
DZ BANK – Internal model for liquidity risks

ECB Money Market Contact Group

Michael Schneider, February 2010



Liquidity risks – international requirements

“Principles for sound liquidity management and supervision” dated Sept. 2008

Areas of focus

- Concentration on extreme stress scenarios
- Allocation of liquidity costs/risks
- Quantitative liquidity buffer

Changes

- Internal liquidity management systems for groups
- Expansion of the role of the supervisory bodies
- Monitoring of implementation

Legal implementation

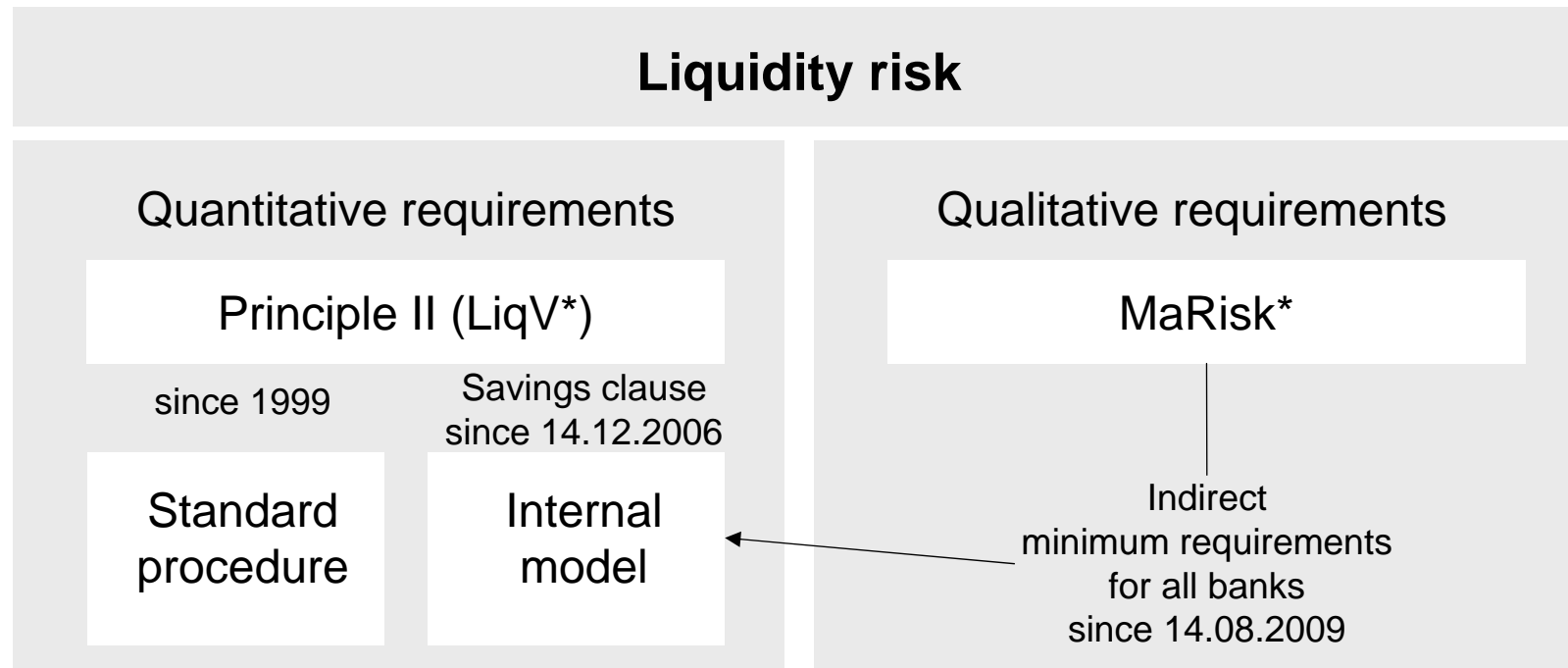
EU: CRD Amending Directive (Appendix V / XI)

DE: Modification of MaRisk (BTR 3)

Follow-up work

1. Development of a quantitative framework (consultation paper from December 2009)
2. Implementation study on liquidity principles from September 2008 (starting 2010)

Liquidity risks – national requirements in Germany



In 2007, five German banks submitted applications to have their internal model for liquidity risks examined and approved. The crisis in the financial markets and the increased legal requirements have made it significantly more difficult for banks to obtain approval for their liquidity risk models. DZ BANK was one of the first banks to have its liquidity risk model approved in accordance with § 10 LiqV, in October 2009, and thereby to discontinue the standard procedure.

