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

Circular 2008/44
SST

Swiss Solvency Test (SST)

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Appendix 1:	Market-consistent valuation in the SST
Appendix 2:	Group model
Appendix 3:	Credit risk in the standard model
Appendix 4:	Intervention thresholds

Addressees																								
BA			ISA			SESTA		CISA								AMLA			Other	
Banks	Financial groups and congl.	Other intermediaries	Insurers	Insurance groups and congl.	Insurance intermediaries	Stock exch. and participants	Securities dealers	Fund management companies	SICAVs	Limitied partnerships for CISs	SICAFs	Custodian banks	Asset managers CISs	Distributors	Representatives of foreign CISs	Other intermediaries	SROs	DSFIs	SRO-supervised institutions	Audit firms	Rating agencies
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I. Introductory remarks

Pursuant to the Insurance Supervision Act (ISA; SR 961.01) and the Insurance Supervision Ordinance (ISO; SR 961.11), both of which entered into force on 1 January 2006, the solvency of insurance companies is to be assessed applying the Swiss Solvency Text (SST), taking transition periods into account. Capital adequacy is to be assessed in accordance with Solvency I at the same time. 1

This Circular sets out the rules of the ISA in general, and those of the ISO pertaining to the SST in particular. 2

Notes are given in italics. 3

II. Definitions

Valuation model 4

A *valuation model* is a mathematical or actuarial method for determining the value of assets and liabilities.

One-year risk capital 5

The *one-year risk capital* is the target capital less the risk margin.

Supplementary capital 6

The *supplementary capital* consists of hybrid instruments that satisfy the requirements of art. 39 sect. 1 ISO and have been approved by FINMA pursuant to art. 37 sect. 2 ISO. This capital is subdivided into upper and lower supplementary capital (art. 49 ISO).

Expected shortfall 7

As used in this Circular, *expected shortfall* follows from the definition given in Annex 2 to the ISO.

Groups 8

Insurance groups and conglomerates in terms of art. 64 et seq. and art. 72 et seq. ISA are designated in this Circular as *groups*.

Internal model 9

As used in this Circular, an *internal model* is a risk model used by insurance companies or groups that departs from the standard model. The departure from the standard model goes beyond simply modifying the parameters established by the regulator.

Calibration test 10

Calibration test refers to the test of the risk measure specified by FINMA and the parameters pertaining to risk measure, time horizon, confidence level, yield above that provided for in the counterparty risk-free yield curve for determining the risk margin and — where no individually

determined yield curves in terms of this Circular are used — the counterparty risk-free yield curves used for valuation.

Core capital 11

In calculating the *core capital*, the difference between the market-consistent value of assets and the market-consistent value of debt is to be added to the risk margin. The positions specified in art. 48 sect. 1 ISO are to be subtracted from this amount.

Market-consistent balance sheet 12

The *market-consistent balance sheet* is a listing of all rights and obligations at their market-consistent value, referred to below as assets and liabilities (and in the aggregate, positions).

Methodology and parameter test 13

Methodology and parameter test refers to the verification of the appropriateness of the assumptions made, the methodology employed, the parameters selected, and reviewing the representation of the insurance company's risk profile by the risk model for adequacy. This test is termed "statistical quality test" by the International Association of Insurance Supervisors (IAIS).

Risk margin 14

The *risk margin* is the cost of capital to cover the risk-bearing capital over the lifetime of insurance liabilities.

Risk model 15

Risk model refers to a mathematical/statistical method for quantifying relevant risks and thus for determining the target capital.

Risk-bearing capital (RBC) 16

Risk-bearing capital is the sum of the core capital and the supplementary capital, to the extent that the supplementary capital is eligible for inclusion.

SST ratio 17

The *SST ratio* is determined by dividing the risk-bearing capital by the target capital.

Standard model 18

The standard model specified by FINMA is a risk model comprised of sub-modules. The sub-modules are in reference to the insurance risks, market risks and credit risks.

Use test 19

Use test refers to an examination of the use of a risk model by an insurance company for the essential purpose of internal risk management.

Target capital (TC) 20

Target capital is defined as the sum of the discounted risk margin in a year minus the expected shortfall of the difference of the discounted risk-bearing capital in one year and the current risk-bearing capital (referred to below as "expected shortfall of change in RBC"). The confidence level is defined in section IX.

Notes: 21

$$TC_0 = \frac{Risk\ margin_1}{1+r_0} - ES_\alpha\left[\frac{RBC_1}{1+r_0} - RBC_0\right]$$

where the confidence level corresponds to (1-α).

In the above definition of target capital, an insurance company can substitute "risk-bearing capital" by "core capital". Where this definition of target capital is selected, hybrid instruments are to be valued in accordance with art. 39 sect. 1 ISO as follows: the future cash flows are to be discounted applying the counterparty risk-free yield curve. Any exception provided for in this Circular shall not apply in this case. 22

In section VI below, a diagram illustrates the relation between core capital, supplementary capital and risk margin. 23

III. Scope of application and purpose

This Circular applies to all insurance companies and groups that are subject to regulatory supervision by FINMA pursuant to art. 2 sect. 1 lett. a and d ISA in association with art. 65 and art. 73 ISA, respectively, with the exception of 24

- branches of foreign insurance companies and
- reinsurance captives pursuant to art. 2 ISO, insofar as they have not been made subject to the rules of the SST pursuant to art. 2 sect. 2 ISO as an exception.

The designated purpose of this Circular is to set out the requirements applicable to the SST procedures and reporting to FINMA. 25

IV. Materiality

In the context of the SST, all significant items of the market-consistent balance sheet and all relevant risks in terms of this Circular are to be taken into account. Non-significant positions and non-relevant risks can be omitted or presented in a simplified manner. Disregarding positions or risks or using a simplified presentation may be done only if the overall effect of disregarding or simplifying them results in a relative change of no more than 10% in 26

- the RBC or TC

and

- the SST ratio

An insurance company must document the analyses for determining non-significant positions and non-relevant risks. 27

Notes: 28

As a general rule, the calculation of the — hypothetical — impact on the RBC or TC should be based on sound estimates. FINMA will decide on a case-by-case basis whether the quality of the estimates suffices.

FINMA reserves the right to demand that a more precise calculation of the RBC and TC be performed. It may demand this particularly when the SST ratio is below 100%, or might be below 100% if a more exact calculation were to be performed. 29

V. Market-consistent balance sheet

A. Objective

An insurance company must determine and value all assets and liabilities in accordance with economic principles and in a market-consistent manner, unless specified otherwise in the ISO, insofar as they are material in terms of the above definition. This also includes off-balance sheet items as defined in an accounting sense. It must take into account in particular all contingent liabilities and corresponding rights. The insurance company is to then prepare a market-consistent balance sheet using these values. 30

Notes: 31

Currently insurance companies may submit a market-consistent balance sheet using the template included with the standard model or employ the List of Fundamental SST Data published on the FINMA website as the reporting format. In so doing, the balance sheet items specified by FINMA represent a minimum classification the balance sheet must contain. However, the insurance company may use a more granular classification. FINMA will publish any amendments to this on its website six months prior to the SST filing date at the latest.

B. Principle of valuation

As a rule, all assets and liabilities are to be valued in accordance with economic principles in a market-consistent manner. A market-consistent valuation is to be in accordance with and not at variance with information that can be gleaned from trade in liquid financial markets. Where a market value exists for an instrument, this is to be used as the basis of valuation ("marking-to-market" method), otherwise the market-consistent value is to be determined by applying a suitable model ("marking-to-model" method, cf. section 1 of Annex 3 to the ISO and section V.C of this Circular). 32

For market-consistent valuation, the assets and liabilities can be decomposed into their embedded sub-items. The sub-items can then be valued applying the marking-to-market or marking-to-model method. 33

The market-consistent balance sheet must pass the relevant parts of the calibration test applicable to it (cf. section IX). 34

Any currency can be selected for maintaining the market-consistent balance sheet and presenting the core capital. In lieu of a single currency a currency basket can be used that, comprised of several other currencies, represents an artificial currency. If the market-consistent 35

balance sheet is maintained in a currency other than the Swiss franc, it is to be additionally converted to Swiss francs.

C. Valuation methods

Market-consistent valuation is to be done such that knowledgeable business partners would purchase or sell the positions at this price in an arm's length transaction. Where these conditions are not satisfied in stressed markets, plausible methods and parameter estimates are to be selected. Supplementary provisions pertaining to market-consistent valuation are to be found in Appendix 1 "Market-consistent valuation in the SST" of this Circular. 36

The market-consistent value of policyholder liabilities and that of other liabilities is to be determined under the assumption that, where liabilities are not FINMA-approved hybrid instruments in terms of art. 39 sect. 1 ISO, the insurance company will fulfil these obligations in full. Consequently, when determining the market-consistent value of all liabilities with the exception of FINMA-approved hybrid instruments (see section VI), the creditworthiness of the insurance company may not be taken into consideration. This means that a marking-to-model approach frequently has to be applied in valuing these liabilities. Where a market value is available for these positions and the insurance company wishes to apply it, it has to be adjusted by the effects of the company's creditworthiness. 37

Marking-to-market

Where sufficient transactions for an asset or liability take place at arm's length between knowledgeable business partners or a sufficient number of securities traders or brokers quote prices in the capacity of business partners for a potential transaction, in good faith and in a binding manner, and for significant volumes, an insurance company is to use this price for determining the market-consistent value of the position being valued. If one or more of the aforementioned conditions are not satisfied, the insurance company is to establish the plausibility of the appropriateness of the application of the transaction price observed. The requisite effort and expense entailed in verifying market prices may be made dependent on the significance of the position being valued. 38

Marking-to-model

Where no marking-to-market can be done, an insurance company must apply the marking-to-model method. Marking-to-model must satisfy the following conditions: 39

- In determining the value via the marking-to-model method the insurance company is to apply basically sound finance mathematics and actuarial methods for assets and liabilities. The models applied are referred to as *valuation models*. 40

- Valuation models are to be created for all significant positions exercising the requisite degree of care. The valuation of positions of little significance may be done using simpler valuation models. The insurance company is to ensure that in this case the valuation of each individual position, or each meaningful group of positions, is done or a suitable consolidation of positions is performed. Where FINMA questions the reliability of simpler valuation models, it may demand that a more precise valuation be performed. 41

- Valuation models and their parameters have to be calibrated as much as possible on the basis of objectively observable data. 42

- When applying the marking-to-model method the valuation models used for determining 43

market-consistent values have to be sufficiently documented.

