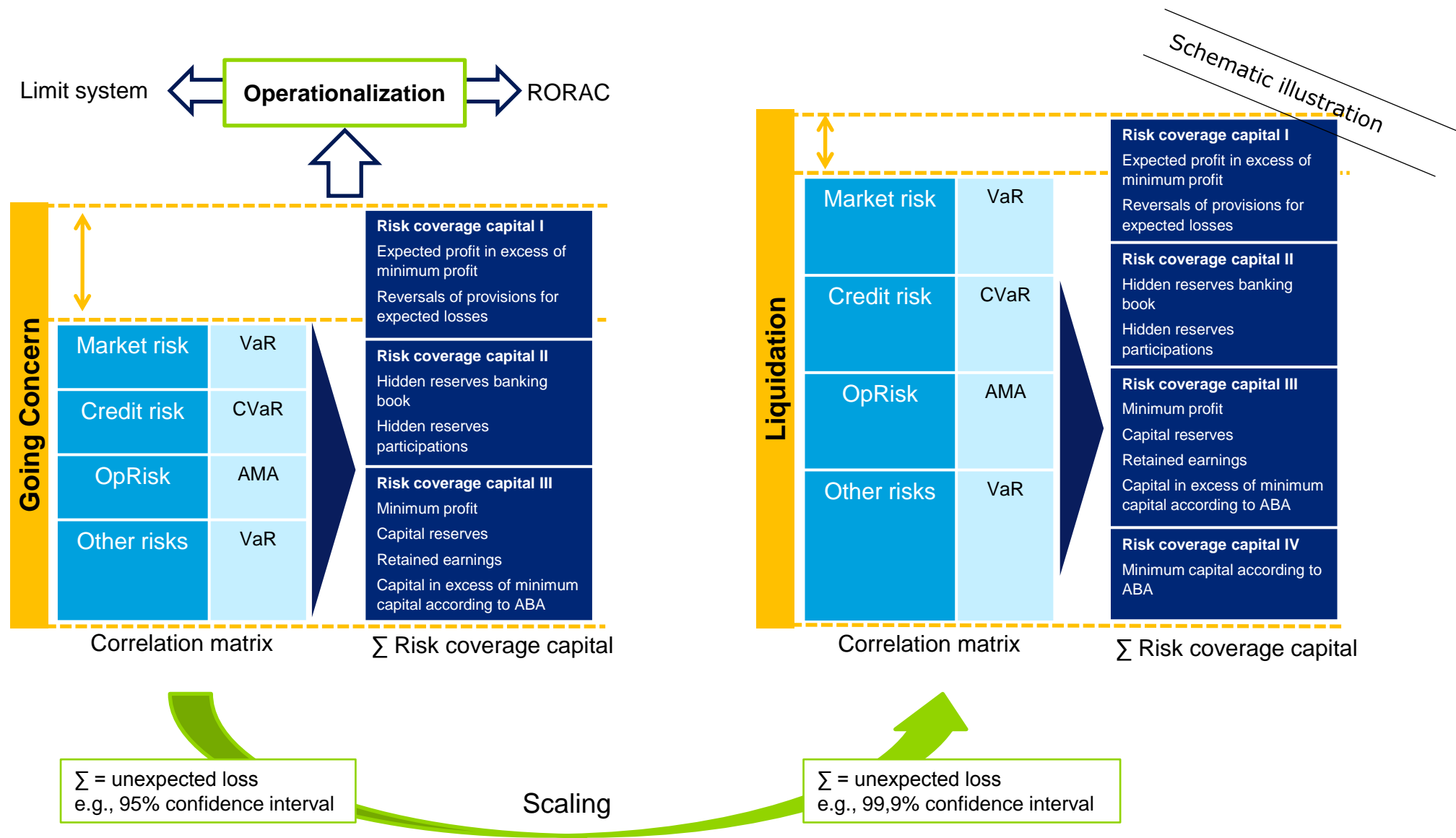
2. Integrated Liquidity Risk Management Framework

