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Sovereign debt crisis and Basel III

major impacts on liquidity risk management

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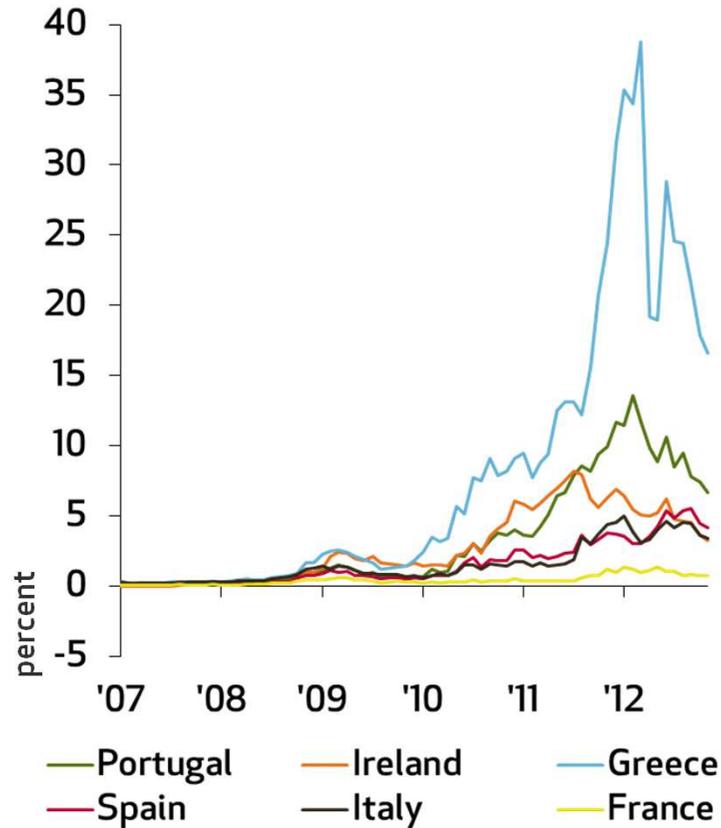**prometeia**

heavy toll on banks' credit risk and equity index…

Emu countries 10-yr government bond spreads over Bund yield

- Portugal
- Spain
- Ireland
- Italy
- Greece
- France

Average of main Emu banks CDS* and banks equity index, Emu

- CDS banks, senior 5y
- banks equity index (rhs)
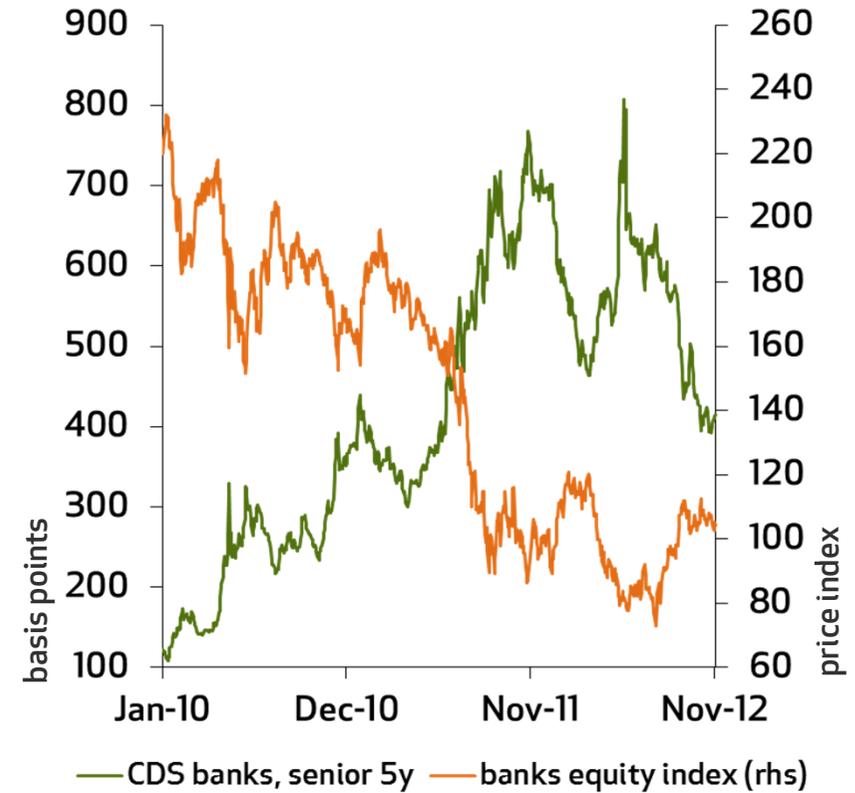
source: Thomson Reuters, CMA, Prometeia calculations; data at 15/11/12
* Average of Emu banks CDS for the Datastream-Market Emu Banks equity index' constituents.

