

UCITS IV – A Risk Management perspective

Liquidity risk for Investment Funds September 2010



Agenda

Liquidity risk for Investment Funds

1. What is Liquidity risk?
2. Regulation
3. How to assess liquidity risk? Current methods
4. Liquidity risk in the context of Investment Funds
5. How to manage liquidity risk?

Agenda

Liquidity risk for Investment Funds

1. What is Liquidity risk?
2. Regulation
3. How to assess liquidity risk? Current methods
4. Liquidity risk in the context of Investment Funds
5. How to manage liquidity risk?

1. What is Liquidity risk?

Definitions

Liability Liquidity risk

- Arises when the fund cannot meet the redemption payment or is able to do so but with such an investment deviation that it could generate claims from the investors.

Asset Liquidity risk

- Also called market/product Liquidity risk, arises when transactions cannot be conducted at quoted market prices due to the size of the required trade relative to normal trading lots.

Agenda

Liquidity risk for Investment Funds

1. What is Liquidity risk?
- 2. Regulation**
3. How to assess liquidity risk? Current methods
4. Liquidity risk in the context of Investment Funds
5. How to manage liquidity risk?

2. Regulation

Current regulation

CSSF circular 07/308

The other risks (operational risk, settlement risk, legal risk, etc.) which are not directly covered in this circular, but which may cause losses to UCITS, must be the subject of adequate supervision at the UCITS level.

⇒ Liquidity risk could be considered as part of other risks

⇒ Liquidity risk is mentioned through the circular (for example in collateral) but not considered as a risk per se

2. Regulation

CESR

CESR 09-178 (Risk management principles)

*Ongoing risk management operations involve the computation of a number of quantitative measures (the risk measurement framework), which generally aim to address the effects of market risk, credit risk (including issuer risk and counterparty risk) and **liquidity risk**.*

CESR 09-963 / Level 2 (technical advice to the European Commission to the UCITS management company passport)

*In particular, the risk management policy shall comprise procedures which enable the management company to assess the exposure to market risks, **liquidity risks**, counterparty risks and to all other risks, including operational risks, which might be material to each UCITS it manages.*

2. Regulation

CESR

CESR 10-788 / level 3 (CESR's Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS)

*The risk management process should comprise procedures which enable the management company to assess the UCITS' exposure to all material risks including market risks, **liquidity risks**, counterparty risks and operational risks.*

⇒ Clear requirement to assess **Liquidity risk**

Agenda

Liquidity risk for Investment Funds

1. What is Liquidity risk?
2. Regulation
- 3. How to assess Liquidity risk? Current methods**
4. Liquidity risk in the context of Investment Funds
5. How to manage liquidity risk?

3. How to assess Liquidity risk? Current methods

Equities – average traded volume

A common method to assess liquidity risk for equities is based on the average traded volume.

The quantity in portfolio is compared to a percentage of the average traded volume during a specific period of time.

Example:

100 IBM shares in portfolio

Average traded volume for the last 3 months: 6,133,436

20% of avg traded volume: 1,226,687

$100/1,226,687 = 0,01\% \Rightarrow$ **Low liquidity risk**

3. How to assess Liquidity risk? Current methods Average traded volume – Could be misleading?



3. How to assess Liquidity risk? Current methods

Bonds – Bid / ask spread

A common method to assess liquidity risk for bonds is based on bid / ask spread.

The bid / ask spread denotes the difference in simultaneously quoted prices to buy and sell an asset.

Example:

