

Liquidity risk management comes in three loops

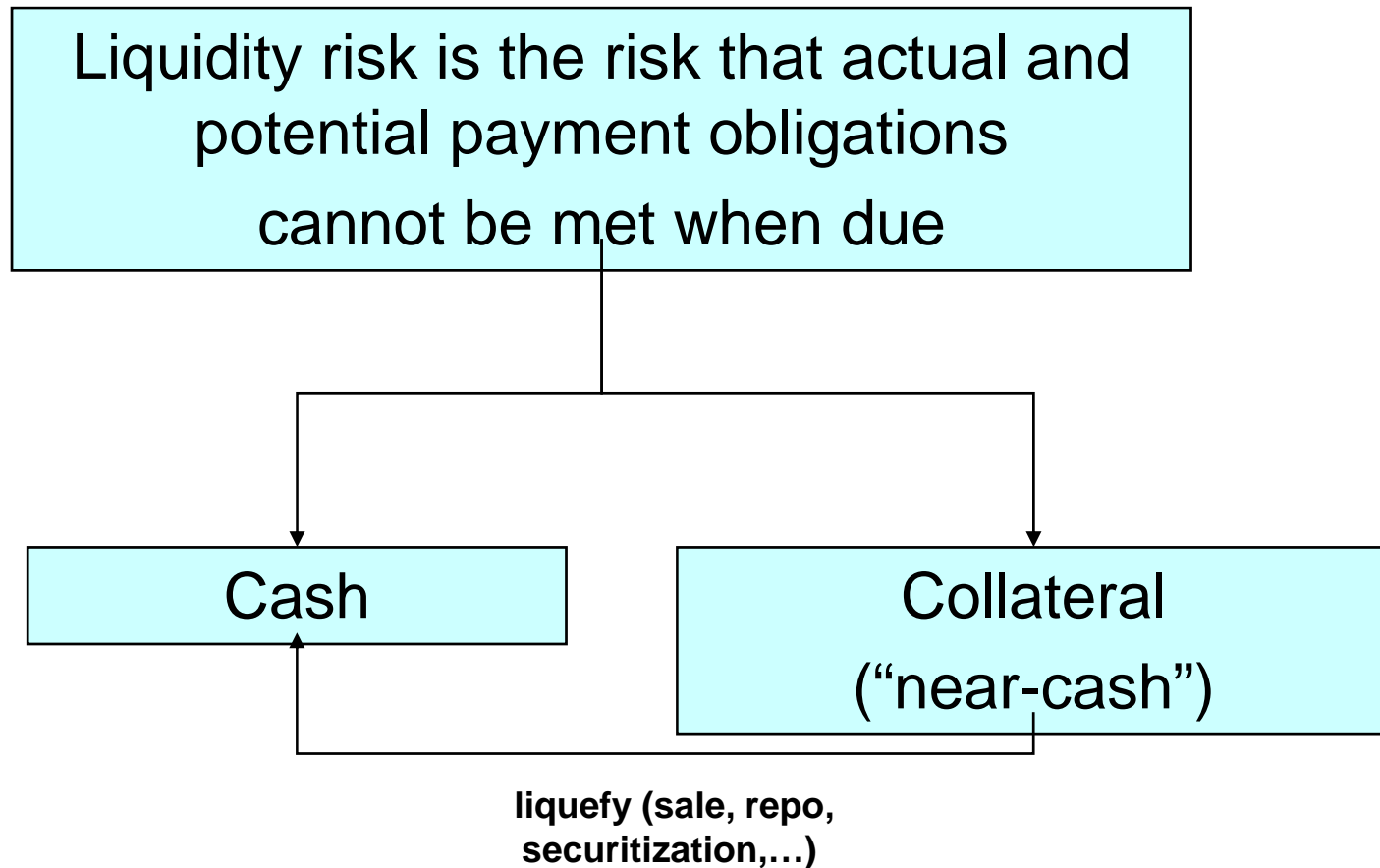
Liquidity risk management as part of centralized asset and liability management
CAIRO, EGYPT, 7-9 April 2009