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… and on periphery banks' ability to fund themselves in wholesale markets

Money Market Funds exposure to European Bank CDs, CP, Repos and other
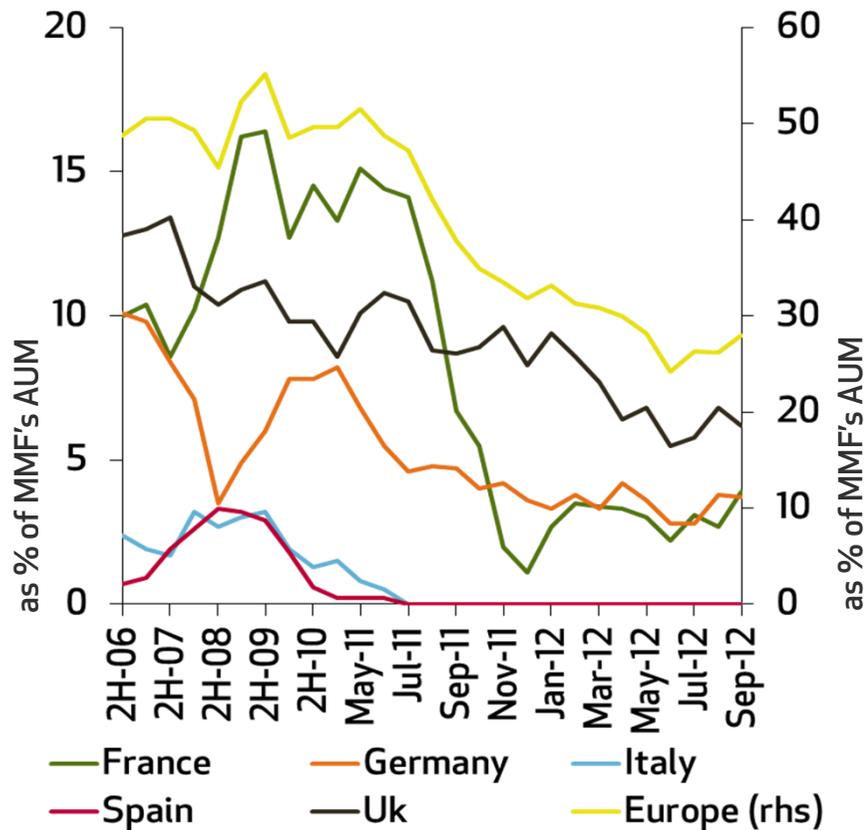
source: Fitch Ratings, MMF public Web sites, SEC filings, Prometeia calculations; data at 15/11/12

Euro Area bank debt issuance
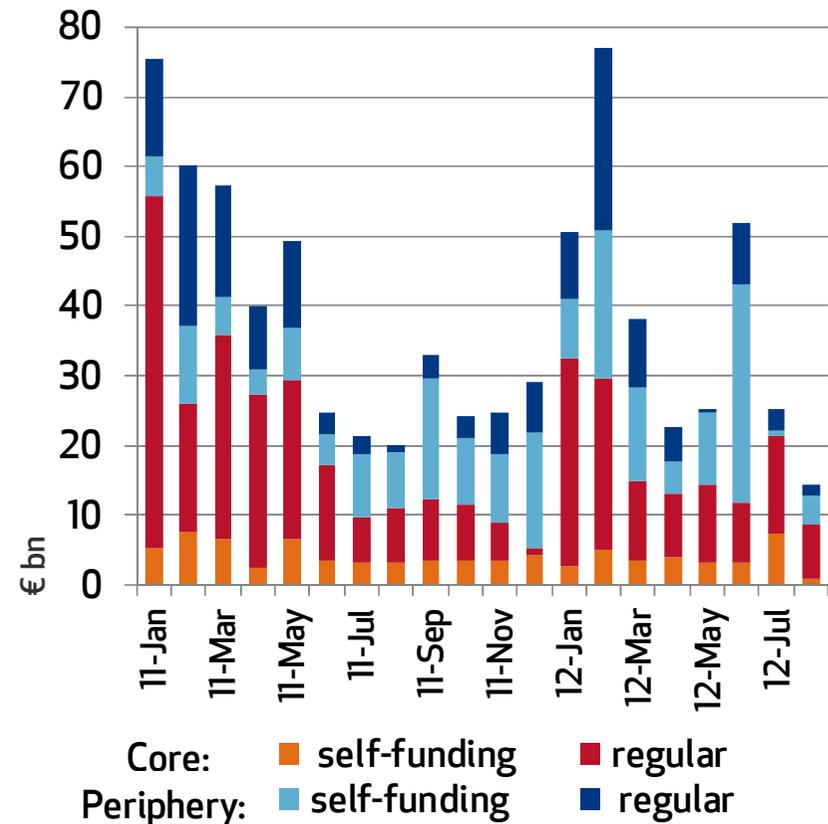
source: IMF, GFSR October 2012, on Dealogic data
core=Austria,Belgium,France, Finland, Germany, and the Netherlands;
periphery = Cyprus, Greece, Ireland, Italy, Portugal, and Spain.

