



Moscow  
November 2012

# How the international crisis has changed the ALM focus:

*Evolution of analytical frameworks  
and IT support systems*

# AGENDA

- ▶ • **The new market and regulatory scenario**
- **How the ALM focus has changed**
- **Evolution of analytical frameworks**
- **Evolution of IT support systems**

# The new market and regulatory scenario

## The main impacts on ALM processes (1/2)

Lessons of the financial crisis have placed **a new emphasis on ALM policies and procedures** and new regulations, including Basel III and Dodd-Frank, have significantly **extended the role and the responsibilities of Treasury Risk managers**

1. The financial crisis has highlighted **the weaknesses of consolidated risk management** practices:
  - over-reliance on short-term wholesale funding
  - excessive leverage ratio and structural fund mismatch
  - inadequate quality and quantity of capital resources
  - poor risk analysis frameworks for liquidity risk and capital adequacy



**Evolution of metrics and managerial practices for Liquidity Risk and Capital Adequacy**

# The new market and regulatory scenario

## The main impacts on ALM processes (2/2)

1. International regulators have undertaken a **revision of the previous regulatory schemes**, in order to enhance the resilience of the banking sector **to liquidity risks**, shaping a more prescriptive regulatory framework



**Requirements set by new Basel 3 / EBA regulation**

2. Besides, the **new regulations have raised the amount and quality of capital banks should hold**, requiring also greater risk integration and improved stress testing



**Integration between ALM and Capital Planning to set the optimal balance between expected P&L and RWA**

3. **The low interest rate environment** which has followed the international crisis has significantly **reduced the profitability of commercial banks**. As a result, strategies for facing the “margin compression” have reached the top of CFO / CRO agendas



**New role of interest risk management to face the “margin compression”**

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# How the ALM focus has changed

## Evolution of analytical processes

### FOCUS BEFORE THE CRISIS

- Structural liquidity analysis

- Support to ICAAP
- Support to Hedge Accounting

- Interest risk monitoring

- Net interest income analysis

**New metrics  
and practices**

**Basel 3 / EBA  
requirements**

**New role of  
interest risk  
management**

**Integration  
between ALM  
and Capital  
Planning**

### FOCUS AFTER THE CRISIS

- **Structural fund planning**
- **Short term liquidity analysis**
- **Liquidity stress testing**

- Support to ICAAP
- Support to Hedge Accounting
- **Liquidity Ratios**
- **Fund Transfer Pricing**

- **Support to active interest risk management** in order to mitigate:
  - risk free rates volatility
  - funding spreads volatility

- Analysis of Net interest income and **other P&L components** (credit losses and recoveries)
- **Capital optimization**

# AGENDA

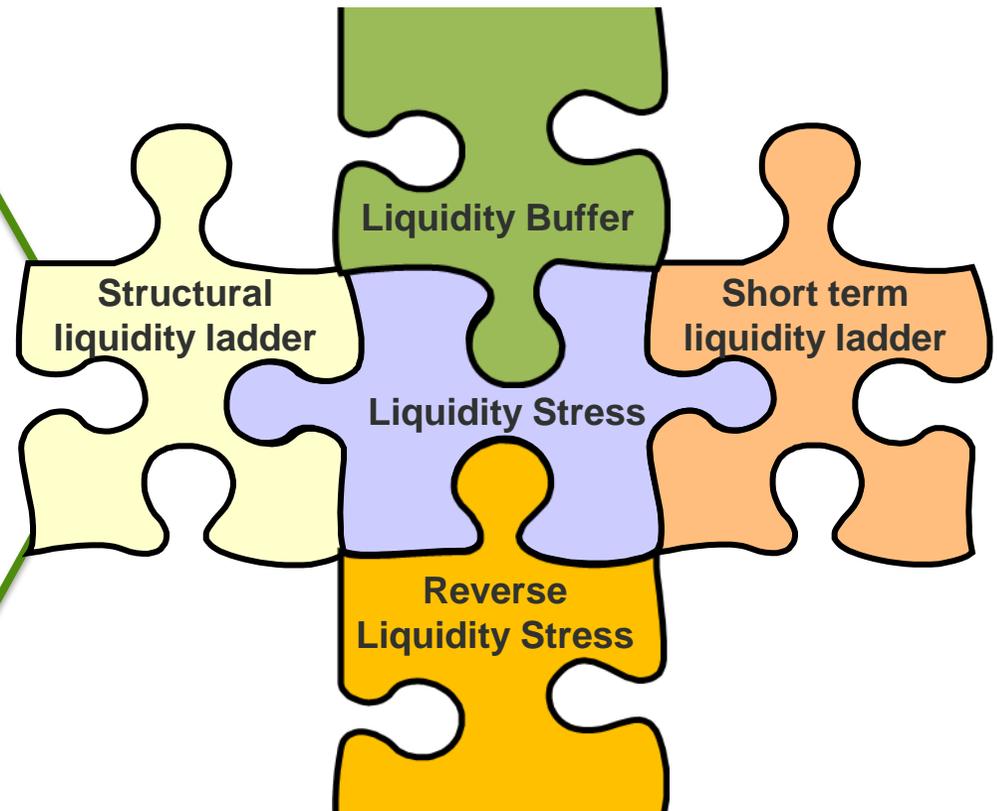
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# Evolution of analytical frameworks