Werner D'Haese
Group Treasury

FORTIS BANK

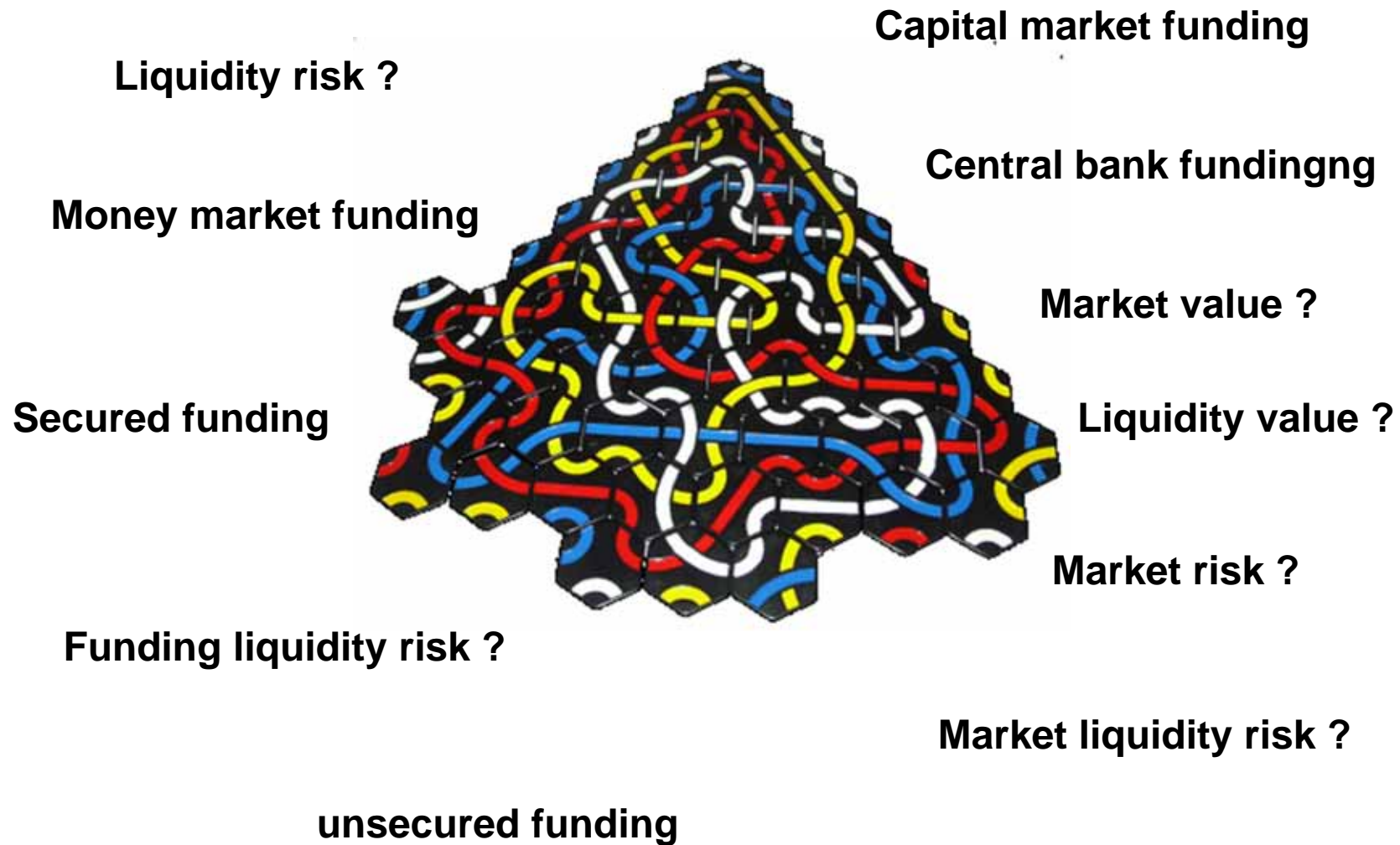


Liquidity risk has two ingredients: cash and collateral

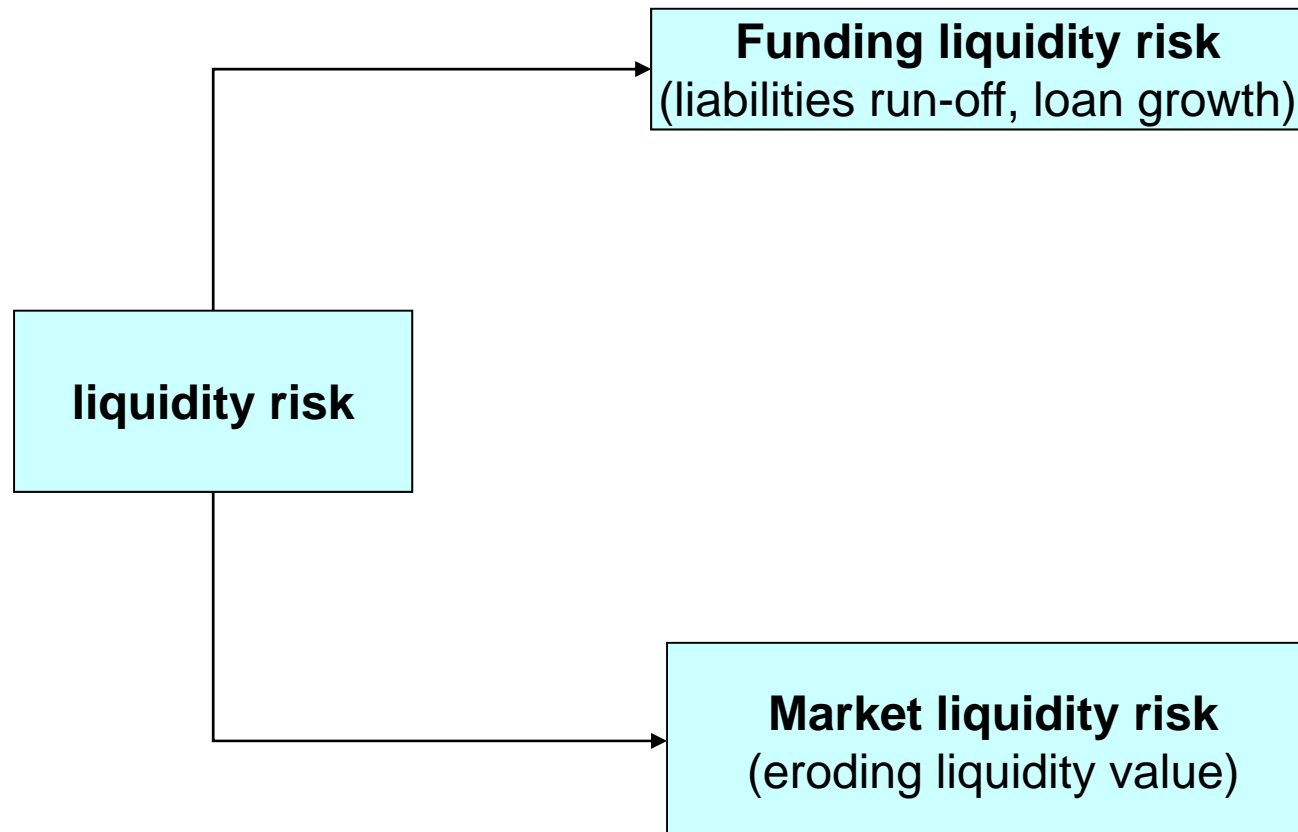


It is about cashflow within time bands not the risk of loss

Liquidity risk management ?



Liquidity risk has two components: funding liquidity risk and market liquidity risk



Definitions: funding liquidity risk and market liquidity risk

Funding liquidity risk is the risk that expected and unexpected cash demands of deposit-, policy- and other contract- holders cannot be met without suffering unacceptable losses or without endangering the business franchise.

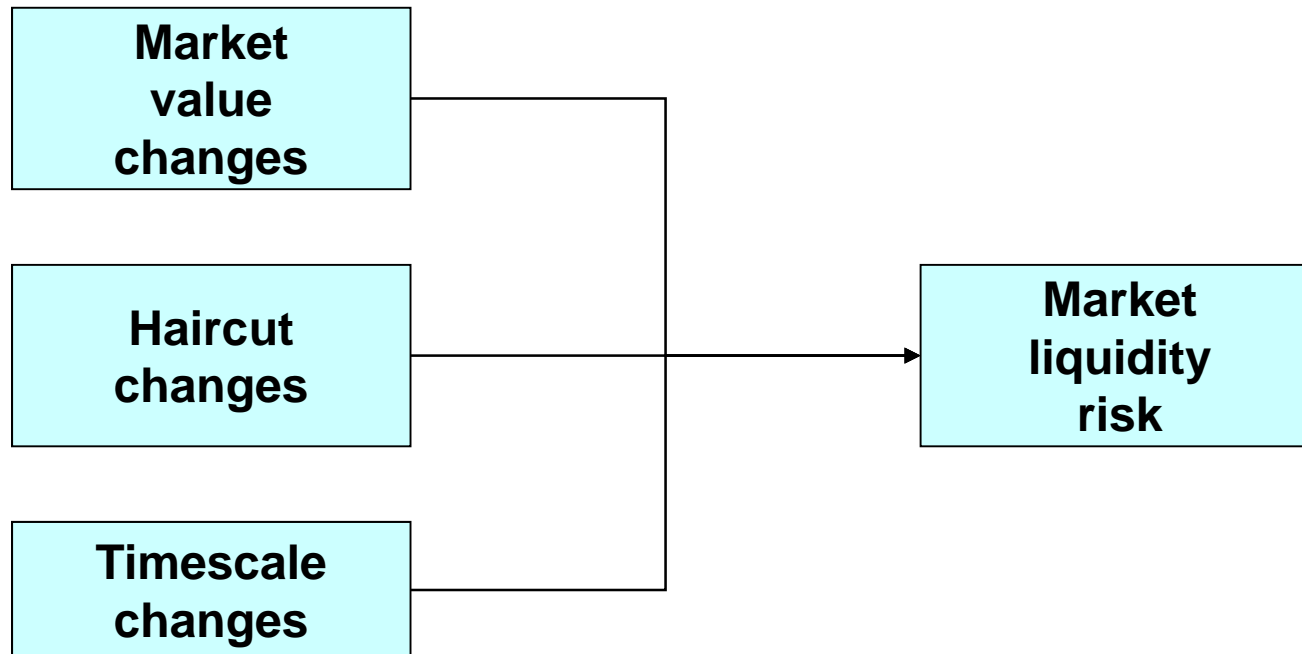
Market liquidity risk relates to the inability to realise assets due to inadequate market depth, or market disruption. To some extent it is related to market risk.

Market risk versus Market liquidity risk

Market risk is the sensitivity (volatility) of the market value of a portfolio due to changes in market prices such as: interest rates, foreign exchange rates, equity prices, and commodity prices.

Market liquidity risk is the sensitivity (volatility) of the liquidity value of a portfolio due to changes in the applicable haircuts and the change of the market value. It is also related to the uncertainty of the timescale that is necessary to realize the liquidity value of the assets

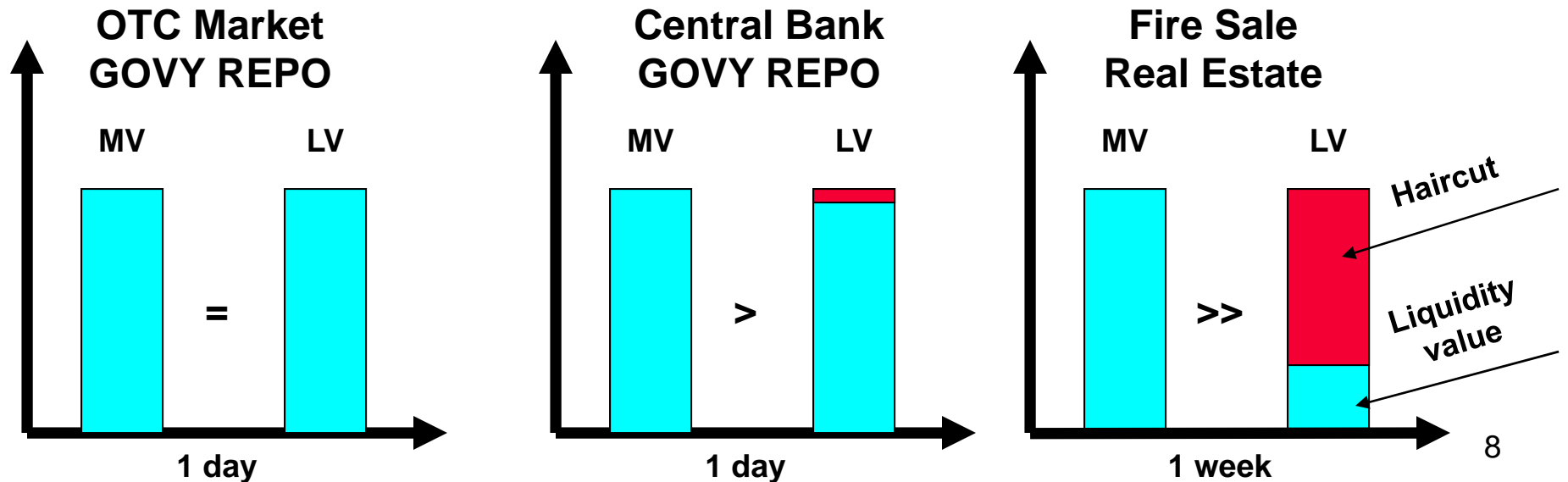
Market risk versus Market liquidity risk



Liquidity value versus market value

The liquidity value of an asset is calculated by submitting its market value to a discount (haircut) which is subject to market conditions, repricing frequency, time available to liquefy, market presence, traded volume and the eligibility (risk acceptance) criteria of market participants. Consequently the liquidity value of an asset is equal or (much) lower than its market value.