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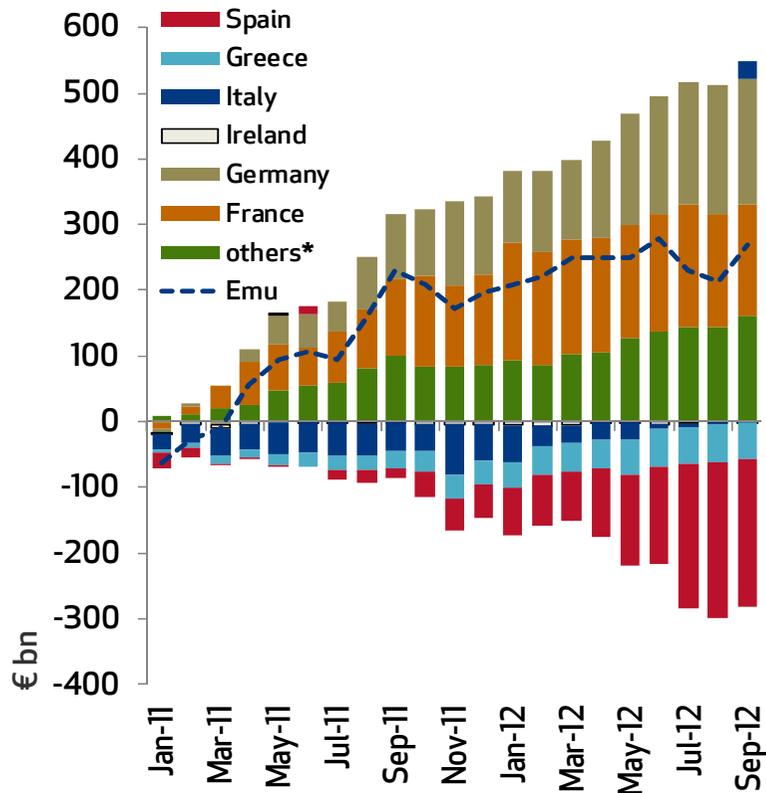# retail funding also suffered, although recently there are some signs that the worst might be over

Deposits from private sector flows - Euro Area
cumulative change since December 2010

Legend:
- Spain
- Greece
- Italy
- Ireland
- Germany
- France
- others*
- Emu

* other counties: Austria, Belgium, Finland, Luxembourg, Netherland, Portugal

Euro Area bank lending survey: banks' assessment of funding conditions and ability to transfer risk
net percentages of banks reporting deteriorated market access

retail funding — wholesale funding

net deterioration / net easing

net percentage

- Short-term deposit
- Long-term deposit and other retail funding instruments
- Short-term money market
- Medium to long-term debt securities

Legend:
- 2011Q1
- 2011Q2
- 2011Q3
- 2011Q4
- 2012Q1
- 2012Q2
- 2012Q3
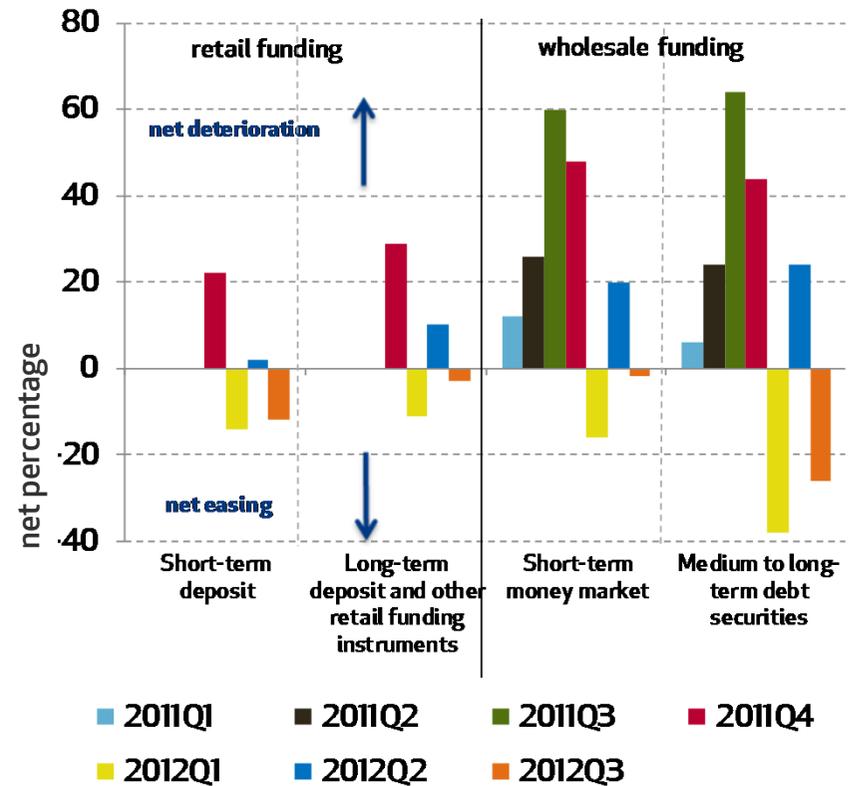
source: Prometeia calculations on ECB and Bank of Italy data