## Towards a “global” liquidity risk perspective

Given the relative stability of short term funding, the **ALM processes** have been traditionally focused on the analysis of structural liquidity mismatch.

In the new scenario, banks must prove their resilience to unexpected liquidity shortages at any time. This emphasize the role of new concepts for ALM practitioners such as “Treasury gap”, “Liquidity Reserve”, “Liquidity Buffer”, “Stress Testing”

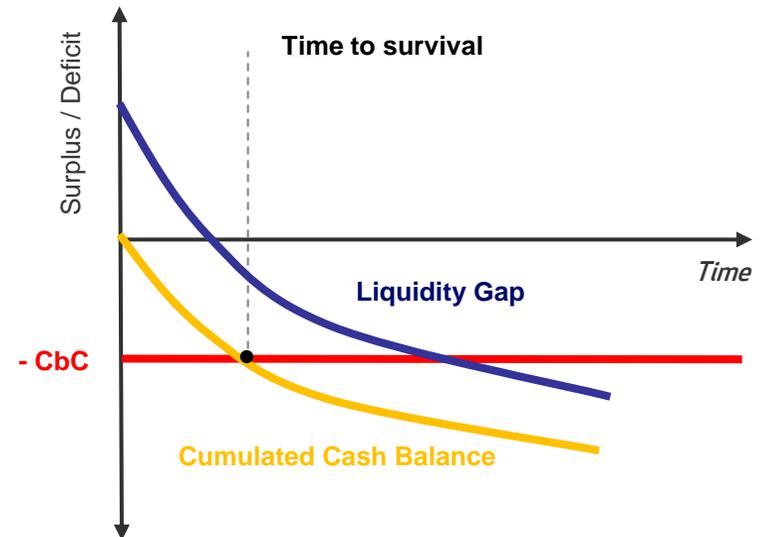


# Towards a “global” liquidity risk perspective

## The new paradigm for Maturity Ladders

CUMULATED CASH BALANCE
 + 
 LIQUIDITY RESERVE (CBC)
 = 
 NET LIQUIDITY SURPLUS / DEFICIT

Time	Cumulated Cash Balance	CBC	Liquidity Gap	Limit	Test
1D	1.000	+10.000	+11.000	2.000	OK
2D	-2.000	+10.000	+8.000	1.000	OK
3D	-8.000	+10.000	+2.000	500	OK
4D	-10.000	+10.000	∅	500	OK
5D	-12.000	+10.000	- 2.000	500	KO
6D	-16.000	+10.000	- 6.000	1000	KO



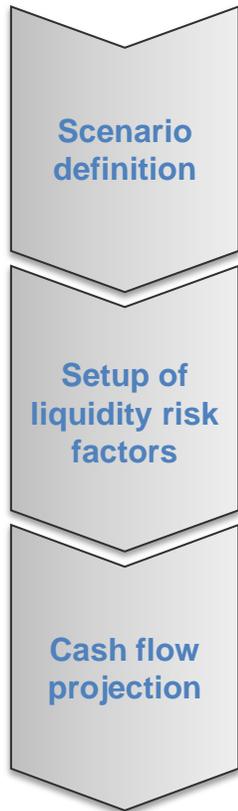
- CbC includes all assets which can be pledged with the Central Bank (eligible assets) or used as collateral for secured funding transactions
- Collateral is **evaluated** at market price, adjusted by haircut ratios and time-to-sell assumptions

1 What is the survival time of the Bank, given its expected funding capacity?

# Towards a “global” liquidity risk perspective

## Liquidity Stress Test and Reverse Stress Test

**STRESS TESTING PROCESS**



**Identify the most plausible scenarios to simulate**

**Transform the scenarios in financial effects** on expiring inflows / outflows, available collateral, etc.

**Calculate the liquidity surplus / deficit** originated by different scenarios

### Crisis scenarios

- System crisis
- Market disruption
- Bank downgrading
- Reputational problems
- ...