Corporate bond

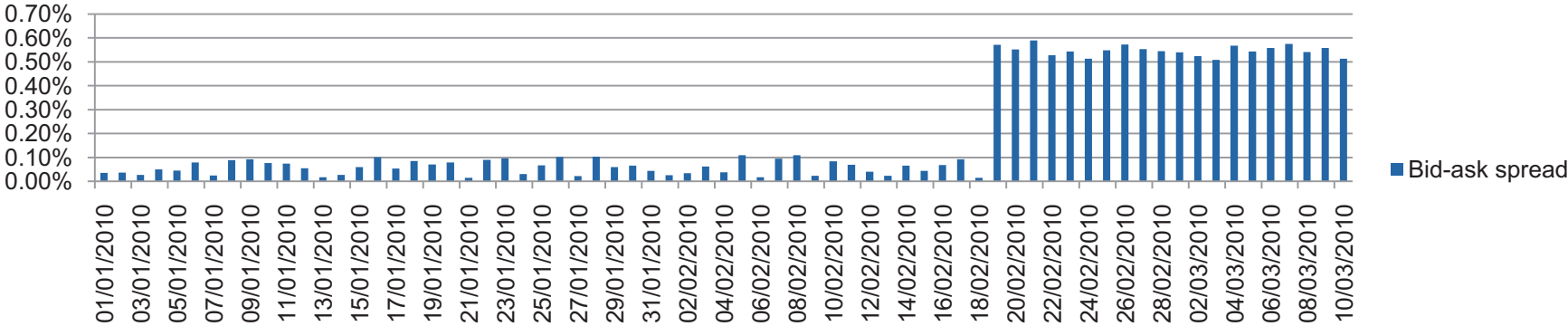
Bid: 99.8

Ask: 101.2

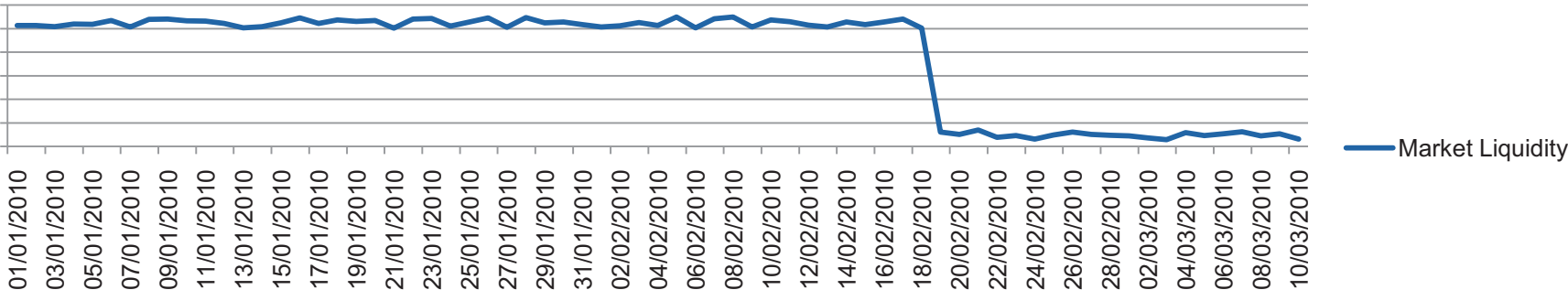
Bid / Ask spread: 1.4

3. How to assess Liquidity risk? Current methods Bid / ask spread – snapshot or forward looking indicator?

Bid-ask spread



Market Liquidity



3. How to assess Liquidity risk? Current methods

Liquidity at risk

The VaR quantifies the maximum loss at a given probability over a particular holding period. The liquidity adjusted VaR (LVAR) is a very similar measure that incorporates Liquidity risk through the bid / ask spread.

$$\text{LVAR} = \text{VAR} + \frac{1}{2} (V * (\text{bid} / \text{ask spread}))$$

Example:

VAR: 3.3

Bid / ask spread: 1%

Asset value: € 100

$$\text{LVAR} = 3.3 + \frac{1}{2} (100 * 1\%) = € 3.8$$

3. How to assess Liquidity risk? Current methods

Advantages and drawbacks

Advantages

- **Average traded volume** : availability of data + easy to interpret and compute
- **Bid / ask spread**: easy to compute
- **LVAR**: gives a potential loss at a given probability for a defined horizon

Drawbacks

- **Average traded volume**: Average traded volume tend to increase when things are turning bad for the company
- **Bid / ask spread**:
 - Difficult to find data (contact the broker)
 - Really depends on the quantity traded
 - Number of market makers
 - No long term horizon, gives a snapshot of the current situation
 - How to interpret? To be compared with a benchmark?
 - Will show Liquidity Risk when it will be too late
- **LVAR**: As it is adjusted by the bid / ask spread it will suffer from the same drawbacks

3. How to assess Liquidity risk? Current methods Additional challenges

Additional challenges

- How to aggregate these indicators in order to have a view on the Liquidity risk of the portfolio?
- What about other instruments (derivatives, structured products)?
- Impact of subscriptions and redemptions?

Agenda

Liquidity risk for Investment Funds

1. What is Liquidity risk?
2. Regulation
3. How to assess liquidity risk? Current methods
4. **Liquidity risk in the context of Investment Funds**
5. How to manage liquidity risk?

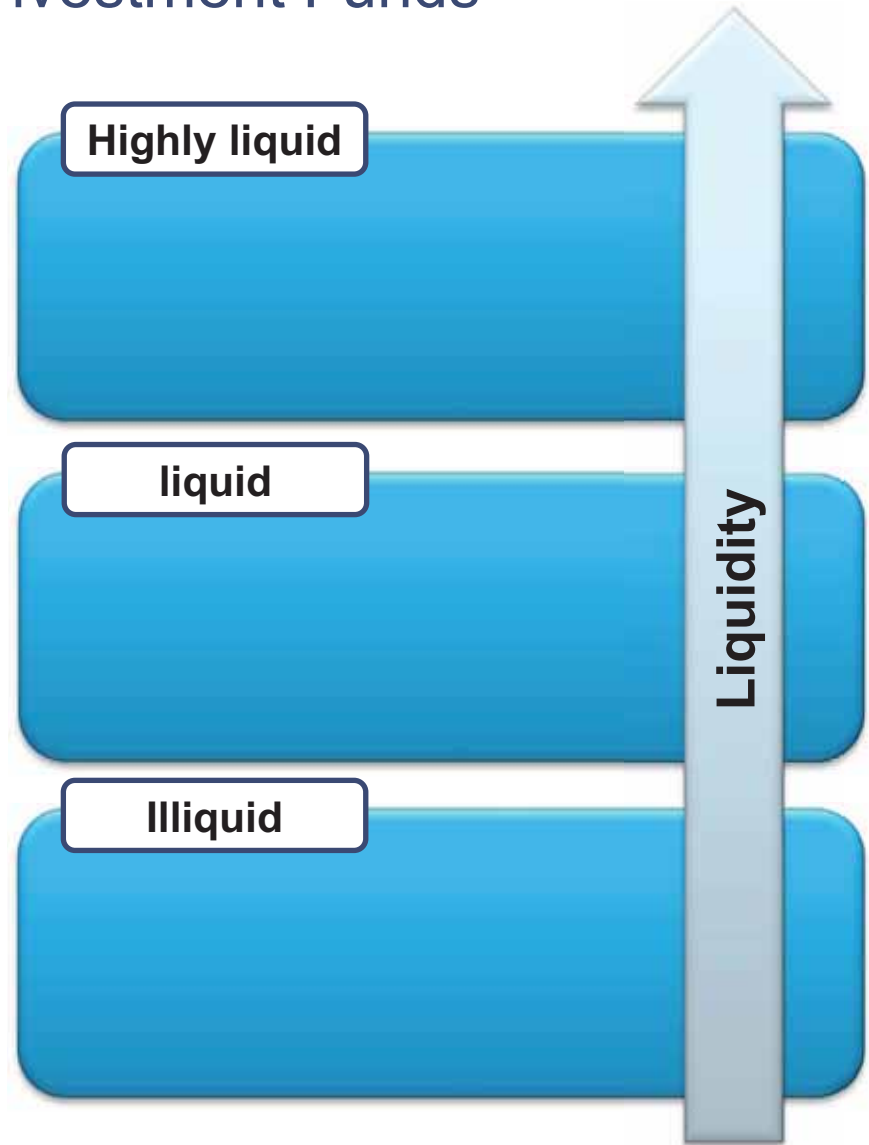
4. Liquidity risk in the context of Investment Funds