**3. ICAAP versus ILAAP**

4. Outlook

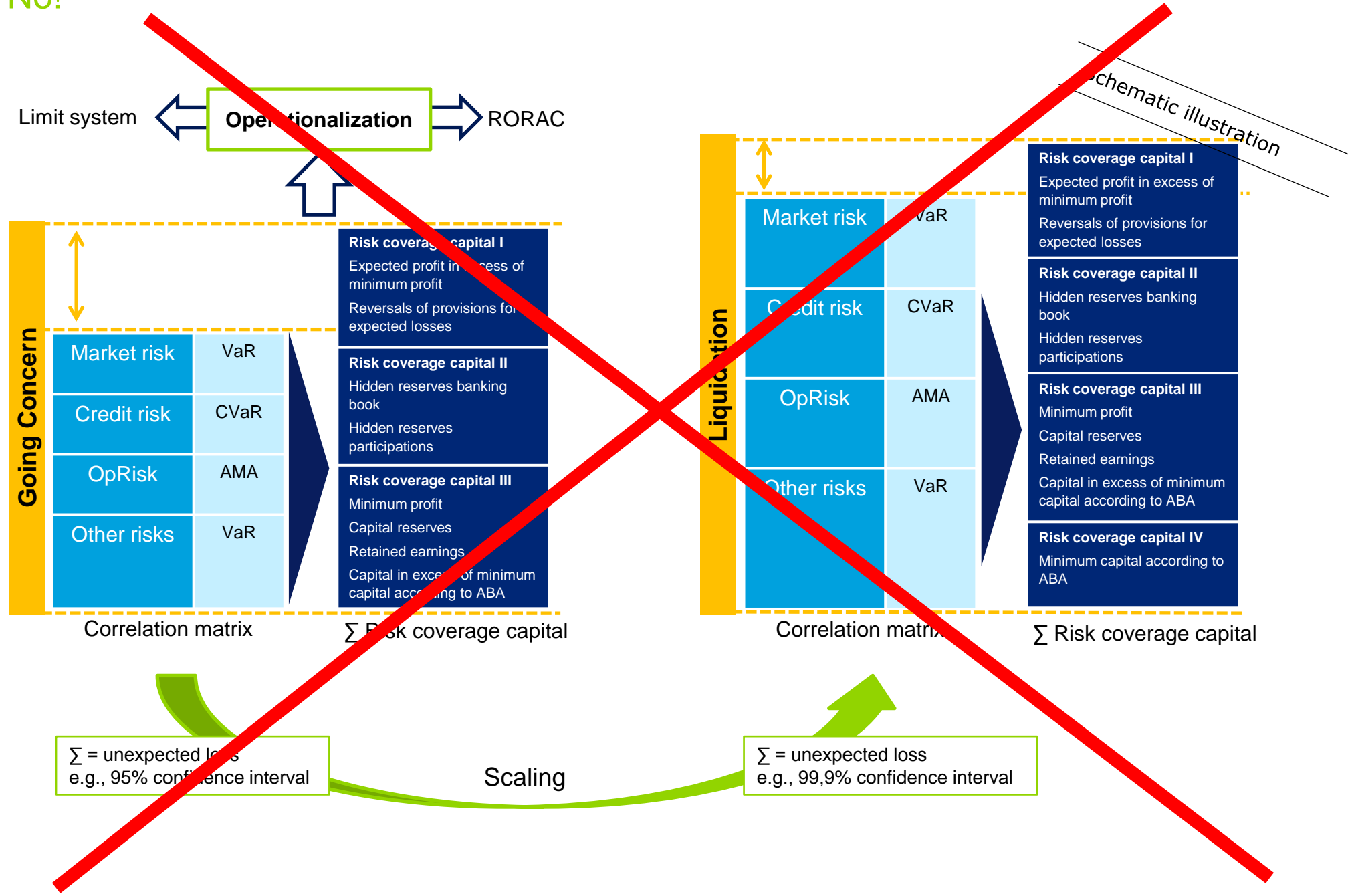
# 3. ICAAP versus ILAAP

Should you integrate your LRM Framework in Pillar 2 of Basel II?



