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 bellow 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.
  - \( \alpha = 99.8\% \overset{\Delta}{\rightarrow} PD = 0.2\% \)

- Total liquidity = liquid assets + borrowing capacity
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.

<table>
<thead>
<tr>
<th>Holding</th>
<th>Stock-out</th>
<th>Confidence Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid assets</td>
<td>10,00%</td>
<td>15,00%</td>
</tr>
<tr>
<td>Borrowing capacity</td>
<td>0,30%</td>
<td>15,00%</td>
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</tbody>
</table>
**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

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![ROC distribution - as of jan/19](image1)

- Average: 8.86%

![ROE distribution - as of jan/19](image2)

- Average: 6.58%
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:

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<tr>
<td>Liquid assets</td>
<td>2,00%</td>
<td>100,00%</td>
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<td>0,30%</td>
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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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