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Autorité fédérale de surveillance des marchés financiers FINMA
Autorità federale di vigilanza sui mercati finanziari FINMA
Swiss Financial Market Supervisory Authority FINMA

9 SEPTEMBER 2016 | Occupational pension schemes at life insurers

Financial reporting 2015: transparency report

Foreword

The abridged English and Italian versions of the “Financial reporting 2015: transparency report” contain the key points and the glossary. References to sections and subsections in the abridged versions refer to the full versions of the report, which are available in German and French at <https://www.finma.ch/en/transparency-report-private-insurance>.

Since the glossary entries for each language version are in alphabetical order, the four figures included in each version of the glossary may be numbered differently.

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10 Glossary

Occupational pension schemes: the role of private life insurers

Occupational pension schemes are managed and safeguarded by > occupational pension institutions which are legally autonomous and subject to the Swiss Federal Act on Occupational Retirement, Survivors' and Disability Pension Plans (OPA).

On the other hand, private life insurers are subject to the Insurance Supervision Act (ISA). They assume part or all of the risk coverage and capital management from occupational pension institutions by reinsuring and providing full or partial coverage of the risks which the latter cannot or do not want to assume (Section 3). These > group life insurers manage approximately one fifth of all pension assets totalling CHF 967 billion, insure almost half of the four million active insured persons, serve around one fifth of the approximately one million pensioners, and satisfy small and medium-sized enterprise (SME) demand for full insurance solutions (Subsection 4.1).

Group life insurers operate in a strictly regulated area of social insurance. In this context, FINMA is mandated to ensure that the assets entrusted to them for occupational pensions are secure. Guaranteed insurance obligations are comprehensively covered by separate > tied assets which are subject to strict investment requirements in terms of quality, risk diversification, permitted asset classes, risk management and administration.

Results for 2015

In their > financial reporting for 2015, private life insurers have accounted for their occupational pension schemes activity – the 11th time they have done so. In the wake of the difficulties endured in 2008, they have for the seventh consecutive time reported an overall positive result. The results of the three processes > savings process, > risk process and > cost

process amount to an > aggregate > gross result of CHF 2,994 million. Life insurers strengthened their > technical provisions by an aggregate sum of CHF 1,847 million. This gives a > net result of CHF 1,147 million, of which CHF 509 million is placed in the > surplus fund, leaving an > operating result of CHF 638 million.

At the beginning of 2015, the Swiss National Bank (SNB) discontinued the CHF-EUR exchange rate floor and introduced negative interest rates for balances on current accounts. This basically resulted in a further fall in interest rates in 2015 of almost half a per cent. During 2014 and 2015, the valuation reserves increased by 90%, with the net investment performance accounting for 8.6% in 2014 and 1.9% in 2015 (Subsection 2.4.3). This is not included in the results reported. While this performance reflects the fact that interest rates in Switzerland have fallen below zero per cent within two years, the obligations assumed by life insurers have also gained significantly in value. Even with risk-free market investments, the high guarantees accorded by occupational pension institutions – particularly owing to the minimum interest and conversion rates under the OPA – cannot be safeguarded easily. The longer these circumstances prevail, the greater the challenges will be that both life insurers and occupational pension institutions face.

All life insurers must ensure that they have an adequate amount of > technical provisions which equal their assumed obligations and must strengthen them if the need arises. > Strengthening those provisions seeks to secure and fulfil over the long term the obligations set out in the policies concluded. This is essential to grant maximum sustainable protection to insured persons' benefits, while also enhancing trust in second pillar insurance benefits as set out in the ISA. FINMA's main responsibility lies in ensuring that this requirement is fulfilled.

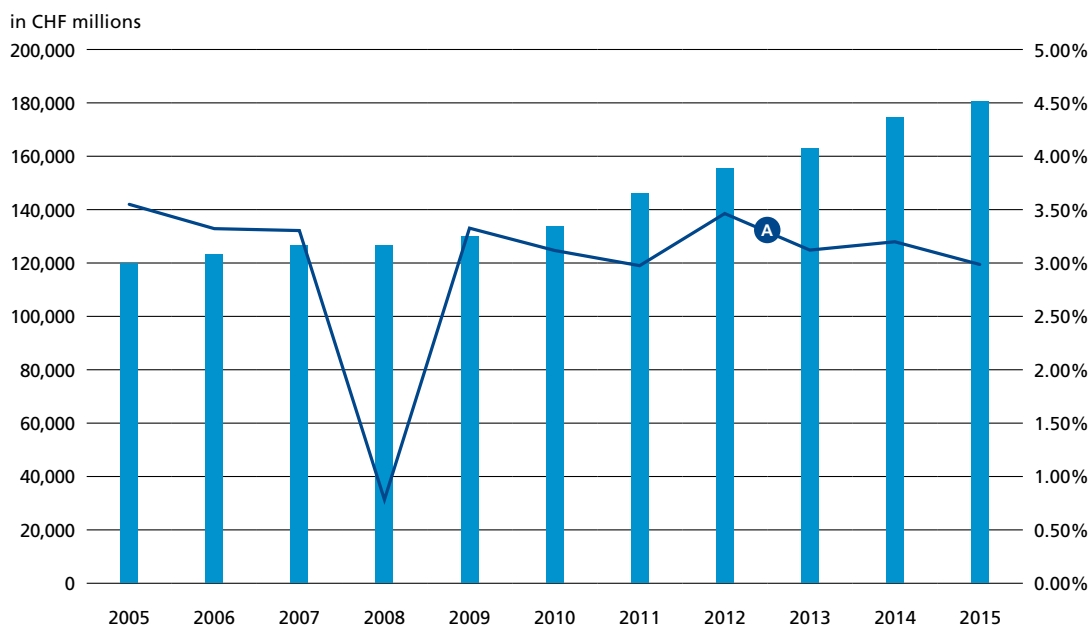
An aggregate sum of CHF 509 million was placed in the surplus fund for the benefit of insured occupational pension institutions and the persons they insure, with a > surplus participation of CHF 703 million going to them from this fund for 2016. The > payout ratio for 2015 was 92.6%, significantly above the legal minimum of 90% for collective insurance policies with a statutory prescribed minimum ratio (Subsections 2.1, 2.2 and 2.3). Life insurers active in the occupational pension scheme sector reported an aggregate annual result before taxes of CHF 638 million for 2015 and for their occupational pension business. The annual result from the occupational pension business is incorporated in the enterprise result; a decision on the appropriation of the result is then made at enterprise level (Subsection 4.4).

Savings process: stable and positive return on investment

The > savings process adopted by life insurers in 2015 saw them break even. While revenues minus expenses yielded a positive figure of CHF 1,857 million, it was necessary to reserve CHF 1,841 million of this result in order to strengthen the > actuarial reserves for old-age and survivors' pensions and to close coverage gaps in the case of pension conversions. Due to these additional requirements for pension payments, active insured persons, who account for 60% of the insurance obligations, were left with less than half of the return on pension assets.

At 2.96%, the net return on investments (> book yield) was slightly lower than in previous years.

Aggregate assets and net book yield of the group life insurers, 2005–2015 (Figure 1)



A Aggregate assets of the group life insurers in CHF millions
■ Net book result in %

Between 2005 and 2015, the average annualised return was 2.99%. Taking account of the changes in the value of the investments, performance stood at 1.9%, following the high figure of 8.6% posted in the previous year and a slightly negative performance in 2013. Such substantial fluctuations show how exposed insurers providing full insurance are to investment risks. FINMA's main task here is thus to focus on identifying major risks, monitor control mechanisms and, where necessary, require additional security measures to be taken, for which it uses a range of supervisory tools; most importantly, investments made by group life insurers may not involve uncovered risks which would jeopardise the long-term fulfilment of obligations arising from insurance policies.