Simplified view



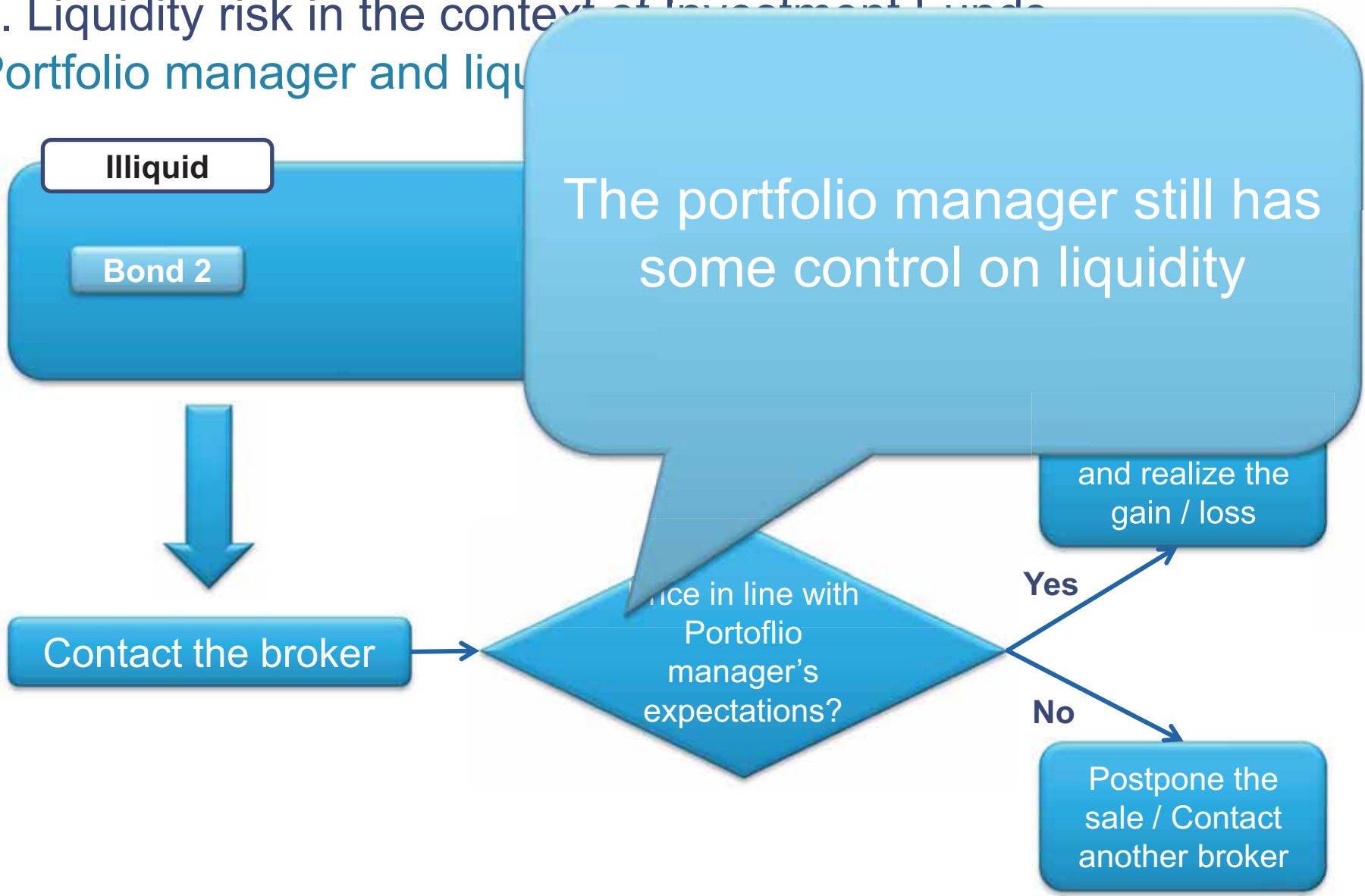
4. Liquidity risk in the context of Investment Funds