examples

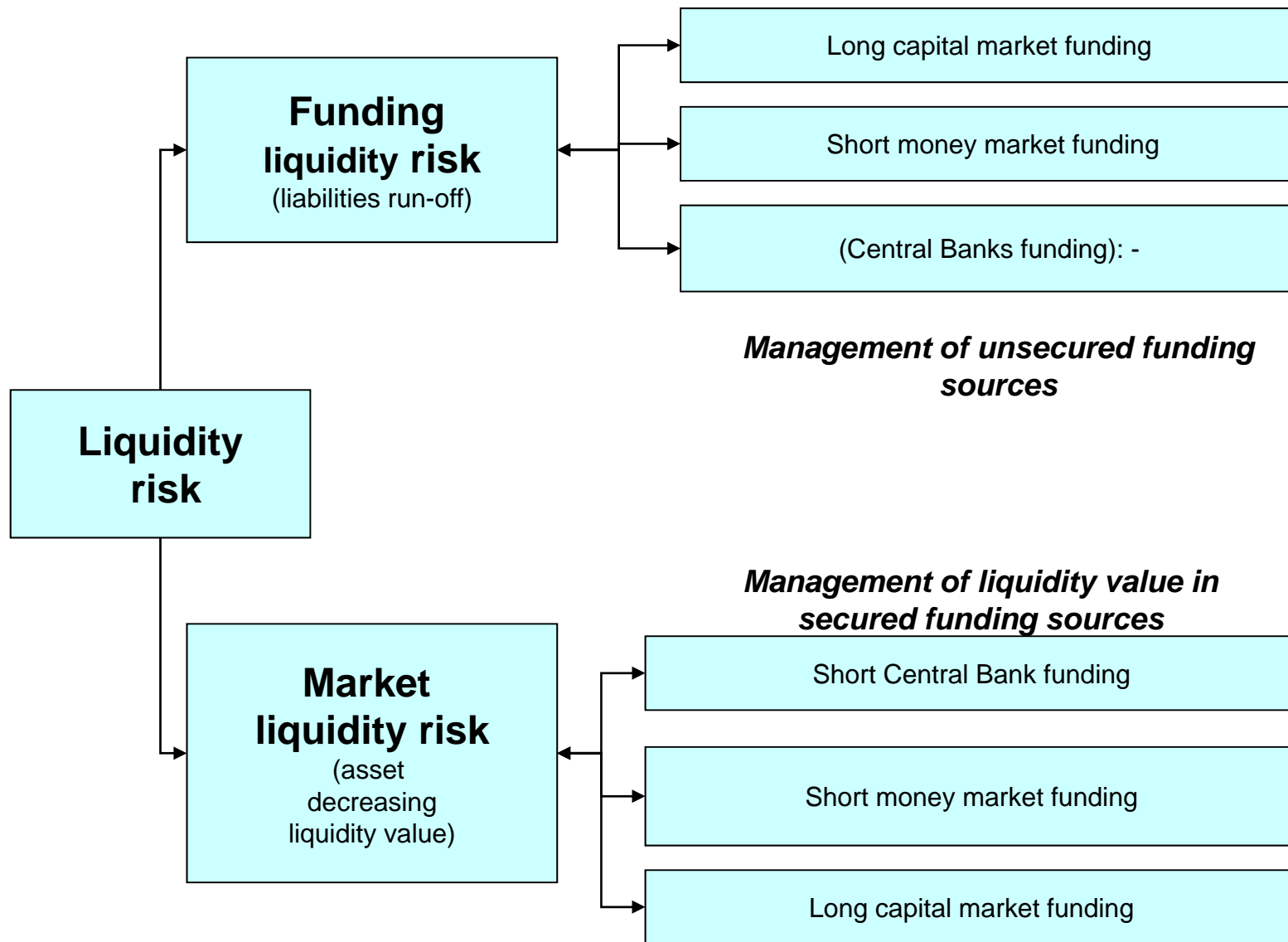


Two-fold segmentation

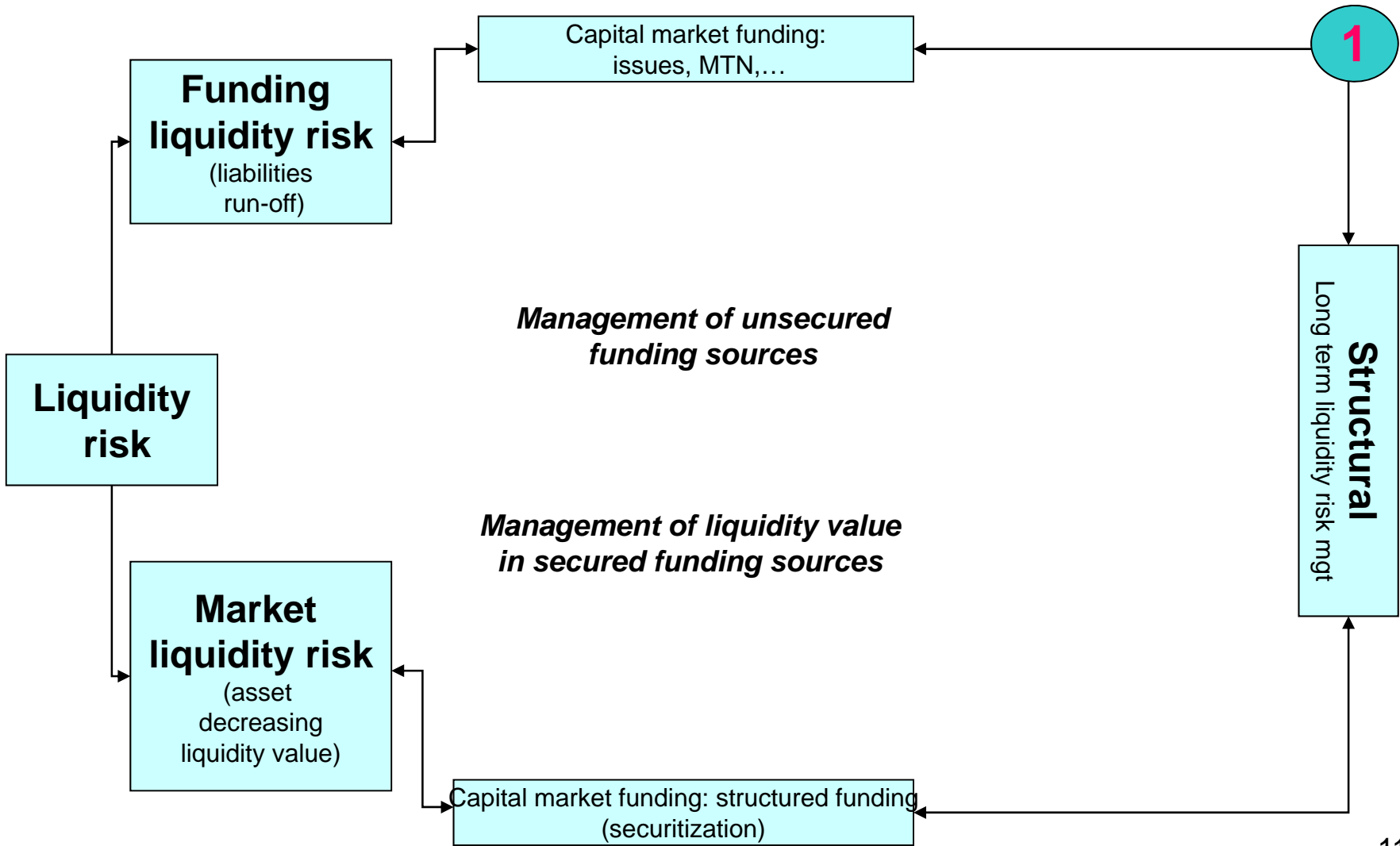
| Segmentation funding markets | Short term financial instruments for funding providers | Long term financial instruments for funding providers |
|------------------------------|--|--|
| Secured funding | <ul style="list-style-type: none"> •Repo, •Securities lending •Conduits & SIV's •Tenders - Standing Facilities- Discount windows | <ul style="list-style-type: none"> •Securitization |
| Unsecured funding | <ul style="list-style-type: none"> •Short term Deposits •Commercial paper | <ul style="list-style-type: none"> •Long term deposits •Issues |

Liquidity risk management comes in three loops (= funding routes)