The high amount of fixed-interest values (79%) indicates the types of investment made. As returns on new investments have gone down considerably since

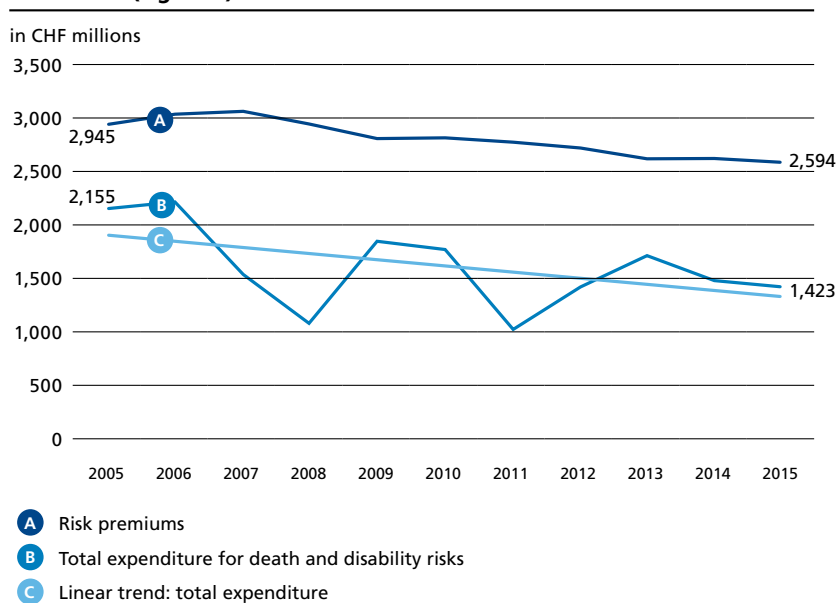
2010, it is becoming ever more difficult, when re-investing pension scheme assets, to finance the statutory prescribed interest guarantees on retirement assets (> minimum interest rate), as well as on the actuarial reserve (referred to as > guaranteed pension conversion rates) (Subsection 2.4.3).

Asset management costs only increased negligibly by four basis points to 0.21% of the market value of the investments.

Risk process: relatively stable results for death and disability risks

The risk process once again showed a positive result relative to the previous year owing to the small drop in > claims expenditure linked to slightly discounted risk premiums. Over the years, the reduction in benefits has been passed on to insured persons in the form of reduced premiums. Life insurers used the majority of the > aggregate earnings totalling

Premium development and total expenditure in the risk process, 2005–2015 (Figure 2)



CHF 1,171 million to strengthen technical provisions and to distribute > surplus participations to the insured persons. The remainder, i.e. the operating result, is being used by group life insurers to build up equity capital and further compensate the equity capital providers, provided it is not required to boost technical provisions (Subsection 2.5).

Cost process: further reduction in effective costs and the cost deficit

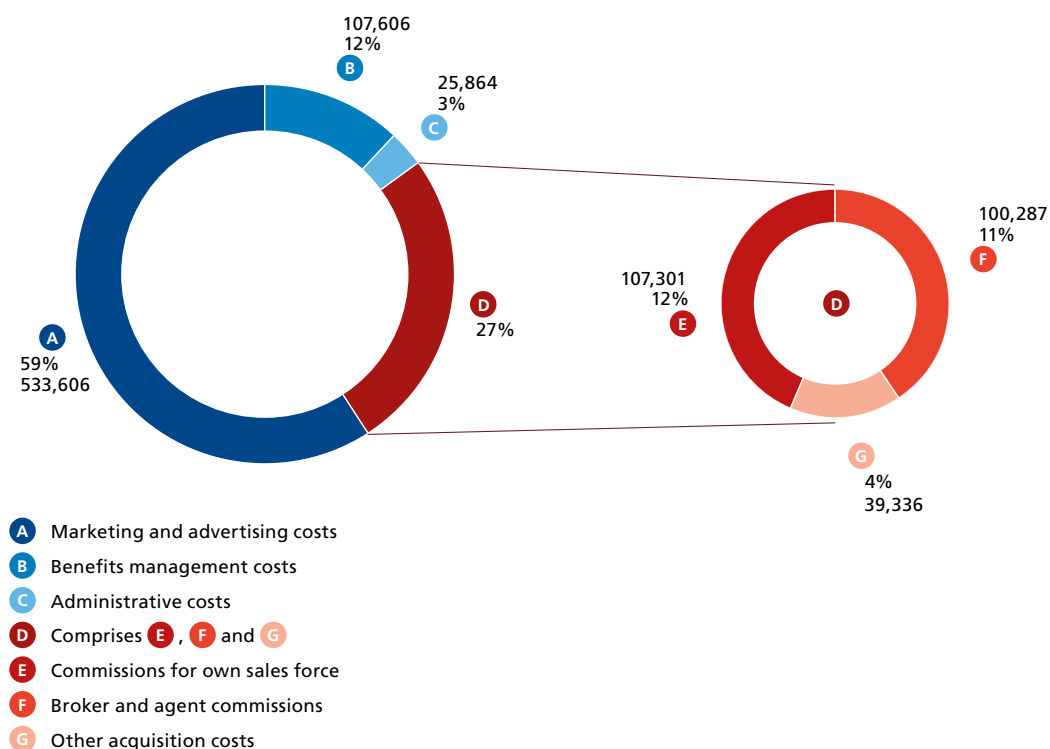
The results for the cost process remained negative in 2015 aggregated over the group life insurers. While in 2008 life insurers reported a cumulative cost deficit of CHF 168 million, this deficit in 2015 still stood at CHF 40 million (2014: CHF 80 million),

parallel to a 10.9% increase in the pool of insured persons. The reported operating costs per capita for 2015 were reduced even further than in the previous four years, with an average reduction of 5% to CHF 337 being achieved.

As management costs for active insured persons, collective pensions and > vested benefits policies can be different, FINMA has divided up the operating costs since 2012 according to cost unit. For 2015, the values per capita for each unit were:

Active insured persons	CHF 435
Pensioners	CHF 409
Vested benefits policies	CHF 73

Operating costs broken down by cost centre, 2015 (Figure 3)



The per capita costs for each life insurer vary considerably, however. Depending on the life insurers' business models, the reported management per capita costs differ significantly (Subsection 2.6).

Distribution and advisory costs totalling CHF 247 million can be broken down as follows:

Broker commission:

CHF 107 million

Own external sales force commission:

CHF 100 million

Other acquisition costs:

CHF 40 million

The breakdown of distribution and advisory service costs – data which FINMA has been collecting since 2013 – has shown that group life insurers generally use internal and external distribution channels, although to varying degrees. On average, group life insurers spend 27% (previous year: 30%) of their costs on distribution, advisory services, marketing and advertising, and 73% on management, claims processing and services performed, as illustrated in figure 3.

In 2015, distribution and advisory service costs amounted to CHF 139 for each active insured person, similar to the previous year. Based on the gross premium volume generated in 2015, they accounted for almost 1%.

Technical provisions: declining interest rates led to strong growth in 2015

Technical provisions quantify the contractual obligations to be met. They include > retirement assets, actuarial reserves for current pensions, and other allocations to provisions for the insured group of persons.

Actuarial reserves and other technical provisions (with the exception of retirement assets) were valued based on current biometric bases and valuation interest rates, which on average stood at 1.6% at the end of 2015.

In 2015, retirement assets saw significant further growth totalling almost 5% and amounted to CHF 98 billion at the end of the year. The interest rate for > mandatory pension was 1.75%, while on average that for > supplementary pension was 1.03%. Participation in the surplus generated must also be included (Subsection 2.8).

Actuarial reserves for current old-age and survivors' pensions has gone up substantially for the seventh consecutive time (plus 9.5%), amounting to CHF 39.9 billion. Part of this increase can be attributed to the fact that group life insurers are required to strengthen their actuarial reserves as a result of increased life expectancy and the drop in the level of interest rates. This affects current pension benefits, as well as any losses owing to conversion rates being too high (Subsections 2.7 and 2.9).