- Where the basis for determining the market-consistent value of insurance liabilities constitutes a discounted best estimate, it must be supplemented by the risk margin so that if technical liabilities are settled, the capital costs incurred in the process of using the company's own funds are covered. 44

- Where the market-consistent value of insurance liabilities can be determined directly and without having to resort to the indirect method of a discounted best estimate,[1] it need not be subdivided into the discounted best estimate and the risk margin. No risk margin needs to be determined for these technical liabilities. 45

- The value of liabilities that are not FINMA-approved hybrid instruments in terms of art. 39 sect. 1 ISO is to be determined by appropriately applying the counterparty risk-free yield curve (see Appendix 1 "Market-consistent valuation in the SST").[2] 46

- In lieu of the risk-free yield curves issued by FINMA in the most commonly used currencies, insurance companies may use counterparty risk-free yield curves they have computed themselves. The method used for computing these yield curves is to be submitted to FINMA in a suitable form for approval. Where an insurance company employs its own counterparty risk-free yield curves in lieu of the risk-free yield curves issued by FINMA, it is to provide a side-by-side comparison of the yield curves calculated by it and those issued by FINMA. The insurance company is to perform a calculation or make an estimate of the difference between the present value of expected payment flows from liabilities based on the use of its own yield curves vs. the present value of expected payment flows from liabilities based on the yield curves issued by FINMA. Where there are significant valuation differences due to the insurance company using its own yield curves, FINMA reserves the right to apply a discount to the RBC. 47

VI. Risk-bearing capital

Risk-bearing capital is the sum of the core capital and the supplementary capital, to the extent that the supplementary capital is eligible for inclusion. 48

Notes: 49

The risk margin is thus a component of the core capital. However, it is not explicitly calculated for the purpose of determining the core capital since the market-consistent value of the insurance liabilities is the result of the best estimate and the risk margin for the most part. Consequently, the core capital is determined as the assets at their market-consistent value minus the best estimate of the insurance liabilities and the other debt at its market-consistent value in the context of this Circular.

[1] An example of a method leading directly to a market-consistent value of insurance liabilities is a replicating portfolio.

[2] FINMA makes counterparty risk-free yield curves available in the most commonly used currencies (CHF, EUR, USD, JPY) as per 1 January and 1 July of every year. Where FINMA requests that an insurer perform the SST at intervals of under one year, it will make available counterparty risk-free yield curves in the most commonly used currencies. Where other yield curves are required, the insurer is responsible for calculating them itself.

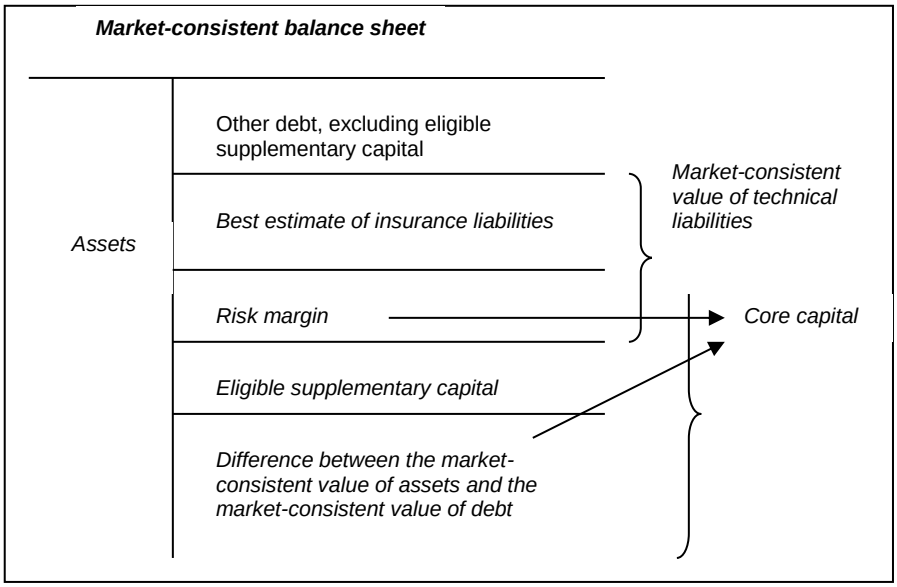

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Figure 1: Illustration of risk-bearing capital (RBC)

The expected shortfall of the change in the RBC also determines the amount of the TC, i.e. the TC is gauged such that the expected shortfall of the change in the RBC during one year is larger than or equal to the risk margin. Consequently, the TC is comprised of two parts, i.e. (1) the one-year risk capital as the expected shortfall of the change in the RBC over one year and (2) the risk margin. 51

The risk margin as a component of the RBC is defined in art. 41 sect. 4 ISO as the sum of the present values of the capital costs of the RBC including the costs of cover in a settlement situation, totalled over all future years. Being part of the RBC, the risk margin itself does not cause any additional capital costs to be incurred. The present values of the capital costs of the RBC are therefore identical to the present values of the capital costs of the one-year risk capital. The TC is thus higher than the one-year risk capital by the amount of the risk margin. 52

The upper and lower supplementary capital may be eligible for inclusion in the RBC up to the limits specified in art. 47 sect. 2 ISO. The supplementary capital may be included up to a maximum of 100% of the core capital. The exception to this is the lower supplementary capital pursuant to art. 49 sect. 2 ISO, which according to art. 47 sect. 2 ISO — and subject to the conditions of art. 49 sect. 3 ISO —, is eligible up to a maximum of 50% of the core capital. 53

FINMA-approved hybrid instruments pursuant to art. 39 sect. 1 ISO are to be included at their market values, taking into account the insurance company's creditworthiness. When valuing them, it is immaterial whether the hybrid instruments can be included in the core capital on the basis of their limits as specified in art. 39 sect. 2 ISO. As a consequence, the procedure for valuing approved hybrid instruments differs from that followed for liabilities that do not constitute approved hybrid instruments. 54

Notes: 55

This procedure for valuing hybrid instruments prevents an insurance company from possibly having to immediately show a high loss when issuing the instruments. Taking into consideration or disregarding own credit has no impact on the RBC, at least as far as hybrid instruments that are eligible for inclusion as part of the RBC are concerned.

Taking received guarantees into account in the SST impacts the RBC as well as the TC. As a general rule, where an insurance company is sufficiently capitalised and modelling is appropriate, the present value of received guarantees is relatively small and the effect of modelling on the TC is substantial as well as risk-mitigating. 56

VII. Risk margin

Pursuant to art. 41 sect. 4 ISO, the *risk margin* is the cost of capital to cover the risk-bearing capital to be made available for covering insurance liabilities over their lifetime. 57

A more detailed definition is given below for the purpose of determining the risk margin in practice. 58

Notes: 59

Purpose of the risk margin: Pursuant to art. 42 sect. 4 ISO, the market-consistent value of the insurance liabilities is the result of adding the discounted best estimate and the risk margin.

For the cash flows from insurance liabilities for which the market-consistent value cannot be determined directly, an insurance company is to proceed as follows: For each future year during the entire expected duration of settlement of the insurance liabilities, an ancillary SST is to be performed and the one-year risk capital determined. Like the current SST, the method employed in the ancillary SSTs to be conducted is to extend to determining the present market, insurance and credit risk in applying the best estimate of the insurance liabilities and evaluating and aggregating the relevant SST scenarios. 60

Notes: 61

Assuming that the market-consistent value of hedgeable risks is already completely included in the best estimate of liabilities, the determination of the one-year risk capital is based solely on the non-hedgeable risks.

In determining the risk margin, companies are to apply the same parameters and assumptions as when determining the insurance liabilities, this pertaining to the following assumptions in particular: 62

- assumptions pertaining to one's own business policies,
- assumptions pertaining to settling one's own portfolio,
- assumptions pertaining to diversification in one's own portfolio,
- assumptions pertaining to one's own expense risk,
- assumptions pertaining to client behaviour.

Notes: 63

It would not be acceptable to FINMA if, for example,

- *the lapse rate assumptions applied in the best estimate were not used and a client behaviour involving a deviating cancellation behaviour was used instead,*
- *in departing from the assumptions made in determining the best estimate, a different business policy was assumed, e.g. a change in the exercise of potential management options,*

- *instead of engaging in diversification in one's own portfolio, a different method of diversification involving a hypothetical portfolio was employed.*

FINMA attaches substantial value to consistency between determining the best estimate and the risk margin. Therefore, the assumptions pertaining to the risk margin are to follow those made for the best estimate. If, for example, when determining the best estimate assumptions are based on a specific lapse rate or on a retention rate of ten years in the occupational pension business under the second pillar, these same assumptions must also be applied when determining the risk margin. 64

Determining the cost of capital / risk margin: The ancillary SSTs to be performed result in a one-year risk capital for each future year during the entire expected duration of settlement of the insurance liabilities. According to the principle of materiality, an insurance company may dispense with conducting an ancillary SST for each future year during the entire expected duration of settlement and determine the one-year risk capital in each case using proxies. The approximation methods are to be justified to FINMA and described in detail in the SST report. 65

The future one-year capital costs result from multiplying the one-year risk capital by the yield over the counterparty risk-free yield curve determined in the calibration test (section IX). The future one-year capital costs are to be discounted as of the reporting date of the current SST using a counterparty risk-free yield curve. The sum of these present values results in the risk margin. 66

VIII. Target capital

A. General remarks

In the SST, insurance companies are to use a suitable risk model for determining the TC. Either the standard model specified by FINMA or an internal model is to be used. An internal model is to be used whenever the standard model is not able to appropriately model all the relevant risks of an insurance company. 67

A risk model is considered to be suitable where it suffices the requirements of this Circular. 68

Until further notice it is assumed that the standard credit risk model is suitable for all insurance companies in terms of this Circular although it does not satisfy the calibration test. 69

An insurance company must cover the TC by way of sufficient RBC no later than as of the elapse of the transition period as provided for in art. 216 sect. 4 lett. d ISO. Where this prerequisite is not satisfied at this time, FINMA will initiate the requisite action. Intervention thresholds and possible actions are established in Appendix 4 "Intervention thresholds". 70

An insurance company must determine the TC and RBC at least once a year and report the findings of this analysis to FINMA. 71

Groups must determine the TC and the RBC for their individual insurance company members or clusters and other relevant figures at the beginning of each half year. 72

Where circumstances warrant, insurance companies are to also conduct an intra-year SST if requested to do so by FINMA (see section XIV.B). 73

Notes: 74

In art. 41 sect. 1 ISO, only the standard case of the SST calculation is mentioned with regard to the one-year projection period. The one-year projection period also applies to any intra-year calculations.

