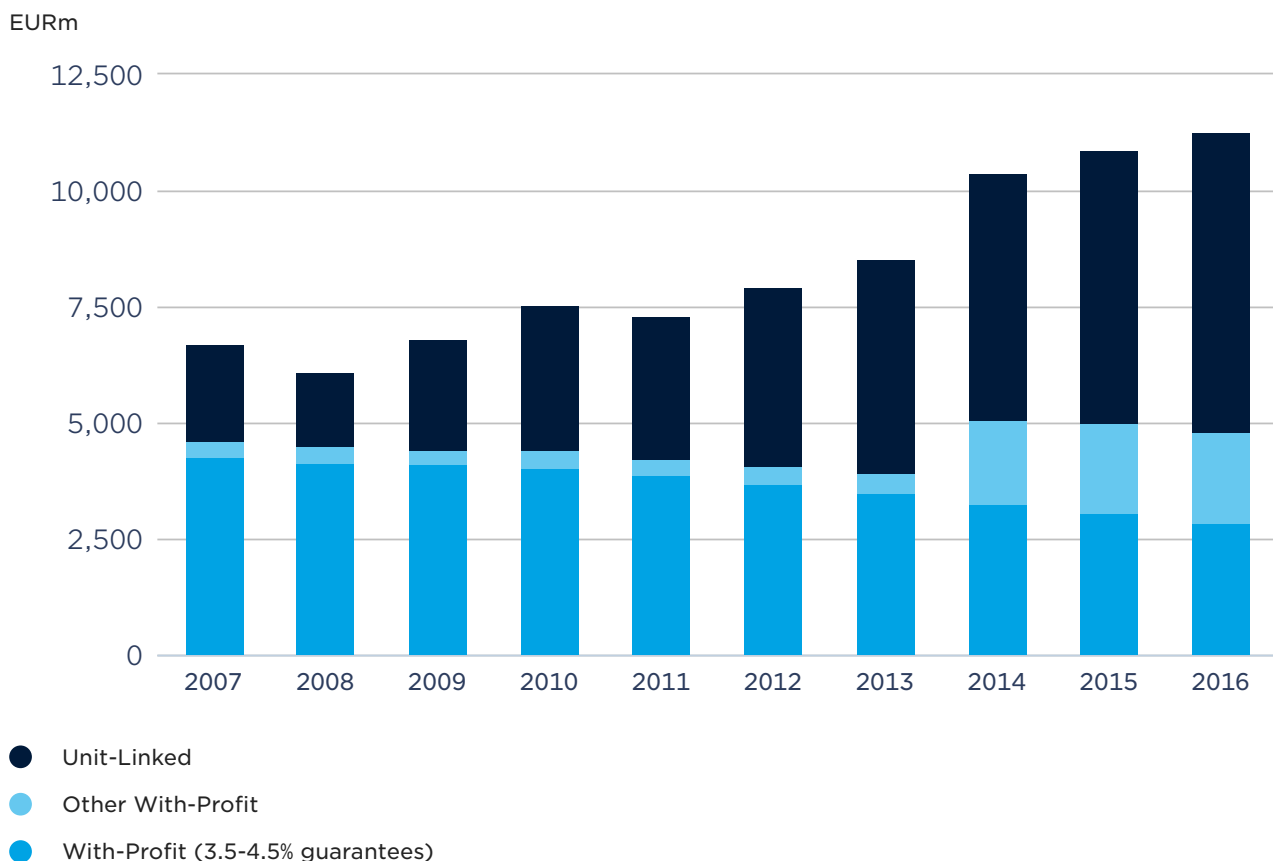


Life Insurance Underwriting Risks

The unit-linked business has been Mandatum Life's main focus since 2001. Since then the trend of unit-linked technical provisions has been upward and the average annual growth in unit-linked technical provisions has been 23 per cent per annum. Due to the nature of the unit-linked business, volatility between the years has been relatively high. Around EUR 3,000 million of current unit-linked liabilities totaling EUR 6,440 million are sold through Danske Bank. These liabilities, together with around EUR 200 million of with profit liabilities, will be transferred to Danske Bank A/S. Transfer date is expected to be at earliest 31.12.2017.