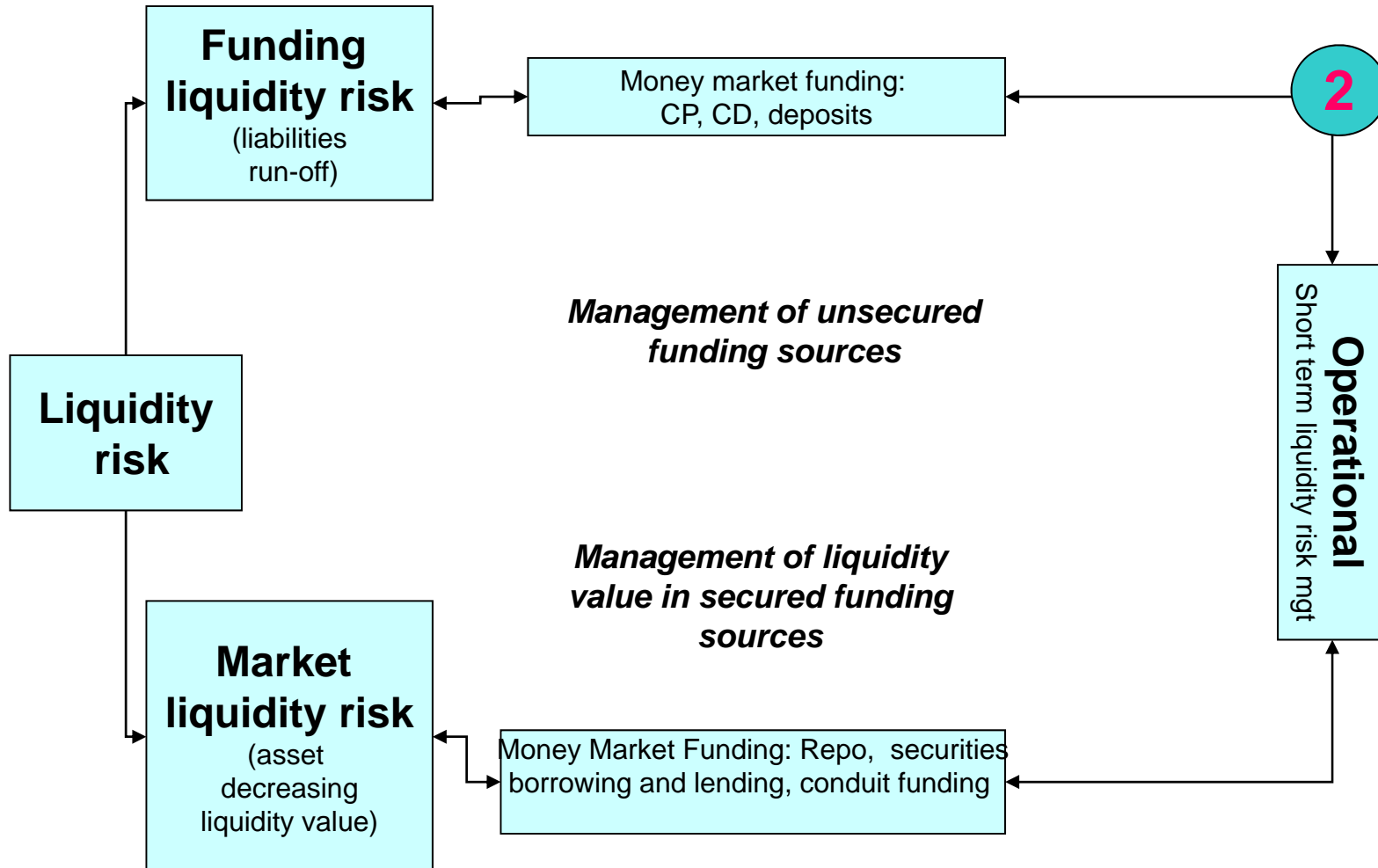
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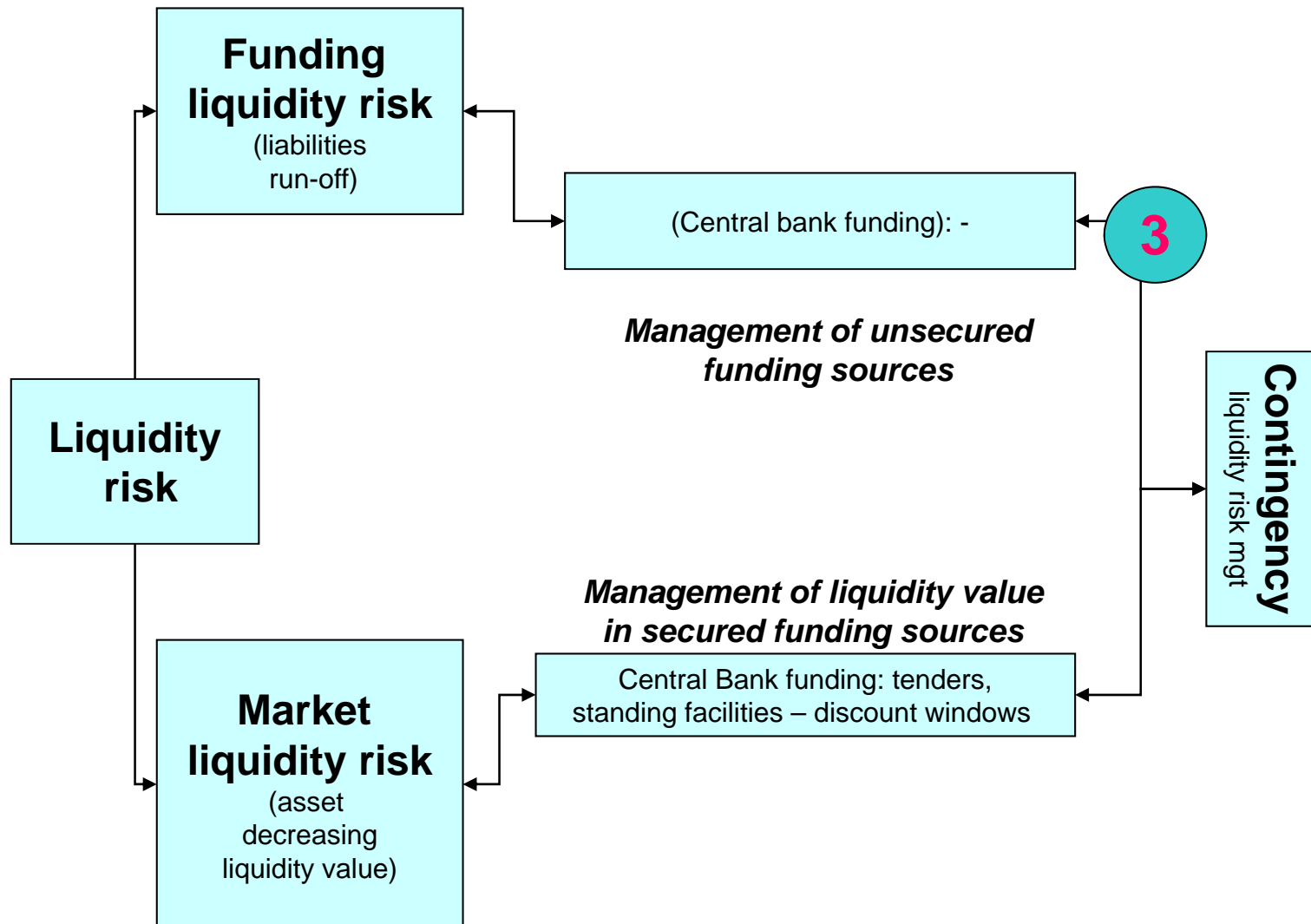
The first loop