In art. 41, the ISO also specifies the reporting date as of which the calculation must be performed. As a general rule, the reporting date is 1 January of every year. The items as of 1 January are frequently identical to those of the year-end balance sheet as per 31 December of the previous year. Consequently, for valuation and risk assessment purposes the items reported as of 31 December can be used, adjusted for any material changes such as portfolio transfers. 75

B. Group modelling

Applying a suitable risk model to groups necessitates modelling their individual legal entities, however several legal entities can be grouped to form a cluster, this being subject to certain conditions. 76

Further elements relating to modelling groups are given in Appendix 2 “Group model”. 77

C. Risk-generating positions

In determining the TC an insurance company must take into consideration the relevant risks of all positions that are integral components of a market-consistent balance sheet. In particular, an insurance company must also include in an appropriate manner the risks of options, guarantees and other contingent liabilities and corresponding rights. 78

D. Risk categories

An insurance company is to include at minimum the following risks in the risk model, insofar as they are relevant: 79

1. Insurance risks 80

- Non-life insurance 81
  - Settlement risk
  - Risk of new claims
  - Accumulation risks

  The parameter and random risk must be modelled for new claim risks as well as the settlement risk, albeit not necessarily separately.
- Life insurance 82
  - Mortality
  - Longevity

- Disability/morbidity
- Recovery
- Expenses
- Lapse and other options
- Accumulation risks

The risk model must also take into account the parameter risk as well as the random risk.

- Health insurance 83

The risk model must also take into account the parameter risk as well as the random risk. It must distinguish between group daily sickness benefit insurance coverage in the event of loss of income and other health insurance business.

In determining the insurance risk, an insurance company must establish appropriate classes. When using internal models it may suitably select classes deviating from those specified by FINMA in the standard model.

As a general principle, risks must be determined on a gross basis for all lines of business. The impact of reinsurance has to be modelled separately. In so doing, credit risk vis-à-vis reinsurers is to be taken into account in particular. Upon application by an insurance company, FINMA will permit determination to be done on a net basis where the insurance risks can be appropriately modelled as a result, and the counterparty risk resulting from the reinsurance contract is recognised and taken into account in modelling.

2. Market risks 84

- Interest rate risks
- Spread risks
- Foreign exchange risks

Notes: 85

Insurance companies are basically free in their selection of reporting currency when preparing a market-consistent balance sheet. It must be borne in mind that the free choice of reporting currency may have an effect on the currency against which the foreign exchange risk is measured. The currency should be selected such that it takes into account the focus of the company's present and planned business activities, mismatching of assets and liabilities in various currencies, and potential fluctuations in the value of positions.

In addition, a suitable currency basket can in principle be designated for the RBC, for which mismatches and thus a foreign exchange position then result from the actual net currency positions. In the standard model this basket consists entirely of Swiss francs. 86

- Real estate risks 87

- Equity exposures
- Risks associated with alternative investments (private equity, hedge funds, commodities, etc.)
- Risks resulting from changes in volatilities and correlations
- Risks resulting from holdings in or loans to group members are to be modelled so that the specific volatilities of these investments and their dependence on fluctuations in value are taken into account in the risk model along with the insurance company's other risks.

Notes: 88

As a general rule, the main share of investments and insurance liabilities are exposed to market risks, e.g. with regard to the interest-rate risk and, as applicable, the foreign exchange risk. In life insurance, technical liabilities are frequently subject to a complex interest-rate and share-price risk on account of embedded options and guarantees.

3. Credit risks 89

Credit risk pertains to modelling the risk posed by the complete or partial default or change in creditworthiness or rating of an obligor of an insurance company with regard to its liabilities. In modelling the credit risk, the insurance company must take into account all positions exhibiting a counterparty risk. Reference is made here to the relevant documents published by FINMA and the Basel Committee, on which Appendix 3 "Credit risk in the standard model" is based. The following are affected: claims on third parties, e.g. from bonds and loans, and in particular claims on reinsurers, clients, brokers and agents as well as counterparties in derivative and securitisation positions. Positions that in the context of the international standard approach (SA-BIS) in the Capital Adequacy Ordinance (CAO; SR 952.03) and FINMA Circ. 08/19 "Credit risks — banks" lead to a deduction from capital and thus to a risk weighting of 1,250% in the standard credit risk model in the context of the SST are not to be taken into account in the market risk insofar as the credit risk is determined using the standard credit risk model. 90

Where an insurance company uses an internal model for capturing credit risks, it is to take into account the default and migration risk in modelling. 91

4. Other risk types 92

Notes: 93

a) Operational risks: To date insurance companies have captured and assessed operational risks on their own responsibility and periodically discussed the findings of this assessment with FINMA. At the current time, no quantitative consideration of operational risks is generally required in the SST unless an insurance company were to be expressly requested by FINMA to do this for serious reasons. Operational risks are to be appropriately taken into account in risk management. FINMA is currently looking into further developing the SST for the purpose of a systematic, quantitative assessment of operational risks.

b) Liquidity risks can be captured in a solvency assessment system only in part. They 94

have to be taken into account in a company's qualitative risk management.

c) Risk concentrations are frequently not duly taken into account in an analytical risk model. That is why they are discussed separately in the Scenarios *section. In addition, it has to be ensured that this risk is recognised and assessed in risk management and action is taken as needed to prevent or hedge against material risks or accumulations of risk.* 95

d) Model risk: Apart from parameter risk in the insurance risk, there has been no quantitative recognition of the model risk in the SST to date unless an insurance company has been explicitly requested by FINMA to do this for serious reasons. Since a model risk can never be completely precluded, it must be taken into account in risk management. It has to be ensured in particular that the impact of any model shortcomings are recognised. Among other things, this presupposes the monitoring of exposures and the establishment of limits, also on a nominal basis. 96

E. Scenarios

- In addition to the scenarios specified by FINMA, an insurance company is to define ones of its own that take its own individual risk situation into account. The scenarios are to be appropriately documented and reviewed on an annual basis. Valuation of the relevant positions is to be done in the scenarios applying a revaluation. In exceptional cases valuations can be approximated on the basis of sensitivities, for example, provided that no material misstatements are caused as a result. The results of the scenarios are to be analysed and taken into account in risk management. 97

- An insurance company is to analyse in particular whether and to what extent the model used understates the probability of extreme events due to its specification. Where this is the case, the insurance company is to define and evaluate appropriate scenarios and take them into account in determining its TC. 98

- An insurance company is to analyse in particular whether and to what extent the model used understates the impact of risk concentrations on capital requirements. An understatement of this type occurs, for example, where in a potentially solvency-threatening exposure vis-à-vis a counterparty the model is based solely on the probability of default suggested by the counterparty's rating. Where this is the case, specific scenarios are to be defined and evaluated and taken into account in determining the TC. 99

F. Applicability of the standard model and internal models

In determining the TC, an insurance company is to employ a risk model that reflects its relevant risks in a suitable manner. FINMA provides a standard model that can be used as a modelling approach for determining the TC. Groups and reinsurance companies must develop an internal model, save for individually approved exceptions. 100

Where the standard model is employed, the parameters used have to be adjusted by an insurance company where their correspondence to the insurance company's specific risk situation is insufficient. The adjustments are to be documented. They are to be justified to FINMA in a comprehensible manner and will be approved by FINMA provided that they are appropriate. 101

In addition, upon application with FINMA and approval by same, an insurance company may 102

employ partial or complete internal models in lieu of the standard model where they satisfy the regulatory requirements of the ISA, ISO and this Circular and thus are suitable for gauging the company's relevant risks in terms of the SST. The application for approval of an internal model must be signed by a member of the board of directors or a member of senior management.

Where an insurance company is unable to develop an internal model for its relevant risks employing reasonable effort and expense due to its structure and where the standard model is not suitable for the relevant risks, FINMA may establish a capital add-on, which releases the insurance company from its obligation to completely model the risks not reflected in the standard model. FINMA will determine the capital add-on applying a prudent estimate made using suitable methods with a view to protecting policyholders, the estimate being reviewed annually. The insurance company must show that it is able to sufficiently monitor and control these risks also without the benefit of a quantitative measurement of the risks not reflected in the standard model. FINMA will regularly examine the appropriateness of the estimate and the methods for managing non-modelled risks. It will also regularly examine whether changes result that make the effort and expense entailed in the development of an internal model seem imperative. 103

G. Standard model

Where an insurance company employs the standard model published by FINMA for determining its TC, it is to submit the standard model based on its data to FINMA together with the SST report. 104

Where the parameters of the standard model used by an insurance company have been modified to such an extent that FINMA is no longer in a position during the annual review process to assess the appropriateness of the approach employed, FINMA may employ the review mechanisms used by it when approving internal models. 105

The template and the explanatory documents are updated by FINMA at least once a year and are made available in a timely manner. 106

Notes: 107

FINMA makes a number of aids available on its website for applying the standard model, i.e. a template and various explanatory documents, instructions for using the template and documenting the changes to parameters in addition to other commentaries. FINMA will announce any material changes to the model structure six months prior to the SST filing date at the latest.

