



2019 Biennial IADI Research Conference

Towards Building a More Resilient Financial System –
Challenges in Deposit Insurance and Bank Resolution

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Discussion of “In Search of Optimal Liquidity for Deposit Insurers” – Jean Roy

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What the paper is about?

- ❖ **Liquidity is important** for a DI to fulfill its role.
 - Pay depositors upon bank failures
 - Contribute to the stability of the financial system
- ❖ Difficulty in its determination arises because potential failures generate a **contingent liability** for the DI.
- ❖ The paper presents **three different approaches** to find optimal liquidity.
 - Liquidity target and ex-ante funding
 - Liquidity target through Value at Risk
 - **Optimal Liquidity through inventory models**



Liquidity Target and ex-ante funding

- ❖ Obtain sufficient **ex-ante funding** through premium collections
- ❖ DIs set a **target** for ex-ante funding as a percentage of ID or ED.
- ❖ Capital is invested in **liquid assets**
- ❖ Identifying the appropriate percentage is a hard task that generally the DIs do in **pragmatic fashion** (“educated guess”).
- ❖ The target is a result of a **political trade-off between** liquidity **supply** and potential liquidity **demand**
 - Pressure from insured banks take the DI to set a **target below the required level.**

Liquidity target through VaR

- ❖ DIs run **failures' simulations** to evaluate the **distribution of losses**.
- ❖ **Loss** versus **liquidity needs**.
 - Usually losses are net of recoveries.
- ❖ DI can determine the target (**DIFT**) by setting the **confidence level**.
 - Resources to bear losses in a great % of bank failures scenarios
- ❖ The **confidence level** is linked to the **probability of default** of the DI in case its resources are at the target level.
 - $\alpha = 99.8\% \xrightarrow{\Delta} PD = 0.2\%$
- ❖ Total liquidity = liquid assets + borrowing capacity

Optimal liquidity through inventory models

- ❖ Instead determining optimal liquidity by setting a confidence level for the liquidity demand

- ❖ Roy uses a **Inventory models (IM)** to determine the levels of confidence associated to **the targets** of:
 - Liquid assets
 - Borrowing capacity

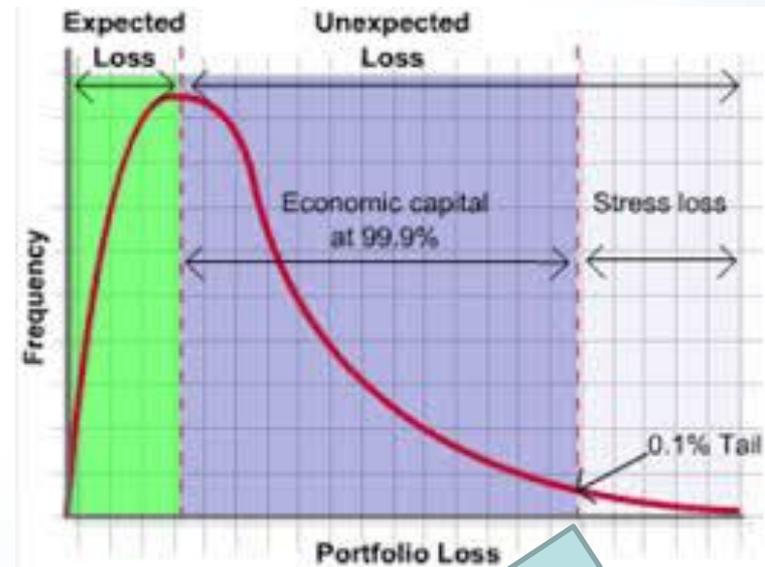
- ❖ In IM, the levels are determined by equalizing:
 - Mg holding costs
 - Mg stock-out cost (cost of not having liquidity when needed)

Optimal liquidity through inventory models

❖ What the inventory methodology does is to establish **levels of confidence** for the DI loss (liquidity needs) distribution based in **holding cost** and **stock-out cost**.

❖ Still needs a loss distribution.