Life insurers must ensure that they have an adequate amount of technical provisions (Art. 16 ISA). Inadequate provisions must be > strengthened according to the approved > business plan by using the income generated from the three processes mentioned above. Technical provisions that are no longer required must be released and included in the income statement. Basically, offsetting risks is of major importance in the insurance business, allowing insurers to use funds where risk exposure occurs. Group life insurers must assess their technical provisions at least once a year to ensure that they have been calculated correctly using actuarial methods and that they suffice to meet contractual obligations on a sustainable, secure and ongoing basis. Techni-

cal provisions must be strengthened where necessary before the > surplus fund can be used.

A surplus fund is an actuarial balance sheet item to free up surplus dividends for occupational pension institutions and their insured persons. In 2015, they were allocated a total of CHF 853 million, i.e. 50% of the assets accumulated in various surplus funds (Subsection 2.8). This shows that the surpluses generated in one year were passed on rapidly to those insured.

Transparency allows for market comparison

The transparency achieved through this report generates a positive effect. Key indicators, e.g. for costs, dividend policy and investments, show the strengths and weaknesses of market participants, and make it possible to draw comparisons with competitors. This in turn benefits the enterprises that are obliged to have a retirement fund, and their employees. Nonetheless, group life insurers' limited offerings restrict many occupational pension institutions from changing to another provider or even being able to take out full value insurance. Practically all group life insurers have cut back on the writing of new business; in some cases, pools are being actively reduced. Insurers are not looking to take on new business, presumably because the risk-to-return ratio is not attractive for investors.

Acquisition costs

These are the costs involved in selling pension planning solutions and providing advisory services.

Actuarial reserves

Actuarial reserves quantify the individually calculated contractual obligations of life insurers towards insured persons. The calculation is based on biometric data such as mortality rates (> mortality bases) and the > technical interest rate. Trends in the biometric data of a community of insured persons and in market interest rates may lead to a situation in which the reserve becomes inadequate, in which case the actuarial reserves must be > strengthened.

When a group life insurance contract is terminated or employment ends prior to retirement, the actuarial reserves, calculated in accordance with the > revolving door rule, are surrendered. When retirement assets are converted into a pension, the statutory > conversion rate (OPA Art. 14) is applied to the mandatory portion, while the > conversion rate approved by FINMA which is set out in the business plan is applied to the supplementary portion. Annuity capital must be calculated so that it is sufficient to finance a pension (FINMA Circular 2008/43, margin no. 5 ff.).

Actuarial reserves for annuities

See > Actuarial reserves.

Actuary responsible

Insurance enterprises supervised by FINMA must appoint an actuary responsible. This person ensures that the insurance enterprise forms sufficient technical provisions, uses appropriate assumptions in its calculations and manages its tied assets in accordance with the supervisory rules (Art. 24 ISA).

Aggregate (aggregation)

This refers to the total number of life insurers who provide occupational pension schemes. "Aggregation" is the term used for the total sum.

Annualised

The annual income from investments as a percentage of the invested capital is referred to in Figure 20 as the "return". If the return is measured over a number of years (e.g. seven years), the annualised return is the average return for the seven years. The geometric mean is used in this case. The formula for the annualised return over seven years (e.g. 2006 to 2012) is:

$$\left(\prod_{i=1}^7 (1+r_i) \right)^{\frac{1}{7}} \quad r_i = \text{return generated in year } i$$

Antiselection

This refers to the risk of occupational pension institutions or insured persons providing options which disadvantage the insured parties; another issue is that the risk situation may not have been fully captured during the assessment phase before the contract was concluded. Life insurers may therefore find themselves being confronted with benefit claims which were not covered in the premium volume agreed.

Asset categories

In the savings process, life insurers invest the insured persons' money in capital and property markets. The following asset categories are set out in this report:

- Fixed-income securities
- Loans to private and public entities
- Mortgages
- Cash and fixed-term deposits
- Real estate
- Shares and units in investments funds
- Private equity and hedge funds
- Other capital investments

Asset categories 1 to 4 are combined in the report under the term “fixed-income assets”.

Basis points

A basis point (bp) is a unit of measure used for interest rates. It is defined as a hundredth of one per cent; in decimals 0.0001. For instance, 50 basis points equal half a per cent.

Biometric bases

Biometric bases are used to calculate biometric characteristics such as mortality (> mortality bases) and morbidity. These include variables such as mortality rates, morbidity rates and withdrawal rates following death or return to employment, and other probabilities which can be derived from measurement data from previous years. A distinction is made between measurement data from collective measurements and measurement data which are collected by life insurers. The time period used is generally five or ten years. The biometric bases must be recognised by FINMA before they can be used.

As a matter of principle, the biometric data must be collected from the community of insured persons within which the risk is pooled – in other words, the community of insured persons jointly liable for the insured risk (e.g. annuity, death or disability). This applies across all insurance institutions, irrespective of whether they are pension institutions which insure occupational pensions or insurance enterprises which reinsure occupational pensions or cover other risks. If the community of insured persons is too small to provide sufficient data, data from collective measurements must be used (where possible, data which incorporates the community’s own data). This does not, however, release insurers from the obligation to collect the biometric data of their own communities. A recognised actuarial model which properly weights the collective data and the insurer’s own measure-

ment data for their credibility must then be used to determine the biometric calculation basis. > Credibility in this context means combining the insurer’s own data and the collective data in such a way that the collective data is predominant in measurement ranges which are insufficiently represented in the insurer’s own data, and that otherwise the insurer’s own data predominates. The basis for calculation produced by this process is smoothed using a further actuarial process to eliminate inconsistencies. Statistically determined safety margins are then applied to take account of trends and random fluctuations. This is the only method by which insurers can realistically anticipate the level of claims in their own community of insured persons.

The impact of some of the measured variables on the level of claims is shown below under “Book value”.

Book value

The book value is the value at which an asset is carried on the balance sheet in a life insurer’s financial statements under the Swiss Code of Obligations (CO). It must be prudent. On the assets side, for > fixed-

Variable	Impact on the level of claims
Likelihood of becoming disabled	A decline reduces claims expenditure.
Degree of disability	Downgrading reduces claims expenditure.
Mortality among disabled persons	A decline increases claims expenditure.
Likelihood of successful return to work	A decline increases claims expenditure.
Likelihood that widows will remarry	A decline increases claims expenditure.

income securities the book value is at most the value under the amortised cost method (Insurance Supervision Ordinance Arts. 88 and 89); for the other positions, the book value is at most the cost value minus any loss in value due to usage or age or other valuation adjustments (CO, Art. 960 ff.).

Book yield

The book yield is the book income generated by investments divided by the average > book value of the investments. The book income consists of direct income (i.e. regular investment income such as coupon payments on bonds, dividends on equities, and rental income from real estate), the balance resulting from gains and losses on the sale of investments, the balance of write-ups and write-downs, and the foreign exchange result, minus investment-related interest expenditure. For simplicity sake, the average book value of investments is calculated as the arithmetic mean of the book value at the start of the financial year and the book value at the end of the financial year. In contrast to > performance, however, the book yield does not include any change in > valuation reserves. This means that it is significantly less susceptible to capital market fluctuations over time. This works to the advantage of the insured persons, who expect contractually agreed constant cash flows with a high level of value guarantee. (Subsection 2.4.3, Figure 19).

Business plan

An insurance enterprise which is supervised by FINMA must submit a business plan. Any changes to the business plan must be reported; FINMA can initiate a supervisory review (Arts. 4 and 5 ISA).

Claims expenditure

Claims expenditure comprises the benefits due in death and disability cases, benefit handling costs and the change in the corresponding technical provisions.

Claims ratio

The claims ratio is calculated by dividing claims expenditure by risk premiums.

Coefficient of determination

The coefficient of determination is a statistic which measures how well a statistical model replicates observed outcomes. In the case of a linear regression model, the coefficient of determination lies between 0 (no linear correlation) and 1 (full linear correlation).

Conversion rate

On retirement, accumulated retirement assets are converted into a pension. The conversion rate is the pension expressed as a percentage of the accumulated retirement assets. It is calculated on the basis of the > technical interest rate and the > life expectancy of the future pension recipient (Section 2.9).