FINMA will adapt the standard model itself from time to time, and the parameters used in the standard model at intervals of one year in keeping with ongoing new findings. 108

H. Internal models

The general requirements to be satisfied by risk models pursuant to section VIII.A to VIII.E also apply to the use of internal models. 109

a) Approval prerequisites and approval

The approval of an internal model constitutes a release of the internal model by FINMA for the purpose of regulatory use of same. The approval of an internal model does not release the in- 110

surance company from its obligation to verify the suitability and appropriateness of the model at regular intervals.

Upon application, FINMA will issue approval where the requirements specified in this Circular regarding the following are satisfied: 111

- methodology and parameters,
- qualitative aspects and organisation, and, in particular, governance,
- implementation and
- documentation of the internal model

Applying the definition of materiality given in section IV of this Circular, FINMA will ascertain whether the simplified assumptions used in modelling are appropriate in an insurance company and are in agreement with the circumstances of that insurance company. 112

Approval can be made contingent upon specific conditions. The insurance company may use the internal model for which final approval has not yet been issued for the duration of the review process for regulatory purposes unless advised otherwise by FINMA. 113

Notes: 114

In considering the application for approval of an internal model submitted by an insurance company FINMA bases its decision on the documentation submitted by the company, on-site reviews and the documentation requested in the process, as well as on the findings of reviews conducted by it or reviews it has had conducted by third parties. FINMA may also consult the assessments of qualified independent experts as well as foreign regulatory authorities.

b) Methodology and parameter test

Insurance companies must comply with the requirements in this section pertaining to methodology and parameters: 115

aa) General remarks

The internal model must pass the calibration test pursuant to section IX of this Circular and, in addition, the methodology and parameter test. The following items in particular must be satisfied for the methodology and parameter test: 116

- An insurance company must model the significant positions pursuant this Circular and take into account the relevant risks as specified in this Circular. To this end it must show the risks to which it is exposed and which relevant risks result from the individual positions and their interaction. 117
- Generally speaking, unknown parameters such as the value of a risk factor, a position, a financial instrument or the RBC at the end of the year are to be modelled by random variables. The risk model is to establish in particular the common distribution function of these risk factors, define the functional dependence between the risk factors and the positions and/or the financial instruments, and enable the probability distribution function of the loss of RBC during the year to be determined. 118

- The methods for determining the probability distribution of loss of RBC have to be based on sound actuarial and finance mathematics methods. The choice of the common distribution function of the risk factors and the calibration of this distribution function have to be based on realistic, credible assumptions. The modelling of dependencies between the risk factors has to be taken into account. Simplifications can be performed as provided for in sections IV and VIII.H.b)bb) of this Circular. 119

- The change in the market-consistent valuation of assets and liabilities in relation to the risk factors has to be comprehensible. 120

- The risk factors and estimation methods used for their distribution parameters must be shown. 121

- When modelling is done in sub-modules, the aggregation of the sub-modules or the results from the sub-modules are to be explained. 122

- Where possible and appropriate, the model parameters are to be determined applying sound statistical estimation methods. The data used must be complete, correct and timely. Where too little in the way of relevant data is available, expert opinions may also be consulted. FINMA may demand that an insurance company apply more prudent parameters, where the parameters used previously are not sufficiently suitable for modelling risks. The dataset used and the parameters derived from it must be verified at least once a year prior to computing the SST, taking into account materiality, and be updated as needed. 123

bb) Simplifications and omissions

- Where an insurance company employs simplifications with regard to the requirements of section VIII.H.b)aa), it must show in particular that the internal model being simplified leads to sound and, in cases of doubt, prudent capital requirements. Where simplified internal models are used, the consideration of dependencies or diversification effects is generally characterised by a certain room for interpretation. The insurance company is to show that the quantification of the diversification effects is sound and prudent. 124

- Simplifications and omissions applied in risk quantification may be used by an insurance company provided that they satisfy the materiality criteria pursuant to section IV of this Circular. FINMA may prohibit the use of simplifications and omissions or make them contingent upon conditions in cases in which their use would result in the insurance company's risk situation becoming non-transparent. 125

c) Modifications to the model and changes in the risk profile

An insurance company must submit to FINMA any and all material changes to models for approval and report any material changes in the risk structure of its business immediately upon being detected. It must submit the associated documentation in which the changes have been marked. In the case of material changes to models, their impact on the calculation of risk is to be tested and documented. 126

FINMA will approve material changes to models, provided that the requirements pertaining to internal models are satisfied. 127

In addition, FINMA will verify on a regular basis whether general advances in modelling methods have been taken into account in an internal model. If necessary, FINMA may require that the internal model be adapted in line with the state of the art. 128

An insurance company may not replace an approved internal model with the standard model unless it has submitted sufficient justification for this to FINMA and FINMA has approved said replacement. 129

d) Documentation of internal models

An insurance company must supply to FINMA a documentation of the various modules of the internal model and the interactions between these modules. The documentation must be self-contained. It should enable a knowledgeable third party to ascertain in a reasonable amount of time whether the regulatory requirements for approval of the internal model are satisfied. 130

The documentation must explain the methodology (theories and assumptions) on which the internal model is based and its implementation within the insurance company. It must describe the limitations and weaknesses of the internal model. The documentation must indicate which positions and financial instruments or which risks have not been taken into account. 131

The documentation must delineate the empirical basis of the internal model. In particular, it must describe the manner in which the model parameters were estimated, and the datasets and other information sources used in the process. 132

The documentation must show whether the insurance company, based on its own assessment, is in line with the calibration test as well as with the methodology and parameter test. 133

The documentation must show the manner in which the data quality and, in particular, the quality of information pertaining to positions and exposures is ensured. 134

To assess the internal model, FINMA may demand that an insurance company evaluate certain predefined scenarios and consider shocks applied to certain parameters. 135

e) Modular assessment of internal models

FINMA will publish on its website a review concept for the approval of internal models. The review is conducted in the form of a modular risk-oriented system assessment. As a consequence, a model may be approved in part. This is the case, for example, where the assessment has been completed only for part of the review areas or for individual modules.
FINMA may commission third parties with mandates to this effect. 136

f) Provisional use of non-reviewed internal models

Internal models for which an insurance company has made application and has sufficiently documented prior to the entry into force of this Circular, may be used on a provisional basis until they have been issued legally binding approval, unless the company is advised otherwise by FINMA. 137

g) Imposition of a capital add-on until a model is approved

FINMA may demand that an insurance company that has been called upon to develop a suitable internal model apply an appropriate capital add-on until the internal model has received approval. 138

FINMA will establish the capital add-on with the aid of an estimate, the estimate being reviewed on an annual basis. FINMA will establish the amount of the capital add-on in a prudent 139

manner.

IX. Calibration test

The calibration test establishes a minimum framework to which insurance companies must adhere in employing risk models and performing valuation in a market-consistent balance sheet. It comprises the following: 140

- Measure of risk: The relevant measure of risk is formed by the expected shortfall of the change in the RBC in terms of Annex 2 to the ISO and section II of this Circular with a confidence level of 99% and a time horizon of one year. 141
- Yield: The yield over the counterparty risk-free yield curve for determining the risk margin is published on the FINMA website. 142
- Yield curves: The counterparty risk-free yield curves specified in the standard model or the independently determined counterparty risk-free yield curves as provided for in section V.C of this Circular are to be used for valuation in a market-consistent balance sheet in the context of the SST, where yield curves are required for valuation in the respective currency. Valuation employing these counterparty risk-free yield curves is to be done irrespective of how the interest risk is modelled. 143

X. Qualitative and organisational requirements

A. Responsibilities of the governing bodies of a company or group

The responsibility for employing a suitable risk model lies with a company's board of directors. Where the standard model is not used, the board may delegate responsibility for the development of an internal model and the implementation and continued use thereof to senior management. 144

In groups, the governing bodies of the company designated pursuant to art. 191 sect. 3 ISO are to ensure that the provisions of section X of this Circular are accordingly implemented within the company managing the group from Switzerland. 145

B. Use test

In the use test an insurance company is to ensure that it applies the risk model in a suitable manner. 146

An insurance company must ensure that the exposure limits established at the company level are consistent with the risk model. 147

Senior management and the board of directors must have a sufficient understanding of the risk model, its outputs and its limitations in order to be able to gauge the implications of the risk model with regard to an insurance company's risk management and capital requirements. They must know and take into account the results of the risk model in their decision-making. 148

In justified cases, e.g. in cases in which FINMA requires the use of an internal model by an in- 149

surance company, it may grant the company a suitable period within which to embed the risk model in the company's processes.

Notes: 150

When an internal model is used in many applications within an insurance company, FINMA has compelling evidence that the insurance company has an inherent interest in the quality and maintenance of the internal model. This may impact FINMA's assessment effort and expense in its risk-oriented approach.