### Stress factors

- Assumptions can be specified at level of:
  - products
  - currency
  - counterparty
  - ...

### Liquidity imbalances

- Cash-in/out flows projections after the application of different stress scenarios

**Identify the most plausible scenarios** which could originate the given financial effects

**Identify which financial effects** can generate the expected deficit: roll-over rates, collateral depreciation, ...

**Identify the liquidity deficit** not tolerable for the bank given its current / expected funding capacity

**Scenario calibration**

**Reverse setup of liquidity risk factors**

**Liquidity loss with expected severity**

**REVERSE STRESS TESTING PROCESS**

**2 What is the effect of a predefined scenario on the Bank’s liquidity profile?**

**3 What scenario could generate the worst liquidity profile for the Bank?**

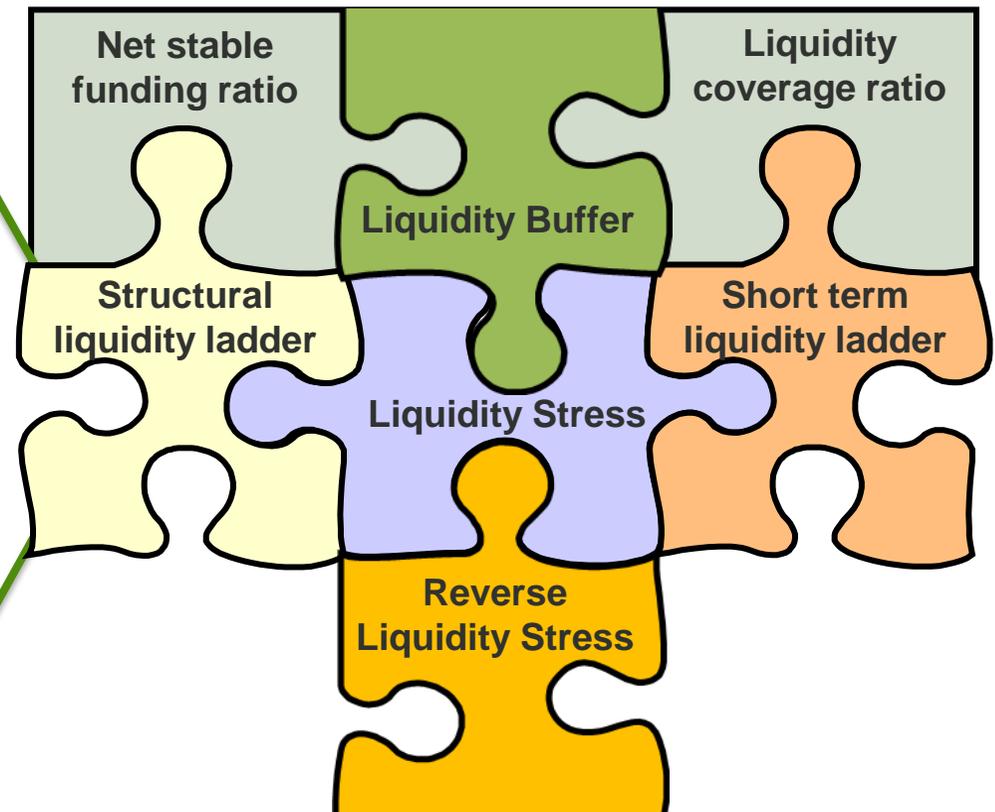
# Evolution of analytical frameworks

## Towards a “binding” regulatory environment

The new **Basel 3** framework has introduced two obligatory ratios and a set of mandatory tools for liquidity risk monitoring.