In contrast to the unit-linked trend, the trend of with-profit technical provisions has been downward since 2005 (with the exception of year 2014 when group pension portfolio from Suomi Mutual was transferred to Mandatum Life). In particular, the parts of technical provisions with the highest guarantees (4.5 per cent and 3.5 per cent) have decreased. The development of with-profit and unit-linked portfolios is presented in the figure Development of With-Profit and Unit-Linked Technical Provisions, Mandatum Life, 2007-2016.

Development of With Profit and Unit-Linked Technical Provisions
Mandatum Life, 2007-2016



The above mentioned group pension portfolio transferred from Suomi Mutual and related assets are separated from the rest of the Mandatum Life balance sheet into a segregated group pension portfolio. The segregated group pension portfolio has its own profit

sharing rules, investment policy and asset and liability management committee. The with profit liabilities other than in the segregated group pension portfolio are hereafter referred to as the "original" with profit liabilities.

Underwriting Performance and Risks

During the year 2016 insurance liabilities developed as planned. Unit-linked business increased and with profit liabilities with the highest guarantees decreased. The technical provisions with the highest guarantees fell by EUR 214 million. In total the with

profit technical provisions decreased less (EUR 193 million) due to increased discount rate reserves.

The development of insurance liabilities during 2016 is shown in the table Analysis of the Change in Provisions before Reinsurance, Mandatum Life, 2016.

Analysis of the Change in Provisions before Reinsurance Mandatum Life, 31 December 2016

EURm	Liability 2015	Premiums	Claims paid	Expense charges	Guaranteed interest	Bonuses	Other	Liability 2016	Share %
Mandatum Life parent company									
Unit-linked total	5,703	946	-553	-61	0	0	244	6,279	56%
Individual pension insurance	1,248	66	-14	-14	0	0	27	1,313	12%
Individual life	2,104	343	-186	-20	0	0	106	2,346	21%
Capital redemption operations	1,779	472	-349	-20	0	0	95	1,977	18%
Group pension	573	65	-4	-7	0	0	16	643	6%
With profit and others total	4,996	146	-468	-37	138	5	24	4,804	43%
Group pension insurance, segregated portfolio	1,196	9	-72	-2	24	4	-16	1,142	10%
Basic liabilities, guaranteed rate 3.5%	782	9	-72	-2	24	4	-30	715	6%
Reserve for decreased discount rate (3.5% -> 0.50%)	257	0	0	0	0	0	18	275	2%
Future bonus reserves	157	0	0	0	0	0	-5	153	1%
Group pension	2,180	55	-209	-7	71	1	27	2,117	19%
Guaranteed rate 3.5%	2,010	4	-187	-3	67	0	-7	1,885	17%
Guaranteed rate 2.5%, 1.5% or 0.0%	170	51	-22	-4	4	1	33	232	2%
Individual pension insurance	973	12	-144	-6	36	0	27	899	8%
Guaranteed rate 4.5%	770	10	-99	-4	31	0	-13	695	6%
Guaranteed rate 3.5%	142	2	-28	-1	4	0	18	137	1%
Guaranteed rate 2.5% or 0.0%	61	1	-17	0	1	0	22	67	1%
Individual life insurance	197	32	-29	-10	6	0	-16	180	2%
Guaranteed rate 4.5%	61	5	-7	-1	3	0	-2	58	1%
Guaranteed rate 3.5%	93	10	-10	-3	3	0	-6	86	1%
Guaranteed rate 2.5% or 0.0%	44	17	-12	-5	1	0	-8	35	0%
Capital redemption operations	36	0	0	0	0	0	-8	28	0%
Guaranteed rate 3.5%	0	0	0	0	0	0	0	0	0%
Guaranteed rate 2.5% or 0.0%	36	0	0	0	0	0	-8	28	0%
Future bonus reserves	0	0	0	0	0	0	0	0	0%
Reserve for decreased discount rate	244	0	0	0	0	0	28	273	2%
Longevity reserve	106	0	0	0	0	0	-1	105	1%
Assumed reinsurance	2	3	-1	0	0	0	-2	2	0%
Other liabilities	63	35	-13	-12	0	0	-14	59	1%
Mandatum Life parent company total	10,699	1,092	-1,021	-98	138	5	268	11,083	98%
Subsidiary SE Sampo Life Insurance Baltic									
Unit-linked liabilities	155	26	-25	-2	0	0	6	161	1%
Other liabilities	18	3	-2	0	1	0	-2	17	0%
Mandatum Life group total	10,873	1,122	-1,048	-101	138	5	272	11,261	100%

Biometric Risks

In general the long duration of policies and restriction of Mandatum Life's right to change policy terms and conditions and tariffs increases biometric risks. If the premiums turn out to be inadequate and cannot be increased, technical provisions have to be supplemented by an amount corresponding to the increase in expected losses.