C. Validation on a regular basis

An insurance company must ensure that adherence to the regulatory requirements of the SST is reviewed in regular intervals and that the findings of this review are made known to the board of directors or senior management. Adherence to regulatory requirements is to be validated in particular when preparing the annual SST report. 151

An insurance company is to examine the following in particular: 152

- the suitability and appropriateness of the risk model employed and the company's individual scenarios
- compliance with qualitative and organisational requirements
- requirements applicable to implementation

Where the risk model of an insurance company changes or where methodological shortcomings are detected, the insurance company must adapt the risk and valuation model accordingly or employ an internal model. 153

XI. Requirements applicable to implementation

An insurance company must have documented, internally validated and internally approved methods that ensure that all transactions and contractual agreements are recorded in a complete, correct and timely manner, and are processed for the purpose of valuation and risk measurement. 154

An insurance company must ensure the physical security of data keeping to a sufficient extent. 155

The implementation risks posed by the SST are to also be taken into account in the internal control system. 156

XII. SST report

A. Frequency

Pursuant to art. 53 ISO, insurance companies must submit a report (SST report) every year on the calculation of the TC and RBC. This report is to be signed by senior management and 157

filed with FINMA. Starting in the financial year 2011, the results of the SST must be submitted to FINMA no later than 30 April of every year. FINMA will establish a transition plan. In the plan, the filing deadlines will be brought forward in a staggered manner from the end of July to the end of April and be announced at least six months in advance.

Where FINMA demands that the SST[3] be performed for periods of less than one year, it will announce the filing deadline. 158

Pursuant to art. 202 ISO groups must prepare an SST report on a six-monthly basis. FINMA will synchronise these filing dates with filing dates for the legal entities belonging to the same group and publish them in a timely manner. 159

B. General remarks

Pursuant to art. 53 sect. 2 ISO, the SST report must contain all relevant information required to understand the calculation of the TC and RBC and to assess an insurance company's risk situation. 160

The SST report must enable FINMA to understand the insurance company's risk situation. 161

The following items at minimum are to be shown and explained in the SST report: 162

- The application of the methods in determining the market-consistent values or the best estimate for all items in the market-consistent balance sheet. Using a suitable analysis, the insurance company must show what positions are not material. The simplified valuation methods and consolidations used for these positions are to be shown. 163
- The elements of the RBC, consisting of the core capital and the supplementary capital 164
- Showing the data input in the relevant risk models for determining the market, credit, life, non-life and health insurance risks as well as modelling the capital and risk transfer instruments 165
- The scenarios specified by FINMA and those defined by the insurance company itself 166
- Determination of the risk margin 167
- The TC 168
- Concentration/accumulation risks 169
- Passive reinsurance 170
- Other relevant risks 171
- Departures from the standard model: Where the standard model is used, deviations from sub-elements of the standard model are to be documented and an appropriate justification included. They are to be shown in a comprehensible manner so that they can be approved on this basis. 172

[3] See section XIV.B.

If necessary, FINMA may specify further information elements and make notification of them to insurance companies in a suitable manner. 173

C. Review of the SST report

Where an insurance company uses a suitable risk model in a correct manner, FINMA will issue confirmation in writing within six months of the filing date of the SST report that the insurance company, in the opinion of FINMA, does not require any additional RBC on the basis of this documentation, provided that the requirements pursuant to art. 41 ff. ISO are satisfied. This confirmation may be subject to certain conditions. 174

Where the internal model used is an internal model that has been submitted to FINMA and approved by same, an insurance company is to prepare the SST report so that it is shown which changes have been made to the internal model and why and to what extent the risk structure has changed as compared to the circumstances in effect at the time the internal model was approved. 175

Where there are material weaknesses in the SST calculations, FINMA may request in writing that an insurance company submit a corrected recalculation within a reasonable period of time and, if necessary, clarify the report. Where these weaknesses cannot be remedied within a reasonable period of time, FINMA may impose a prudently calculated capital add-on and take further action to ensure solvency as may prove necessary. Where required to protect policyholders, FINMA will immediately impose a capital add-on in the event of material weaknesses and/or initiate further action. 176

Should FINMA come to the conclusion that confirmation of the SST report must be ruled out, it will order that suitable measures be taken to correct the SST report. These measures may be accompanied by imposing an add-on to the TC and/or a discount on the RBC. 177

Where there are material weaknesses, e.g. gross errors in the application of the standard model, obvious serious errors in the application of an internal model, or serious departures from the requirements to be satisfied by internal models, the SST shall be deemed to have not been satisfied. In such cases the TC and RBC will be assessed and decreed by FINMA. 178

XIII. Data to be submitted

FINMA imposes the following minimum requirements on the data to be submitted with the SST report as a component of the SST: 179

- Where the SST standard model is used for calculation of the SST, the SST template is to be completed and submitted to FINMA. 180
- Where the SST calculation is not based on the standard model at all or only in part, the template is to either not be completed at all or only in part. In this case, the set of fundamental SST data is to be submitted together with the portions of the SST template used, if any. 181

In addition to this minimum requirement, FINMA may request that additional data be submitted in an individual case. 182

XIV. Reporting significant events

A. Losses subject to reporting

An insurance company must report to FINMA any aggregate losses over the threshold values defined below in terms of a market-consistent view of the entire economic balance sheet. Where events become known that may have led to corresponding losses, an estimate of these losses is to be reported immediately. A recalculated estimate of the RBC is to be filed within two weeks of any such losses becoming known. Reportable losses in terms of this provision are: 183

- SST ratio in excess of 150%: Losses amounting to one third or more of the RBC last calculated for the SST or the recalculated RBC subsequent to a reportable loss. 184
- SST ratio of between 100% and 150%: Losses amounting to 20% or more of the RBC last calculated for the SST or the recalculated RBC subsequent to a reportable loss. 185
- Losses resulting in an SST ratio of 100% or less. 186
- As soon as the SST ratio falls below 100%, whether at the beginning of the year or in the course of the year as the result of the updated estimate thereof where extraordinary losses are incurred: Losses amounting to 10% of the RBC or its sub-annual estimate. 187

Subsequent to a reportable loss, an insurance company is to re-estimate the TC, if necessary applying a simplified approach. The reporting date for this is generally speaking the same day as of which a re-estimate of the RBC is done. 188
Estimates may be limited to the impacts of relevant determinant factors that lead to a change in the RBC or TC. This also means that no re-estimate needs to be made of inherently non-relevant discriminating components as of 1 January in the calculation of the target capital. A description of the simplifications is to be given to FINMA.

B. Significant changes in the risk profile

An insurance company is to notify FINMA immediately of any significant changes in its risk situation as provided for in art. 51 sect. 2 ISO. At minimum, significant changes in the risk situation are present where there is a change in the TC of 20% or more since the last calculation. 189

FINMA will decide whether a re-estimate of the RBC and/or TC must be made. FINMA will establish the relevant reporting date in consultation with the insurance company. 190

The simplification principles as described in section XIV.A shall apply to re-estimates. 191

XV. Test phase

The rules contained in sections XIV.A and XIV.B take effect as of 1 January 2010. The period until 1 January 2010 shall constitute a test phase during which, in the aforementioned cases, simplified estimates of the RBC and TC are to be submitted as applicable. 192

The rules contained in section XII.C, first paragraph, pertaining to confirmation by FINMA go 193

into effect as of 1 January 2011.

Appendix 1

Market-consistent valuation in the SST

I. Principles of market-consistent valuation

The principles pertaining to market-consistent valuation are to be found in Annex 3 to the ISO and in this Circular. Essentially, a distinction is made between the application of market values (marking to market) vs. valuation model values (marking to model). Where model values are used, FINMA may consult independent third parties to verify the procedures followed at the insurance company's expense. 1

The obligation to apply market-consistent values as described in this Circular constitutes an overarching autonomous principle. IFRS valuations may be used where they are in line with this principle. FINMA will publish on its website a list, updated from time to time, of the balance sheet items and categories for which the IFRS values generally do not conform to this principle; IFRS valuation may also be inappropriate in other cases. 2

Appropriate valuation methods from a present-day perspective are given below for selected balance sheet items; the focus here is on positions for which no market values can be established on a regular basis. Where market values exist, preference is to be given to them for the respective positions. The listing in section II and III is not designed to prevent insurance companies from also applying demonstrably better methods for these positions. 3

II. Market-consistent valuation of assets

A. Loans including mortgage loans with variable and fixed interest rates

Principles are given below for the valuation of loans with variable and fixed interest rates and mortgage loans to be dealt with in a similar manner. 4

a) Risk-adjusted interest rate

Risk-adjusted interest rate pertains to the nominal interest rate corrected by the risk premium. The risk premium takes into account in particular the general risk aversion of the market, the time to maturity of the claim, its liquidity and seniority, the debtor's credit rating, and the existence and quality of any potential collateral instruments. 5

b) Loans and mortgage loans with fixed interest rates

An insurance company is to discount cash flows from loans and mortgage loans with fixed interest rates using risk-adjusted interest rates. As a simplification, risk-adjusted interest rates can be determined on a portfolio basis for portfolios of similar mortgages. 6

c) Loans and mortgage loans with variable interest rates

An insurance company is to value loans including mortgage loans with variable interest rates using methods commonly applied in financial mathematics to loans with variable interest rates. 7

Notes: 8

The following impacts value: as well as the effect of the change in interest rate since the last

interest fixing, the effect of the change in spread (risk premium) in particular for a product with otherwise comparable characteristics (residual time to maturity, reference interest rate, seniority, etc.). No such product exists in most cases, so that the current spread has to be estimated.

d) Mortgage collateral

An insurance company must determine the value of mortgage collateral, including the pledged items, on the basis of the market value. The market value of mortgage collateral is to be reviewed by the insurance company periodically (every 10 years at minimum). The periodicity and the assessment method are to be in line with criteria specified and documented by the insurance company according to property type. 9

Notes: 10

A hedonic valuation method can be used where the data quality and the valuation model used permit the real estate property to be valued in a reliable manner.

e) Intra-group loans and receivables

Intra-group loans are also to be valued by an insurance company using the marking-to-model approach based on risk-adjusted interest rates. 11

B. Real estate

a) Principles applicable to the valuation of real estate

An insurance company is to value all real estate properties, both developed and undeveloped, every year. The principle of individual valuation is to be applied. 12

Various valuation methods are illustrated in the following sections. 13

Pursuant to FINMA Circ. 08/18 “Investment guideline – insurers”, the value of all real estate property is to be subjected to a complete individual assessment by an expert property valuator, whether internally or externally, at least every 10 years (in terms of a review of the market-consistent value, including viewing on site), whereby assessment may be done in a staggered manner. In so doing it must be ensured that in each of these reviews the corresponding certificate of title is obtained and included in the file on the property. The same applies to obtaining an extract from the register of contaminated sites pursuant to art. 32c sect. 2 of the Federal Environmental Protection Act. 14

b) Valuation methods for real estate

Common methods for obtaining a market-consistent valuation of real estate property are: the discounted-cash flow (DCF) method, the income approach (*Ertragswertverfahren*), and the hedonic method. The DCF method and the capitalised value method are explained in more detail in the Appendix to FINMA Circ. 08/18 “Investment guideline – insurers”; the hedonic method is explained further in this Appendix. Other methods may also be used provided that they result in a market-consistent value. 15

An insurance company is to inform FINMA about the valuation model or method it uses. It is to document how the value-determining factors were established. 16

Notes: 17

Hedonic valuation method

The hedonic valuation method is based on the characteristics of the real estate property (size, micro and macro location, age, quality of construction, etc.).