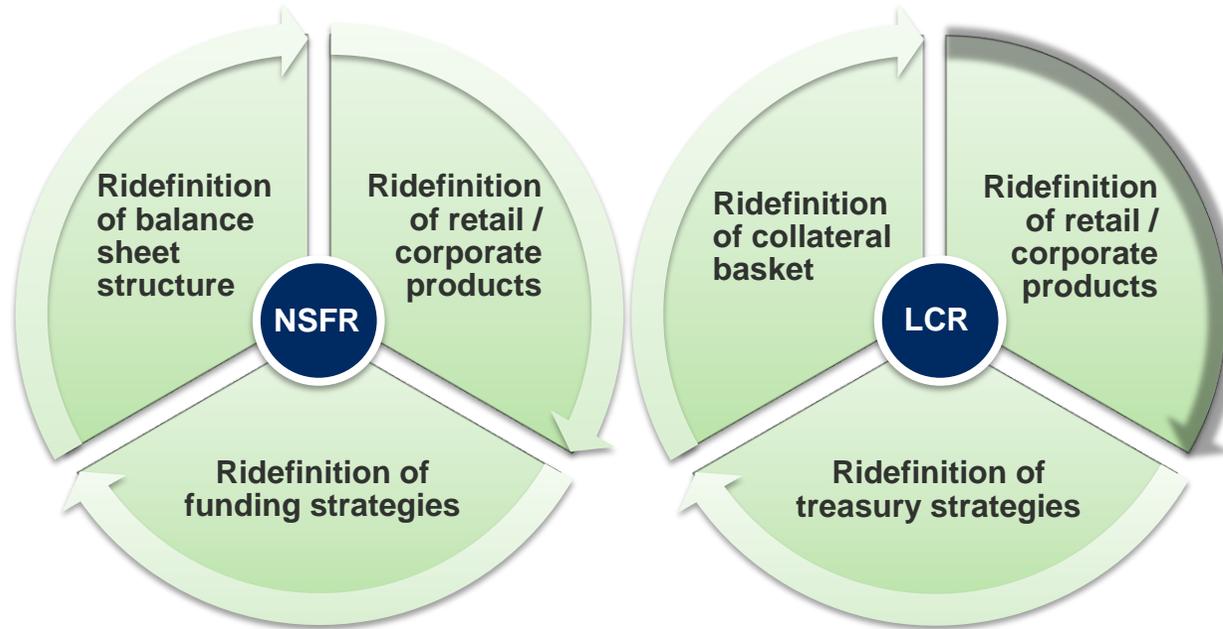
In the new context, banks must define their optimal funding mix and balance sheet profile taking into consideration the trade-off between:

- the risk appetite, defined in terms of target B3 ratios
- the profitability, defined in terms of expected NII



# Towards a “binding” regulatory environment

## Optimization of Basel 3 ratios



OPTIMIZE THE P&L FOR TARGET LEVELS OF B3 RATIOS

MEET MINIMUM LEVEL OF REGULATORY STANDARDS

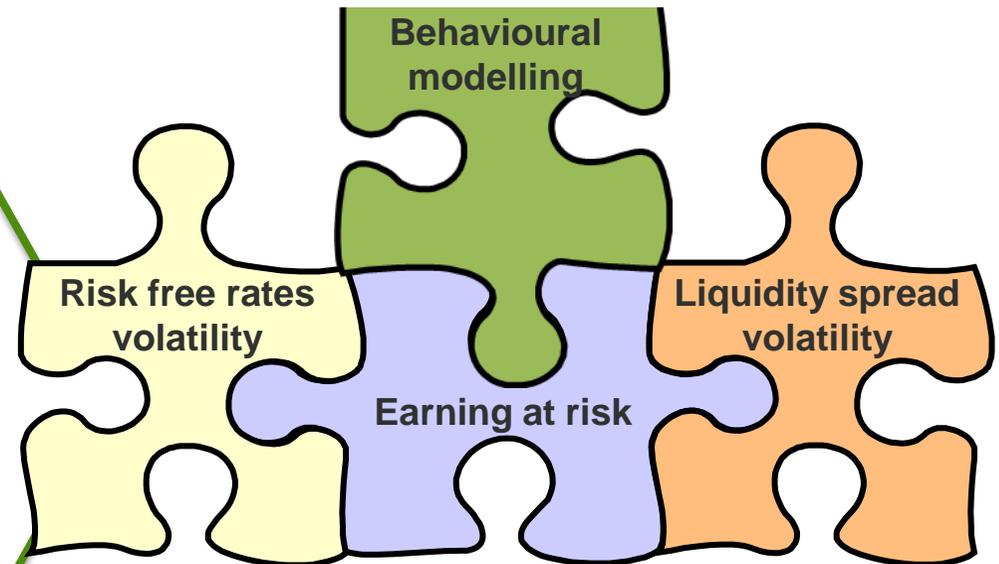
**4** What is the cost, in terms of NII, for maintaining given levels of B3 ratios ?