Longevity risk is the most critical biometric risk in Mandatum Life. Most of the longevity risk arises from the with profit group pension portfolio. With profit group pension policies have mostly been closed for new members for years and due to this the average age of members is relatively high, i.e. for the segregated group pension portfolio the average age is around 68 years and for the other (original) group pension portfolios it is around 69 years. In the unit-linked group pension and individual pension portfolio the longevity risk is less significant because most of these policies are fixed term annuities including death cover compensating the longevity risk.

The annual longevity risk result and longevity trend is analyzed regularly. For the segregated group pension portfolio, the assumed life expectancy related to the technical provisions was revised in 2014 and for the other group pension portfolios in 2002 and 2007. In total, these changes increased the 2016 technical

provision by EUR 105 million (106) including a EUR 87 million longevity reserve for the segregated group pension portfolio. The cumulative longevity risk result has been positive since these revisions. The longevity risk result of group pension for the year 2016 was EUR 2.9 million (5.7).

The mortality risk result in life insurance is positive. A possible pandemic is seen as the most significant risk that could adversely affect the mortality risk result.

The insurance risk result of other biometric risks has been profitable overall, although the different risk results vary considerably. In the longer term, disability and morbidity risks are mitigated by the company's right to raise insurance premiums for existing policies in case the claims experience deteriorates.

The table Claim Ratios after Reinsurance, Mandatum Life, 2016 and 2015 shows the insurance risk result in Mandatum Life's Finnish life insurance policies. The ratio of the actual to expected claims costs was 79 per cent (72) in 2016. Sensitivity of the insurance risk result can also be assessed on the basis of the information in the table. For instance the increase of mortality by 100 per cent would increase the amount of benefit payments from EUR 12 million to EUR 24 million.

Claim Ratios after Reinsurance Mandatum Life, 2016 and 2015

EURm	2016			2015		
	Risk income	Claim expense	Claim ratio	Risk income	Claim expense	Claim ratio
Life insurance	43.2	21.2	49%	42.4	20.1	47%
Mortality	24.8	11.8	48%	24.0	9.7	40%
Morbidity and disability	18.4	9.4	51%	18.4	10.4	57%
Pension	80.8	76.2	94%	68.1	59.9	88%
Individual pension	12.0	12.8	107%	11.6	12.3	106%
Group pension	68.8	63.4	92%	56.5	47.6	84%
Mortality (longevity)	63.9	61.0	95%	48.9	43.2	88%
Disability	4.9	2.4	49%	7.6	4.4	58%
Mandatum Life	124.0	97.4	79%	110.5	80.0	72%

The underwriting portfolio of Mandatum Life is relatively well diversified and does not include any major concentration of biometric risks. To further mitigate the effects of possible risk concentrations, Mandatum Life has catastrophe reinsurance in place.

In general biometric risks are managed by careful risk selection, by setting prices to reflect the risks and costs, by setting upper limits for the protection

granted and by use of reinsurance. Mandatum Life's Underwriting Policy sets principles for risk selection and limits for sums insured. The Reinsurance Policy governs the use of Reinsurance. The Board approves the Underwriting policy, Reinsurance Policy, pricing guidelines and the central principles for the calculation of technical provisions.

The Insurance Risk Committee is responsible for maintaining the Underwriting Policy and monitoring the functioning of the risk selection and claims processes. The Committee also reports all deviations from the Underwriting Policy to the RMC. The Insurance Risk Committee is chaired by the Chief Actuary who is responsible for ensuring that the principles for pricing policies and for the calculation of technical provisions are adequate and in line with the risk selection and claims processes.

Reinsurance is used to limit the amount of individual mortality and disability risks. The Board of Directors annually approves the Reinsurance Policy and determines the maximum amount of risk to be retained on the company's own account. The highest retention of Mandatum Life is EUR 1.5 million per insured. Mandatum Life has catastrophe cover to mitigate the effect of possible catastrophes.