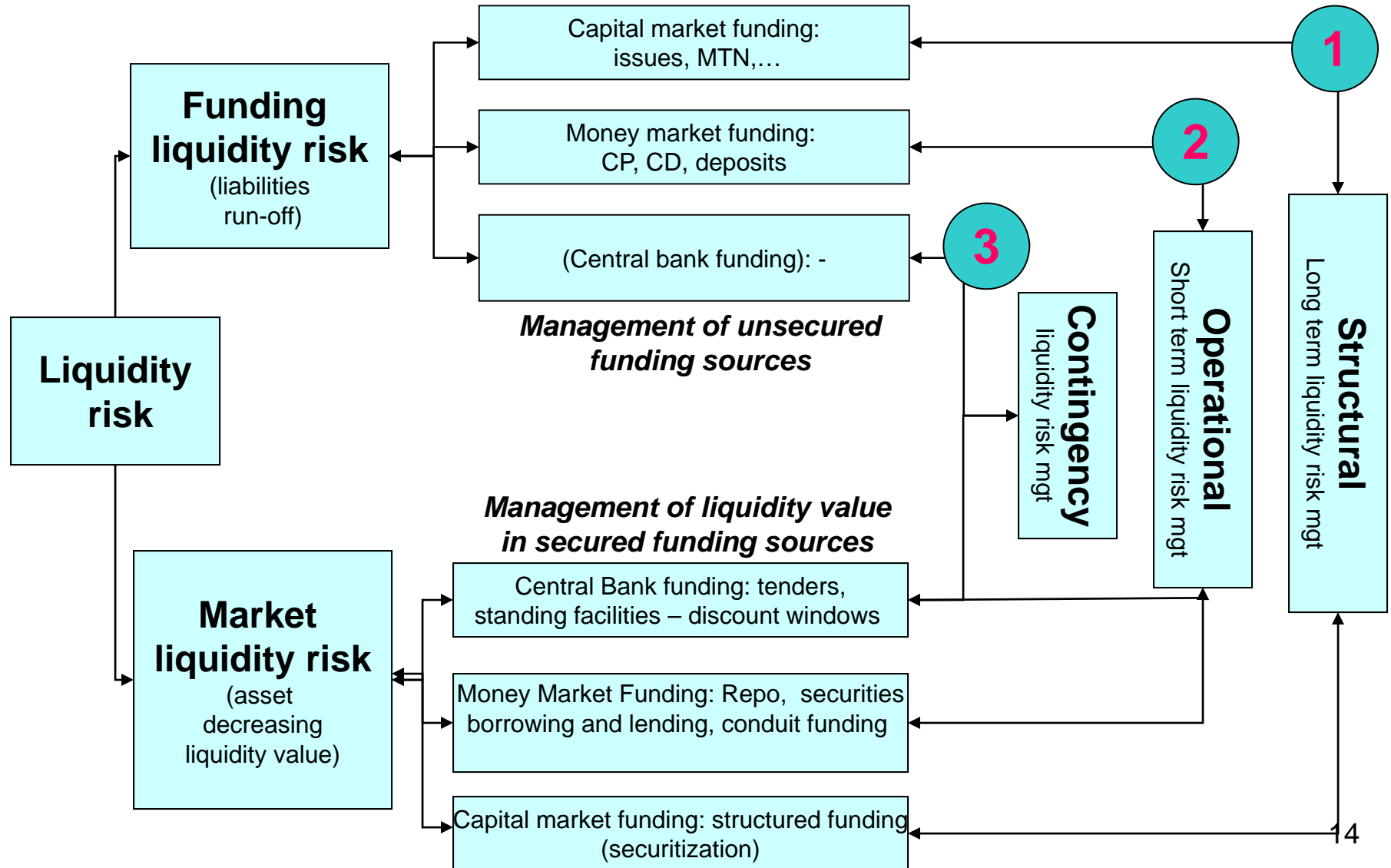
The second loop



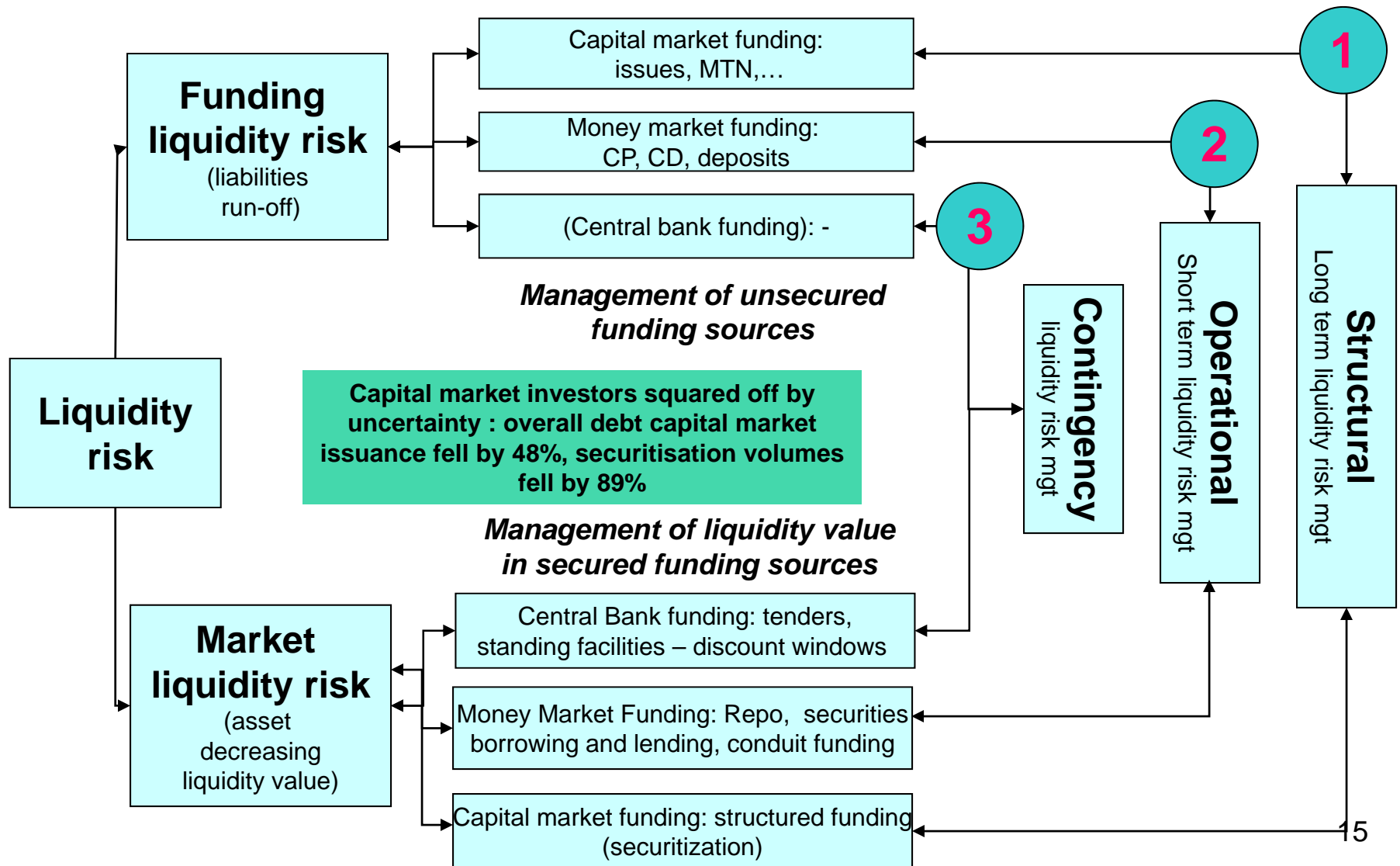
The third loop



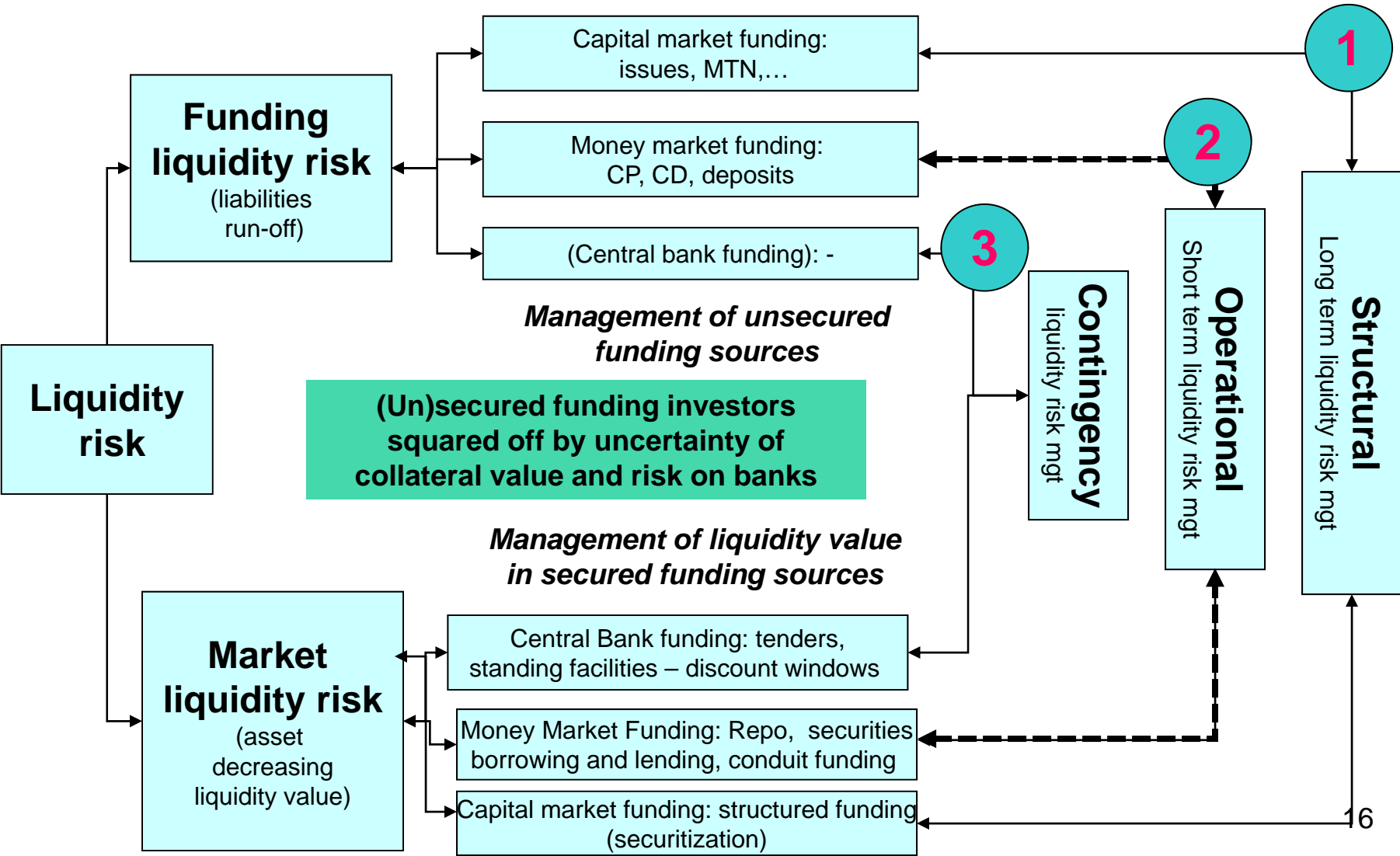
Liquidity risk management comes in three loops