# Evolution of analytical frameworks

## Towards an active management of rates & spread risks

Given the relative stability and immateriality of wholesale funding spreads, the **ALM processes** have been traditionally focused on the analysis of the impacts originated by “**risk free rates**” volatility, both in terms of MTM and earnings.

In the new scenario, banks must actively manage the volatility of another relevant risk factor, the “**funding spread**”, which can strongly affect the NII evolution by increasing the funding costs



# Towards an active management of rates & spread risks

## Repricing effects of risk-free rates & liquidity spreads

### ASSETS

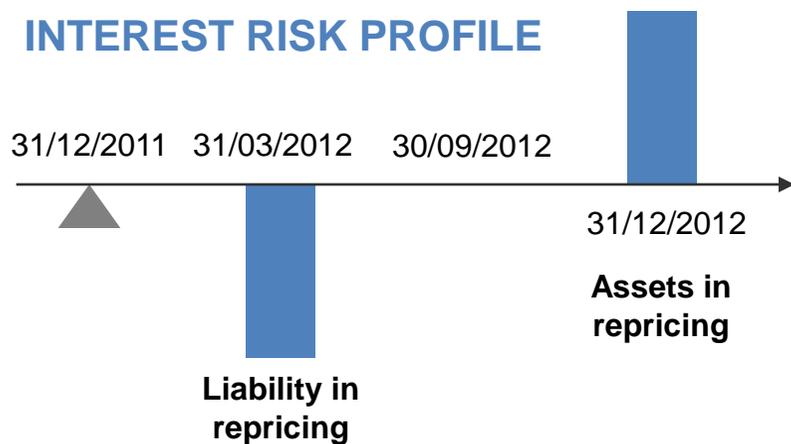
Fixed rate loan at maturity	100
Repayment type:	bullet
Next (capital) payment date:	31/12/2012
Next repricing date:	31/12/2012
FTP Base Rate:	2,00%
FTP Liquidity Spread:	0,50%

### LIABILITY

Floating rate note 3M reset	100
Repayment type:	bullet
Next (capital) payment date:	30/09/2012
Next repricing date:	31/03/2012
FTP Base Rate:	1,25%
FTP Liquidity Spread:	0,25%



