IAA Mortality Committee - Taiwan Report (May 2012)

New Industry Mortality Table

A new mortality table TSO (Taiwan Standard Ordinary) 2011 was announced in 2011 and the industry will be required reserve based on 100% of this table for new business written starting July 1, 2012. Although not technically required to do so, it is standard industry practice to price premium rates based on the prevailing industry table.

TSO 2011 is the fifth industry table and will replace its predecessor TSO 2002 which has been in use since 2003. Like all its predecessors, TSO 2011 is an ultimate only table and rates are not differentiated by smoking status.

The regulators called for the construction of a new table as TSO 2002 has been in use for almost 10 years and industry experience has been favorable relative to TSO 2002. For example, published 2008 industry mortality experience indicated that ultimate experience (durations 16 and over) is around 60% of TSO 2002. Industry experience has also been consistently improving.

The following steps were involved in deriving TSO 2011:
- Industry experience from 2004 to 2008, with around 145,000 male claims and 74,000 female claims, serves as the main basis.
- Rates for ages 0 to 59 were based on smoothed data from the industry experience.
- Rates for ages 60 to 92 is a function of smoothed industry data and Gompertz forecasts.
- Rates above 92 are based on Gompertz forecasts as there was little industry experience.
- Several smoothing techniques were tested with Kernel the final choice.
- Margins were not disclosed.

TSO 2011 mortality rates have the following relativities to TSO 2002:

<table>
<thead>
<tr>
<th>Age</th>
<th>5</th>
<th>15</th>
<th>25</th>
<th>35</th>
<th>45</th>
<th>55</th>
<th>65</th>
<th>75</th>
<th>85</th>
<th>95</th>
<th>105</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>42%</td>
<td>46%</td>
<td>63%</td>
<td>81%</td>
<td>84%</td>
<td>79%</td>
<td>74%</td>
<td>73%</td>
<td>69%</td>
<td>72%</td>
<td>86%</td>
</tr>
<tr>
<td>Female</td>
<td>49%</td>
<td>53%</td>
<td>70%</td>
<td>65%</td>
<td>66%</td>
<td>68%</td>
<td>67%</td>
<td>76%</td>
<td>80%</td>
<td>91%</td>
<td>118%</td>
</tr>
</tbody>
</table>

As mortality rates for TSO 2011 have generally decreased significantly from TSO 2002, the next project is to revise 2007 smoker distinct reserve tables which are based on TSO 2002.

Unofficial estimates of life expectancies of newborns under TSO 2011 are around 77 males / 83 females versus 73 males / 80 females using TSO 2002.

New Industry Annuity Table

Concurrently with TSO 2011, a new Second Industry Annuity Table was also approved by regulators as the industry standard starting July 1, 2012.

This did not cause much of a stir in the industry as few annuity policies are expected to be annuitized (as opposed to lump sum withdrawal).

For reference, mortality rates of the Second Annuity Table have the following relativities to TSO 2011:

<table>
<thead>
<tr>
<th>Age</th>
<th>5</th>
<th>15</th>
<th>25</th>
<th>35</th>
<th>45</th>
<th>55</th>
<th>65</th>
<th>75</th>
<th>85</th>
<th>95</th>
<th>105</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>58%</td>
<td>58%</td>
<td>64%</td>
<td>57%</td>
<td>63%</td>
<td>60%</td>
<td>51%</td>
<td>46%</td>
<td>40%</td>
<td>35%</td>
<td>30%</td>
</tr>
<tr>
<td>Female</td>
<td>57%</td>
<td>56%</td>
<td>62%</td>
<td>63%</td>
<td>61%</td>
<td>59%</td>
<td>55%</td>
<td>44%</td>
<td>38%</td>
<td>31%</td>
<td>25%</td>
</tr>
</tbody>
</table>