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the Ecb has become an alternative source of funding for periphery banks

Use of the Eurosystem Open Market Operations*

Legend: GIIPS ■ Germany ■ others Emu ■
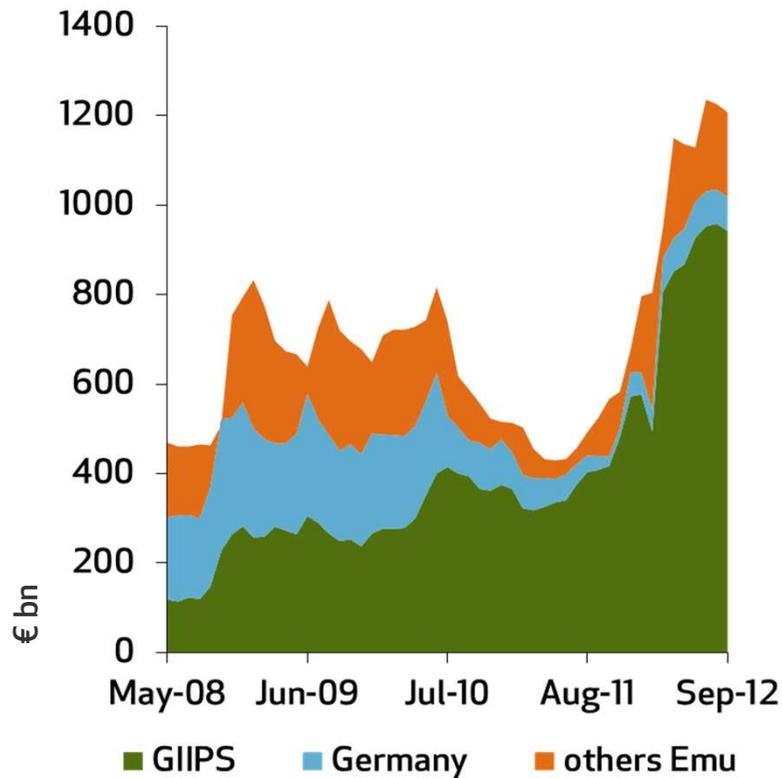
Collateral lodged with the Eurosystem**

Legend: ■ use of collateral — % of eligible marketable assets (rhs)
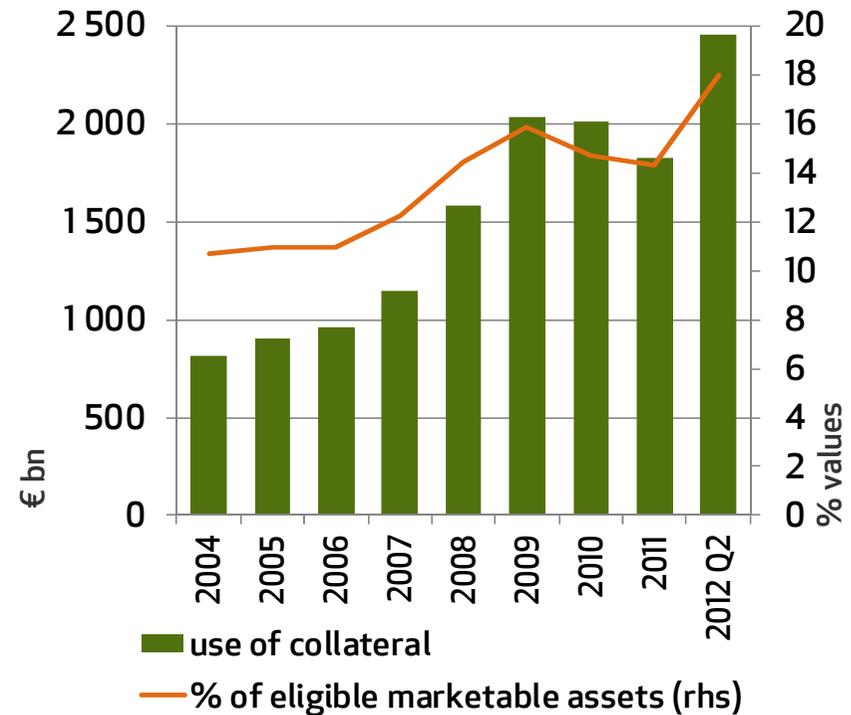
source: based on data from NCB monthly financial statements at 15/11/12
* these data refer to total central bank loans to domestic MFIs, not the breakdown by instrument