Portfolio manager and liquidity



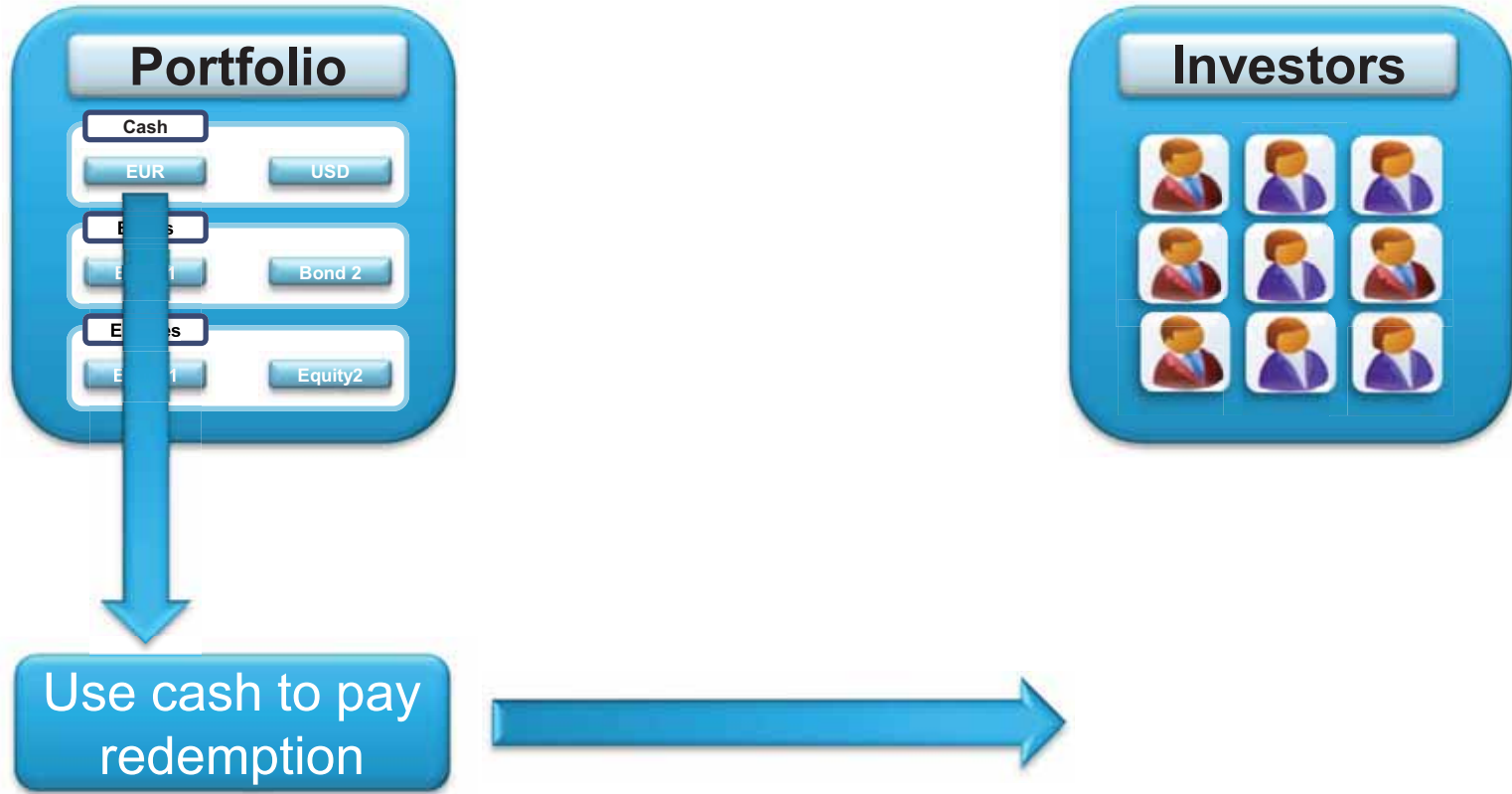
4. Liquidity risk in the context of Investment Funds