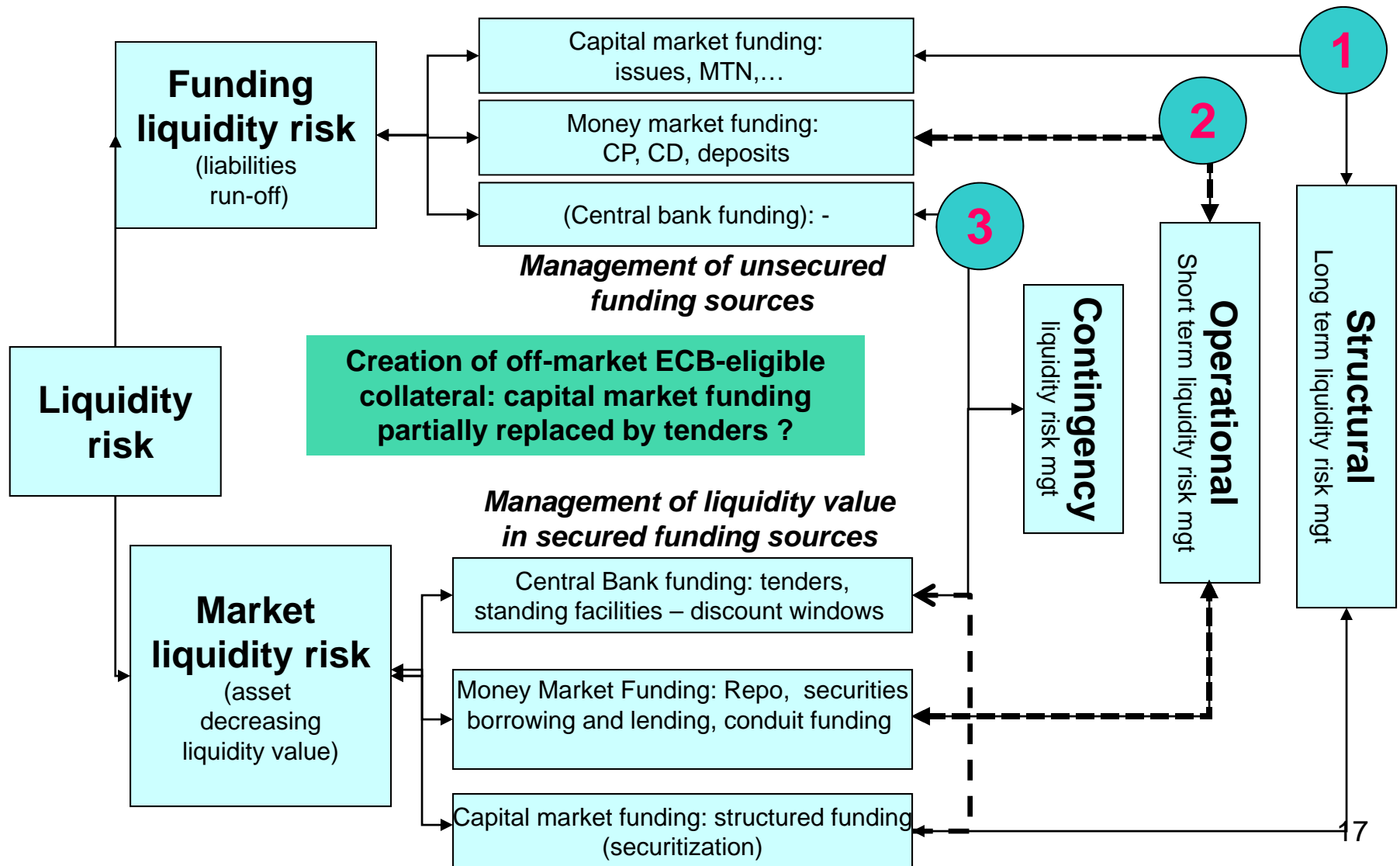
Liquidity risk management comes currently in two loops



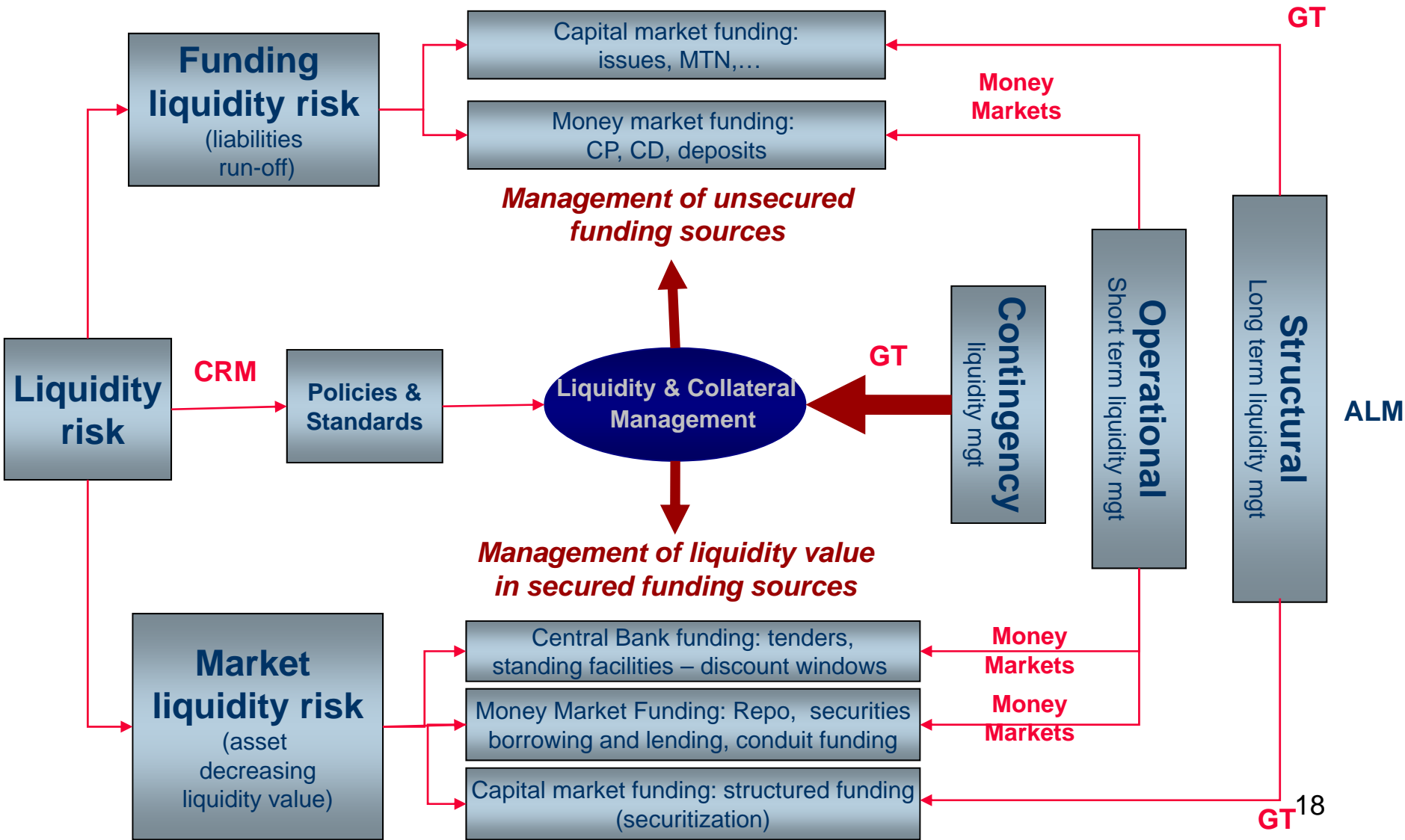
Liquidity risk management still comes in two loops but operational loop interrupted