* Liquiditätsverordnung = German Liquidity Requirements; MaRisk = Germany's Minimum Requirements in Risk Management

Liquidity risk – the DZ BANK Group

For calculating liquidity risk, DZ BANK uses its own internal procedure for measuring and managing liquidity risk, which has been approved by BaFin* in accordance with § 10 LiqV for use in assessing liquidity adequacy, in place of the standard procedure (Principle II) prescribed by the authorities.

- Risk model at the level of the DZ BANK Group
- Daily simulation of one risk scenario and four stress scenarios
- Calculation of the key figure “minimum liquidity surplus” for each scenario
- Liquidity risk limitation on the basis of the minimum liquidity surplus
- Focus: liquidity up to 1 year

* BaFin = Bundesanstalt für Finanzdienstleistungsaufsicht = German financial services regulator

Internal model for liquidity risks – basic structure

Minimum liquidity surplus

- The key figure “minimum liquidity surplus”, which quantifies the minimum amount of cash surplus available within the following year in the event of the scenario actually occurring and taking immediate effect, is calculated for each scenario.
- $\text{minLiq} = \text{counterbalancing capacity} - \text{forward cash exposure}$

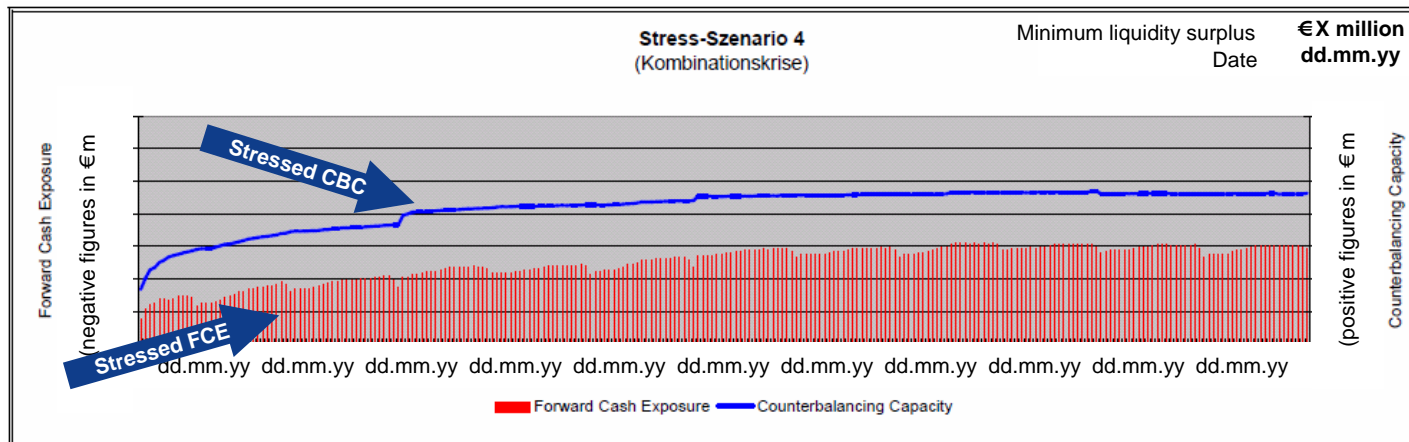
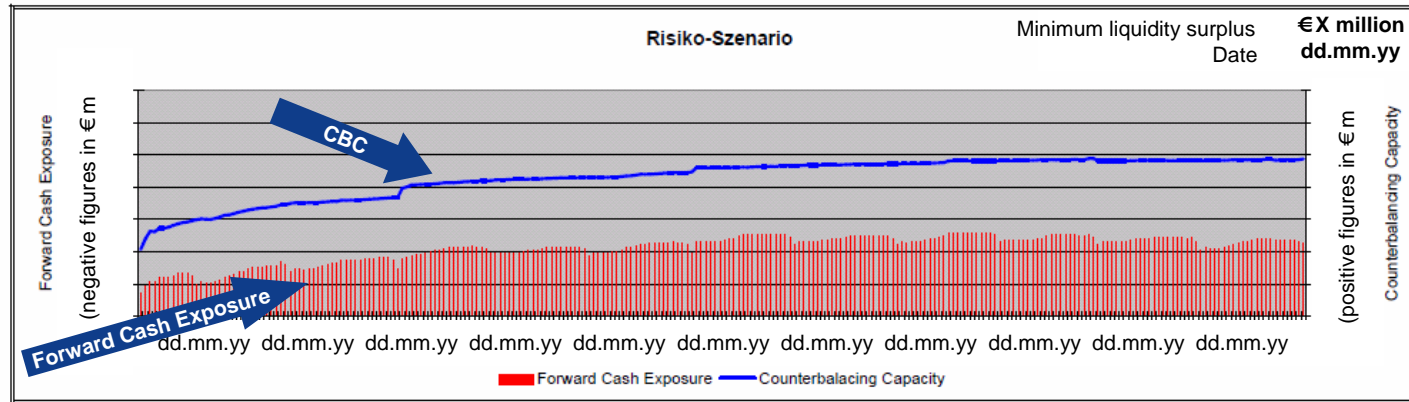
Forward cash exposure