Portfolio manager and liquidity



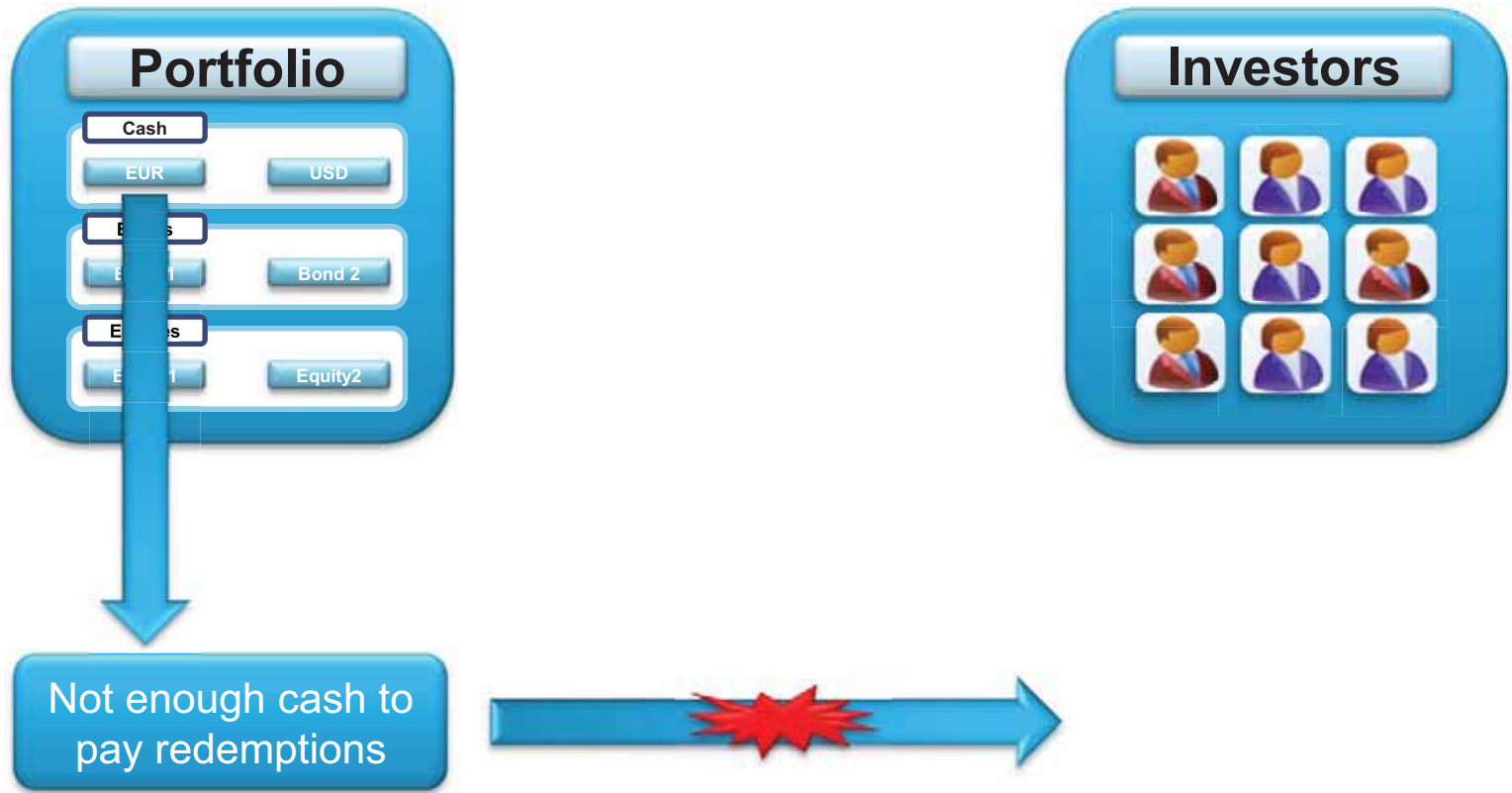
4. Liquidity risk in the context of Investment Funds

Impact of redemptions



4. Liquidity risk in the context of Investment Funds

Impact of redemptions

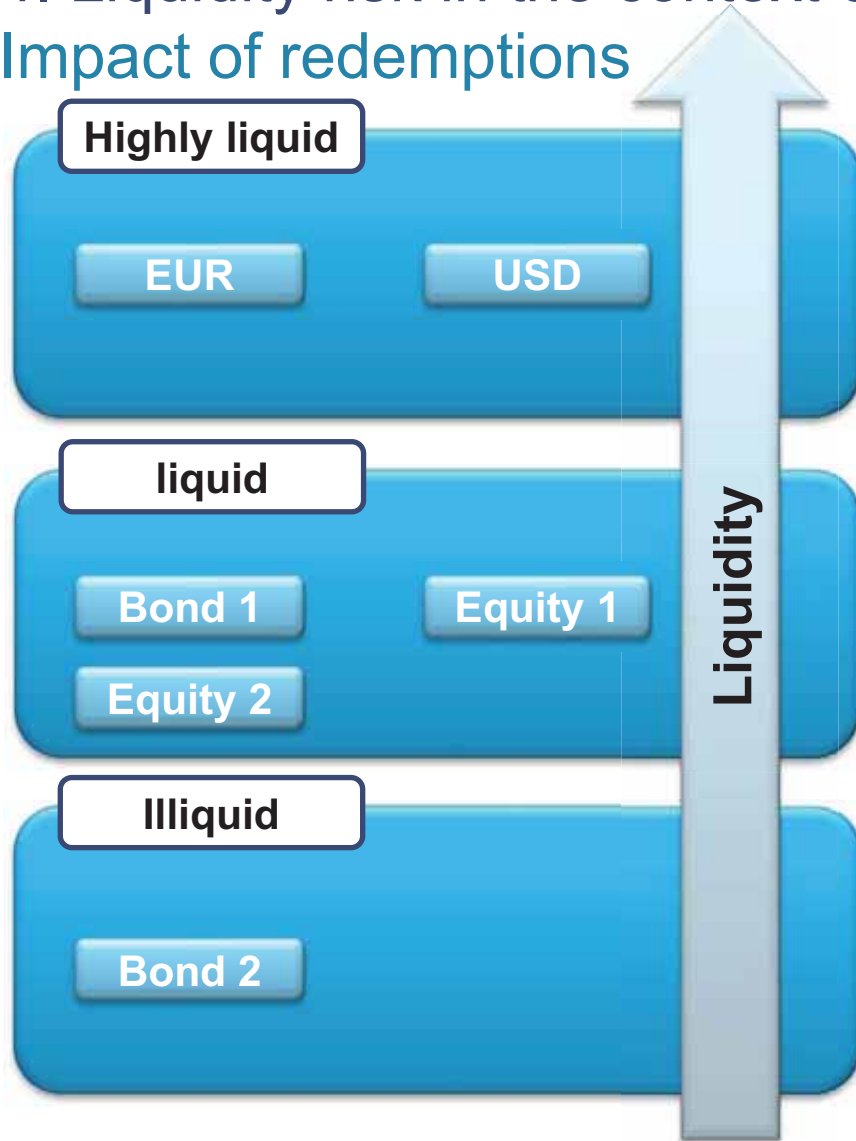


⇒ Sell securities?

⇒ What about liquidity of the portfolio?

