FTP and Liquidity Management

Funds Transfer Pricing
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Lecture 4

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Agenda

- Pricing liquidity via the FTP process
- Correctly costed asset origination: the FTP component
- FTP input to returns analysis: the RAROE model

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FTP-TLP and Loan Pricing

Typically business lines in corporate (commercial) and retail banking employ a loan pricing calculator that provides a target or guide price that incorporates the bank’s transaction costs for capital and liquidity.

Also ideally this provides a measure of the true return at this price (see RAROE slides)

Model should feature:

- Element of granularity for PD, LGD, Tenor
- Governance and control from Treasury and Internal Audit
- Target pricing adjustments for sector and if desired sub-sector…
- …so competitive pricing for lower-risk obligors
A vanilla pricing approach for a corporate bank relationship manager uses these inputs:

1. Set the target margin for the asset (function of bank’s cost of capital, followed by risk weighting and sometimes size of loan, etc)
2. Factor in risk / default probability of customer
3. Factor in extent of collateral given or if unsecured
4. Factor in term liquidity premium

Item [4] is what we are talking about with a Treasury-applied “term liquidity premium”. It is what Treasury supplies in the FTP. If it adds in anything else it is essentially “double-counting”…

The components might look like this…
Pricing guide...

[1] Margin:
- Loan amount
  - £0 - £500K: 100bps
  - £501K - £1mm: 50 bps
  - £1mm+: 10 bps

[2] Default risk (an input from Credit team)
- Risk (PD)
  - 1: 50 bps
  - 2-3: 100 bps
  - 4 (and new customer): 200 bps
  - 5 and above: 300 bps
**Pricing guide...**

- **[3] Collateral arrangements**
  
<table>
<thead>
<tr>
<th>Security</th>
<th>LGD</th>
<th>Premium</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>0</td>
<td>0 bps</td>
</tr>
<tr>
<td>&gt; 75%</td>
<td>1</td>
<td>50 bps</td>
</tr>
<tr>
<td>&gt; 50%</td>
<td>2</td>
<td>100 bps</td>
</tr>
<tr>
<td>&lt; 50%</td>
<td>3</td>
<td>200 bps</td>
</tr>
</tbody>
</table>

- And finally...
Pricing guide...

▷ For item [4] Liquidity premium (an input set by Treasury)
  ◷ Tenor (years)  TLP
  ◷ < 1 year  0 bps
  ◷ 1-2 years  25 bps
  ◷ 2-3 years  35 bps
  ◷ 3-4 years  45 bps
  ◷ 5-6 years  55 bps
  ◷ > 6 years  100 bps

▷ The four factors produce the one price for the client.
▷ Of course this hypothetical template is very rigid. In reality the RM may have discretion to vary price within set parameters (eg., +/- 25 bps) to meet customer requirement and in response to competitive pressure.
▷ Factor [4] is no more or less important than factors [1]-[3] but **must** be included and regularly reviewed. The whole FTP regime boils down to just this one single input.
In a corporate bank especially, but across all business lines, in practice there wont be such a rigid template. Factors influencing final quoted price will include:

- Credit risk input: internal model will map the customer PD to an internal grade and hence required margin
- Fully drawn or not? Bullet repayment or amortising?
- Any additional income flow on asset? (Up-front or periodic fee income?) Any *actual* non-loan ancillary income on origination?
- LGD influenced by actual collateral, but even if no security there may be “soft form” security umbrella such as loan covenants (interest coverage ratios, minimum customer EBITDA and NAV ratios, negative pledges, etc) that lower the LGD

But the important point is that the TLP element is costed correctly and controlled and applied to business lines by Treasury / ALM desk
## Example loan pricing

### Asset Pricing Calculator

<table>
<thead>
<tr>
<th>Product type</th>
<th>Loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilisation</td>
<td>100%</td>
</tr>
<tr>
<td>Interest rate basis</td>
<td>LIBOR</td>
</tr>
<tr>
<td>Amount</td>
<td>£1,000,000</td>
</tr>
<tr>
<td>Term (months)</td>
<td>60</td>
</tr>
<tr>
<td>PD</td>
<td>0.064%</td>
</tr>
<tr>
<td>LGD</td>
<td>5%</td>
</tr>
</tbody>
</table>

**Customer:** ANO & Sons

**Asset costs illustration**

<table>
<thead>
<tr>
<th>Tier 1 capital</th>
<th>£12,640</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLP bps</td>
<td>236</td>
</tr>
<tr>
<td>Expected loss rate</td>
<td>0.06%</td>
</tr>
<tr>
<td>Undrawn liquidity buffer</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

**Cost of capital:** £2,100

**TLP:** £8,325

**Expected loss:** £480

**Liquidity buffer:** £0

**Total costs**

**Recommended pricing**

- Margin bps: 431
- Target margin bps: 331
- Minimum margin bps: 306

**RM proposed pricing**

- Proposed margin bps: 325
- Proposed fee: £0
- Proposed non-util fee: £0

Tenor and “loan profile” (expected life)
Example loan pricing...notes

✦ Specialist sector value adjustment:
  ✦ The empty box: an allowance to adjust target margin to reflect particular sector appetite (eg., discounts below the RAROE hurdle)
  ✦ May help to protect Deposits in that sector with a sub-hurdle pricing
✦ RM proposed pricing: enables the RM to enter a margin and fee within a respective discretion level
✦ Asset costs illustration: actual cost of transaction enabling comparison to revenue stream
✦ For recommended pricing, a bank may adopt an ROE or EVA approach....
**Sidebar: ROE and EVA**