Cooperative pension institution

See > Occupational pension institution.

Cost premium

See > Cost process.

Cost process

The cost process is one element of the operating statement. It sets the cost premiums for the reporting year against the management and operating costs. The difference between these two is the cost result.

Credibility

When measuring biometric data such as mortality and morbidity, group life insurers are required to analyse their own portfolio statistically and to keep appropriate statistics. Group life insurers also have access to statistics from collective measurements. Insurers can use collective measurements whenever their own statistical measurements in certain ranges

or for particular characteristics are insufficient for making credible estimates. The business of deciding which measurements should be included in the insurer's calculations – and in what way – is referred to as credibility. The term means combining the insurer's own data and the data from collective measurements in such a way that the collective data is predominant in measurement ranges which are insufficiently represented in the insurer's own data, and that otherwise the insurer's own data predominates. By using this approach the insurer arrives at a credible calculation basis which adequately reflects the insurer's community of insured persons. When undertaking this weighting process, the insurer uses tried-and-tested methods such as the Bühlmann-Straub credibility model. Credibility models can be used more widely than in the weighting of measurements based on a particular community of insured persons and collective measurements. They are also used to form risk classes in the process of > pricing for death and disability risks with the aim of creating incentives for loss prevention, especially in accident and health insurance.

Credit spread

The credit spread is a yield mark-up paid to investors in bonds which are exposed to the risk of default. As a rule, the credit spread is the yield differential between the issued bond and a reference bond which is free of such risk. The higher the credit spread, the lower the market price of the bond.

The credit spread compensates the investor for the counterparty risks associated with the investment. It is made up of the credit risk and the actual spread risk, but also incorporates some capital market liquidity aspects. The credit spread is expressed in basis points. A basis point is a hundredth of one per cent (i.e. 0.01%).

The credit risk is linked to the bond issuer's credit rating. Rating agencies (e.g. Standard & Poor's (S&P), Moody's and Fitch Ratings) use a standardised process to assess the credit rating of issuers. The rating is the agency's assessment of the issuer's future capacity to repay its debts. Lower rating classes have higher credit spreads. The credit spreads of bonds within the same rating class may also differ substantially.

Credit risk can be broken down into migration risk and default risk. Migration risk is the risk that the bond issuer may be downgraded to a lower rating class. Default risk is the risk that the borrower may become insolvent and that the investor may only receive part of the outstanding interest payments and principal.

The credit spread varies over time even if an issuer's credit quality remains constant. Spread risk is the risk that credit spreads may increase due to heightened risk aversion on the part of capital market actors. The spread risk tends to rise sharply during capital market crises (e.g. the LTCM crisis in 1998 or the subprime crisis in 2007/08).

Debit

See > Tied assets.

Disclosure

All private life insurers which insure occupational pension schemes must provide the insured occupational pension institutions with an annual disclosure report. At the very least this must include the > disclosure schedule defined by FINMA along with other information and explanations which are reviewed by FINMA before the report is issued.

Disclosure schedule

The disclosure schedule is a clearly structured matrix defined by FINMA containing key figures from the operating statement. FINMA publishes this schedule for each individual life insurer operating in group

insurance of occupational pensions and also makes the relevant details available in aggregated form together with its financial reporting for private insurers.

Duration

The fall in price of a fixed-income security in response to a rise in interest rates is described roughly by $>$ duration. If interest rates rise by 1%, the valuation of the security will fall by an amount, expressed as a percentage, approximately equivalent to the duration. For Pillar 2 pensions, life insurers assume an average residual term of around seven years, which produces a duration of around 6.5 at an interest rate level of 0.3%. Therefore, if interest rates rise by 50 basis points, the valuation of the fixed-income securities in the life insurers' portfolio will fall by approximately 3%. Given an investment volume of CHF 128 billion (Figure 16), this amounts to around CHF 4 billion. Other factors (e.g. restructuring or the $>$ credit spread of the fixed-income securities and real estate valuation trends) can also have an impact. It is therefore essential that life insurers keep $>$ valuation reserves on the fixed-income securities available as a hedge against the potential loss in value that would occur if market interest rates were to rise.

Earnings-based method

The earnings-based method is one of the two methods for applying the $>$ minimum ratio. In the case of the earnings-based method (also referred to as the gross method), the total earnings, which result from the savings, risk and cost processes, are taken as the assessment basis for applying the minimum ratio of 90%. The earnings-based method is the method that is normally used (Figure 4).

Economies of scale

These arise when the fixed costs are distributed across a larger number of cost units, producing cost savings per cost unit.

Equity capital

The equity capital of a life insurer consists essentially of its share capital, statutory and voluntary reserves, the result brought forward from the previous year, and the year's earnings. It is provided for the entire legal entity. No separate equity capital is provided for the accounting area of group insurance of occupational pensions.

A life insurer's equity capital forms the core of its $>$ solvency capital. Other components (e.g. subordinated loans) may also be counted towards solvency capital. However, equity capital must make up at least half of solvency capital.

Financial reporting

Enterprises are obliged to publish accounts for the information of their shareholders. In Switzerland this process is regulated in the Swiss Code of Obligations (SCO). Assets and liabilities are reported at $>$ book value (Art. 960 ff. SCO). Enterprises which are listed on a stock exchange must apply the financial reporting standards (e.g. IFRS, US GAAP) specified by the exchange. As a rule, these standards state that assets and liabilities should be reported at market values.

Fixed-income assets

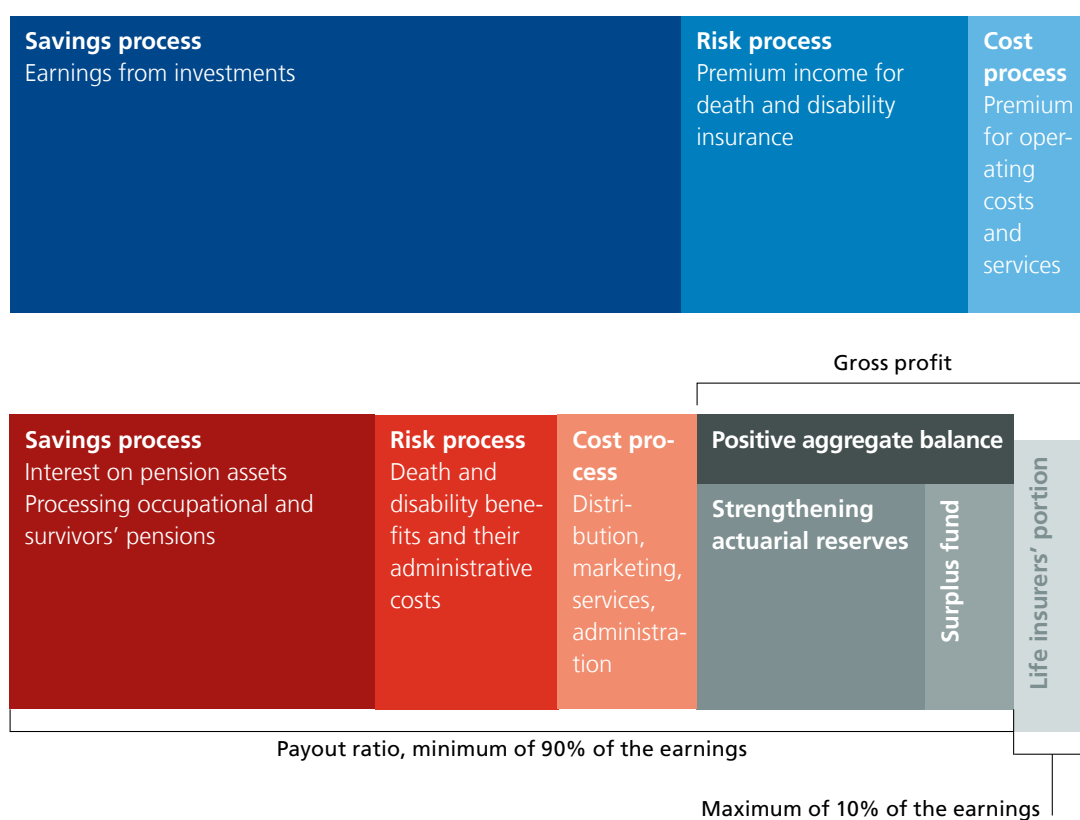
See $>$ Asset categories.