### INTEREST RISK PROFILE



### FUNDING RISK PROFILE

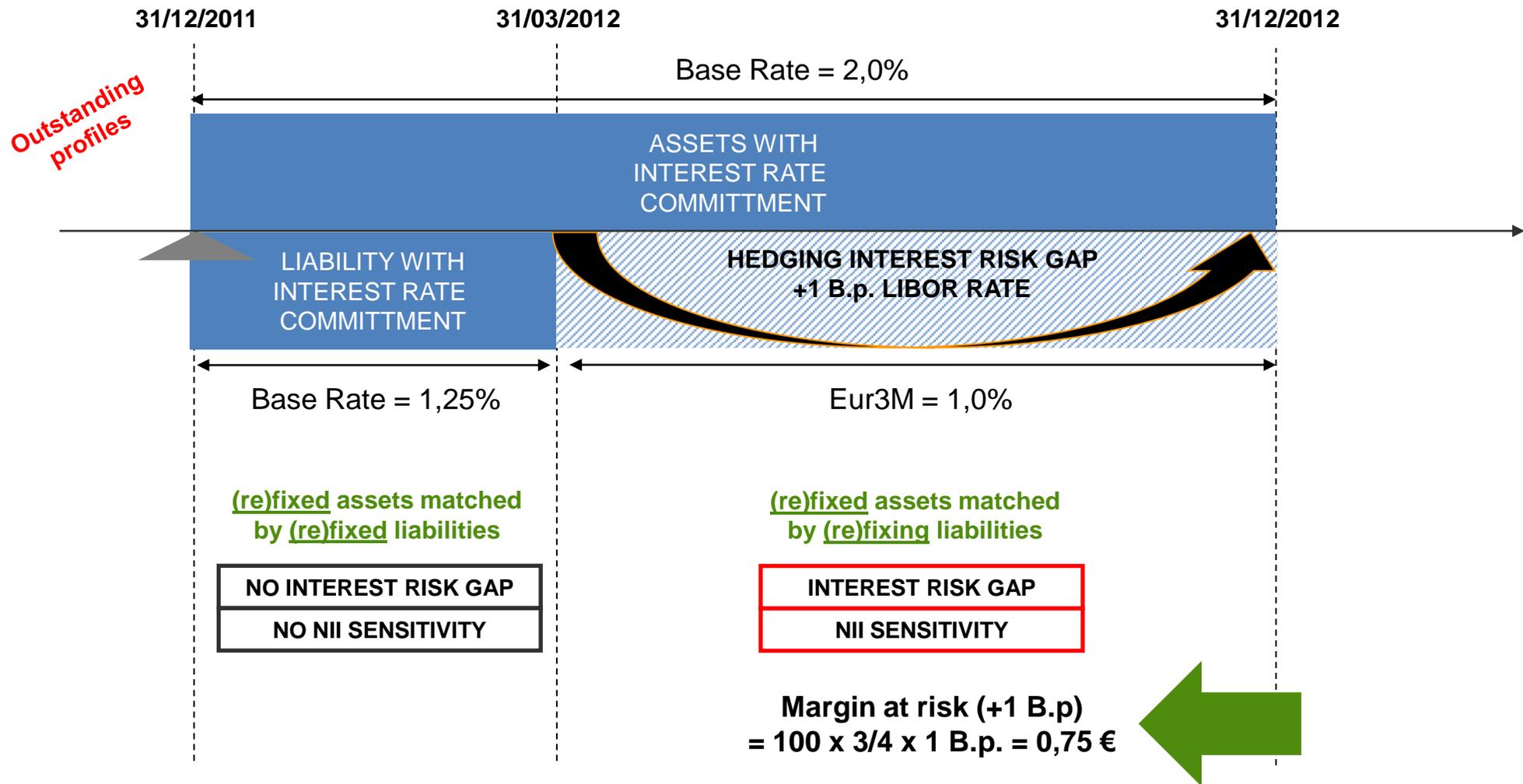


**5** What is the effect of 1 B.p. shift in the interest curve (IRR hedging cost)?

**6** What is the effect of 1 B.p. shift in the liquidity spread (funding cost)?

# Repricing effects of risk-free rates & liquidity spreads

## What is the effect of 1 B.p. shift in the risk free rates?



