Finansinspektionen's Regulatory Code

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Regulations amending Finansinspektionen's regulations (FFFS 2007:24) regarding technical bases;

FFFS 2020:5
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decided on 19 May 2020.

Finansinspektionen prescribes pursuant to section 1 of the Ordinance (2007:721) with authorisation for Finansinspektionen to issue regulations regarding technical bases that the appendix to Finansinspektionen's regulations (FFFS 2007:24) regarding technical bases shall have the following wording.

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1. These regulations shall enter into force on 01 June 2020.
2. Older regulations may be applied to financial years that concluded no later than 31 December 2020.

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Appendix

Technical bases

Interest rate assumptions

Interest rate assumptions are expressed as an interest rate in per cent before any deductions for yield tax.

Finansinspektionen calculates and adopts the interest rate every year. Information about this interest rate is published on Finansinspektionen's website, fi.se, after the close of the month of September every year.

The calculation of the interest rate that shall be applied to assumptions that do not entail a commitment of future compensation for inflation or index adjustment are based on nominal government bonds.

The calculation of the interest rate that shall be applied to assumptions that entail a commitment of future compensation for inflation or index adjustment are based on indexed bonds and nominal market rates for treasury bonds that have been reduced considering the changes on the Consumer Price Index.

The interest rate is calculated as follows

The basis for calculating the interest rate consists of zero-coupon rates that are calculated at the end of each month. *Zero-coupon rates* refer to long-term market rates for treasury bonds with an add-on for the value of future coupon rates.

The interest rate r constitutes an average of the zero-coupon rates over the past twelve months. The following formula is used for the calculation:

$$r = \frac{½r_0 + r_1 + ... + r_{11} + ½r_{12}}{12}$$

where r_{12} refers to the zero-coupon rate that applies as at 30 September, and r_j is the corresponding rate at the end of the month $12 - j$ months earlier, where $j = 0,1,2,\ldots,11$.

The interest rate is rounded to the nearest tenth of a per cent.

Notwithstanding that set forth above, an employer may apply the interest rate assumption that is used when calculating the premium for a similar benefits within occupational pension insurance if such a calculation does not result in a lower value than the value obtained from the assumption above.

Assumption about deductions for yield tax

If the employer is obligated to pay a yield tax pursuant to the Yield Tax on Pension Funds Act (1990:661), a deduction for the yield tax is applied to the interest rate.

Finansinspektionen calculates and sets the deduction every year; the deduction is announced at fi.se after the end of September every year.

The deduction is calculated as follows

The calculated interest rate for commitments that do not entail a commitment of future compensation for inflation or index adjustment is multiplied by the current tax rate for occupational pension insurance pursuant to the Income Tax Act (1999:1299) and then rounded to the closest tenth of a per cent. The thus calculated charge is then deducted from the interest rate for both assumptions that entail a commitment of future compensation for inflation or index adjustment and assumptions that do not.

If the employer applies the assumption about the interest rate that is used when calculating the premium for a similar benefit within occupational pension insurance, the deduction for the yield tax shall be applied in a similar manner during such a premium calculation.

Assumption about mortality for retirement pension

The mortality intensity μ_x per year at age x is assumed to be given by the following formulas:[1]

$$\mu_x = \begin{cases} a + b \cdot e^{cx} \text{ för } x \le w \\ \mu_w + k \cdot (x - w) \text{ för } x > w \end{cases}$$

where $w = 97$ and $k = 0.03$.

The parameters a, b and c are dependent on the gender and year of birth according to the following tables:

Parameters for women

Year of birth	–1919	192y	193y	194y	195y	196y	197y	198y	1990–
$10^3 a$	3.1	2.7	2.1	1.4	1.1	1.1	1.1	1.0	0.662
$10^6 b$	2.048	1.362	1.005	1.176	0.887	0.406	0.130	0.092	0.245
c	0.124	0.128	0.130	0.127	0.129	0.137	0.150	0.154	0.143

Parameters for men

Year of birth	–1919	192y	193y	194y	195y	196y	197y	198y	1990–
$10^3 a$	3.1	3.4	2.5	1.7	1.5	1.3	1.1	1.0	0.623
$10^6 b$	25.228	11.807	5.385	3.095	1.205	0.464	0.161	0.063	0.054
c	0.100	0.107	0.115	0.120	0.130	0.140	0.152	0.163	0.165

where y = 0, 1,…,9.

[1] So-called Makeham model with correction in the high age groups. The survival function l_x in this model is given by the following formula:

$$-\log(l_x) = \begin{cases} ax + (b/c) \cdot (e^{cx} - 1) \text{ för } x \le w \\ -\log(l_w) + \mu_w \cdot (x - w) + (k/2) \cdot (x - w)^2 \text{ för } x > w \end{cases}$$

Assumptions for survivor's pension

The capital value of survivor's pension is estimated in cases where there can be a survivor with a right to survivor's pension in the event of death and as of the date the employee has deceased and there is a survivor with a right to survivor's pension.

With regard to survivor's pension, the same assumptions about mortality are applied as for retirement pension.

If the family relationships are known in the specific case, they shall be taken into consideration in the calculation. If the family relationships are not known but there can be a future right to survivor's pension, the age difference between the man and the woman is assumed to be four years, with the man assumed to be older.

The probability $g(x)$ of having adult survivor beneficiaries is assumed to be

$$g(x) = 0{,}94 \cdot e^{-0{,}0000009 \cdot (x-54)^4}$$

The beneficiary's marital status is assumed to remain the same after the insured's death.

The assumption is made that surviving children will reach the age of termination, if this is determined.

Assumption about morbidity for disability pension

For an employee who is of age x at the illness incidence, the assumption is made that the probability that he or she will still be entitled to disability pension payment t years later is

$$\sum_{i=1}^{4} f_i(x) \cdot e^{-d_i \cdot (t-0{,}25)}$$

for $t \geq 0.25$, where

$$f_i(x) = a_i + b_i \cdot e^{c_i \cdot x}$$

for i = 1, 2 and 3, and

$$f_4(x) = 1 - \sum_{i=1}^{3} f_i(x)$$

and where a_i, b_i, c_i and d_i are constants according to the following tables.

Parameters for women

i	a_i	b_i	c_i	d_i
1	47.9138	-46.9342	0.000225	2.1132
2	23.9747	-34.3621	0.000046	0.228
3	10.6129	-0.00002	0.144	0.2316
4				0.011676

Parameters for men

i	a_i	b_i	c_i	d_i
1	54.8588	-46.9342	0.0023	1.992
2	187	-194.8	-0.00062	1.9032
3	0.4999	-0.0033	0.081	0.6888
4				0.006168

The actual rate of incapacity for employment in the specific case shall be considered.

If disability pension being paid shall be reduced by simultaneously paid corresponding benefits from National Insurance, the assumption shall be made that these begin to be paid out 15 months after the right to a disability pension has gone into effect.

The capital value for disability pension that is not being paid is set at 0 (zero).

Contingency and operating expense loadings

When calculating the capital value, contingency and operating expense loadings are considered in part through a decrease in the interest rate intensity that corresponds to the assumption of the interest rate after deductions for yield tax and in part through an increase in the capital value, according to the following table:

	Retirement and survivor's pension	Disability pension
Decrease in the interest rate intensity	0.002	0.003
Increase in the capital value	5 %	10 %