Floating average (Swiss federal bonds with a maturity of seven years)

The floating average of Swiss federal bond yields with seven years to maturity approximately represents the yield on a portfolio of Swiss federal bonds with seven years to maturity.

A seventh of this portfolio is replaced every year so that the entire portfolio is fully renewed in seven years. This approach is generally adopted for all

Payout ratio using the earnings-based method (Figure 4)



investments with a fixed interest rate. The assumption of seven years to maturity is a rule of thumb, whereby the retirement savings remain in the portfolio for seven years on average before being transferred due to vesting or dissolution of the contract.

Fluctuation reserves

Occupational pension institutions form fluctuation reserves as a means of balancing price fluctuations on their investments. This is done to prevent shortfalls in cover due to short-term movements on the financial markets which would oblige the insurers to take unpleasant restructuring measures.

The various economic crises of past years have demonstrated the importance of such reserves. Many different methods are used to calculate the level of reserves required. The occupational pension institutions are responsible for using a method which is appropriate to their risk and which incorporates a sufficient level of complexity. The formation of fluctuation reserves is also a quantitative expression of internal risk management and corporate governance.

Under Article 48e OPO 2, the rules for forming fluctuation reserves must be defined in a set of regulations. Additional qualitative requirements for the

method used to quantify the reserves are set out in Section 15 of Swiss GAAP FER 26. Source: <http://www.bsv.admin.ch/aufsichtbv/02024/02121/index.html?lang=de>.

Forming additional reserves

This activity is also referred to as strengthening. This becomes necessary when the bases used are no longer sufficient to enable insurance obligations to be met at the end of the contract period (e.g. because of demographic trends or changes in other biometric bases or the level of interest rates).

Full coverage

See > Full value insurance.

Full value insurance (full coverage)

The term “full value insurance” (or “full coverage”) refers to when a life insurer reinsures all forms of risk. This means the occupational pension institution bears no risks itself (either biometric or investment-related). In particular, the life insurer assumes full ownership of the capital investments, manages them and bears the investment risk. The life insurer grants the occupational pension institution and those insured in it a capital guarantee, a guaranteed level of interest on retirement assets (the statutory minimum interest rate on the mandatory portion and a fair market interest rate on the supplementary portion) along with a share of any surplus. It also guarantees to provide the recipients of old age, survivors’ and disability pensions with the guaranteed pensions to which they are entitled. Full value insurance is still offered by Allianz Life, AXA Life, Basler Life, Helvetia Life, PAX and Swiss Life (as at 2016).

Generational table

A generational table is based on the current > period table (= basic table) and period tables from previous measuring periods. The tables can also come from a

different population provided that this population either contains the basic table’s population or has a mortality pattern similar to the basic table. Mathematical techniques (e.g. logarithmic regression) are used to forecast future trends. A generational table is a two-dimensional representation of these trends. One axis shows ages, while the other shows years, starting with the base year. In a generational table of this kind the mortalities are measured longitudinally (i.e. across the years). To find the mortality of a person who is $x+1$ years old, both the age x and the year t are increased by 1. This allows the observed trend towards a change in mortality over time to be taken into account. Over the past 200 years, there has been an uninterrupted decline in mortality rates among men and women of all ages.

Gross method

See > Earnings-based method.

Gross result

See > Operating result.

Group insurance of occupational pension schemes

Group insurance of occupational pensions includes the cover that private life insurers provide against the risks in occupational pension schemes which the occupational pension institution assumes under a group insurance contract. Group insurance of occupational pensions must be reported in a separate accounting area and disclosed to FINMA and the insured occupational pension institutions in the group life insurer’s operating statement.

Group life insurer

Group life insurers are Swiss life insurers offering full value insurance models and risk insurance against death and disability for > group pension schemes and occupational pension schemes in Pillar 2. Group life

insurers are subject to FINMA supervision, which seeks to protect insured persons against group life insurers going bankrupt as well as excessive premiums and improper contractual provisions. FINMA also monitors compliance with the principles of good corporate governance. To this end, FINMA has an appropriate range of supervisory tools, as set out in the legislation on financial market and insurance supervision.

Group pension schemes

Group pension schemes are a special type of occupational pension scheme which employers and their staff can join if an employer is unable or unwilling to manage its own pension fund. The various employers receive affiliation contracts. An occupational benefits fund, within which the occupational pensions are managed and reported, is set up for them. There are autonomous group pension schemes which bear all the risks themselves; semi-autonomous group pension schemes which reinsure some of their risks (> reinsurance); and other such schemes which cover all their risks through a group insurance contract with a life insurer (> full value insurance).

Guaranteed pension conversion rate

See > Conversion rate.

Hidden reserves

See > Valuation reserves.

Interest arbitrage

Interest arbitrage is the profitable exploitation of interest rate differentials on various capital markets and among various currencies. In free capital markets, interest arbitrage tends to eliminate differences between interest rates on different markets. It ensures that the available funds are borrowed in locations with cheap money (i.e. low interest rates) and lent in locations with dear money (i.e. high interest rates). Interest arbitrage therefore helps ensure that

interest rate differentials are equalised nationally and internationally.

Life expectancy

Life expectancy is the statistically estimated period of time remaining to an individual from a defined date until death. In life insurance, this period is estimated for the members of a community of insured persons using > mortality bases.

Mandatory pension

Funding for the occupational pensions of employees is based on a percentage of the employee's salary. In the OPA mandatory pension, this percentage applies to the portion of the employee's salary between the minimum of CHF 21,150 (entry threshold) and the maximum of CHF 84,600 (as of 2016). Any salary above the OPA maximum can be included by the employer. Contributions based on this portion of the salary form the supplementary pension.

Minimum interest rate

The retirement assets in the mandatory pension earn interest at the minimum interest rate set by the Federal Council (Art. 15 OPA). See > OPA minimum interest rate.

Minimum ratio

The minimum ratio is a tool developed by the legislature which is used to divide the result shown in the operating statement between the community of insured persons and the life insurer. It is used to limit profit-making in an area of social insurance in which insured persons are compelled to participate and in which they have limited influence as individuals.

In concrete terms, the minimum ratio is a percentage which is used to divide the > net result between the community of insured persons and the life insurer. It has been set by law at 90% in favour of the com-

munity of insured persons. The life insurer is therefore entitled to no more than 10%.

The minimum ratio can be calculated in two ways: > earnings-based or > result-based. Under the earnings-based method, the > total earnings are taken as the basis for applying the percentage; under the result-based method, the net result is used.

If the life insurer's risk capacity permits, it may grant the community of insured persons more than the statutory 90%. The percentage actually paid out to a community of insured persons in a given year is referred to as the > payout ratio.

Monitoring

A supervisory measure taken by the supervisory authority to ensure compliance with previously issued instructions. As a rule, it involves issuing a mandate to an audit company to carry out additional auditing tasks. The audit company then makes regular reports to FINMA on its progress. The mandate remains in force until the measures have been implemented in such a way that monitoring can be replaced by normal supervisory activities.

Mortality bases

Mortality bases are one element of biometric data. They are required for calculating the conversion rate and the actuarial reserves of pension benefits. Anyone wishing to insure life-time pensions for old age requires insurance which covers this risk for an entire group of individuals. To achieve maximum accuracy, actuaries rely on past experience and use a so-called mortality table which shows the likelihood that an insured person will die at a given age. Life expectancy at retirement age is an especially important indicator for assessing the remaining life span of insured persons. A distinction is made between > period tables and > generational tables.

Multi-employer pension fund

In most cases, trade and professional associations organise occupational pension provision for their members in the form of multi-employer pension funds (> occupational pension institution).

