USING CROSS CURRENCY SWAPS IN THE HUNGARIAN DEBT MANAGEMENT

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1. DMO’S GENERAL OBJECTIVE:

TO FINANCE THE BUDGET AT THE LOWEST POSSIBLE COST ON THE LONG RUN TAKING INTO CONSIDERATION THE RISKS INVOLVED.

- Conflicting requirements → Trade-off between costs and risks

2. TYPE OF RISKS

- Roll-over: Lengthening the average maturity of the portfolio
- **Exchange rate:** FX debt vs. local currency
- Interest rate: Duration, fix/floating mix
- Liquidity: Treasury Single Account
- Other: Counterparty, political, operational etc.

- DMO’s cannot ultimately avoid taking risk
3. HUNGARY’S CASE:

- Internally developed optimum portfolio model
  - Using Cash-flow-at Risk and Value-at Risk calculations based on Monte Carlo simulation
  - The main objective is to find efficient portfolio scenarios
  - It gives detailed numerical targets benchmarks
- First introduced in 2004
- Annual revision
- Currently major revision of the model and its methodology
CONCLUSIONS OF SETTING BENCHMARKS / STRATEGY

- Difficult to establish and approve numerical benchmarks, especially in less matured markets.

- If not successful, less sophisticated rules and guidelines, the experiences of similar countries help a lot.

- If succeeded, it is worth developing, since it makes the objectives of debt management and decision-making easier, better founded and more transparent.

- On-going development and permanent checks are needed, (requires resources).
1. GENERAL BENCHMARKS
- Currency composition of the debt: HUF: 65-75%; FX: 25-35%
- Liquidity benchmark: minimum end-of-the-day balance of the Single Treasury Account

2. HUF PORTFOLIO BENCHMARKS
- Duration: 3 years +/- 0.5 years
- Fixed / floating rate composition: fixed 61-83%, floating 17-39%

3. FOREIGN CURRENCY PORTFOLIO BENCHMARKS
- Currency composition: 100% EUR (5% fluctuation band)
- Fixed / floating rate composition: 66%-34% (5% fluctuation band)
- (No duration target for the FX debt portfolio)
MAIN FEATURES OF THE DERIVATIVES USED

1. MAIN OBJECTIVES
   - To change the given relationship between the costs and risks
   - To widen the investor base by enabling issuances in different markets
   - Make use of potential cost advantage of particular markets
   - To maintain benchmarks – to minimize deviations (No tactical positions or positions against benchmarks based on future expectations)

2. WHY SWAPS?
   - To reduce exchange rate risk and interest rate risk
   - Issuance and funding policy can be separated from the risk management strategy by the help of swaps
   - More markets available, wider investor base
   - USD liquidity in the past few years, however now the EUR attractive again
   - Majority of the bond issuances are fixed rate
3. RISK TRANSFORMATION

- Foreign exchange risk to counterparty risk
- Counterparty risk mitigation

4. TYPE OF TRANSACTIONS

- Plain vanilla IRS & CCY swaps on the FX debt portfolio
- FX swaps (EUR/HUF), forwards – exclusively with NBH
- No portfolio swaps, always on a specific portfolio element, primarily on bonds
1. SHARE OF FX DEBT: 33.48% (90 days moving average)
2. NET FX DEBT: EUR 26,55 billion
   - FX composition: 99.97% EUR (90 days moving average)
   - Fix-floater: 66.94%-33.06% (90 days moving average)
3. OUTSTANDING SWAPS (nominal value): EUR 15,55 billion
   - CCY swaps: EUR 11,74 billion
   - IRS: EUR 3,81 billion

- Total outstanding CCY swaps account for **15% of the total debt portfolio**
- Swap portfolio or swap data are not published
FX RISK MITIGATION

FX COMPOSITION BEFORE AND AFTER CCY SWAPS (31-12-2015)

Before swaps
- USD: 43%
- EUR: 51%
- JPY: 1%
- GBP: 4%

After swaps
- CHF: 0.03%
- EUR: 99.97%
CREDIT RISK MITIGATION TOOLS

1. DIFFERENT ELIGIBILITY CRITERIA DEPENDING ON THE CREDIT RATINGS
   - Primary dealers are preferred but not exclusive counterparties

2. ISDA MASTER AGREEMENT (ISDA 1992)
   - Currently more than 15 ISDA – 12 (+1, NBH) existing exposure
     - Negotiations with potential new counterparties from time to time.
   - Regular internal reviews taking into consideration the relevant regulatory developments
   - Credit Support Annex (CSA)
     - Mutual collateral placement (only EUR cash)
     - Daily valuations (Bloomberg SWPM function & internal system)
     - 1-1 dedicated person in the Treasury- and Risk Management Department (almost full time engagement)
### Sample MTM Valuation

#### Swap Details

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<thead>
<tr>
<th>Property</th>
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<tbody>
<tr>
<td>Notional</td>
<td>750MM</td>
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<tr>
<td>Currency</td>
<td>USD</td>
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<tr>
<td>Effective Date</td>
<td>02/19/2013</td>
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<tr>
<td>Maturity</td>
<td>02/21/2023</td>
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<tr>
<td>Coupon Rate</td>
<td>5.37500%</td>
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<td>Pay Freq</td>
<td>SemiAnnual</td>
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<tr>
<td>Day Count</td>
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<tr>
<td>Calc Basis</td>
<td>Bond Eqv</td>
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#### Valuation Settings

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<tr>
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<th>Value</th>
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<tr>
<td>Curve Date</td>
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<tr>
<td>Valuation Date</td>
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<tr>
<td>CSA Coll Ccy</td>
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<td>Valuation Ccy</td>
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<tr>
<td>FX Rate</td>
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#### Valuation Results

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<tbody>
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<td>Principal</td>
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<td>Accrued</td>
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<td>NPV</td>
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<td>Premium</td>
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<td>BP Value</td>
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<td>DV01</td>
<td>54,343.88</td>
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<td>DV01 Gamma</td>
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*Image showing a screen with financial data and calculations.*
PROS AND CONS OF CURRENCY SWAPS

1. PROS
   - Helps to mitigate the trade-off between costs and risks
   - FX risk mitigation
   - To widen investor base
   - More markets are available

2. CONS
   - Risk transformation, counterparty risk emerges
   - Daily margining can be costly
     - If ITM, received collateral must be invested
     - If OTM, placed collateral must be refinanced
   - Debt accounting issue: received cash collateral increases the debt
FUTURE CONSIDERATIONS

- Widening investor base and market access is important
- Counterparty risk mitigation by stricter CSA rules
- Stronger co-operation with the National Bank of Hungary
  - They may need exposure to other currencies than EUR
  - MtM cost can be reduced
- Consideration of other type of collaterals than cash (Government securities of highly rated countries)
THANK YOU FOR YOUR ATTENTION!