It is appropriate only for real estate property positions for which a sufficiently good data pool exists, thus ensuring a high valuation quality. In Switzerland, the data situation in particular of many commercial real estate properties and properties located in many rural areas is insufficient. 18

C. Participations

Where present and of sufficient quality, the market value of the respective company is to be used for participations. 19

In most cases no observable market value is available for valuation purposes for participations that are not listed or for which the trading volume of their shares is very small. In these cases the market-consistent value of a company is therefore to be determined on the basis of a valuation model (marking-to-model method), based on the following valuation approaches, for example: 20

- Value of an insurance participation = 21
  Core capital (pursuant to art. 48 ISO) minus the risk margin

- Value of a holding that is not an insurance company = 22
  Net asset value (NAV) at the market-consistent value excluding intangible assets

Notes: 23

FINMA is cognisant of the fact that in applying the above valuation method to an insurance participation not all debt of the holding is valued in a market-consistent manner.

The following in particular occur when applying art. 3 sect. 2 of Annex 3 of the ISO: 24
- *Liabilities are also valued to the exclusion of a company's own counterparty risk.*
- *Future discretionary bonuses to policyholders and corporate taxes are not taken into account in the valuation of liabilities.*

As such, it represents a simplification that is, however, consistent with the valuation of a company's own liabilities and the treatment of subsidiaries and affiliates in the group model. 25

FINMA has the option of requiring a market-consistent valuation of a participation that does not employ the above simplification. This is the case in particular where significant hidden losses are present that would otherwise lead to an overstatement of the participation's value. 26
An insurance company is free to value the liabilities of an insurance participation in a market-consistent manner, without taking the restrictions of Annex 3 of the ISO into account. It must be ensured that risk modelling is consistent with the respective valuation method selected.
Upon application to FINMA, a company may include intangible assets in calculating the NAV of a participation. When doing this, it must show that the volatility of the intangible assets is accounted for in full in the risk model.

Here the value of a participation is generally speaking not negative per se due to a partner's 27

limited liability. In practice, risk transfer instruments like informal guarantees and repercussions for the participation owner's own reputation can result in the holding owner compensating negative values of the holding by making capital injections. Any re-margining obligations of the parent company vis-à-vis the subsidiary, however, are not taken into account unless they are legally binding (see section III.C.d) of this Appendix).
Own shares (shares of the parent company that are held by the holding company) must be deducted from the NAV.
Upon application with FINMA, a different valuation is also possible in special cases (e.g. for service companies).

Notes: 28

Where a re-margining obligation exists, it not only affects valuation but also reduces the subsidiary's target capital while increasing the parent company's target capital.
In a company in which there is an expectation of profitable new business, the value obtained in this manner contains a discount since the value of the future business is not taken into account. This treatment is consistent with the circumstance that (a company's own) intangible assets must be deducted when computing the risk-bearing capital.

D. Received guaranties and sureties

The market-consistent valuation of received guarantees and sureties by an insurance company means that the expected value as well as a risk premium have to be taken into account. The assessability of guarantees and sureties presupposes that they are legally binding and enforceable. In assessing the enforceability of these guarantees and sureties the characteristics of the respective applicable law (i.e. private law, bankruptcy law and supervisory law) must be taken into consideration. Where this is called into question, FINMA may request that an independent expert legal opinion be prepared when guarantees and sureties are material. 29

Notes: 30

A valuation approach looks like this, for example: Value of guarantee/surety corresponds to the expected value of the service rendered including capital costs saved by the recipient (risk margin). This approach is consistent with the valuation of a reinsurance cover received.
As a rule, guarantees and sureties exhibit a stronger impact on the TC than on the RBC.

The probability of default of the guarantor / surety issuer is to be taken into account in the valuation. 31

E. Hedging transactions

Hedging transactions may as a general rule not be offset by an insurance company against a transaction being hedged. 32

Assets and liabilities may be offset against one another by an insurance company where transactions are offset against an identical matching position and the counterparty risk can be precluded by a stock exchange or other mechanisms. In this case, offset positions need not be itemised. 33

Appendix 1

Market-consistent valuation in the SST

III. Market-consistent valuation of liabilities

A. Own credit

When determining the market-consistent value of liabilities that are not FINMA-approved hybrid instruments in terms of art. 39 sect. 1 ISO, the obligor's creditworthiness is not relevant. 34

Notes: 35

This rule constitutes a departure from the market value principle, with valuation performed according to this rule also being designated as "market-consistent valuation" for the sake of simplicity.

This rule means that a marking-to-model approach frequently has to be applied in valuing these liabilities. Otherwise a market value, where available, has to be adjusted for the effects of the company's own credit on the market value. One consequence of this is that the value of loans is higher than their nominal value at the time they are taken out. Nevertheless FINMA uses the designation of "market-consistent" since this valuation is to be distinguished from the valuation rules of other accounting standards (e.g. nominal value); all the valuation parameters applied, with the exception of the own credit spread, are selected in a market-consistent manner. 36

B. Market-consistent valuation of insurance liabilities

The rules of art. 3 of the Annex 3 to the ISO and the relevant passages of this Circular shall apply. The content of the *Technical Document on the Swiss Solvency Test* is of an explanatory nature. 37

C. Market-consistent valuation of non-insurance liabilities

a) Fixed and variable interest rate liabilities

The rules of section II.A of this Appendix shall apply, with the exception that the counterparty risk-free interest rate and not the risk-adjusted interest rate must be applied in valuation. 38

Where a quoted market price is available, an insurance company must either correct it by the effect of the risk premium or perform a valuation taking appropriate account of the counterparty risk-free yield curve, e.g. discounting the cash flows. In variable interest rate liabilities with a fixed (minimum) time to maturity, the risk premium is to be set to zero. 39

b) Provisions for employee pension benefits

When valuing provisions for employee pension benefits, an insurance company is to use the same valuation principles as for insurance liabilities (completeness, principle of best estimate, up-to-dateness, and transparency). 40

c) Deferred tax liabilities

Deferred tax liabilities are not to be valued, as provided for in sect. 3(2)(a.)(4) of Annex 3 to the ISO. 41

d) Issued guaranties and sureties

Unlike in many accounting standards, there are no off-balance sheet items in a market-consistent balance sheet. All guarantees and sureties and comparable instruments are to be valued by an insurance company in a market-consistent manner. In so doing the expected value of services rendered (disregarding a potential default of the guarantor) and, in particular, the fluctuation in value thereof are to be taken into account. 42

e) Hybrid capital

Instruments satisfying the requirements of hybrid instruments pursuant to art. 39 sect. 1 ISO are to be assessed at their market-consistent value, taking into account the spreads based on the company's own creditworthiness. 43

Notes: 44

In contrast to the valuation of insurance liabilities, changes in spreads due to one's own creditworthiness with regard to hybrid instruments in the supplementary capital do not have any effect on the amount of the RBC as long as the supplementary capital limits are not reached. Changes in spreads only cause a shift in the subdivision between core capital and supplementary capital.

Hybrid instruments satisfying the requirements of art. 39 sect. 1 ISO that, however, are not eligible due to the restrictions specified in art. 47 sect. 2 ISO are to be valued taking into account the spreads based on one's own creditworthiness. This ensures that an instrument is valued in a uniform manner irrespective of whether it belongs to the RBC. Applying this valuation also means that raising capital using instruments assumed by FINMA to potentially protect policyholders, thus possibly causing an immediate reduction in the RBC, is avoided. 45

Appendix 2

Group model

I. Introduction

Groups utilise their structure to take advantage of capital efficiency and operational efficiencies. As a consequence, a risk may be posed to policyholders as well as to the financial stability of the group. 1

Groups must comply with the statutory requirements pertaining to group solvency in addition to the provisions of the ISA, the ISO and this Circular, to which the individual insurance companies belonging to the group must comply. This Appendix sets out the requirements to be satisfied by the form and structure of group models; their assessment and the resulting measures are discussed as well. 2

Two approaches are currently used at the international level to model all the relevant risks of groups: 3

The first approach models the risks of a group on a consolidated basis as if the group were a single legal entity ("consolidated group modelling"). As a consequence, the lead supervisor can determine whether the group satisfies capital adequacy requirements as based on its external liabilities. In so doing, intra-group liabilities are not modelled as it is implicitly assumed that assets are freely transferable within the group. 4

The second approach is based on modelling the risks of the individual legal entities of a group, possibly forming a cluster, and thus models the relations between these units in addition to the external relations ("granular group modelling"). In this second method uniform rules are applied to assess the risks of the assets and liabilities of the individual legal entities, in addition to the risks resulting from the relations within the group. This second method enables FINMA, in its capacity of lead supervisor of the group, to determine whether any risk potential is posed to policyholders and the financial stability of the group by individual parts of the group itself for other parts of the group or for the group as a whole, and whether the individual parts of the group aid the others as needed or whether other risk-mitigating measures are available. 5

