Basel 3, The Era of the Quants?

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Presentation outline

- **General introduction**
  - **Financial crisis**
  - **Legislative process**
  - **Capital Requirements Directive**
- **Basel 3**
- **Role of Internal models within Basel 3 Framework and beyond**
- **Crystal ball**
- **Q&A Session**

General Introduction

Financial Crisis

Financial crisis heightened by

- Mix of traditional credit culture with an equity culture.
- Execution of securitization business model.
- Lower capital weights helped to raise returns
- Portfolio invariance used as arbitrage opportunity
- Highly leveraged businesses
- Insufficient liquidity buffers
- Risk managers vs Sales Managers
- Non adherence to internal policies
- Sluggish response by many lenders
- Linkages between systemically Important Financial Institutions (SIFI)

OECD: The Current Financial Crisis: Causes and Policy Issues issued during the Financial Crisis, 2008

Basel 3 requirements aimed at macro and micro level within the Financial Services Sector

The Basel Committee on Banking Supervision

BANK FOR INTERNATIONAL SETTLEMENTS

- 27 members
- *"The Committee does not possess any formal supranational supervisory authority ….*

European Capital Requirements Directive (CRD)

- Legal enforcement requires Basel guidelines to be embedded in binding legislation
- Europe implements Basel agreements in the Capital Requirements Directive (CRD)
- Implementation in the Netherlands through the Law on Financial Supervision (Wft) and DNB Supervisory rules

European Commission The EU Single Market

FSA

De Nederlandsche Bank Eurosysteem

BANCO DE ESPAÑA Eurosistema

DEUTSCHE BUNDESBANK EUROSYSTEM

Legislative process – Implementation timeframe

Capital Requirements Directive Amendments

CRD II	31-12-2010	Guidelines on securitizations, Criteria for inclusion in capital Large exposures regime, Capital requirements in the trading book
CRD III	01-01-2011 31-12-2011	Market Risk modelling enhancements (Incremental Risk Charge and stressed VAR), Introduction of remuneration principles, Extension of the Basel I floor, Strengthening of the LGD floor, higher risk weights for resecuritisations, prudent valuation of fair value positions in the banking book, additional disclosure requirements
CRD IV	01-01-2013	CRD IV ≈ Basel 3; Enhanced risk weightings and capital and liquidity Standards, leverage ratio

New market risk requirements for the trading book

Content	Proposed measures
• Incremental risk charge (IRC) • Stress VaR • Capital charge for market risk of Equity positions • Securitized and resecuritized positions • Correlation trading portfolio	• The additional requirement only affects banks that apply internal models for market risk quantification. • There is no comparable regulation for banks that apply the standardized approach. • The stressed VaR covers the same risks, that are covered by the regular VaR approach
• High level principles for calculating the incremental risk charge	• The IRC applies only to banks that model specific position risks internally. • The IRC is designed to back default- and credit migration risks. • The IRC is not applicable to positions, whose market price depends exclusively on non-IRC market factors (e.g. commodity prices, FX-rates, term structure of interest rates). • The IRC applies to debt instruments, equities, CDOs and structured credit instruments.
• Counterparty credit risk (credit value adjustment, effective **CVA** calculation, margin period, wrong way risk, shortcut approach) • Asset Value correlation	• Higher standards in stress-testing • Stronger requirements for model validation (backtesting) • Consideration of wrong way risk

Deloitte: The road to Basel III , Developments of European Banking Regulations

Basel 3

- **Enhanced quality, sustainability, and transparency of capital composition**

- **Enhanced capital coverage and greater capital requirements for securitized positions, trading accounts, and derivatives**

- **Use of a simple leverage ratio index to reduce the risks caused by errors in models**

- **Efforts to reduce “pro-cyclicality”**

- **Introduction of a unified minimum liquidity criteria**

- **Requires SIFIs to increase capital and liquidity, and implement additional supervision policies to curb “external effect” those institutions have on global market when firm experiences financial difficulty.**

Basel 3 versus Basel 2

Basel 3

- Addresses the weaknesses of Basel 2
  - Enhancement of capital definition
  - Increasing overall capital requirement up to 13%
  - Leverage and liquidity standards

$$\frac{\text{Own funds}}{\text{Risk Weighted Assets}} \geq 8\%$$

Basel 2

- Introducing a risk sensitive approach to capital calculation (RWA)

Basel 3 is designed to enhance the existing Basel 2 framework

Timeline of the Basel 3 proposal

Basel 3 resultant from enhancement of Basel 2 framework and "lessons learned" from financial crisis

Impact assessment phase

Calibration phase

Basel 3 completed

December 2009

Publication of Basel 3 proposals

"Strengthening the resilience of the banking sector" and "Framework for liquidity risk measurement standards and monitoring"

16 July 2010

Countercyclical capital proposal

26 July 2010

Publication of amended Basel 3 proposals

Containing mitigating amendments on capital and liquidity

18 August 2010

Publication of proposal to ensure the loss absorbency of regulatory capital instruments