4. Liquidity risk in the context of Investment Funds

Impact of redemptions

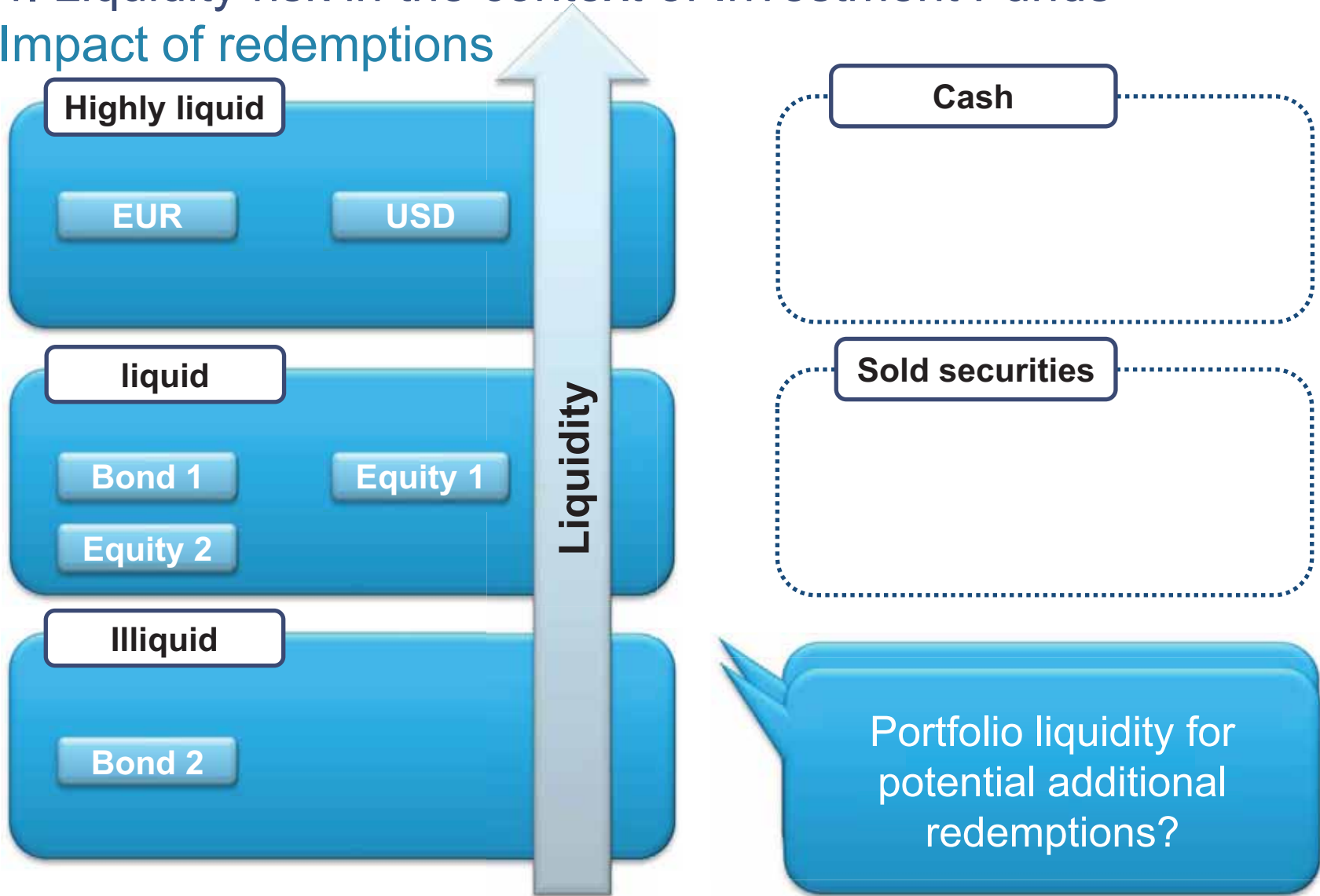


⇒ An important portion of the portfolio will need to be liquidated within a short timeframe

⇒ Less flexibility for asset manager

4. Liquidity risk in the context of Investment Funds

Impact of redemptions



4. Liquidity risk in the context of Investment Funds Consequential risk?

Liquidity is a consequential risk that is triggered by other factors.

In the scope of investment funds, investors behavior is one of the main drivers of liquidity risk.