** nominal amounts, averages of end of month data over each time period shown

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Introduction

In the aftermath of the financial crisis of 2007-2008, international and European regulators have started a revision process of the previous regulatory schemes in order to enhance the resilience of the banking sector to liquidity crisis.

Basel Committee on Banking Supervision (BCBS)	Principles for sound liquidity risk management and supervision	Sep. 2008
	International framework for liquidity risk measurement, standards and monitoring (Cons. Doc.)	Dec. 2009
	Basel III: international framework for liquidity risk measurement, standards and monitoring	Dec. 2010
	Monitoring indicators for intraday liquidity management	Sep. 2012
European Banking Authority (EBA / CEBS)	Second part of CEBS's Technical Advice to the European Commission on Liquidity Risk Management	Sep. 2008
	Liquidity Identity Card	Jun. 2009
	Guidelines on Liquidity Buffers & Survival Period	Dec. 2009
	CEBS Guidelines on stress testing	Dec. 2009
	Guidelines on Liquidity Cost Benefit Allocation	Oct. 2010
	Implementing Technical Standard - Liquidity Reporting	Jun. 2012
European Commission (EC)	CRD IV package proposal	Jul. 2011
Financial Services Authority	Strengthening liquidity standards – consultation paper	Dec. 2008
	Strengthening liquidity standards – policy statement	Oct. 2009

Timeline of Basel III implementation

Since 2011 the Liquidity Coverage Ratio has been monitored by both the Basel Committee and many Supervisors in order to officially make it mandatory with effect from 1 January 2015. The Net Stable Funding Ratio is scheduled to be introduced as a minimum standard as from 1 January 2018.

Since 2010 **European banks** have been facing major efforts caused by the numerous regulation issues and by several quantitative impact studies that were requested by supervisors. Risk Management departments, but also Treasury Dep. and of course IT Departments were heavily affected.

Basel III liquidity keywords

LCR

Liquidity Coverage Ratio, ensure that a bank maintains an adequate level of unencumbered, high-quality assets that can be converted into cash to meet its liquidity needs for a 30-day time horizon under an acute liquidity stress scenario specified by supervisors

NSFR

Net Stable Funding Ratio, promote more medium and long-term funding of bank assets, by establishing a minimum amount of stable funding based on the liquidity characteristics of an institution's assets, business activities, and off balance sheet exposures, over a 1 year horizon

Monitoring Tools

capture specific information related to a bank's cash flows, balance sheet structure, available unencumbered collateral and other market indicators

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Regulatory issues

Basel III

- Definition of stock of high quality liquid assets;

- Penalization of Interbank Lending

- Definition of «stable» and «less stable» deposits

- Elements of national discretion

CRR/CRD IV and ITS

- Implementation Date

- Definition of stock of high quality liquid assets

- Definition of «Consolidated Level»

- Definition of «operational relationship» for corporate clients

- Classification of Retail and Small Business Enterprise

- Reporting framework, frequency, delay, format..

- Calibration of stress scenario (run-off , haircut..)

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What banks need …

Policies & Procedures

Policies and procedures that ensure at the same time full compliance with regulatory framework and internal managerial metrics used to manage liquidity risk

IT Solutions

Scalable and fully integrated suite that supports banking groups in making their critical decisions and regulatory compliance as well