November 2010

Basel 3 endorsement by the G20

December 2010

Basel committee published the final Basel 3 agreement

Transition phase 2012-2019

			Jan 2011	Jan 2012	Jan 2013	Jan 2014	Jan 2015	Jan 2016	Jan 2017	Jan 2018	Jan 2019
Capital	Risk coverage	Market risk, (re-)securitization		Introduction							
		Counterparty risk, FI risk weights			Introduction						
	Capital base	Core Tier 1 ratio			3.50%	4.00%	4.50%	4.50%	4.50%	4.50%	4.50%
		Tier 1 ratio			4.50%	5.50%	6.00%	6.00%	6.00%	6.00%	6.00%
		Total capital ratio			8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
		Phase-in of reg. deductions				20%	40%	60%	80%	100%	100%
		Phase-out of public-sector capital			100%	100%	100%	100%	100%	0%	0%
		Phase-out of silent participations			90%	80%	70%	60%	50%	40%	30%
	Counter cyclicality	Capital conservation						0.63%	1.25%	1.88%	2.50%
		Countercyclical buffer			Phased in at discretion of national regulator						
	SIFI	SIFI Surcharge			Consultative paper expected end 2011						
Liquidity		LCR	Observation				Introduction				
		NSFR	Observation							Introduction	
Leverage		Leverage ratio	Monitoring		Parallel running		Market disclosure			Introduction	

10.5% total reg. capital

Rollout Fully effective

The role of internal models in Basel 3 and beyond ….

Enhancing risk coverage – implications of regulatory changes

- Increase the risk weighting of trading activities, re-securitisations, off-balance sheet exposures and counterparty credit risk arising from derivatives.
- Done by (but not limited to):
  - Capital requirements assessment for counterparty credit risk through stress testing (stressed inputs).
  - Capital charge for potential mark-to-market losses (CVA) and enhanced treatment of adverse risk due to deterioration in counterparty credit quality.
  - Increasing standards on collateral management and initial margin determination.
  - Incentives to use central clearing counterparties
- Enhancing the current Pillar 2 and 3 standards and providing additional guidance on credit valuation (fair value), stress testing, liquidity risk management and corporate governance and remuneration

Procyclicality – Implications of Regulatory Changes

- Requirements related to the build-up of capital buffers above the minimum capital base.
- Binding dividend payment constraint.
- Introduction of anti-cyclical measures with respect to capital requirements.
- Full deduction of a reduction of risk provisioning for expected losses from ‘Tier 1-Capital’.
- Measures against systemic risks of individual institutions.
- Empowerment of supervisory bodies to apply sanctions in case of non-compliance.

Recommended activities

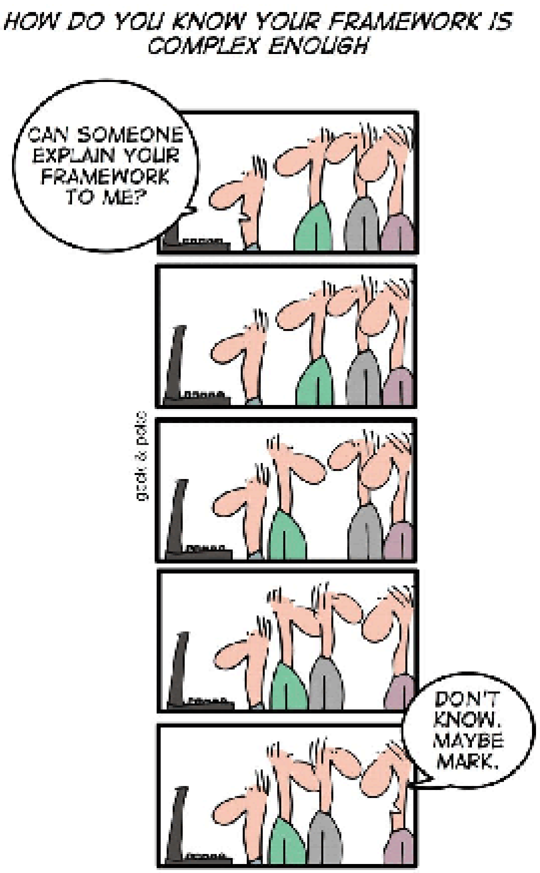
- Ascertainment/ definition of a buffer above the minimum capital base.
- Build-up of risk provisioning / capital buffers in form of core capital.
- Analysis of decrease of the volatility of PDs.
- Adjustments related to valuation allowances.

Role of models is maintained under Basel III

- **In the markets area seen as the way to enhance risk coverage**
- **In IFRS Expected Loss modelling is seen as a way to reduce pro-cyclicality**
- **and the Basel RWA formula is adjusted for FI counterparties to reflect systemic risk**

However, models are not so striking feature of Basel III as they were of Basel II

This has to do with the phenomenon reflected in the cartoon:
- models do add a lot of value, but
- **models make the framework more difficult to understand for stakeholders outside the institution (and therefore more difficult to trust)**



What could quants do?

<u>Engage in external communication</u>
- Banks should better explain their models including limitations to external stakeholders
- Spend time on influencing regulation
- Try to externally benchmark where possible

<u>A larger scope</u>
- Work on the “intuitive plausibility” of models (while challenging expert opinions where justified)
- Own the result, not just the tool

<u>Help understanding the interaction between IFRS and Basel regulation</u>

<u>Solutions/ innovations</u>
- Come up with solutions for EL modelling for IFRS
- Adhere to regulations, but also bring new ideas to the table (keep the innovation going)
- How to deal with low default portfolios
- Provide good solutions for liquidity and leverage risk under pillar 2

What are the areas in banking <u>where you think</u> investment in modelling would add value? If the banks use it because it adds value, regulators will follow in due course as we saw with the creation of the B2 framework

Any Questions ?

Thank you for attending this presentation