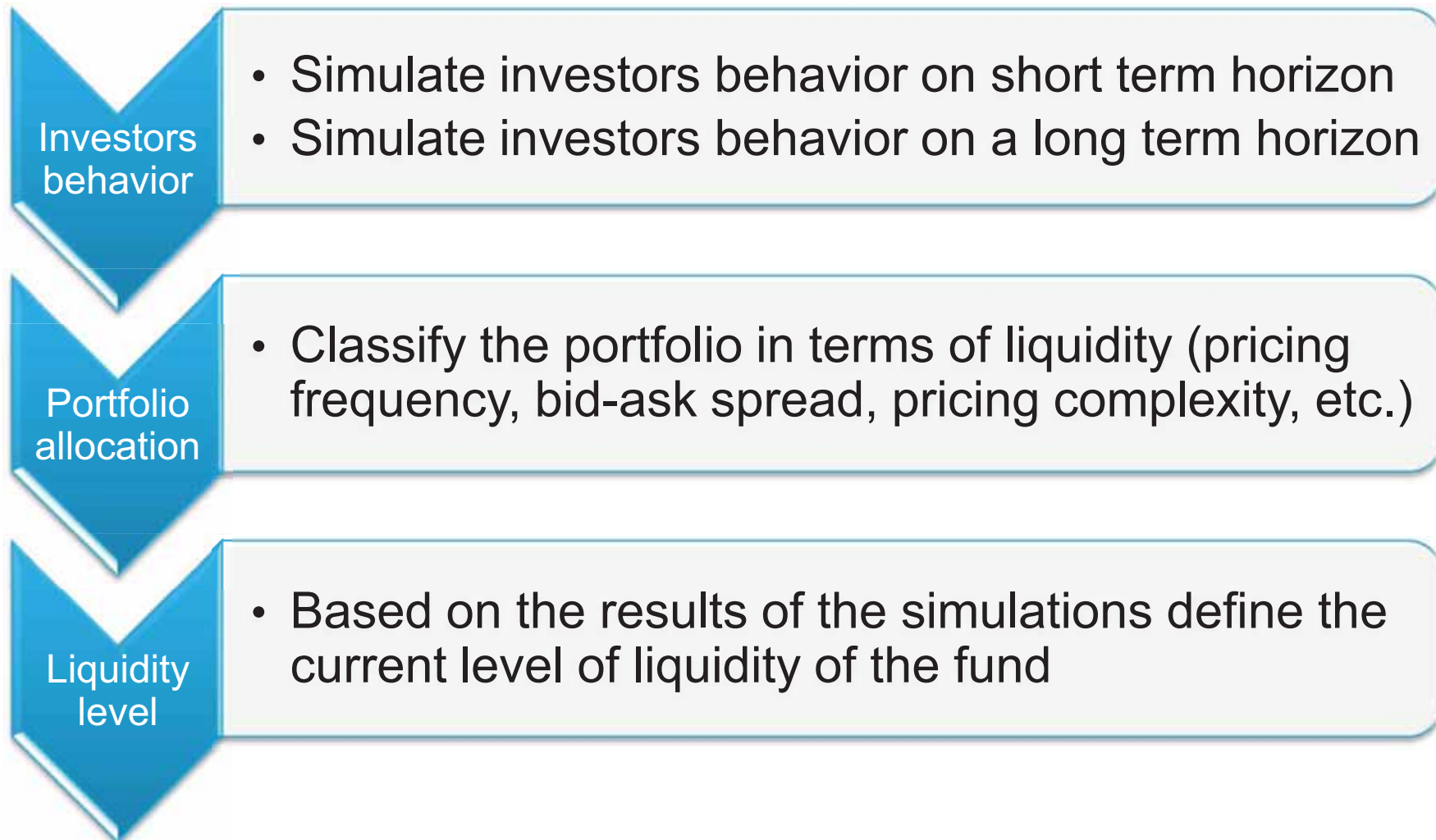
Agenda

Liquidity risk for Investment Funds

1. What is Liquidity risk?
2. Regulation
3. How to assess Liquidity risk? Current methods
4. Liquidity risk in the context of Investment Funds
5. **How to manage Liquidity risk?**

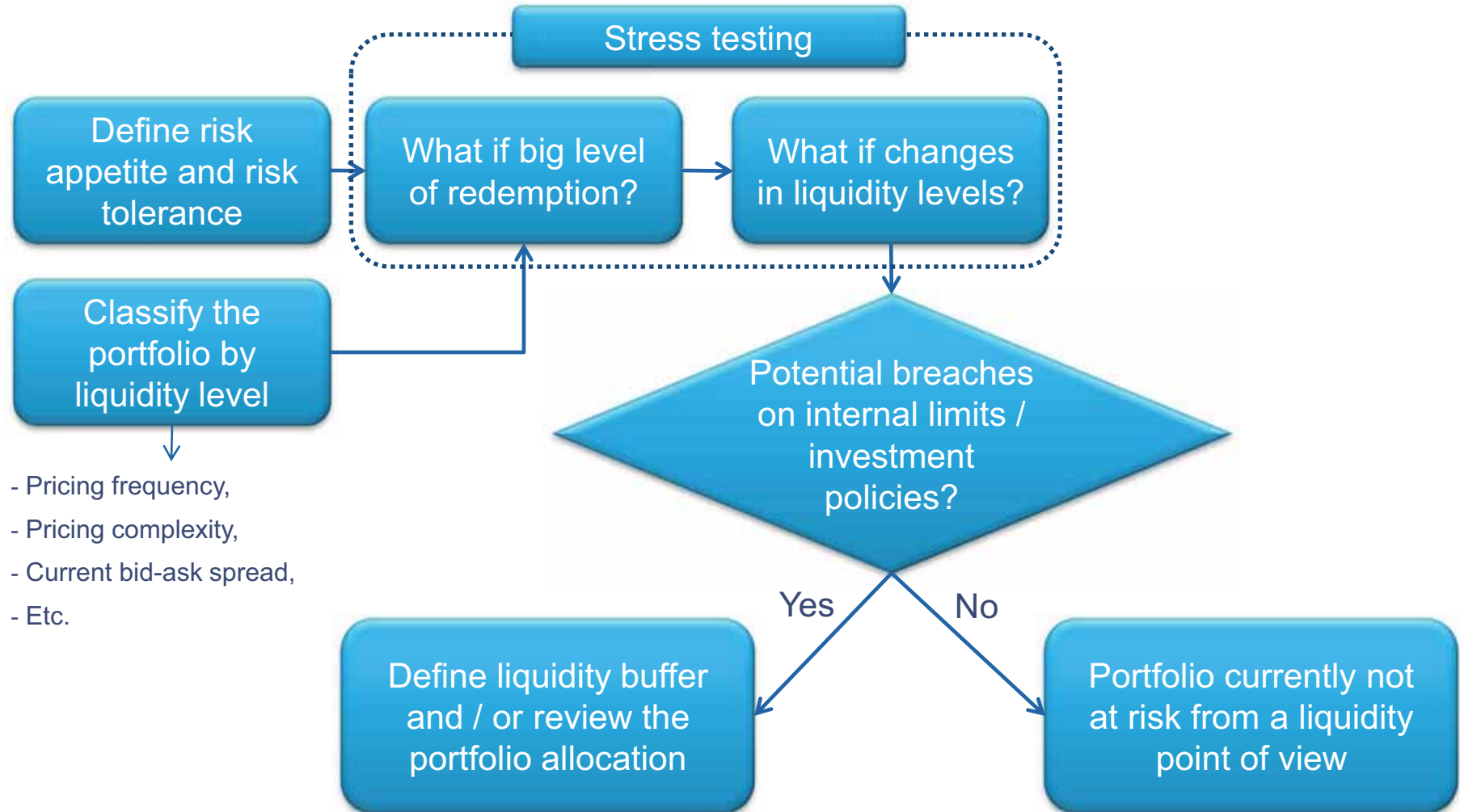
5. How to manage Liquidity risk?