Behavioral Model

Behavioral models for instruments where customers' behavior and/or optionalities can impact liquidity, consistent with ALM models
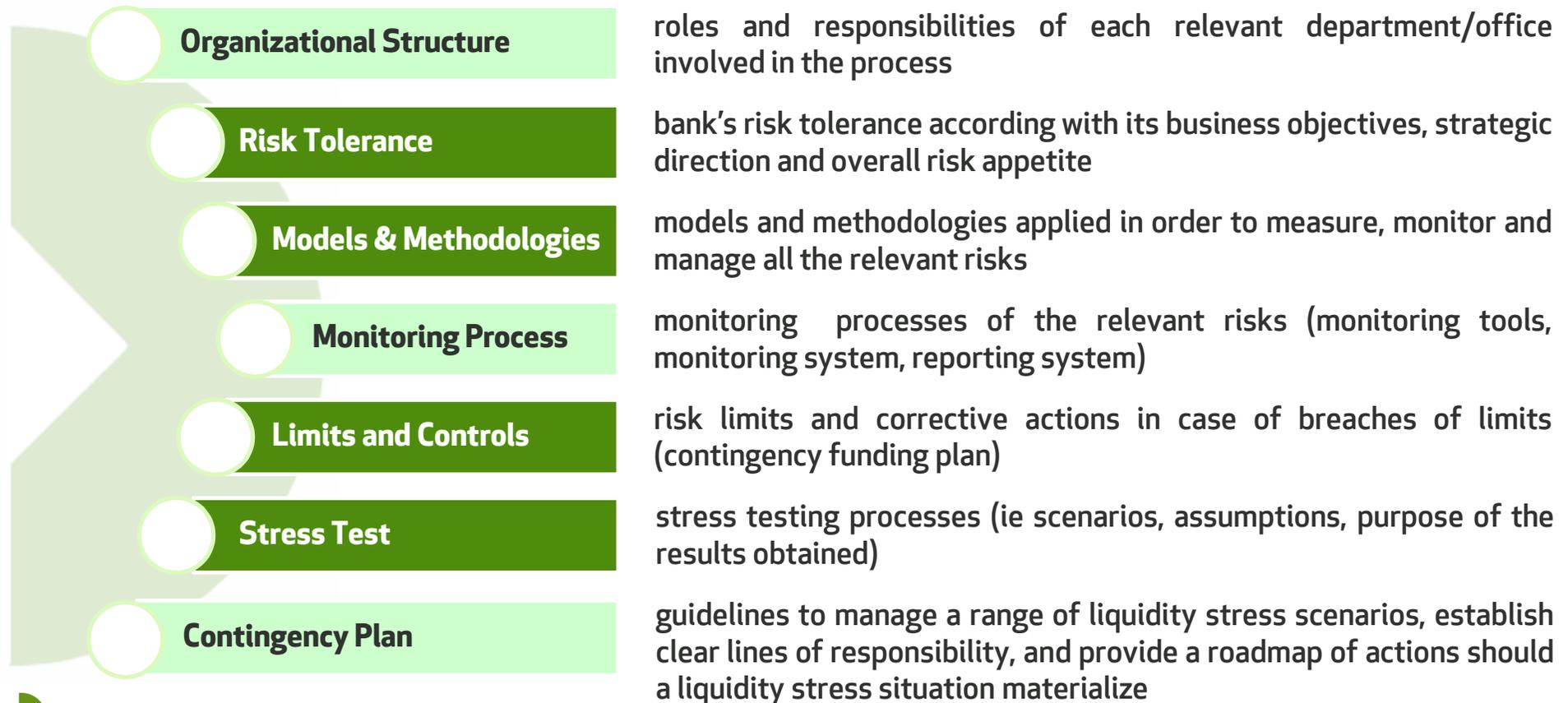
Fund Transfer Pricing

FTP system that incorporates Liquidity Costs and Revenues in order to:
- measure real profitability at product, business unit, client level
- provide the base for product pricing in an EVA framework

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Policies & Procedures

Existing Policies & Procedures need to be "upgraded" to include new Basel III indicators, while maintaining their managerial effectiveness. Need to cope with both a managerial approach and a regulatory one

Organizational Structure	roles and responsibilities of each relevant department/office involved in the process
Risk Tolerance	bank's risk tolerance according with its business objectives, strategic direction and overall risk appetite
Models & Methodologies	models and methodologies applied in order to measure, monitor and manage all the relevant risks
Monitoring Process	monitoring processes of the relevant risks (monitoring tools, monitoring system, reporting system)
Limits and Controls	risk limits and corrective actions in case of breaches of limits (contingency funding plan)
Stress Test	stress testing processes (ie scenarios, assumptions, purpose of the results obtained)
Contingency Plan	guidelines to manage a range of liquidity stress scenarios, establish clear lines of responsibility, and provide a roadmap of actions should a liquidity stress situation materialize

IT Solutions – main challenges…

IT costs related to Basel III should be managed by leveraging existing IT architecture but at the same time using this structural regulatory discontinuity to enhance the "managerial" liquidity risk processes and systems