- Covers both expected and unexpected payments

Counterbalancing capacity

- Includes balances on Nostro accounts, eligible securities as well as unsecured refinancing capacity from customers and banks as well as from commercial papers and certificates of deposits (CP/CD).

Internal model for liquidity risks – basic structure



Internal model for liquidity risks – scenarios

The **risk scenario** reflects current market conditions and company circumstances.

Stress tests are carried out to indicate both the forward cash exposure and the counterbalancing capacity using the 4 scenarios:

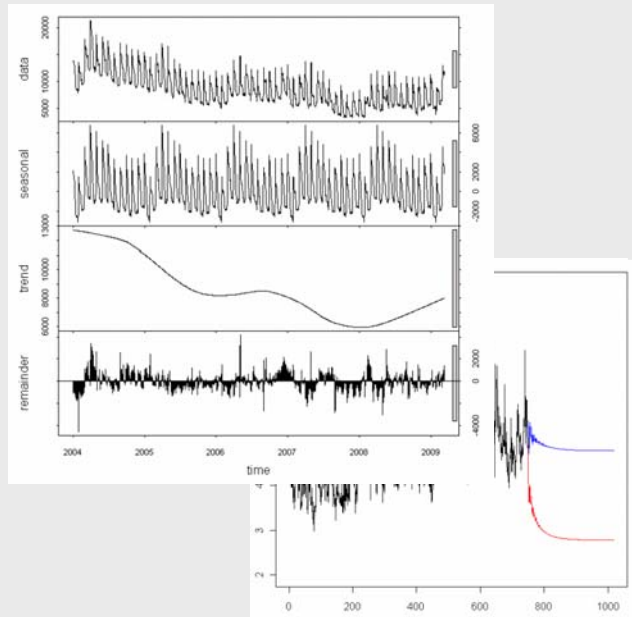
- Downgrading
- Organisational crisis
- Crisis in the markets
- A combination crisis

Each stress scenario illustrates, in relation to the event simulated, a serious deterioration of the underlying conditions. The stress scenarios consider serious causes originating out of the market as well as causes internal to the bank.

Parameters of the stress test for the measurement of liquidity risks

Basis

- Analysis of historical data
- Breakdown of historical data
- Statistical modelling
- Reconciliation by an expert estimate/experience



Drivers of unexpected liquidity outflows

- Reduction of deposits (in specific customer groups)
- Irrevocable credit commitments to customers are drawn down
- Irrevocable credit commitments to conduits are drawn down
- Liquidity requirements of group companies
- Occurrence of loss (VaR)
- Exchange rate changes in foreign currency positions that cannot be funded locally
- Collateral payments from OTC and repo business
- Margin calls for futures transactions

Parameters of funding opportunities in the unsecured market

- Reduction of expected money market borrowing customers
- Reduction of expected money market borrowing banks
- Reduction of expected money market borrowing CPs/CDs