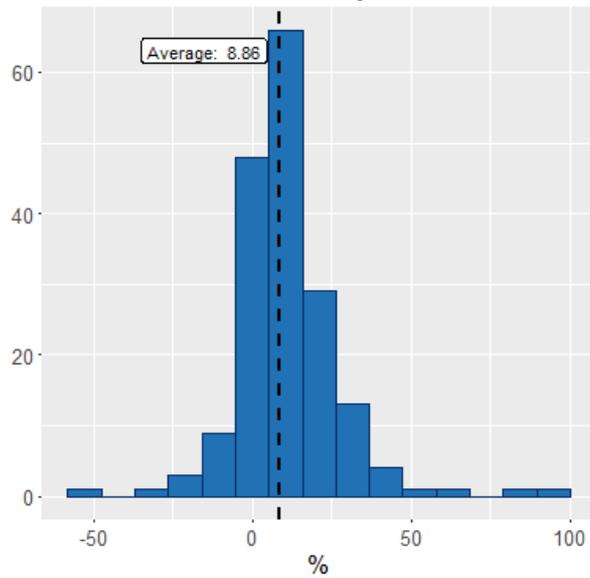
	Holding	Stock-out	Confidence Level
Liquid assets	10,00%	15,00%	60,00%
Borrowing capacity	0,30%	15,00%	98,04%



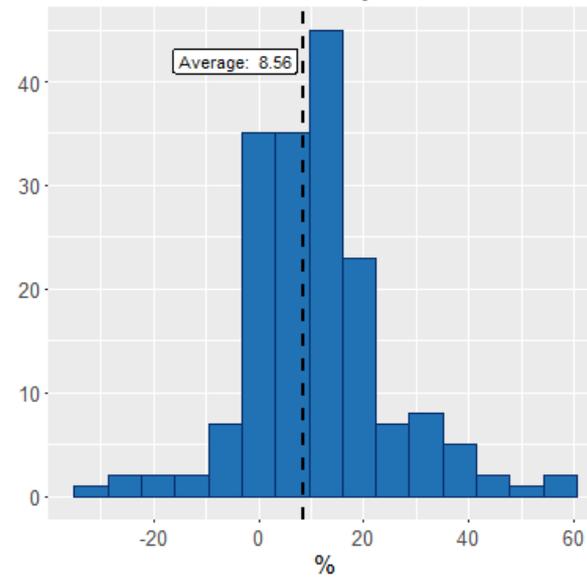
Optimal liquidity through inventory models

- ❖ **Holding Cost:** difference between ROC and the DI investment returns (6.5%)
- ❖ Hard to measure, since each bank has its own ROE or ROC

ROC distribution - as of jan/19



ROE distribution - as of jan/19



Optimal liquidity through inventory models

- ❖ The stock-out cost is even harder to obtain:
 - Cost of not having the money/liquidity when needed
 - » 100% or
 - » if you establish a **stand-by facility** could be the **cost** in terms of interest rate **of using the line** of credit.

- ❖ Levels of confidence generated by holding and stock-out costs:

	Holding	Stock-out	Confidence Level
Liquid assets	2,00%	100,00%	98,04%
Borrowing capacity	0,30%	100,00%	99,70%

	Holding	Stock-out	Confidence Level
Liquid assets	2,00%	15,00%	88,24%
Borrowing capacity	0,30%	100,00%	99,70%

Conclusions

- ❖ According to the author, Inventory theory is a new approach to set the DIFT based on marginal opportunity costs.
- ❖ The approach does **NOT allow to set a DIFT**, unless you have beforehand a **loss distribution**.
- ❖ It is **equal** to the presented **VaR approach**, it **ONLY** differs on the way to set the level of confidence.
 - Risk budget versus Opportunity cost
- ❖ Roy paper just rationalizes the choice of the level of confidence in terms of opportunity costs.

Conclusions

- ❖ I'd rather think the level of confidence in terms of the DI probability of default, instead of marginal opportunity costs.
 - Set the Liquid assets target to cover, for instance, 60% of the potential losses
 - Set Stand-by facility target to make the DI able to cover, for instance, 99% of potential losses.
- ❖ It is much better to **choose the target** and think **in terms of risk**, ie, % of covered and not covered bank failure scenarios.
- ❖ DI Risk tolerance should be a DI Board Decision, and not the result of a marginal opportunity cost calculation.

THANK YOU FOR YOUR ATTENTION

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