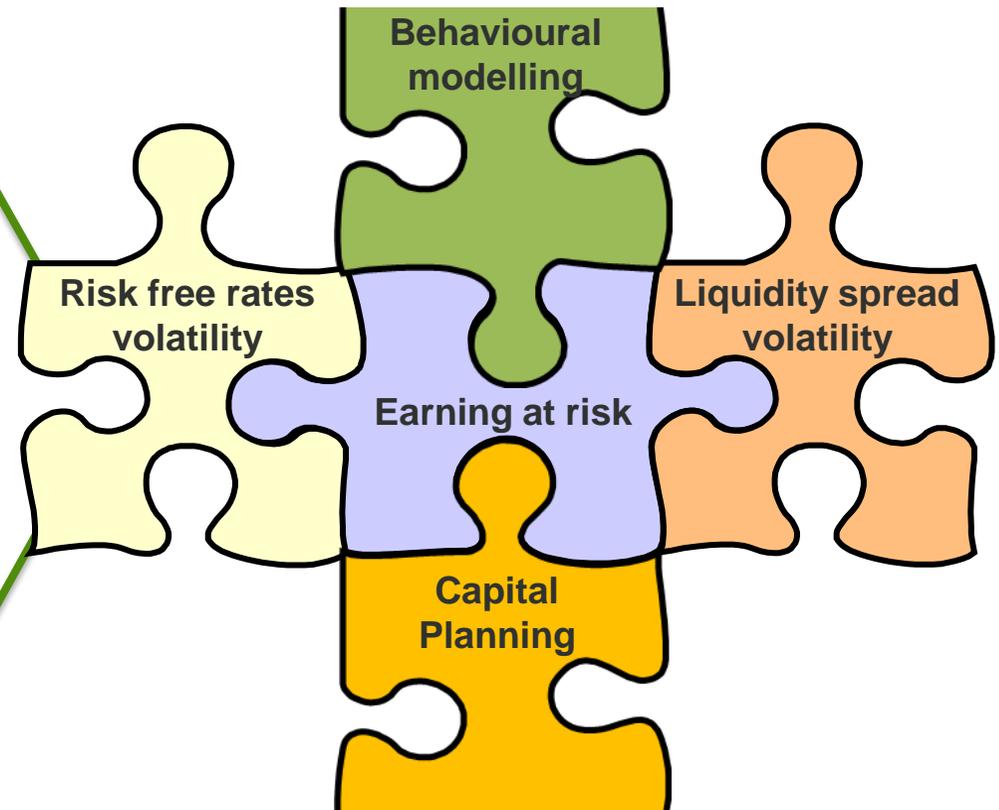


# Evolution of analytical frameworks

## Towards an integrated view of ALM & Capital Planning

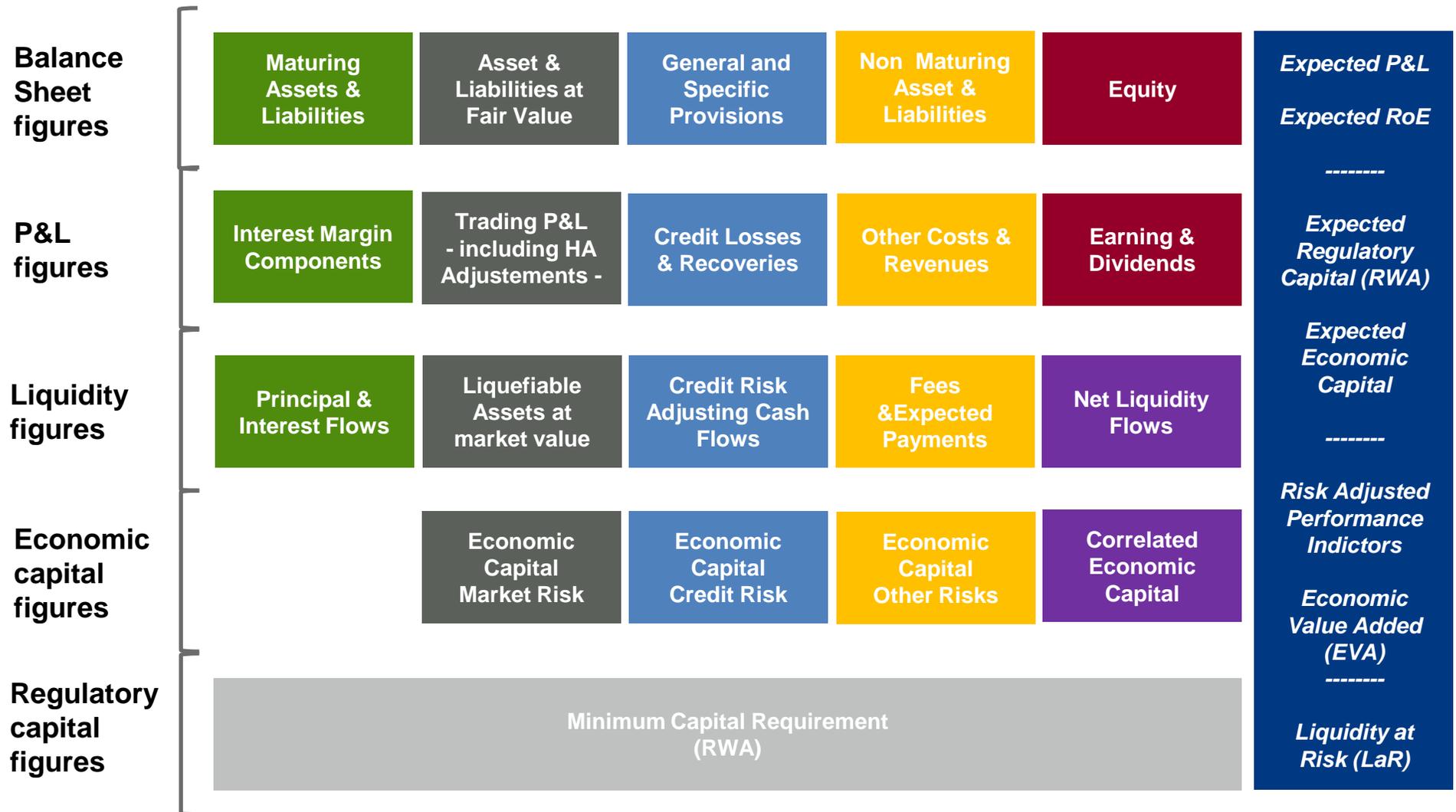
Given the traditional separation between market and credit risk analysis, the ALM processes have been traditionally focused on NII simulation.