Net investment income

Net investment income is gross investment income minus investment expenditure. (Subsection 2.4.3, Figure 19).

Net method

See > Result-based method.

Net result

See > Operating result.

Occupational pension institution

An occupational pension institution is a legal entity which provides occupational pensions. It can opt to cover some or all of the risks (partial or full coverage) with a life insurer. Occupational pension schemes can be set up as pension schemes, > group pension schemes, > cooperative pension institutions, or > multi-employer pension funds. In the case of cooperative institutions, the same regulations apply to all affiliated enterprises. The individual enterprises are not assigned to separate occupational benefits funds with their own affiliation contract, as is the case with group pension schemes. Their employees are all insured using the same range of occupational benefits plans. Multi-employer pension funds are group pension schemes that are managed by trade and professional associations.

Occupational Pension Supervisory Committee (OPSC) schedule

The Occupational Pension Supervisory Committee (OPSC) has regulated the reporting of management costs in the annual financial statements of pension schemes with its Directive 02/2013. As stipulated in

OPSC scheme for the differentiated reporting of asset management costs (Figure 5)

	Total	Cost items direct investments	One-level collective investment schemes	Multi-level collective investment schemes	Non-cost transparent investment schemes
Investment book value					
Cost categories					
TER costs					
Administrative and management costs (internal and external)					
TTC costs					
Transaction costs					
SC costs					
Supplementary costs which cannot be allocated to investments					

this directive, asset management costs are to be broken down in line with Figure 5 above.

A differentiation is made between TER, TTC and SC costs as well as between direct investments and single-level and multi-level collective investments.

- TER costs: asset management costs;
- TTC costs: these are incurred when buying and selling investments and do not count as TER costs, including transaction-based taxes and duties;
- SC costs: set-up costs that cannot be allocated to an individual investment (e.g. internal costs, advisor fees, investment controlling, global custody).

In particular, investments for which the associated asset management costs cannot be reported in the annual financial statements must be listed individually in the notes to the annual financial statements and are thus deemed not to be transparent.

OPA minimum interest rate

The OPA stipulates a minimum interest rate to be applied to retirement credits (> retirement assets) relating to the > mandatory pension. This is set by the Federal Council in consultation with the OPA Commission and the social partners, and is reviewed every two years. The review looks at the performance of marketable investments, particularly Swiss federal bonds, equities, government bonds and real estate.

Operating account

By law, the business of group life insurance in the context of occupational pensions must be kept in its own accounting area in the life insurer's accounting system, separate from other business. This accounting area is referred to as the operating account. It has its own chart of accounts, balance sheet and income statement.

Operating result

The operating result is the total of the savings, risk

and cost processes. Life insurers must ensure that they have adequate technical provisions. Inadequate technical provisions must be strengthened, and provisions that are no longer required must be released. This produces the net result.

The life insurer must determine how much of this amount belongs to the community of insured persons under the minimum ratio regulations. The share belonging to the insured persons is allocated to the surplus fund.

The remaining portion, which belongs to the life insurer (operating result), is used primarily to improve the insurer's solvency capital.

Partial coverage

See > Reinsurance.

Payout ratio

The payout ratio is that part of the surplus which is used for the benefit of the occupational pension institutions and those insured with them. It is based on the results of the savings, risk and cost process and must be at least 90% (> minimum ratio) of these components.

Pension conversion

See > Conversion rate.

Pension conversion rate

See > Conversion rate.

Performance

Performance (also referred to as market yield) is the return on investments plus the change in valuation reserves expressed as a percentage of the arithmetic mean of the market value of the investments at the beginning and end of the year (Subsection 2.4.3, Figure 19).

Period table

This is another name for the traditional mortality table which is based on the following elements:

- observation of the population, generally over a period of five years;
- table of mortality rates for each age, broken down by gender

Using appropriate statistical methods, the mortality rates are smoothed, weighted for credibility using data from a joint table in years with low populated ages and extrapolated to high ages.

Pricing

FINMA reviews the submitted group life insurance premium rates to ensure that they are within a range that protects insured persons against abuse on the one hand and potential insolvency on the part of the insurance enterprise on the other. The law allows the level of premium rates within this framework to be determined by supply and demand. FINMA does not therefore check whether premium rates are appropriate.

Rate setting is the instrument used for calculating risk and cost premiums, pension conversion rates, the rate of interest earned on the supplementary contributions in the retirement assets, and transfer values under the revolving door rules. It contains a statistical data basis for assessment and a formula for calculation.

The rate setting process produces premium rates, which are generally presented in table form.

To set the rates for risk premiums, life insurers require biometric data such as mortality rates (> mortality bases), the expected age of survivors on death, disability rates, reactivation rates and so on.

To set the rates for cost premiums, life insurers require cost statistics and a cost-centre statement with appropriate cost allocation keys for expenditure which cannot be directly attributed to the cost units.

In this way, it is possible to assign probabilities to the contractually agreed future cash flows resulting from the risk and cost bases.

Life insurers also need a > technical interest rate in order to discount the cash flows to which the probabilities have been assigned.

The sum total of the discounted cash flows is referred to as the cash value. The benefit cash value is the cash value of future benefits calculated in this way; the premium cash value is the cash value of future premiums calculated in this way.

The actuarial equivalence principle states that, in rate setting, the benefit cash value must be equal to the premium cash value.

Rate setting must be disclosed in the business plan, which has to be approved by FINMA. In view of the guarantee provided, the bases must be set prudently (i.e. they have to include a > safety margin).

Realisation; proceeds of realisation

If assets are carried on a life insurer's balance sheet at a value lower than the price at which they are traded on the capital market, this gives rise to a > valuation reserve. If a life insurer sells an asset with a high valuation reserve, it releases the valuation reserve and records it as investment income on its income statement. This process is referred to as realisation and the returns are the proceeds of realisation.

Reinsurance

Occupational pension institutions do not have to bear

all the risks they cover. If the community of insured persons is too small, they may even be unable to do so. If an occupational pension institution devolves part of its risks to another risk carrier (e.g. a private life insurer), this is referred to as reinsurance. An occupational pension institution can devolve the biometric risks of death and disability (risk reinsurance), transfer pension portfolios or opt only to reinsure peak risks (e.g. general excess loss, stop loss).

Reinvestment

Reinvestment refers to the accumulation of funds in a bank account, investment fund or (in an accounting context) liability account.

Result-based method

This is one of the two methods for applying the minimum ratio. Under the result-based method (also referred to as the net method), the net result from the operating statement is taken as the assessment basis for applying the minimum ratio of 90%. When the net result from the operating statement is being shared out, the life insurer's share is 10% of the net result plus the net investment income on the solvency margin.

The result-based method is used in exceptional circumstances, for instance when investment returns are high and the minimum interest rate is relatively low. Specifically, the result-based method is used when the following two conditions are met:

