Approaching Credit Risk
The Standardized Approach

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Risk-weighted Assets, or RWA, are a key measure in risk management.

RWA consists of

1. the sum of risk weight times asset amount for on-balance sheet items;

2. the sum of risk weight times credit equivalent amount for off-balance sheet items.
The credit equivalent amount is a measure, prescribed by the regulator, to quantify credit risk for off-balance sheet instruments, such as interest rate derivatives.

The goal of the credit equivalent amount is to translate the value of such instruments into risk equivalent credits.

It is computed as the current replacement cost (if positive) plus an add-on factor, which varies from instrument to instrument (e.g. 0.5% for a 1-5 year interest rate swap).
Computing the RWA

\[ RWA = \sum_{i=1}^{N} \alpha_i E_i + \sum_{j=1}^{M} w_j C_j \]
Computing the RWA

Number of on-balance sheet items

\[ \text{Number of on-balance sheet items} \]

Risk weight of the i-th item

\[ \text{Risk weight of the i-th item} = \sum_{i=1}^{N} \alpha_i E_i \]

Principal amount of the i-th item

\[ \text{Principal amount of the i-th item} = \sum_{j=1}^{M} w_j C_j \]
Computing the RWA

\[ RW A = \sum_{i=1}^{N} \alpha_i E_i + \sum_{j=1}^{M} w_j C_j \]

- Number of off-balance sheet items
- Risk weight of the j-th item
- Credit equivalent amount of the j-th item
Computing the RWA

\[ \text{RWA} = \sum_{i=1}^{N} \alpha_i E_i + \sum_{j=1}^{M} w_j C_j \]

\[ C_j = \max(V_j, 0) + a_j E_j \]

Number of off-balance sheet items

Risk weight of the j-th item

Credit equivalent amount of the j-th item

Example for derivative
In the Standardized Approach, risk weights are provided by the regulator, hence banks are simply required to compute their RWA using the previous formula.

Risk weights are defined for classes of items, ordered according to credit ratings. Credit ratings will be the topic of Week 4.

Capital requirements for credit risk are then equal to 8% of RWA.
The following table contains an example of risk weights under the standardized approach.

<table>
<thead>
<tr>
<th>Risk Weights</th>
<th>AAA/AA−</th>
<th>A+/A−</th>
<th>BBB+/BBB−</th>
<th>BB+/BB−</th>
<th>B+/B−</th>
<th>Below B−</th>
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</thead>
<tbody>
<tr>
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<td>0%</td>
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<td>50%</td>
<td>100%</td>
<td>100%</td>
<td>150%</td>
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Please notice that these weights are constantly updated by the regulator!
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Please notice that these weights are constantly updated by the regulator!
In the documents regulators publish periodically, we can find many other and different risk weights.

For example, for retail lending the usual weight is around 75%.

If a claim is secured by a residential mortgage, the risk weight is 35%, and so on...
RWA: an example of computation under STA

• We are a bank and our assets are made up of:
  
  • €120 million of loans to A-rated corporations;

  • €10 million of AA-rated government bonds;

  • €60 million of residential mortgages.

• What is our RWA (using the risk weights we have just seen)?

• What is our capital requirement for credit risk?
Thank You