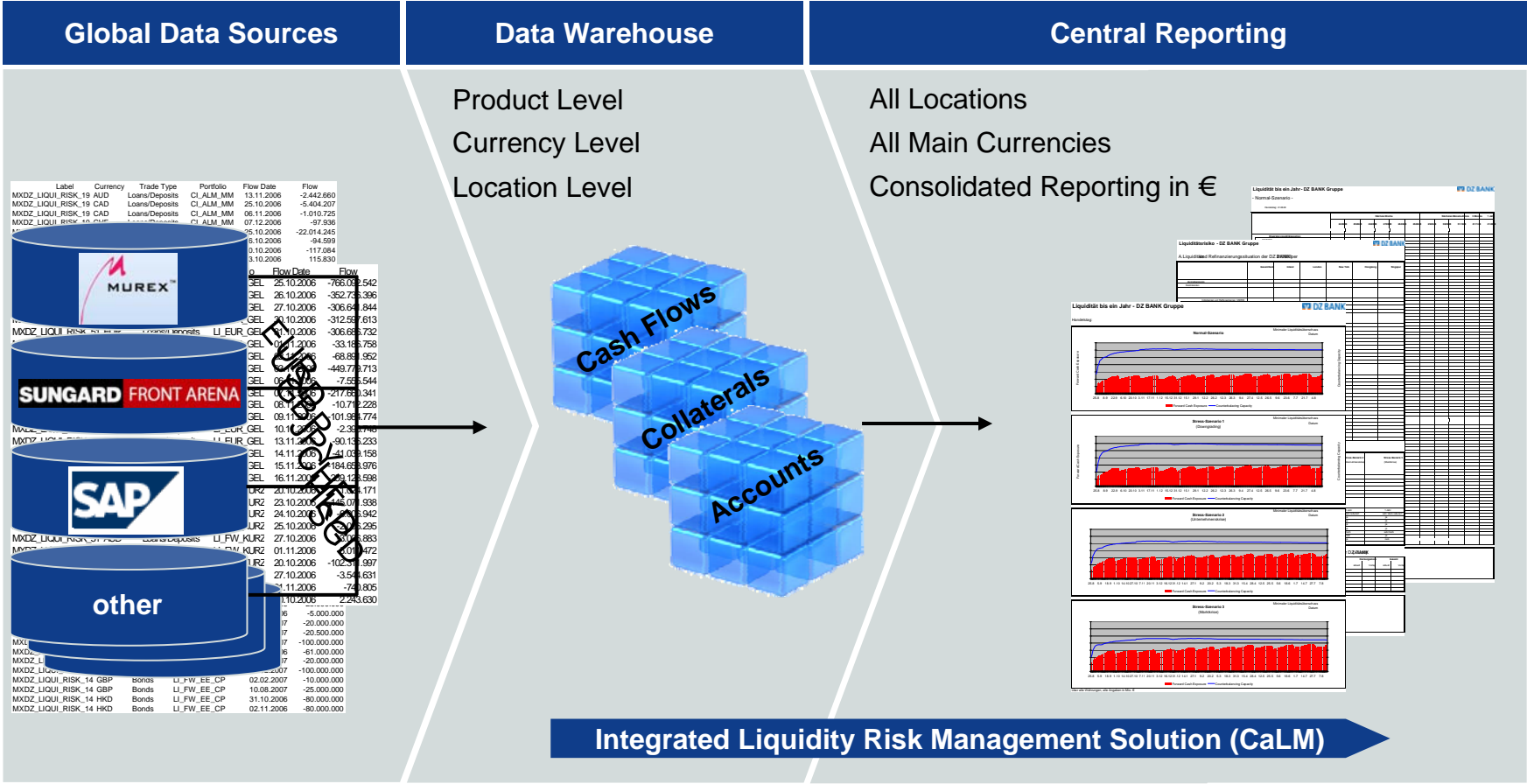
Parameters of the stress test for the measurement of liquidity risks

Parameters of funding opportunities in the secured market

- Basic identification and selection of securities that are eligible for transactions with the central bank and those which are not
- Liquidation – percentage of the total volume that is to be liquidated
- Market acceptance – percentage of the liquidated securities accepted by market
- Haircut – percentage markdown on the market value of the liquidated securities
- Fall in price – percentage markdown on the market value of the liquidated securities

$$E = L * M * (1-H) * (1-K)$$

Internal model for liquidity risks – IT Implementation



Summary and outlook

State-of-the-art liquidity management

- Internal model has been approved by the German banking regulatory authority
- Confirmation of the quality and risk orientation of liquidity management, also against the background of increasing regulatory requirements

New and additional requirements for liquidity risk measurement

- FSA September 2009
- CEBS December 2009
- Basel Committee on Banking Supervision December 2009

Conflicting priorities when considering modified and new control parameters

- Harmonized level playing field
- Standard approach vs. advanced approaches (internal models)
- Uncertainty of defining of requirements for
Counterbalancing capacities, liquidity buffer, liquidity reserves and others.