In the new scenario, characterized by high capital requirements, the balance sheet analysis must necessarily broaden its perimeter – integrating market, credit and liquidity risk factors – in order to support the optimization of the trade-off between P&L and RWA



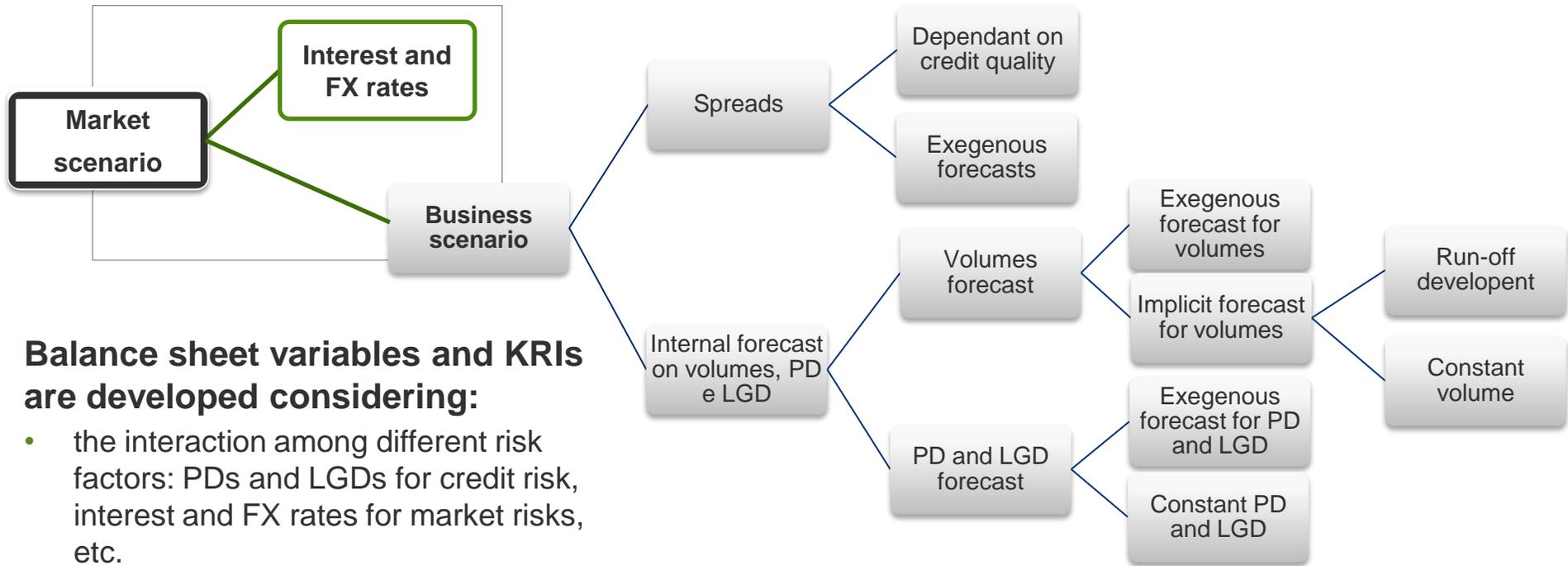
# Towards an integrated view of ALM & Capital Planning

## The outcomes of a risk-integration model



# Towards an integrated view of ALM & Capital Planning

## An example of a risk-integration model



### Balance sheet variables and KRIs are developed considering:

- the interaction among different risk factors: PDs and LGDs for credit risk, interest and FX rates for market risks, etc.
- the business assumptions made by users in terms of credit risk parameters: PD, LGD, etc.
- the strategic assumptions made by users in terms of capital management: dividend pay-out, issue of hybrid bonds, etc.

**7 What is the maximum P&L that can be reached for a given amount of RWA / EC**

**8 What amount of RWA / EC is necessary to reach a predefined level of P&L**

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# Evolution of IT support systems

## The new requirements