# 3. ICAAP versus ILAAP

No!



### 3. ICAAP versus ILAAP

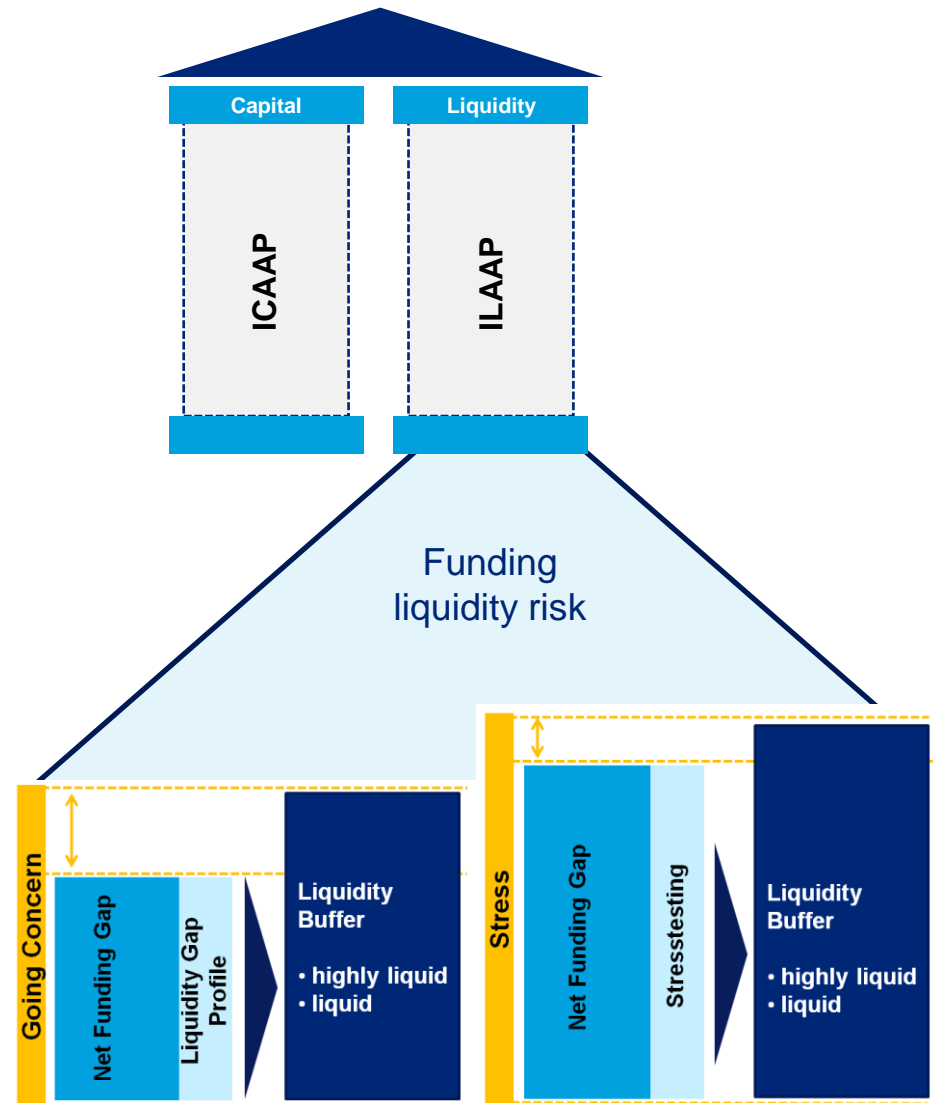
The case for an ILAAP separate and in addition to the ICAAP.