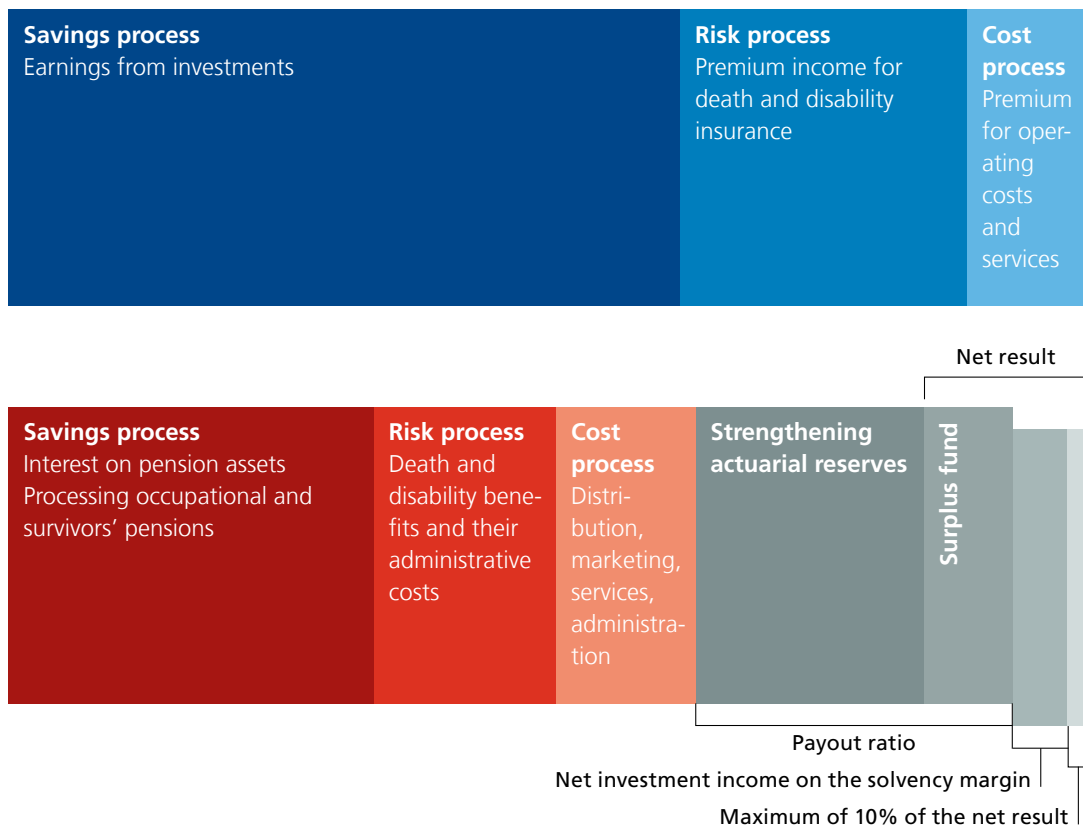
- The savings component (i.e. earnings from the savings process) is 6% or more of the actuarial reserves.
- The minimum interest rate under the OPA is two thirds or less of this percentage.

This is demonstrated in figure 6.

Retirement assets

Mandatory Pillar 2 pension schemes are based on an

Payout ratio under the result-based method (Figure 6)



individual savings process which begins at the age of 25. A percentage of the employee’s monthly salary is paid into this scheme (monthly retirement credits) which is financed equally by the employer and the employee.

Retirement credits contribution scale:

25–34 years:	7%	10 x 7 =	70
35–44 years:	10%	10 x 10 =	100
45–54 years:	15%	10 x 15 =	150
55–65 years:	18%	10 x 18 =	180
		=	Total 500
			(percentage of salary)

The savings process ends once retirement age has been reached. The retirement assets accumulated in the insured persons’ accounts during their working lives are used to finance an old-age pension. A conversion factor is used to calculate the annual pension based on the pension capital accrued (conversion rate).

Revolving door rule

If group insurance contracts (between a life insurer and an occupational pension institution) or affiliation agreements (between a group pension scheme and an enterprise) are terminated, the old and new occu-

occupational pension institutions must come to an agreement on whether the pension recipients should remain with the old institution or switch to the new one, in so far as the contract contains no specific provisions for this eventuality (Art. 53e OPA).

Life insurers generally include the following rules in group insurance contracts:

- Old age and survivors' pensions remain with the life insurer and continue to be paid by it.
- Disability annuities are transferred to the new occupational pension institution along with active insured persons.

The revolving door rule (Art. 16a BVV2) applies to pension portfolios which are passed on when a group insurance contract is terminated.

The actuarial reserves to be transferred are equal to the amount which life insurers would ask from an occupational pension institution on conclusion of a new contract for the same portfolio of insured persons and pensioners with the same benefits.

The revolving door principle is detailed in FINMA Circular 2008/12.

Risk annuity

A pension which arises from the risk process (i.e. a disability pension or a pension for the survivors of deceased active insured persons or deceased recipients of an old age or disability pension).

Risk pooling

Risk pooling in the community of insured persons and over time in accordance with the law of large numbers is the fundamental principle on which insurance operates. Risk pooling means that policyholders insure themselves against contractually defined

risks, pay a > rate-based premium and receive a contractually defined benefit if the insured event occurs. A life insurer covers a whole range of different risks for which cover can be selected in the insurance contracts. The insurer also pools the risks of fluctuations between the individual risks. This stabilises the overall result and helps keep solvency capital and the associated capital costs to a minimum.

Risk premium

See > Risk process.

Risk process

The risk process is one element of the operating statement. It sets the risk premiums for the reporting year against the expenses from death and disability cases. The difference between these two is the risk result.

Safety margin

Safety margins at a predefined level must be included using the appropriate statistical method when setting premium rates and calculating sufficient technical provisions in the following cases:

- errors and random fluctuations in the statistical data basis;
- the risk that unpredictable external influences (e.g. legal practice, technology or changes in values) could affect the expected claims expenditure;
- the risk of > antiselection. This is the risk that occupational pension institutions or insured persons may make choices to the detriment of the community of insured persons.

Savings premium

The savings premium is the contribution made by the employer and the employee towards retirement assets.

Savings process

The savings process is one element of the operating statement. It sets the net investment income in the reporting year against the expenses for technical interest at the guaranteed interest rate and the processing of current old age pensions and vested benefits policies. The difference between these two is the savings result.

Settlement in life insurance

In the life insurance industry, settlement refers to the entire process triggered by an insured event (such as retirement, death or disability), i.e. submitting a claim, determining the nature and extent of the benefit entitlement and everything required to manage the benefits. The latter may be delegated to a third party, in which case the cost of the services provided forms an integral part of the cost of claims. For this reason, the costs incurred by insurers in managing benefits themselves are not booked under administrative costs but under cost of claims.

Smoothing

Smoothing is the term used to describe statistical techniques which enable raw data to be used for statistical purposes or for identifying trends. Various methods are used, including floating arithmetic averages, floating geometric averages, exponential smoothing, and regression techniques. However, smoothing of the surplus allocation is based on a tried-and-tested method, not on a statistical method. A portion of the surpluses that would normally accrue to the surplus fund in years with increased earnings is retained so that a distribution is possible even in less favourable years. Nevertheless, life insurers must ensure that inflows from any given year are distributed in full within the following five years.

Solvency capital

Solvency capital must be provided by life insurers to

enable risks to be borne; some of it is made available by investors.

Solvency margin

The solvency margin is associated with the Solvency I regulations (minimum solvency) as defined in Articles 23-40 ISO. The result of dividing the available solvency margin by the required solvency margin must be at least 100%.

Spot rates for Swiss federal bonds

The Swiss Confederation regularly issues bonds on the capital market. They are regarded as extremely secure and are given a top rating by the various rating agencies. The interest rates for these bonds are used as a benchmark for risk-neutral Swiss franc interest rates.

Spot rates are interest rates for bonds which begin in the present and end at a defined time in the future. The spot rate varies depending on the term of the bond. The yield curve shows the structure of the yield over time. Interest rates which relate to future loan periods are referred to as forward rates.

Interest rates differ primarily in relation to the bond's residual term and the bond issuer's creditworthiness. Group life insurers and occupational pension institutions generally take the spot rates of Swiss federal bonds with a residual term of seven years as their benchmark. Trends for these interest rates are also used by the Federal Council as a guide when setting the minimum interest rate for mandatory retirement assets.

The time series of the spot rates for Swiss federal bonds is published on the Swiss National Bank's website. It begins on 1 January 1988 and contains the interest rates for Swiss federal bonds in Swiss francs with residual terms of 2, 3, 4, 5, 7, 10, 20 and 30 years.

Strengthening actuarial reserves

If the actuarial reserves provided by insured persons do not suffice to finance the insured benefit obligations, the reserves have to be strengthened. Group life insurers achieve this by using collective methods that are applied to all insured persons. Reserves must be reviewed annually to ensure that they remain sufficient in light of market developments during the year (e.g. interest rate levels, > credit spreads) and changes affecting insured persons (e.g. movements, changes to biometric characteristics). If they are too low, they must be increased (strengthened). If they are too high, they must be decreased (released).

