Finnish population

<table>
<thead>
<tr>
<th>Current period life expectancy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>At birth</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>78.5 (2015)</td>
</tr>
<tr>
<td>Female</td>
<td>84.1 (2015)</td>
</tr>
</tbody>
</table>

Population Pyramid 2016

Source: Mortality Human Database (www.mortality.org)
Population forecast

Population 1900-2015 and forecast 2016-2060
Finnish mortality models used in insurance business

• **Life Insurance Mortality model K2012**
  – Model is made for individual and group business
    • ’Different model’ for different insurance classes
    • Used for pricing and reserves
    • Selection: Medical UW

• **Non-Life Insurance Mortality model K2016**
  – Model is made for statutory insurance classes (3rd party motor liability, patient insurance)
    • Used for reserves
    • Selection: damaged individual

• **Statutory Pension Insurance Mortality model (2015)**
  – Model is for Statutory pension
    • Used for reserves (Politically important that liabilities are adequately reserved)
    • Selection: Individual has some kind of working history
Finnish mortality models used in insurance business

• In Finland, we have different models for life, non-life and pension insurance, but basics are same
  – Based on Lee-Carter
  – Population forecast model is converted to be ’insurance data’
  – Modified so that model will match with it’s use (life, non-life, pension)
  – Old age problem -> With old ages all models use population mortality
Life insurance multipliers, male

- **Individual saving**
- **Individual risk**
- **Group risk**
- **Individual pension**
- **Group pension**
- **Accidental dead**
Life expectancy 2017; Male, 30 years and 65 years old

- Population
- Life
- Non-Life
- Pension

30 year and 65 year