#### Why ILAAP?

- No minimum capital requirements for funding liquidity risk in the new LRM regulation – capital does not prevent from a bank run
- Liquidity buffer for funding liquidity risk with analogous function to capital for other risk categories under the ICAAP
- Funding liquidity risk cannot be meaningfully integrated in an ICAAP framework

#### What is the ILAAP?

- An ILAAP concept compares the available liquidity buffer with the net funding requirement under different stress scenarios
- FSA Approach -> ILAA/SLRP/ILG\*\* for funding liquidity risk (= ICAAP/SREP under Pillar 2)
- Funding liquidity risk to be separately managed and reported from capital framework



\*\* ILAA – Individual Liquidity Adequacy Assessment, SLRP – Supervisory Liquidity Review Process, ILG – Individual Liquidity Guidance

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2. Integrated Liquidity Risk Management Framework

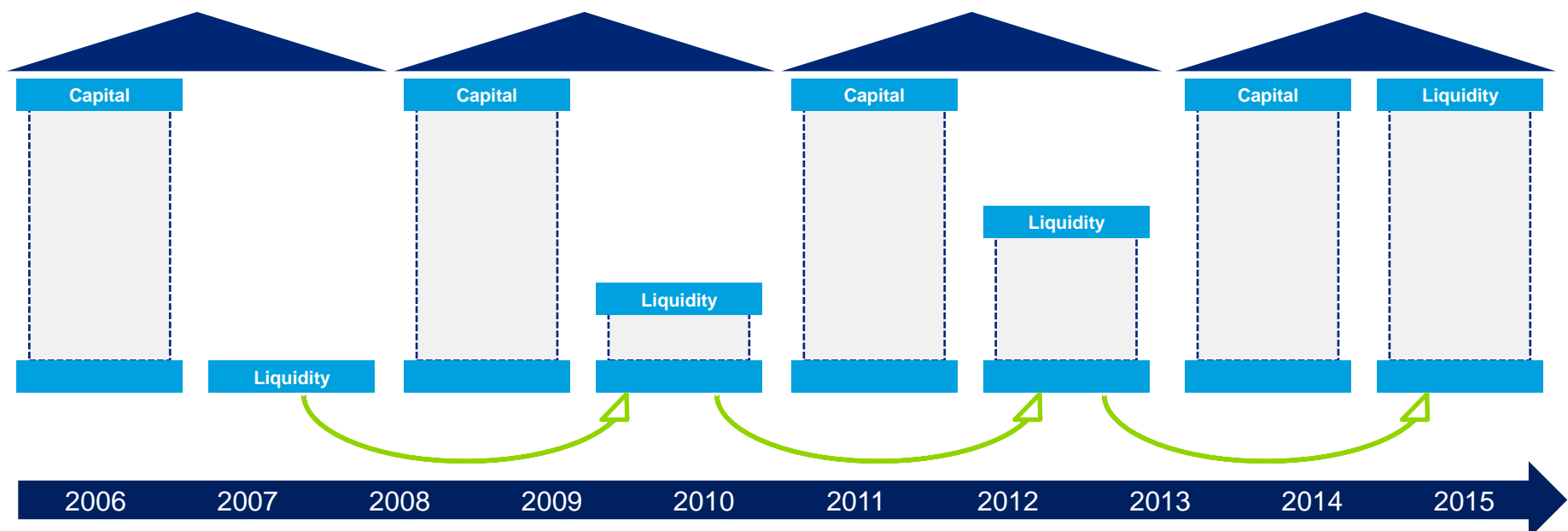
3. ICAAP versus ILAAP

**4. Outlook**

## 4. Outlook

The liquidity topic will gain even more importance during the next years, largely driven by the new Basel III liquidity ratios.

- Liquidity might become equally important to capital for regulatory and internal management purposes
- Two pillars – capital and liquidity - to be managed separately, but in an integrated way
- This will require adaptations regarding a bank's organisation, processes and systems
- Banks gets more like a non-financial corporates which always have been having the liquidity topic on their agenda



# Contact

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