Steps



5. How to manage Liquidity risk?

Decision tree



5. How to manage Liquidity risk?

Buffers

Liquidity buffers

- Additional cash
- Highly liquid instruments
- Credit lines

Limit Liquidity risk

- Fees on redemptions
- Time to maturity management
- Limits on redemptions
- Temporary suspension
- Side pockets

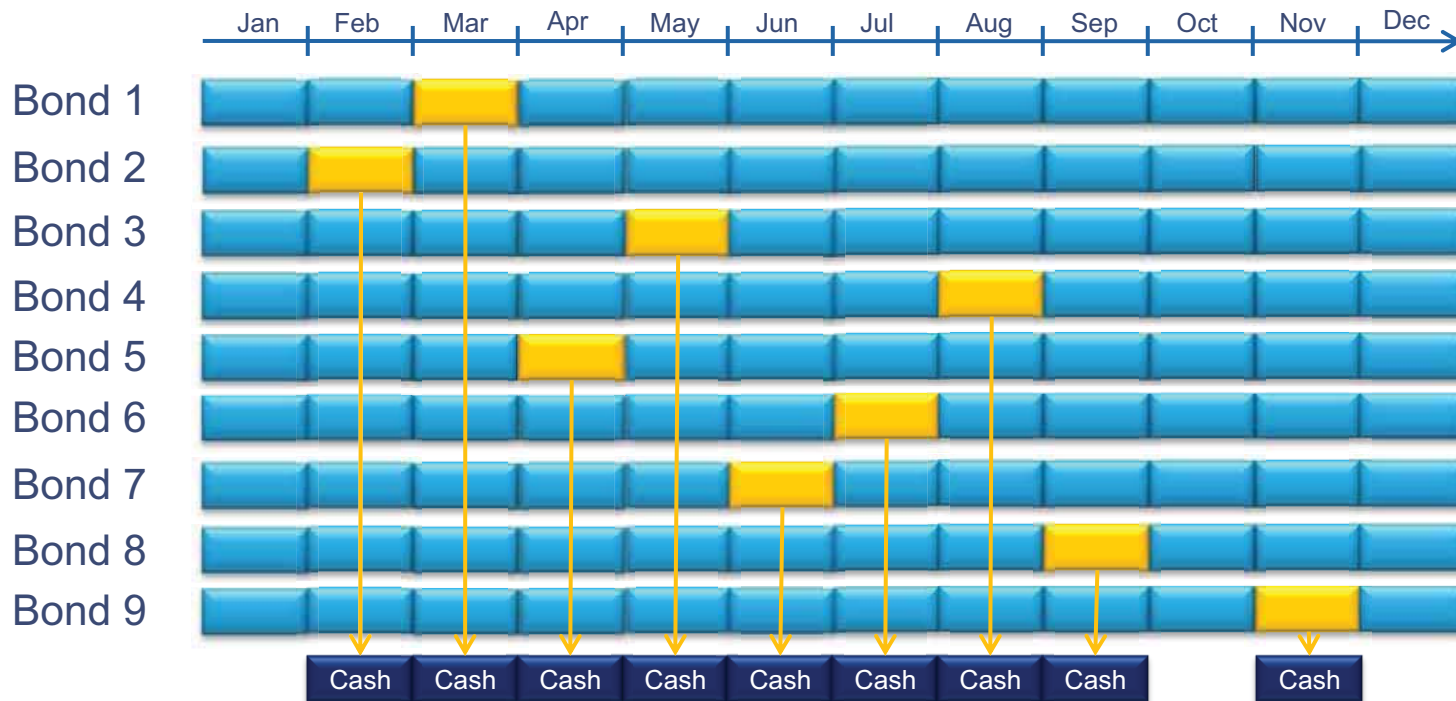
} Generally accepted methods

} Case by case

5. How to manage Liquidity risk?

Time to maturity management

Fixed income portfolio



Questions and Answers

Contacts:

Thierry López

Risk Management Services Leader, PwC Luxembourg

+352 49 48 48 – 4141

thierry.lopez@lu.pwc.com

Benjamin Gauthier

Manager, Risk Management Services

+352 49 48 48 – 4137

b.gauthier@lu.pwc.com