The risk result is followed actively and thoroughly analyzed annually. Mandatum Life measures the efficiency of risk selection and the adequacy of tariffs by collecting information about the actual claims expenditure for each product line and each type of risk and comparing it to the claims expenditure assumed in insurance premiums of every risk cover.

Technical provisions are analyzed and the possible supplemental needs are assessed regularly. Assumptions related to technical provisions are reviewed annually. The adequacy of the technical provisions is tested quarterly. Tariffs for new policies are set and the Underwriting Policy and assumptions used in calculating technical provisions are updated based on adequacy tests and risk result analysis. Tariffs and prices, as well as the reinsurance principles and reserving principles are reviewed and approved annually by the Board of Directors of Mandatum Life.

Policyholder Behavior and Expense Risks

From an asset and liability management point of view surrender risk is not material because in Mandatum Life around 90 per cent of with profit technical provisions consist of pension policies in which surrender is possible only in exceptional cases. Surrender risk is therefore only relevant in individual life and capital redemption policies of which the related technical provisions amounts to only 5 per cent (EUR 208 million) of the total with profit technical provisions. Furthermore, the supplements to technical provisions are not paid out at surrender which also reduces the surrender risk related to the with profit policies. Hence, the future cash flows of Mandatum Life's insurance liabilities are quite predictable.

Policy terms and tariffs cannot usually be changed materially during the lifetime of the insurance, which increases the expense risk. The main challenge is to keep the expenses related to insurance administrative processes and complex IT infrastructure at a competitive level. In year 2016, the expense result of Mandatum Life Group was EUR 26 million (27). Mandatum Life does not defer insurance acquisition costs. Since 2012 the expense result has grown significantly due to increased fee income from unit-linked liabilities and cost efficiency program, as presented in the table Expense result, Mandatum Life Group, years 2007-2016.

Expense result

Mandatum Life Group, years 2007-2016

Year	Expense result, EURm
2016	26.1
2015	26.8
2014	19.6
2013	15.3
2012	6.8
2011	9.8
2010	7.8
2009	5.2
2008	7.3
2007	16.2

Discount Rate Risk

As can be seen from the table Analysis of the Change in Provisions before Reinsurance, Mandatum Life, 2016 presented earlier, in most of the original with profit policies the guaranteed interest rate is 3.5 per cent. In individual policies sold in Finland before 1999, the guaranteed interest rate is 4.5 per cent, which is also the statutory maximum discount rate of these policies. Mandatum Life has sold policies with lower guaranteed rates as well but their share is small.

With respect to with profit policies with the 4.5 per cent guaranteed rate, the maximum discount rate used when discounting technical provisions has been decreased to 3.5 per cent over the lifetime of these policies. As a result, technical provisions were supplemented by a reserve of EUR 48 million (55) at the end of 2016.

In addition, there are reserves for years 2017-2019 to lower interest rates of with profit liabilities as follows:

- EUR 98 million has been reserved to lower the interest rate to 0.25 per cent for year 2017;
- EUR 90 million for the year 2018 to lower the interest rate to 0.50 per cent; and
- EUR 37 million for the year 2019 to lower the interest rate to 2.25 per cent.

In total, Mandatum Life has set up an extra reserve of EUR 273 million as part of the original insurance portfolio's technical provisions.

The guaranteed interest for the segregated group pension policies is mainly 3.5 per cent. More important from a risk management point of view is that the discount rate of liabilities is 0.50 per cent. The discount rate was decreased on 31 December 2016 from 0.75 per cent to 0.50 per cent which increased the reserve for decreased discount rate to EUR 275 million (257). The reserve for future bonuses has an important role in the risk management of the segregated group pension portfolio. The reserve amounts to EUR 153 million, which can be used to cover possible investment losses or to finance possible changes in the discount rate of segregated technical provisions.

The decreasing trend of with profit liabilities is expected to continue. Liabilities with the highest guarantees and highest capital consumption are expected to decrease from EUR 2,861 million to around EUR 1,000 million during the Solvency II transitional period of the technical provision (1 January 2017–31 December 2031). Duration of segregated group pension portfolio is around 10 years and duration of original with profit portfolio is around 9 years.

The figure Forecast of With Profit Liabilities, 31 December 2016–31 December 2031 shows the expected trend of existing with profit liabilities.

Forecast of With Profit Liabilities Mandatum Life, 31 December 2016–31 December 2031

