

## SHOULD WE CAPITALIZE LIQUIDITY RISK?

Liquidity risk management is a hot topic, and one of the trickiest problems is whether banks should allocate capital to liquidity risk.

After all, banks allocate risk capital to most other important risks, including credit risks and difficult-to-quantify risks such as many operational risks. They should also allocate capital to balance sheet mismatch risk, ie, the maturity transformation risks that the bank deliberately assumes.

However, it makes much less sense to try to allocate capital to liquidity risk in its purer form, ie, the chance of a very low-probability but high-severity event that will leave the bank needing more immediate funds than it has available.

**We can and should use sophisticated quantitative techniques to improve cashflow forecasts, stress-test our liquidity and funding strategies and evaluate the efficacy of liquidity reserves that allow us to 'turn on the tap' in the event of a crisis.**

The technical reason for this is that catastrophic liquidity risk manifests itself as a single binary event per period: the bank has arranged its affairs so that it has enough cash on hand to meet its obligations, or it has not.

It's difficult to approach this kind of internal 'all or nothing' problem using the probabilistic tools that we apply to measure market or credit risks in relation to capital. For sure, we can and should use sophisticated quantitative techniques to improve cashflow forecasts, stress-test our liquidity and funding strategies and evaluate the efficacy of liquidity reserves that allow us to 'turn on the tap' in the event of a crisis.

But this is not the same as trying to sum liquidity risk up in a single number and allocating capital to it.

By analogy, balance sheet liquidity risk is equivalent to the credit risk arising from a credit portfolio that contains only one huge loan. Any reasonable approach to calculating the risk capital for this perfectly concentrated credit portfolio would suggest that the bank either:

- Holds capital equal to the whole loan balance (technically, minus expected loss); or - holds no capital against it at all (because the risk of default happens to be lower than the solvency standard of the bank).
- This isn't a very useful answer, for reasons that can also be phrased in operational risk terms. Does it make sense to guard the bank's core data by keeping it in a single place and holding risk capital against it, or would it be better to invest the capital in a series of back-ups in diverse physical locations? Surely, the latter.
- Risk capital models can't do every thing: single-period binary risks are better explored through other techniques, eg, stress-testing, and managed structurally, eg, through diversified funding strategies.
- Indeed, even if we could use risk capital measurement concepts and tools to come up with a 'cost of risk' number for liquidity risk, we should not be fooled into thinking that risk capital is the conceptual equivalent of a liquidity reserve: the bank's risk capital is not necessarily held in forms that allow the bank to speedily turn on the liquidity tap.

## MARKET RISK CAPITAL AND LIQUIDITY HAIRCUTS

Our argument is complicated by the degree to which banks have come to depend on wholesale funding from the capital markets, on securitizations, and on pools of securitized assets. This makes some aspects of the bank liquidity risk management problem look like a market risk problem.

Naturally, banks can use market Value-at-Risk techniques to gauge the risk of an investment portfolio. They can also make use of any market risk analysis to help improve the haircuts they apply to portfolios for liquidity purposes.

Unlike credit risk and market risk during more normal times, liquidity during stressed conditions is driven by ever-changing market structures and crowd behavior.

However, they need to be wary when doing so because liquidity risk managers are interested in the most problematic characteristic of any portfolio's market Value-at-Risk: liquidity under stressed conditions.

Unlike credit risk and market risk during more normal times, liquidity during stressed conditions is driven by ever-changing market structures and crowd behavior. The most careful probabilistic analysis of yesterday's liquidity tail risks may not tell us much about tomorrow's.

## SEPARATE PROBLEMS, JOINED AT THE HIP

None of this is to argue that liquidity risk and capital should be managed separately. On the contrary, bank capital has an effect on liquidity, and liquidity has an effect on capital, for example:

- Contingent liquidity risks may force banks to bring assets onto their books during a market crisis, with a direct effect on capital ratios.
- A well-capitalized bank will be in a better situation during a liquidity crisis than an under-capitalized bank, particularly because of the reassuring 'reputational' effect of its capital buffers.

Likewise, liquidity risks can't be separated from other sources of risk. Liquidity is a contingent risk, usually triggered by failures elsewhere, such as a failure to control credit risk or a flawed business model.

Banks should therefore work harder to integrate their risk, capital, business, and liquidity planning, without conflating these issues or pretending that probabilistic risk measurement techniques are equally valuable, whatever the risk type.

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