

Risk Managing the Libor Transition

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Based on a collaboration with Stefano Iabichino

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Role of Libor at the centre of the financial system

- Banks source funding in the form of debt and collateral from investors and reallocate to borrowers.
- Banks transform contingent cash flow streams by replication but are intrinsically unable to hedge their own cost of funding
- Funding risk can only be risk managed by contractual structuring
- In the past 50 years, LIBOR indexing played a pivotal role to immunize the banking system from funding risk

Funding risk management with LIBOR

- Example 1: a bank issues a floating rate note to a client that pays LIBOR + spread periodically and the nominal at maturity, then the bank funds the structure on a short-term basis at LIBOR
- Example 2: a bank issues a fixed rate note to a client and simultaneously enters a swap with a buy-side counterparty where the bank pays fixed and receives LIBOR. The combination of the two transactions is equivalent to the FRN in Example 1
- Either way, the bank funding risk resulting from lending transactions is hedged robustly, assuming that the bank funding spread is well approximated by LIBOR

The disappearing hedge

- Replacing LIBOR with SOFR will deprive banks of the traditional means to hedge funding and liquidity risk
- The LIBOR transition is currently the leading risk for financial stability, exceeding both Covid and Brexit
- Replacing LIBOR will require a fundamental, industry-wide restructuring of bank treasury business models and risk management practices for funding risk

What is required to risk manage funding risk

- **Simple and general:** The restructuring principles should be stated in not more than a paragraph and apply to all product types, from loans to exotic derivatives
- **Legally unassailable:** Banks should be able to demonstrate at all times, and beyond any reasonable doubt, that they did not monetize unintended gains (or losses) as a consequence of the fallback process
- **Without delta hedging:** Regardless of the fallback language, banks should be able to robustly hedge their funding risks for all product types and under all economic scenarios intrinsically, without shorting the credit of peers
- **Without model risk:** Model risk must be hedged at the structural level to ensure the auto-correcting value exchanges
- **Financially stable:** A transition process should be demonstrated not to cause systemic risk but to strengthen the resilience of the world financial system

Transferring funding risk without LIBOR indexing

- Our proposal is inspired by FVA reserve management in bilateral OTC markets
- The FVA is the cost of funding for cash collateral
- The FVA is an entity level number
 - Computed by means of a forward projection for both collateral and capital requirements
 - Accounts for rehypothecation benefits at the legal entity level
 - Projects risk capital requirements as a fungible form of funding

$$\text{FVA}(t) = \mathbb{E}_t \left[\int_t^{\tau_B} M_t(s)^{-1} s_B(s) \left(\sum_i (V_i(s) - \bar{c}_i(s)) 1_{t < \tau_i} - EC(s) - RC_t(s) \right)^+ ds \right]$$

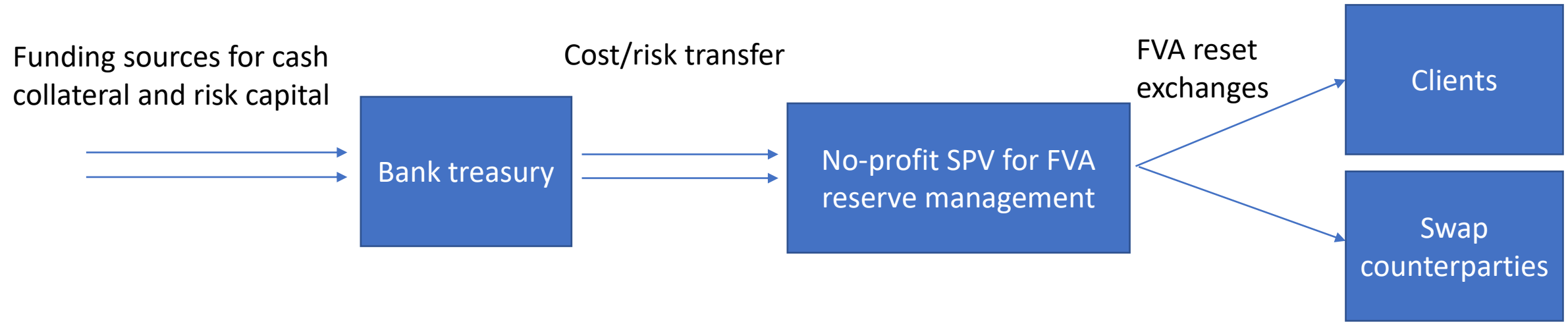
Time of bank default

Exposures net of collateral received

Risk/economic capital

Reserve capital

Robust transferring of funding risk



- A stream of FVA resets are contractually overlayed upon all transactions in the back and front book
- For clients that insist on fixed coupon payments, an offsetting FVA swap is issued
- FVA resets are apportioned periodically to all counterparties in proportion to their incremental FVA
- If the SPV is over-reserved, clients receive payments; if the SPV is under-reserved, clients pay a positive reset
- SPV reset levels are computed by projecting collateral and risk/reserve capital requirements on a run-off basis

A path to implementation

- The fallback language in contracts for business loans lends itself well to a transition to FVA resets because it mentions “prime rates”: FVA resets can be regarded as objective prime rates which are guaranteed to be profit-free for the bank (and thus legally robust)
- Other loan and mortgage classes are more ambiguous, but the process can still be extended
- Once a coverage for loans is achieved, one can strengthen the definition of LIBOR: FVA reset rates can be interpreted as offer rates but are transaction based and impossible to manipulate
- LIBOR can thus survive indefinitely and the contracts that are difficult to transition can remain indexed at LIBOR

Side benefits of FVA resets

- Enhanced degree of financial stability: entity specific funding spreads will trigger entity specific profits and deleveraging for banks in distress, acting as a circuit break mechanism to prevent bank default
- As an immediate side benefit, transitioning to more accurate FVA reserve management will trigger material capital relief and day-one gains in bilateral market
- A consistent modelling framework supporting entity level strategies will enable a vast array of further side benefits

Conclusions

- LIBOR's dismissal potentially impairs funding risk management and could destabilise the financial system by amplifying GWWR
- Whereby there is risk there is opportunity, as the LIBOR transition can motivate banks to rethink capital and collateral management practices
- A structural reset is required
 - to risk manage the LIBOR transition
 - to make bank funding and capital management strategies more robust and accurate
 - to transition from the siloed business model of banking to entity level strategies