**ROE: in principle the methodology is:**

\[
ROE = \frac{(Income - Costs)}{Capital}
\]

-- costs are driven by the transaction

-- a hurdle ROE % is set to determine the income required

-- the ROE hurdle can be adjusted as appropriate to market/sector/ product

-- income required to meet ROE hurdle % less Costs drives the price

ROE is return on capital employed, which is usually adjusted for risk purposes as RAROE

**EVA: in principle the methodology is:**

\[
EVA = Income - Costs - Cost of Capital
\]

-- costs are driven by the transaction

-- profit (EVA) is calculated as a % of costs

-- the EVA can be varied as appropriate to market/sector/product

-- total of Costs + EVA drives the required price

EVA is the value created (ie., economic profit) through undertaking the deal
FTP feeding into price setting

The PRA’s question:
How does the balance sheet maturity ladder (contractual and behaviouralised) feed into FTP?

Contractual and behavioural gap profiles will look different!
FTP and pricing...

- Behaviouralised pricing should be built into the loan pricing template we described previously...
- …so the term liquidity premium to apply can then be on a behaviouralised basis
- The COF calculated for the bank can also be on a behaviouralised basis
FTP policy standard - template

Policy standards:

- The specified bank pricing curve, set by Treasury and ratified by ALCO, should be used in external pricing of all assets and liabilities

- TLP/COF/WACF

- The curve should be reviewed on a monthly / quarterly basis by ALCO and disseminated to the business lines

- Updates to the pricing model and the FTP curve inputs/outputs should be documented; TLP and FTP grids should be adjusted to reflect asset and liability behaviouralisation

- The TLP/FTP curve should be used in internal performance measurement

- Balance sheet coverage: includes customer and non-customer balances

- Back book treatment: define the back book of existing business (and cut-off date to which this applies, after which any new business is treated as marginal new business

- All behaviouralisation is approved by Treasury and ALCO
FTP input to RAROE model
Return setting: the RAROE model

The business needs to own the ongoing development and maintenance of the Risk-adjusted Return on Equity (RAROE) pricing calculator.

This can be at entity level – eg the CRO office – or at business line level.

The RAROE model expresses facility and connection level income net of expected losses (ie., it is risk-adjusted) as a return on regulatory equity.

RAROE = \[\frac{\text{Income} + \text{Capital Benefit} - \text{Operating Costs} - \text{Funding Costs} - \text{Expected Loss}}{\text{Total Tier 1 Capital}}\]

Would be a principal front book asset pricing calculators

- Facilitate comparative analysis of investments of differing risk profiles
- Understand cost of risk undertaken and reward received for so doing
- Improve MI and decision making
RAROE model: governance

- Governance for Treasury, Finance, Risk Management and Portfolio Management to take a collegiate approach when proposing any updates to model
- However accountability must be clear
- Defined governance in updates, modifications, usage
- Model inputs and outputs must be relevant and realistic to the business the entity writes, and regulatory monitored and updated
- Model updates subject to appropriate segregation of duties / approval
## RAROE model: governance

- Model inputs should be approved by ALCO. Sample below.
- Rationale and current and proposed levels to be standing item at ALCO

<table>
<thead>
<tr>
<th>Parameter / Input</th>
<th>Current Value</th>
<th>Frequency of Review</th>
<th>Responsible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Term Liquidity Premium</td>
<td>Term structure</td>
<td>Monthly / quarterly</td>
<td>Treasury</td>
</tr>
<tr>
<td>Capital Income</td>
<td>2.90%</td>
<td>Quarterly / Semi-annually</td>
<td>Treasury</td>
</tr>
<tr>
<td>Undrawn Commitments Liquidity Charge</td>
<td>20 bps</td>
<td>Semi-annually</td>
<td>Treasury</td>
</tr>
<tr>
<td>FTP</td>
<td>Libor + 50</td>
<td>Quarterly / Semi-annually</td>
<td>Treasury</td>
</tr>
<tr>
<td>Cost-income ratio</td>
<td>25%</td>
<td>Semi-annually</td>
<td>Finance</td>
</tr>
<tr>
<td>Capital Ratio (Return)</td>
<td>10%</td>
<td>Semi-annually</td>
<td>Finance</td>
</tr>
</tbody>
</table>

### Notes
- **Term Liquidity Premium**: A premium payable on term liabilities.
- **Capital Income**: Capital income reflects the value attributed to the capital supporting a given transaction. [Not all banks agree this]. Rate a function of how the capital is "hedged", eg., tenor of accompanying swap.
- **Undrawn Commitments Liquidity Charge**: The cost of the LAB w.r.t. undrawn facilities with no ratings triggers, reflecting the cost of term funding the assets in the buffer plus yield spread cost.
- **FTP**: The internal funds transfer price, as a spread over LIBOR (or Base Rate).
- **Cost-income ratio**: Cost-income ratio is used to calculate the operating costs associated with a transaction and is applied to the projected transaction lending income.
- **Capital Ratio (Return)**: The target RoE for the business.
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