In the SST it is assumed that granular group modelling is applied, with consolidated group modelling additionally being permitted upon application by the group with FINMA or being requested by FINMA. The "group SST" is based on granular group modelling, which can be supplemented by consolidated group modelling. 6

II. Basic fundamentals

Pursuant to art. 69 and 77 ISA, FINMA establishes the capital adequacy requirements for the entire group. In addition, art. 201 and art. 204 ISO stipulate that groups must use a suitable internal model for determining and quantifying all relevant risks. 7

As well as the statutory provisions of the ISO, this Circular and its Appendices are also of relevance for the group SST. The following are not relevant: 8

- Sections VIII.E, X.B, XI und XIV of this Circular.
- Appendix 4: "Intervention thresholds"

Appendix 2

Group model

III. Principles

A. General remarks

Granular modelling consists of a market-consistent valuation of all assets and liabilities of all the legal entities belonging to the respective group and modelling all the relevant risks of these individual legal entities. This also includes all capital and risk transfer instruments between the respective units complying with the requirements set out below. This is without prejudice to the simplifications pursuant to section III.B of this Appendix. 9

The valuation and risk modelling methods must conform to the procedures to be followed for individual companies subject to Swiss regulatory supervision. In particular, valuation is to be done in a market-consistent manner. When determining the risk margin, diversification effects in the granular group model may be taken into account only within clusters (cf. section III.B.b)). The capital and risk transfer instruments taken into account in the model must be specified and their modelling documented. 10

Notes: 11

Since capital and risk transfer instruments like loans, guarantees, reinsurance contracts and other instruments are frequently employed among the legal entities of a group, correctly modelling these instruments and their impact on the RBC and TC of the individual legal entities in line with the valuation and risk modelling principles of the SST are of particular significance.

Examples: 12

A hybrid loan of one group member to another group member is to be taken into account as an asset by the lender with regard to its repayment entitlement. The risk that this finance instrument carries impacts the lender's target capital in accordance with the underlying risk posed by the recipient of the loan. Where the conditions of the ISO are satisfied by the hybrid loan and the limits pertaining to supplementary capital have not been exhausted, the loan is to be included in the loan recipient's RBC. A participation between two group members has a similar effect.

As well as effects in the market-consistent balance sheet, an intra-group reinsurance contract generally also leads to an increase in the reinsurer's TC and a decrease in the cedent's TC. A guarantee has a similar effect. 13

In the SST only capital and risk transfer instruments that are legally binding and enforceable may be considered in intra-group relations. In assessing the enforceability of these capital and risk transfer instruments the characteristics of the respective applicable law (i.e. private law, bankruptcy law and supervisory law) must be considered and shown by way of independent expert legal opinions should FINMA so request. 14

Notes: 15

Since the group SST only considers legally binding instruments, non-binding statements made by the governing bodies of a group member and a group member's strategic significance are not modelled in the quantitative model.

As a general rule, each legal entity of a group specifies an RBC and determines its TC applying the granular group model and taking into account the group structure. Omissions and sim- 16

plifications in terms of section III.B of this Appendix may not be performed unless the overall effect of disregarding and simplifying positions and risks results in a relative change of no more than 20% in the SST ratio of each legal entity.

FINMA is to be notified for each legal entity at minimum of the RBC and its components, the balance sheet total of the market-consistent balance sheet, the amount of capital investments and the TC. Where FINMA requires additional/other data, it will announce this in a timely manner in the document entitled *List of Fundamental SST Data*, available on the FINMA website. 17

B. Permissible simplifications

a) General remarks

Upon receiving a reasoned application, FINMA will permit insignificant legal entities to be disregarded in the granular group model. In this case, only the significant legal entities are to be included in the granular group model. 18

b) Clusters

Upon receiving a reasoned application, FINMA will approve the grouping of several legal entities into a hypothetical unit, referred to below as “clusters”, for the purpose of risk modelling. Clusters are necessarily smaller than the entire group. FINMA will permit this simplification where, for example, the group structure is so complex that correctly modelling all legal entities would entail a disproportionate amount of effort. Clusters are to be generally formed in a meaningful manner in line with the group’s participation structure. The assumptions pertaining to the fungibility of capital within a cluster must be explained. FINMA examines whether the assumptions documented are realistic and whether these assumptions provide for sufficient fungibility of capital within the cluster. The capital and risk transfer instruments between clusters must be reflected in the model. 19

Notes: 20

Forming clusters leads to the assumption of implicitly complete fungibility of capital within a cluster and a higher degree of diversification than in the sum of the individual units. These effects must be taken into account in the choice of cluster composition. Making a good selection in clustering enables biases from the aforementioned effects to be minimised.

Clusters are to be modelled on the basis of partial consolidation. 21

c) Symmetric valuation

Upon receiving a reasoned request, FINMA may permit symmetric valuation where no significant biases occur as a result. This means that companies that have liabilities toward other group members of the same group are to value these liabilities in the group SST and the SST for individual legal entities, disregarding the creditworthiness of the counterparty. 22

Notes: 23

In valuing liabilities that are not eligible hybrid instruments in terms of art. 39 sect. 1 ISO, one’s own creditworthiness may not be taken into account as a general rule. The result of this is that in exchanging rights and obligations among group members, a company that shows an obligation as a liability reports a higher absolute value in return, as compared to the company

that shows this instrument as an asset. This asymmetrical treatment of rights and obligations may result in disproportionate effort and expense for groups.

IV. Assessment of group solvency

a) The requirements of the group SST are satisfied where all legal entities or clusters show an SST ratio of over 100% in the granular group model. 24

b) A group may make application to additionally prepare a consolidated group model. This can also be requested by FINMA. 25

Where a consolidated group model is prepared, the group must show that an SST ratio of no less than 100% is achieved on the basis of the consolidated group model. The requirements of the group SST are satisfied in this case as well. 26

Notes: 27

Due to the granular group model, the group SST does not result in a single SST ratio but rather in a multiplicity of SST quotients, to which the consolidated SST ratio is added as applicable. Determining group solvency on the basis of a consolidated group model constitutes another approach for determining the RBC and TC based on the granular group model of the legal entities or clusters.

V. Risk management of groups

Each group must show how its group model is embedded in risk management so as to safeguard the financial stability of the group and the interests of policyholders. 28

Where individual significant legal entities or clusters of a group show an SST ratio of less than 100% and where a risk is posed to the group's financial stability or the interests of policyholders, the group is to show in its risk management which actions are being taken to ensure the group's financial stability and safeguard the interests of policyholders. These actions may consist of reducing risks, transferring excess fungible capital or taking other suitable precautions. In so doing, particular attention is to be accorded to liquidity and the transferability of assets within the group. 29

VI. Action taken by FINMA

Based on information gained in the group SST, FINMA may initiate action to create an appropriate balance between the group's risks and available capital. Among other things, these actions may extend to reducing risks or having additional capital made available. 30

Appendix 3

Credit risk in the standard model

I. Introduction

In art. 43 sect. 2 ISO, FINMA is mandated to provide a consistent standard model for all insurance companies for the purpose quantifying financial risks. “Financial risks” is understood to pertain to market and credit risks. 1

This Appendix defines in detail the standard model for credit risks — referred to below as the “standard credit risk model” — in the context of the SST. 2

II. Basic fundamentals

The standard credit risk model is based, subject to the provisions of section III, on the CAO and FINMA Circ. 08/19 “Credit risks — banks”. 3

The CAO and FINMA Circ. 08/19 “Credit risks — banks” implement the revised framework agreement pertaining to the International Convergence of Capital Measurement and Capital Standards of the Basel Committee on Banking Supervision of June 2006 and pertaining to the Global Regulatory Framework for more Resilient Banks and Banking Systems of June 2011 (referred to below as “Framework”) into national law. The rules of the Framework shall apply where rules established by the CAO and FINMA Circ. 08/19 “Credit risks — banks” should prove insufficient. The CAO, FINMA Circ. 08/19 “Credit risks — banks” and the Framework together are referred to below as the “Basel III foundation documents”. 4*

FINMA additionally provides a booklet containing concise instructions of the procedures to be followed for key positions in the standard credit risk model (referred to below as “brief guide”) and a template (referred to below as “Basel III template”). 5

III. Modifications with regard to the SST

A. General remarks

In addition to setting out the credit risk capital requirements, the Basel III foundation documents also set out the market risk capital requirements, non-counterparty risks and operational risks. They also set out the definition of capital. 6

FINMA’s standard credit risk model of the SST pertains exclusively to those parts of the aforementioned documents that govern credit risk. The provisions in the Basel III foundation documents have been modified for the SST in the sections below. In addition, ongoing modifications to the Basel III foundation documents may give rise to modifications to this Appendix as well. 7

B. Market-consistent values

The standard credit risk model of FINMA does not apply the risk weights for credit and counterparty risk-carrying positions to balance sheet items derived using accounting principles but rather to market-consistent values in terms of Appendix 1 “Market-consistent valuation in the SST” of this Circular. 8

Where the application of market-consistent values for certain positions is not practicable on the basis of the brief guide and the Basel III foundation documents, an insurance company is to contact FINMA for the purpose of obtaining approval for an alternative. 9

C. Capital deduction

Positions for which a capital deduction is provided in the Basel III foundation documents, with the exception of art. 32 lett. f CAO, are to be assigned a risk weight of 1,250% in the standard credit risk model. This corresponds in the SST to complete coverage using risk-bearing capital. 10

D. Shares and participations

Individual credit risks that result from equity securities positions are generally not to be taken into account since the risks of the shares in the respective company are modelled as a whole for the most part. Credit risks in terms of this section are to therefore be included in the standard credit risk model where an insurance company decomposes the company from which is has equity securities into its underlying risks and models the equity securities on the basis of these underlying risks. 11