Input data needs

This represent a critical issue to be addressed: it is not strictly related to a Vendor solution. Get help from who has already managed this task, you will save a lot of time and money (understand and leverage your current data gathering process in ALM, interpret the regulatory framework, understand the link between managerial data and regulatory requirements)

Basel III vs Managerial Approach

Do not adopt 2 different solutions: regulatory and managerial solution should be integrated at all levels (input data, computational stage, reporting processes)

Output to be produced

Do not define project goals just looking at regulatory requirements. They ask for "current" LCR & NSFR but you will need to compute them in the funding plan and budgeting processes
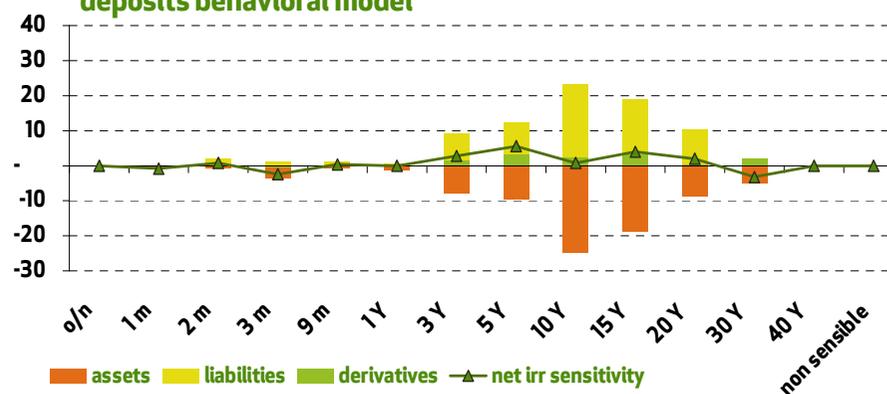
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Behavioral model| repricing profile

economic value sensitivity - example

Sensitivity banking book +100 bps WITHOUT non-maturity deposits behavioral model

assets | liabilities | derivatives | net irr sensitivity
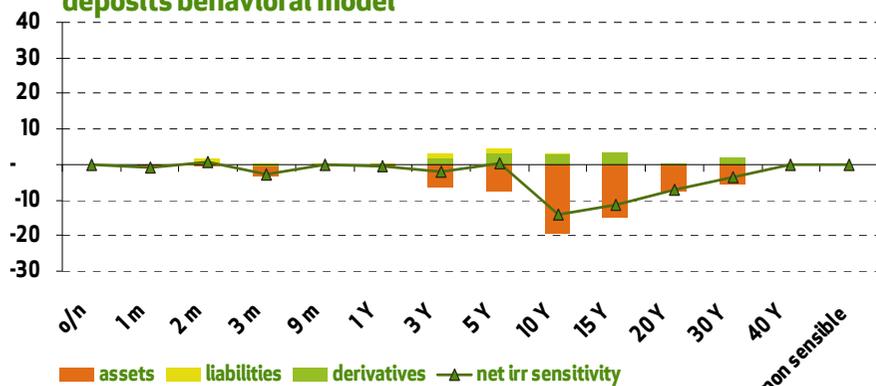
Sensitivity banking book +100 bps WITH non-maturity deposits behavioral model

assets | liabilities | derivatives | net irr sensitivity

WITHOUT non-maturity deposits models

	assets	liabilities	derivatives	net irr sensitivity
o/n	0.0	0.0	0.0	0.0
1 m	-0.8	0.1	-0.1	-0.7
2 m	-0.6	1.3	-0.1	0.7
3 m	-3.0	0.5	-0.4	-2.9
9 m	-0.4	0.3	0.0	0.0
1 Y	-0.8	0.2	0.0	-0.5
3 Y	-6.3	3.1	1.4	-1.8
5 Y	-7.6	4.8	3.1	0.3
10 Y	-19.5	3.0	2.6	-13.9
15 Y	-14.8	0.0	3.3	-11.5
20 Y	-7.6	0.0	0.4	-7.2
30 Y	-5.3	0.0	2.0	-3.4
40 Y	0.0	0.0	0.0	0.0
non sensible	0.0	0.0	0.0	0.0
total	-66.6	13.4	12.3	-40.9