Subprime crisis: drastic mutation of liquidity risk management roadmap

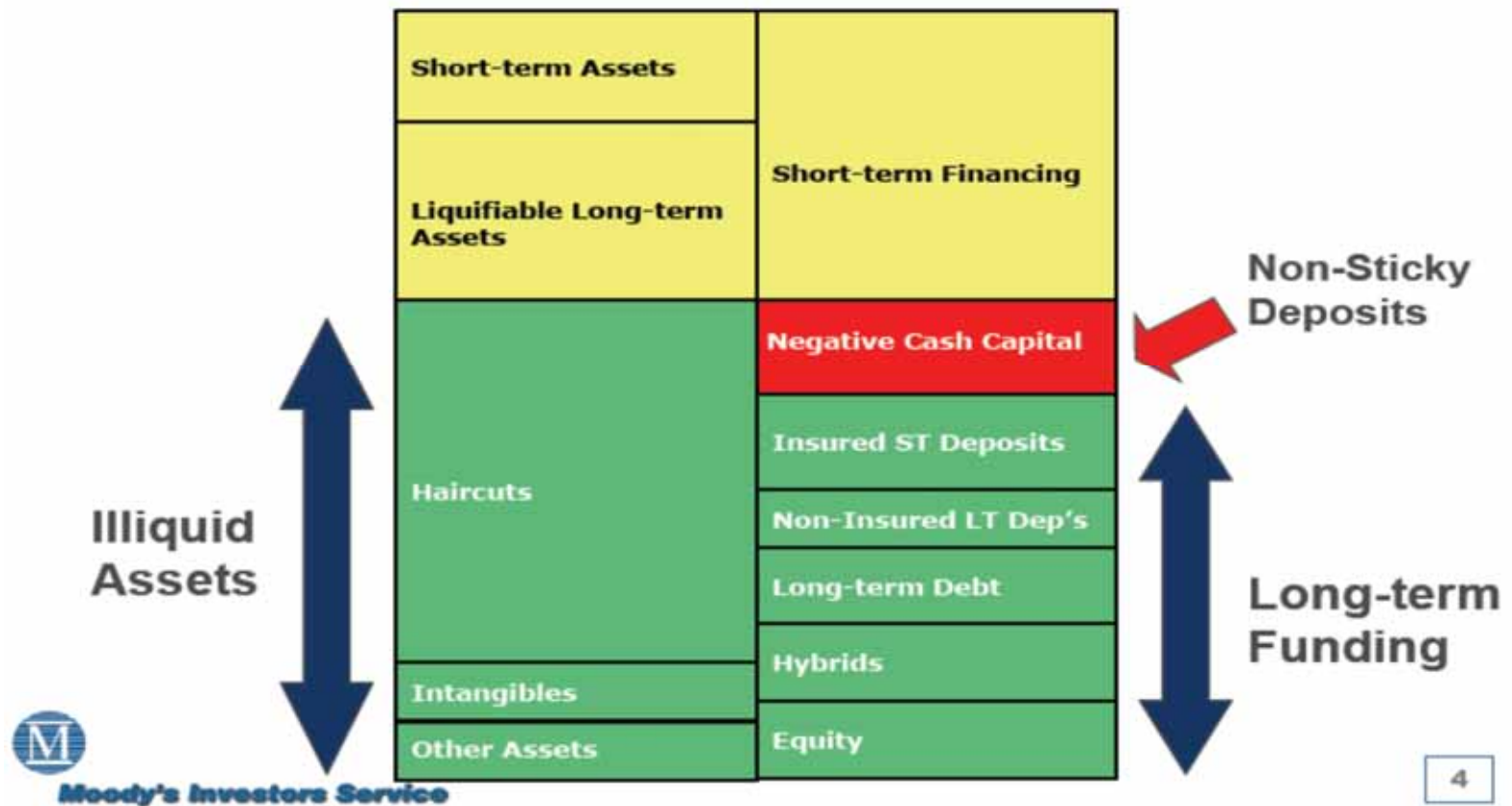


Liquidity management responsibilities within Fortis Bank (under review)



Monitoring tools for structural liquidity risk: “net balance of stable funding (cash capital)”

Applying securities analysis: cash capital

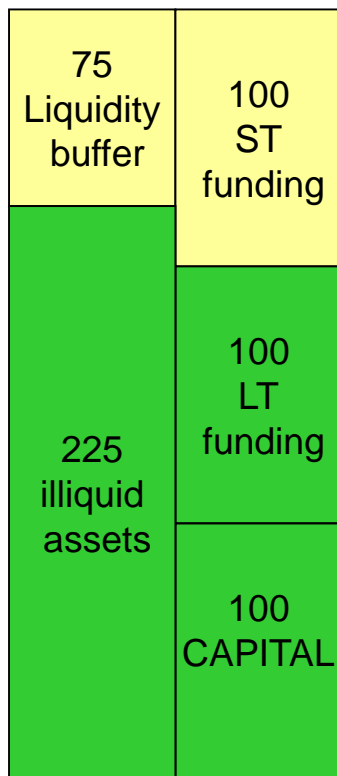


Monitoring tools for structural liquidity risk: “net balance of stable funding (cash capital)”

- **Conceptually straightforward (*):**
 - net cash capital= long term funding - illiquid assets
- **A positive result indicates that the bank would be able to continue operating from its available resources, even with a temporary disruption in the unsecured wholesale funding markets**
- **To allow comparative analysis**
- **To identify weaknesses – dependency on wholesale funding**
- **Annual report Nordea ‘05 : “The structural liquidity risk of Nordea is measured by the net balance of stable funding, which is defined as the difference between stable liabilities and stable assets. “**
- **(*) Liquidity risk measurement and management (Matz-Neu-Raffis p.257)**

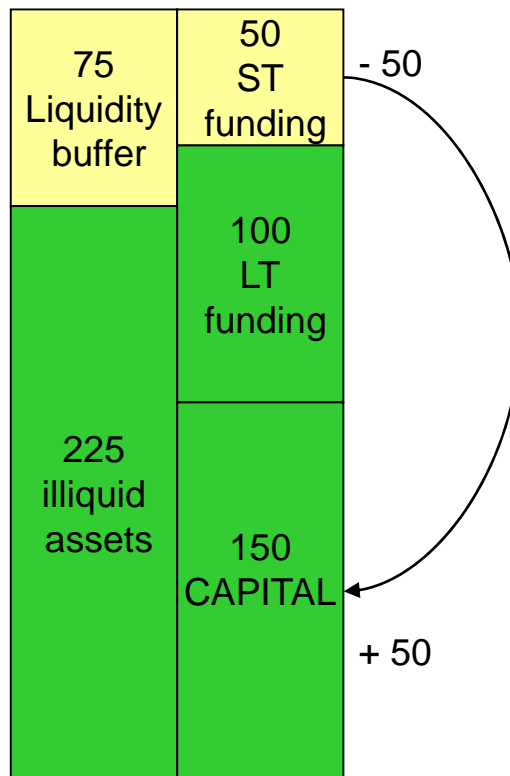
Net balance of stable funding

+ Start position



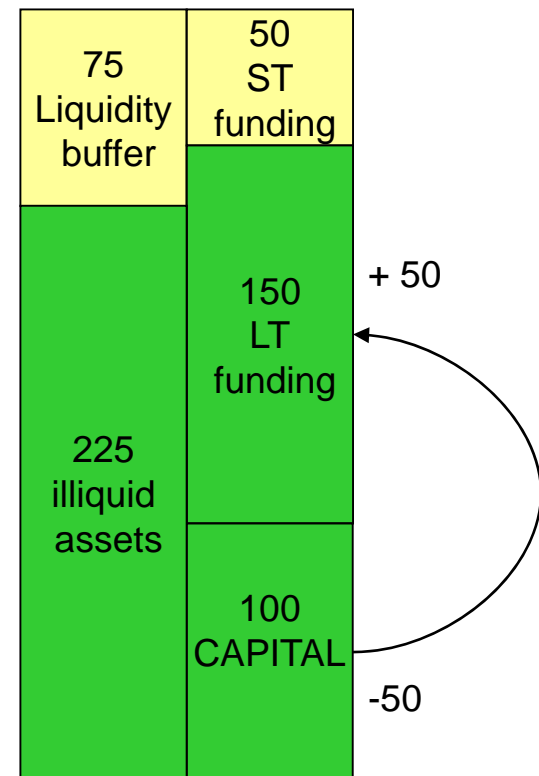
-25 cash capital

**Switch from
volatile funding to
equity without
extra cash inflow**



+ 25 cash capital

**Migration within
stable funding
sources**



+25 cash capital

Net balance of stable funding

+ Start position

| | |
|---------------------------|----------------------|
| 75 Liquidity buffer | 100 ST funding |
| 225 illiquid assets | 100 LT funding |
| | 100 CAPITAL |

-25 cash capital

Switch from
volatile to stable
funding through
securitization

| | |
|---------------------------|----------------------|
| 75 Liquidity buffer | 100 LT funding |
| 125 illiquid assets | 100 CAPITAL |

+75 cash capital

via a remote SPV

| | |
|-----------------------|-------------|
| 100 Mort- gages | 100 RMBS |
|-----------------------|-------------|