E. Collective investment schemes

In the standard credit risk model, hedge funds are not collective investment schemes in terms of the CAO. Wherever possible, collective investment schemes are to be decomposed into their component parts, which are then to be taken into account in the credit risk model. 12

F. Passive reinsurance and retrocession

Passive reinsurance and retrocession are risk mitigation forms that give rise to a counterparty risk. 13

Existing amounts due from reinsurance contracts are to be underpinned by their risk-weighted market value like ordinary receivables. 14

In the standard credit risk model, the expected value of payments from future claims already covered by existing reinsurance contracts is viewed as a receivable from the reinsurer, which is to be considered a risk-weighted asset. This approach is to be applied by an insurance company irrespective of whether the expected value of the payments from future claims is actually shown as an asset or whether it reduces the TC. 15

The aforementioned approach may result in a relevant understatement of risk where the occurrence of the insured event might be closely tied to default by the reinsurer. In such cases FINMA reserves the right to specify that another procedure be applied. 16

G. Pledged life insurance policies

In addition to the collateral listed in the Basel III foundation documents like life insurance policies with a surrender value, a pledged life insurance policy is eligible as security up to the surrender value at maximum. Where the obligor is also the issuer of the policy, the portion of the claim secured by the policy in this manner is to be given a risk weight of 0%. 17

Appendix 3

Credit risk in the standard model

H. Multipliers

Abrogated 18*

Appendix 4

Intervention thresholds

I. Introduction

This Appendix sets out the actions that FINMA may initiate according to various thresholds where an insurance company does not satisfy the solvency requirements of the SST. 1

This Appendix restricts itself to actions with regard to individual legal entities. Actions pertaining to groups are dealt with in Appendix 2 “Group model”. 2

II. Basic fundamentals

Where an insurance company does not satisfy the solvency requirements of the SST, according to art. 46 ISA (i.e. art. 46 sect. 1 lett. d ISA) FINMA is obligated to procure information pursuant to art. 29 FINMASA and art. 47 ISA and/or to initiate protective measures as provided for in art. 51 ISA. 3

III. Threshold values

FINMA defines three thresholds based on the SST ratio. The thresholds are established as follows: 4

- Threshold 1 represents the solvency requirement of the SST. It is reached when the RBC is equal to the TC. This corresponds to an SST ratio of 100% and thus a confidence level of 99%. 5
- Threshold 2 is reached when the RBC is equal to 80% of the TC. 6
- Threshold 3 is reached when the RBC is equal to 33% of the TC. 7

Where the RBC of an insurance company is above threshold 1, it is in the *green zone*. Where the RBC of an insurance company is between threshold 1 and threshold 2, it is in the *yellow zone*. Where an insurance company’s RBC is between threshold 2 and threshold 3, it is in the *orange zone*. Where the RBC is below threshold 3, the company is in the *red zone*. 8

The target amounts of the various thresholds are established in the assessment of the SST report and are binding until the assessment of the next SST report is concluded. In justified cases, e.g. in the event of extraordinary losses, FINMA may order that an insurance company perform a sub-annual assessment of the RBC and, as applicable, a re-estimate of the TC. FINMA will then classify the insurance company on a sub-annual basis as being in the green, yellow, orange or red zone and adjust, as necessary, the target amounts of the various thresholds. 9

IV. Actions taken

A. General remarks

The content and extent of the protective actions taken by FINMA pursuant to the list (non-exhaustive) in art. 51 ISA are in keeping with the solvency situation in general, and the extent 10

to which the threshold values defined above are not met in particular.

All transactions directly resulting in the SST ratio falling below any of the aforementioned thresholds are subject to approval. 11

Important notice: 12

The actions described below are to be understood as general guidelines. As such, they do not obligate FINMA to initiate a specific action — except where they are formulated below as being obligatory — nor do they enable a third party to invoke them in the sense of a legal entitlement that a specific action will be initiated. It is also possible that, depending on an insurance company's respective actual situation, other actions outside of the SST — whether more or less far-reaching — also need to be initiated than those allocatable to a specific area.

B. Actions initiated in the green zone

Where an insurance company is in the green zone, FINMA will initiate no action based on the company's SST solvency situation. 13

C. Actions initiated in the yellow zone

Where an insurance company is in the yellow zone, an increased risk is posed to the interests of policyholders due to the company's solvency situation. In such a situation, FINMA will intensify the risk dialogue with the insurance company with the objective of mitigating the risk posed to policyholders. 14

a) Causal analysis and action plan

FINMA will additionally order that an insurance company in the yellow zone perform an analysis of the causes resulting in the RBC dropping below the threshold value. In such an event, it will request that the insurance company submit an action plan based on realistic assumptions, said action plan to be submitted as a rule within two months of the underfunding being detected. The action plan — subject to approval by FINMA — shall establish in a binding manner the content and timing of the actions to improve solvency. The action plan is to be prepared so that the green zone is generally achieved within three years upon notification by FINMA. 15*

The action plan must include the following at minimum:

- Immediate steps to improve the SST ratio (e.g. capital increase, risk reduction, taking out of reinsurance). If necessary, these actions are to be implemented prior to submitting the action plan. 16
- A strategy for improving the SST ratio in the medium term 17
- A list of key long-term individual measures as a component of this strategy 18
- A timetable for implementing these measures 19
- A budget plan calculation, projected balance sheet with a forecast horizon of no less than four quarters as from the completion of the restructuring plan. 20

Appendix 4

Intervention thresholds

FINMA will perform verifications of adherence to the action plan on a regular basis. Where the action plan is not adhered to, FINMA reserves the right to initiate further measures as provided for in art. 51 ISA. 21

b) Approval requirement pertaining to certain transactions

Resolutions passed by a company leading to dividend payments, capital repayments, voluntary repayments of the company's own loans, intra-group transactions including the issuing of guarantees as well as the distribution of with-profit bonuses to policyholders and similar transactions must be submitted to FINMA in advance for its approval. 22

c) Other possible actions

FINMA may order further measures, taking the insurance company's situation into account, i.e. 23

- Have audits conducted by external experts to verify the valuation in terms of the market-consistent balance sheet or the appropriateness of the procedure followed in determining the TC. 24
- Demand that key indicators also be observed intra-year and reported to FINMA. 25
- Order that supplementary scenario analyses be conducted that enable the effectiveness of the restructuring measures in the specified timeframe to be reviewed under various assumptions pertaining to the development of the risk factors. 26

The aforementioned measures do not release an insurance company from complying with its obligations under company law, where the attending requirements are satisfied (in particular art. 725 of the Code of Obligations). 27

D. Actions initiated in the orange zone

Where an insurance company is in the orange zone, FINMA may initiate further actions in addition to the actions detailed in section IV.C of this Appendix and/or, as applicable, tighten the measures enacted under section IV.C of this Appendix. The omission of dividend payments is mandatory. 28*

a) Restructuring plan

An insurance company must prepare a restructuring plan, within two months, that returns the insurance company to the yellow zone within two years as a rule upon notification by FINMA and following that to the green zone within a further three years as a rule upon notification by FINMA. 29*

The restructuring plan must contain the elements specified in IV.C.a) of this Appendix at minimum. The forecast horizon for the budget plan calculation and the projected balance sheet must amount to no less than six half-year periods as from the completion of the restructuring plan. The restructuring plan must also show which of the insurance company's risks will be immediately reduced by which methods. The impact is to be determined of various scenarios — including negative ones — on the effectiveness of the restructuring plan. 30

Appendix 4

Intervention thresholds

b) Other possible interventions

Where the aforementioned interventions do not suffice by themselves to remedy the company's lacking solvency, FINMA will initiate further measures. To this end, FINMA may do the following in particular: 31

- Order that an extraordinary liquidity plan be prepared. 32
- Make particularly risky new business and renewals subject to approval. 33
- Prohibit new and renewal business 34
- Prohibit risky and complex transactions where it is not ensured that they serve to improve the SST ratio. 35
- Have an insurance company carry out organisational changes and have more in-depth controls, monitoring, reporting and audits performed by way of internal audit. 36

E. Actions initiated in the red zone

When reaching the red zone an insurance company must take immediate steps – in addition to steps in the yellow or orange zones - to protect policyholders. It has to be apparent to FINMA within a short period of time whether the actions initiated by the insurance company are likely to lead to success. The following actions in particular may be appropriate for an insurance company in the red zone: 37*

- Immediate increase of the RBC or reduction of the TC 38
- Voluntary transfer of the entire insurance portfolio 39
- Partial transfer of the insurance portfolio, resulting in the SST ratio being out of the red zone subsequent to the transaction. 40

Where it is not possible for an insurance company to initiate suitable measures and where the measures ordered by FINMA also do not result in success in the short term, FINMA will revoke the insurance company's licence. 41

Notes: 42

FINMA may not tolerate an insurance company being in the red zone. This results in FINMA only being able to permit or initiate urgent measures to improve the situation of the policyholders. For example, continuing operation with the objective of operating at a profit and thus gradually improving the solvency situation by retaining profits, for example, is not an acceptable alternative when a company is in the red zone.

F. Cooperation of management

Where the responsible governing bodies do not carry out the measures ordered by FINMA when in the yellow, orange or red zone so that a continued risk to the interests of policyholders is prevented, FINMA will demand that the respective persons be dismissed as provided for in art. 51 sect. 2 lett. f ISA. Where the responsible governing bodies do not comply, FINMA will initiate measures as provided for in art. 51 sect. 2 lett. c ISA. 43

List of modifications

The appendices have been modified as follows:

These modifications were adopted on 1 June 2012 and will enter into force on 1 January 2013.

modified	Appendix 3, margin no. 4
abrogated	Appendix 3, margin no. 18

References to the Capital Adequacy Ordinance (CAO; SR 952.03) have been adapted according to the version which will enter into force on 1 January 2013.

These modifications were adopted on 3 December 2015 and will enter into force on 1 January 2016.

modified	Appendix 4, margin nos. 15, 28, 29, 37