WITH non-maturity deposits models

	assets	liabilities	derivatives	net irr sensitivity
o/n	0.0	0.0	0.0	0.0
1 m	-0.8	0.1	-0.1	-0.7
2 m	-0.9	1.8	-0.1	0.9
3 m	-3.5	1.4	-0.4	-2.5
9 m	-0.7	1.1	0.0	0.4
1 Y	-1.0	0.9	0.0	0.0
3 Y	-8.0	9.3	1.4	2.7
5 Y	-9.8	12.4	3.1	5.7
10 Y	-24.9	23.2	2.6	1.0
15 Y	-18.6	19.2	3.3	3.9
20 Y	-8.9	10.6	0.4	2.0
30 Y	-5.3	0.0	2.0	-3.4
40 Y	0.0	0.0	0.0	0.0
non sensible	0.0	0.0	0.0	0.0
total	-82.4	80.2	12.3	10.0

delta EV in the event of +200 bps of interest rate shock **- 19 %**

delta EV in the event of +200 bps of interest rate shock **+ 4.7 %**

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Behavioral model| prepayment analysis

A survival function is estimated and then applied to contractual amortization profile of loans. Through Montecarlo simulations it is possible, for a given level of risk aversion, to get an upper and lower bad of the expected accelerated amortization plan.

Contractual balance, expected balance and hedging

EXAMPLE

Legend:
- **Hedging with IRS and swaptions**
- **Hedging with IRS**
- **Contractual balance**
- **Expected balance**
- **Lower band**
- **Upper band**

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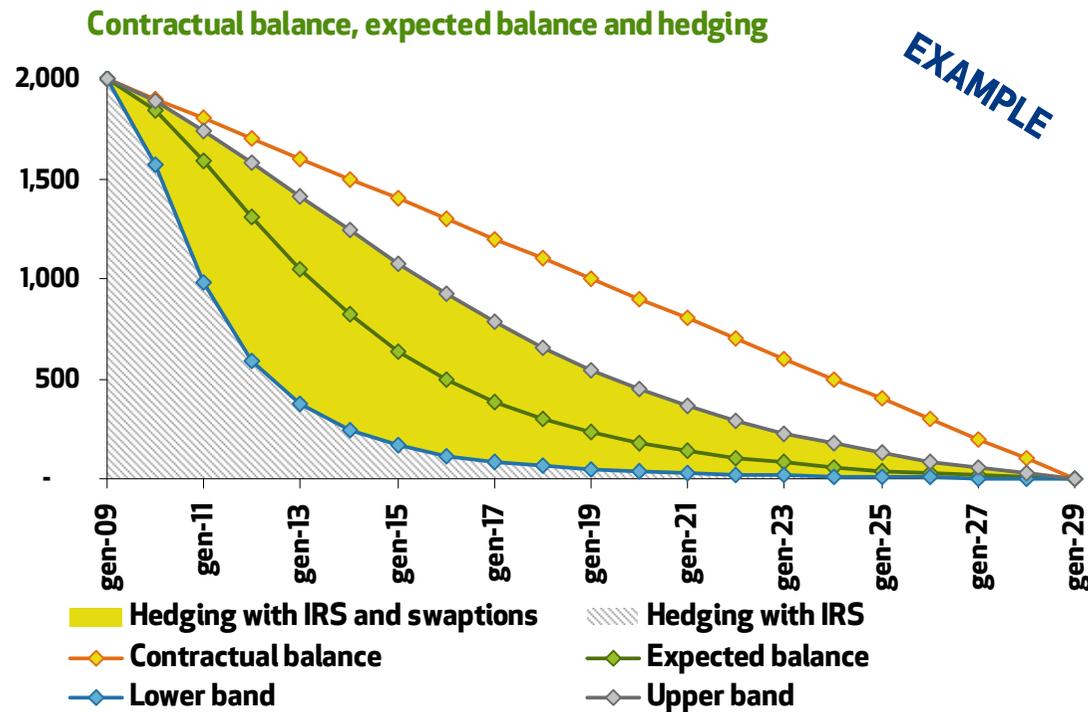
Fund Transfer Pricing Model

Before and during the global crisis many banks were not taking into consideration the price of liquidity risk in their FTP processes. Regulators and current market environment are pushing financial institutions to enhance their FTP methodologies and systems.

Market Parameters

Many banks used a "Libor / Swap" approach as FTPs market parameters; on short term maturities Libor does not represent the market for unsecured lending any more, while on ML Term maturities real market conditions (i.e. marginal funding costs) must be priced in the FTPs

Behavioral models

While in ALM practices the use of "replicating portfolios" were widely spread across Europe, with regard to FTP banks used to consider retail at sight deposits as short term funding

FTPs vs incentives to business units

FTP in some cases were used as an instrument to give incentives to business unit to this or that product making it more profitable or viceversa. A sharp separation must be enforced between FTP and commercial incentives required to steer the commercial policies

Trading book and liquidity buffer

Cost of carry for trading book assets used to be the O/N rate, even for illiquid assets. Need to price liquidity risk correctly in the trading book as well. Need to understand how to price and allocate indirect cost of liquidity risk to other assets & liabilities

References