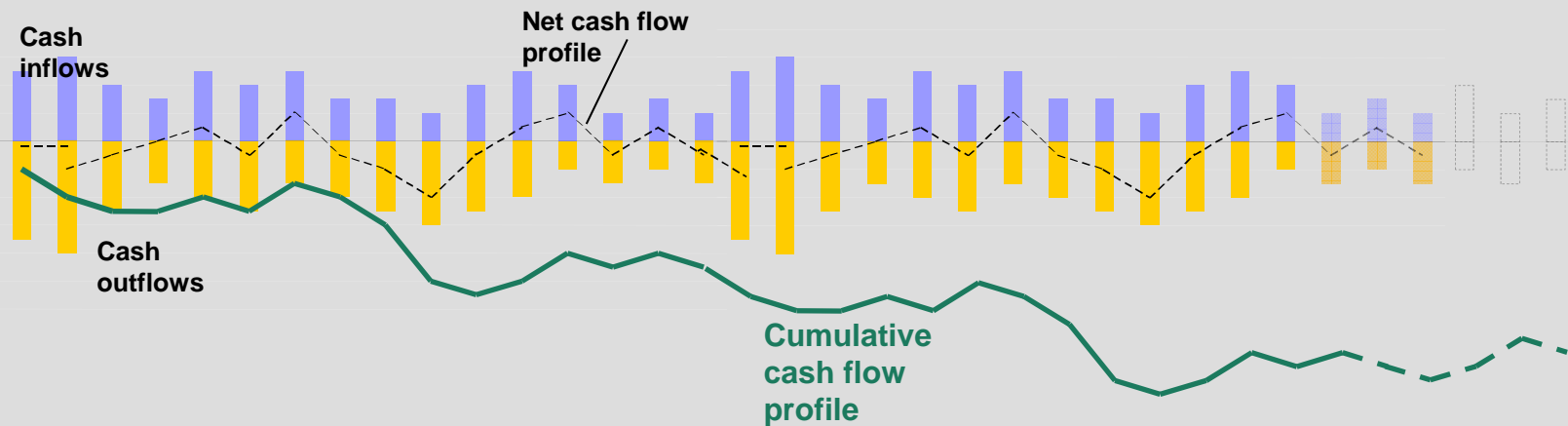
0 cash capital

via a conduit

| | |
|-----------------------|-------------|
| 100 Mort- gages | 100 ABCP |
|-----------------------|-------------|

-100 cash capital

Cash Flow Projection as early warning indicator

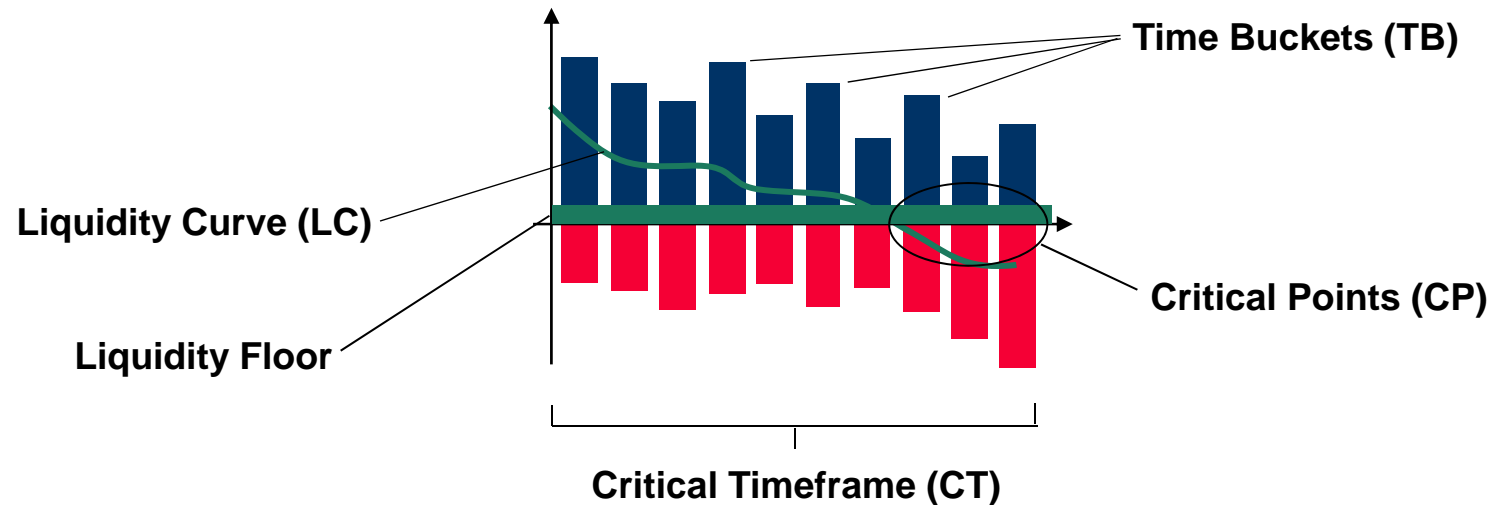


Maximum Cash Outflow (MCO)

- Daily cash flow projection based on contractual maturity
- Modelling of loan assets and liabilities with non-contractual maturities

Adapted from presentation by Deutsche Bank

Liquidity Risk and Liquidity Management



Challenge :

- Keep the Liquidity Position above the Liquidity Floor at the lowest opportunity cost

| | |
|--------------------------------|--|
| Critical Timeframe (CT) | The period, during which the risk is monitored. |
| Time Bucket (TB) | The smallest unit of time taken into account. |
| Critical Point (CP) | Any Time Bucket of the CT where the Liquidity Position is negative. |
| Liquidity Risk (LR) | Liquidity Risk is the risk that Fortis will not be able to efficiently meet both expected and unexpected current and future cash flow and collateral needs without affecting either daily operations or its financial condition. |

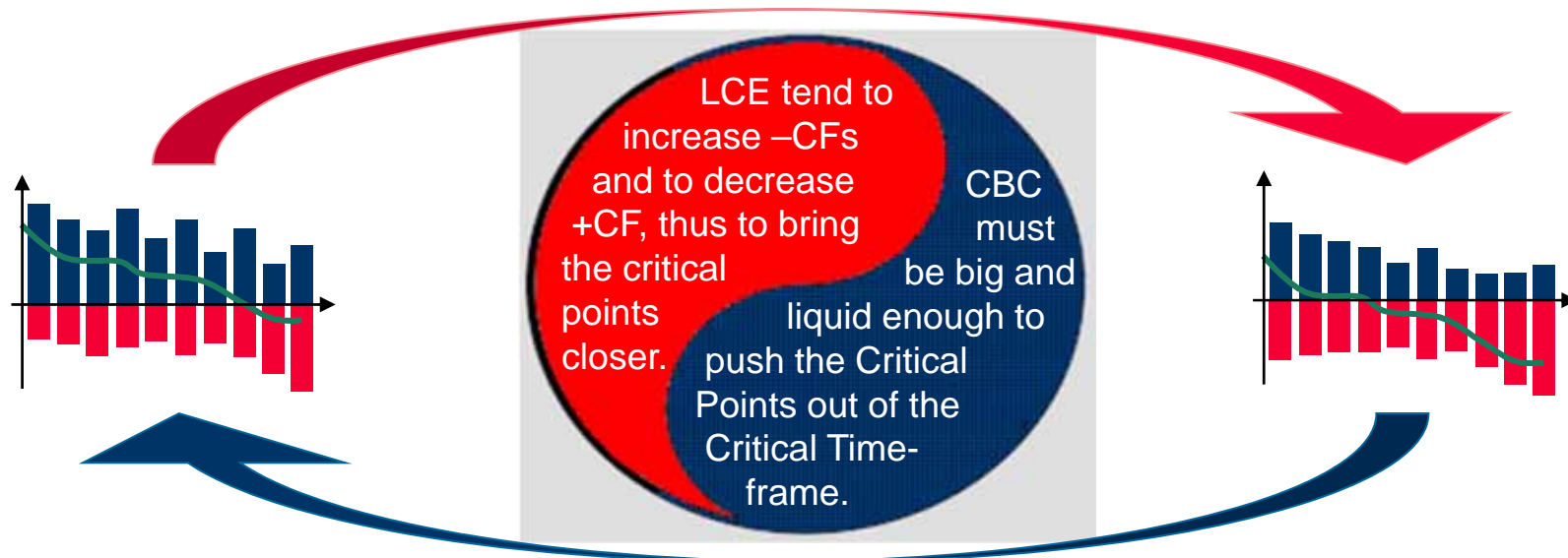
Concepts of Stress-Testing

Liquidity Consuming Event & Counterbalancing Capacity

LCE : Liquidity Consuming Event

Any event that could have a materially negative impact on Fortis' Liquidity.

Ex. : Market Disruption, Rating Downgrade, credit crunch,...



CBC : Counterbalancing Capacity

The overall capacity of the bank to generate Liquidity.

Ex. : Sale of assets, repo, use of credit lines,...

Thank you

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