Strengthening technical provisions

Technical provisions are calculated at the time of their formation (e.g. when retirement assets are converted into a pension) using a defined technical interest rate and biometric bases. However, capital market returns and biometric data (e.g. mortality or reactivation rates) change over time, which means that life insurers have to periodically review the basis used for the calculation. If it turns out that the technical provisions no longer cover the insurer's contractual obligations, the technical provisions must be strengthened immediately, or as soon as possible, on the basis of a plan.

The extra funds added to the provisions must be such that the obligations arising from insurance contracts can be met over the long term. This requirement offers the most sustainable protection to insured persons and also strengthens confidence in the Pillar 2 pension system. One of FINMA's core responsibilities is to ensure that this requirement is always met. FINMA determines what is meant by prudently calculated technical provisions and also defines the statistical bases and actuarial methods to be used in the calculation. Insurers are obliged to submit a report to FINMA which enables FINMA to verify that

insurers are in compliance with requirements. If the (bolstered) insurance provisions are inadequate, they must be strengthened immediately. On request, the enterprise can submit a plan to FINMA to strengthen the provisions.

Supplementary pension

See > Mandatory pension.

Surplus allocation

See > Surplus fund.

Surplus assignment

See > Surplus participation.

Surplus fund

The surplus fund is a balance sheet position for the > reinvestment of surplus earnings for the benefit of all insured persons. The surplus from the operating result is allocated to this fund on an annual basis. In the following year, the occupational pension institutions and those insured with them receive their share of the surplus allocation from the surplus fund. Surpluses must be allocated in accordance with Articles 152 and 153 ISO. Specifically, allocation must take place in line with recognised actuarial methods. These methods take account of the level of the individual actuarial reserves (in the savings process), the level of claims for insured risks (in the risk process) and the administrative overheads (in the cost process).

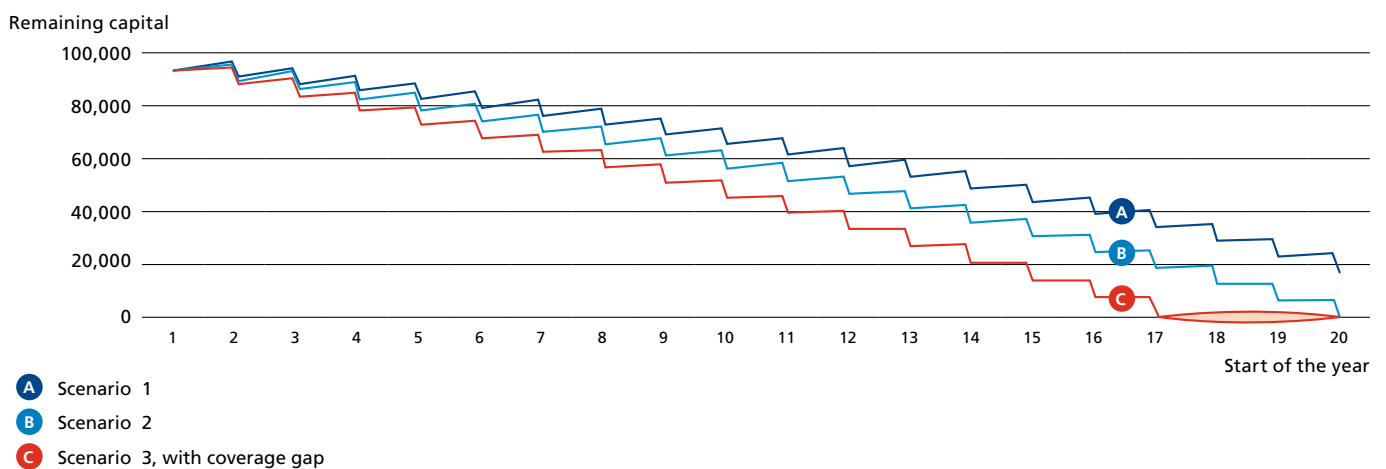
Surplus participation

The surplus participation is the portion of the gross result which is allocated to the surplus fund for distribution to occupational pension institutions and those insured with them.

Surplus share

See > Surplus fund.

Actuarial reserves development of a pension (Figure 7)



Swiss Solvency Test (SST)

The SST sets out the regulations for establishing the level of risk-based solvency capital for Swiss insurance enterprises.

Technical interest rate

The technical interest rate is the rate used for calculating the actuarial reserves required for pensions.

On retirement, accumulated retirement assets are converted into a pension. Since, however, individual pensions will only become due in the future, they must bear interest from the time that they are paid out until the conversion date. The technical interest rate is the interest rate which is used for this purpose and is guaranteed for the entire duration of the pension. The higher the technical interest rate, the larger the pension that is paid out. The technical interest rate must be set prudently so that the accumulated capital, together with future investment income, is sufficient to guarantee that a pension can be paid out for life. Figure 14 shows how the invested capital (referred to as the actuarial reserves) changes

if the pension is taken out at the start of the year and the remaining capital attracts interest at the technical interest rate during the year. Scenario 2 shows the pension payments if the invested capital generates exactly as much income as was projected in the conversion rate. Scenario 1 shows what happens if the invested capital generates more income than expected, and Scenario 3 shows what happens if the investment revenue falls short of expectations. In the third case, the underfinanced pensions must be financed from the assets of the community of insured persons. This is referred to as a coverage shortfall.

Technical provisions

Technical provisions quantify the level of obligations from life insurance contracts. They must be sufficient and are calculated using actuarial methods.

Tied assets

One of the key aims of insurance supervision is to secure the claims of insured persons and, in particular, to protect insured persons against the consequences of an insurance enterprise going bank-

rupt. In order to secure the contractual entitlements of insured persons, an insurance enterprise must form sufficient technical provisions on the basis of actuarial principles. These technical provisions must be covered at all times by the enterprise's tied assets (FINMA Circular 2008/43, margin no. 5).

The technical provisions are the main component of the target amount, which under Article 18 ISA corresponds to the amount of the technical provisions and an appropriate safety margin. The target amount must be covered by the tied assets at all times. (FINMA Circular 2008/18, margin no. 16). Furthermore, any holdings in tied assets must comply with stringent requirements on risk diversification, the selection of appropriate > asset categories, and the management of risk and investments.

Under Article 54 ISA, if an insurance enterprise goes bankrupt, the proceeds from tied assets are used primarily to satisfy claims from insurance contracts for which a guarantee is provided. In other words, eligible claimants enjoy a privileged position because, in the event of bankruptcy, their claims must be satisfied out of the proceeds of the tied assets before other claims are considered.

Total earnings

Total earnings are the sum of the earnings components from the savings, risk and cost processes.

Underwriting policy

This policy is an insurance enterprise's code of conduct that sets out which risks it can enter into and the extent to which they can be insured. It is part of the enterprise's corporate strategy and risk management, i.e. when insuring the risks entailed in occupational pensions, collective insurers must position themselves and set down the extent to which they will offer full coverage and risk reinsurance.

Valuation reserves

The accounting standards set out in the Swiss Code of Obligations (SCO) provide that assets should be valued prudently. In particular, life insurers must report their fixed-income securities which are denominated in a fixed currency and which can be repaid or amortised on a predefined date on the balance sheet at a value not greater than that derived using the scientific or linear amortised cost methods (Arts. 89 and 110 ISO). The difference between this figure and the market value must be posted as hidden reserves or hidden liabilities in the notes to the balance sheet. This report refers to hidden reserves as valuation reserves.

Vested benefits policies

If insured persons leave an occupational pension institution before a pension claim becomes due, they are entitled under the Federal Act on Vesting in Pension Plans (FZG) to the vested benefits. If the insured person transfers to a new occupational pension institution, the old occupational pension institution must transfer the vested benefits to the new one. Otherwise the insured person must receive the assets in the form of a vested benefits account or a vested benefits policy.

Yield

See > Book yield.



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