Appendix 2: Risk Definitions

Underwriting Risks

In general, the book value of insurance liabilities (technical provisions) and economic value of insurance liabilities are dependent on (i) the size and timing of future claims payments including expenses and (ii) the interest rates used to discount these claims payments to the current date.

The first component is a source of underwriting risk and the second component affects the interest rate risk in the balance sheet.

Underwriting risk can be generally defined as a change in the value of insurance liabilities caused by variance between the final costs for full contractual obligations and the assumed costs when these obligations were estimated. Hence, underwriting risk is realized as unexpected liability cash flows or unexpected change in the value of insurance liabilities when the pricing and provisioning assumptions on claims payments differ from the actual payments.

Technical provisions and the economic value of insurance liabilities always include a degree of uncertainty as they are based on estimates of the size, timing and the frequency of future claim payments.

The uncertainty is normally greater for new portfolios for which comprehensive run off statistics are not yet available, and for portfolios which include claims that take a long time to settle. Workers' compensation, motor other and motor third party liability, personal accident and liability insurance are examples of non-life products with the latter characteristics. In principle most of the life products have the latter characteristics embedded within them also. Life insurance policies are also exposed to the behavior of policyholders, because policyholders can change their premium payment intensity or cancel the existing policy.

Non-Life Insurance Underwriting Risks

Non-life insurance underwriting risks are often divided into premium and catastrophe risks and reserve risk in order to separate the risks related to future claims of current insurance contracts from already incurred claims. The division of non-life insurance underwriting risks is illustrated in the figure Non-life Insurance Underwriting Risks below.

Non-Life Insurance Underwriting Risks

External drivers

Technical & medical innovations, changes in climate, natural disasters, economic environment, inflation, laws and regulations

Changes in the timing, frequency or severity of fires, motor accidents, windstorms, floods, thefts and other insured events

Changes in longevity, inflation components, latent factors and precedents etc.

Premium and catastrophe risks

Changes in expected liability cash flows resulting from:

- Size and/or frequency of future claims related to unexpired contracts being greater than expected
- Timing of future claims payments related to unexpired contracts differs from expected.

Reserve risk

Changes in expected liability cash flows resulting from:

- Size of claims payments related to already incurred claims being greater than expected
- Timing of claims payments differs from expected.

Changes in economic value of liabilities and technical provisions

Changes in market interest rates and regulatory discount rates

Premium Risk and Catastrophe Risk

Premium risk relates to future claims resulting from expected insured events which have not occurred by the balance sheet date. The frequency, severity and timing of insured events and hence future claims may differ from those expected. As a result, the claims cost for future claims exceeds the expected level and there is a loss or adverse changes in the value of the insurance liabilities.

Catastrophe risk can be seen as an extreme case of premium risk. It is the risk of extreme or exceptional events, such as natural catastrophes where the pricing and setting of provisioning assumptions include significant uncertainty. These events may lead to significant deviations between the actual claims and the total expected claims resulting into a loss or adverse changes in the value of insurance liabilities.

Reserve Risk

Reserve risk relates to incurred claims, resulting from insured events which have occurred at or prior to the balance sheet date. The final amount, frequency and timing of claims payments may differ from those originally expected. As a result technical provisions are not sufficient to cover the cost for already incurred claims and there is a loss or adverse changes in the value of insurance liabilities.

Reserve risk includes **revision** risk, which is defined as the risk of loss, or of adverse change in the value of insurance and reinsurance liabilities, resulting from fluctuations in the level, trend, or volatility of revision rates applied to annuities, due to changes in the legal environment or in the state of health of the person insured.

Life Insurance Underwriting Risks

The value of life insurance liabilities is sensitive to underwriting risks and interest rates. Underwriting risk includes biometric, policyholder behavior and expense risks as presented in the figure Life Insurance Underwriting Risks below.

This is a user defined extract from Sampo's Online Annual Report and this kind of extract can in no circumstances be referred to as Sampo's Annual Report or an extract thereof. Sampo's entire Annual Report is available at www.sampo.com/annualreport.

Life Insurance Underwriting Risks

External drivers

Emerging infectious diseases, medical innovations, natural disasters, changes in lifestyles, economic environment, laws, taxation and regulations

Changes in longevity, mortality, morbidity and disability, or inaccuracy of used models

Biometric risks

Changes in expected liability cash flows resulting from:

- Actual pensions are being paid for a longer time than expected.
- Actual mortality, disability or morbidity rate is greater than expected.

Changes in policyholders' behavior

Policyholder behavior risks

Changes in expected liability cash flows resulting from:

- Actual rate of policy lapses differs from expected.
- Rate of actual surrenders differs from expected.

Changes in general expenses and/or direct underwriting costs

Expense risk

Changes in expected liability cash flows resulting from:

- Amount of expenses incurred is greater than expected.
- Timing of expenses incurred is earlier than expected.

Changes in economic value of liabilities and technical provisions

Changes in market interest rates and regulatory discount rates

Biometric Risks

Biometric risks refer to the risk that the company has to pay more mortality, disability or morbidity benefits than expected, or the company has to keep paying pension payments to the pension policy holders for a longer period (longevity risk) than expected originally when pricing the policy.

In life insurance, catastrophe events include – as in non-life insurance – rare single events or a series of events, usually over a short period of time and, albeit even less frequently, longer lasting events. When a low frequency, high severity event or series of single events lead to a significant deviation in actual benefits and payments from the total expected payments, an extreme case of biometric risk (i.e. a catastrophe risk) has been realized.

Policyholder Behavior and Expense Risks

Policyholder behavior risks arise from the uncertainty related to the behavior of policyholders. The policyholders have the right to cease paying premiums (lapse risk) and may have a possibility to withdraw their policies (surrender risk).

The company is also exposed to expense risk, which arises from the fact that the timing and/or the amount of expenses incurred differs from those expected at the time of pricing. As a result, expense charges originally assumed may not be enough to cover the realized expenses.

Discount Rate Risk in Technical Provisions

Discount rate risk in technical provisions is the main risk affecting the adequacy of technical provisions. The guaranteed interest rate in policies is fixed for the whole policy period. Thus, if market interest rates and expected investment returns fall, technical provisions may have to be supplemented.

Investment Portfolio Market Risks

In general, market risks refer to fluctuations in the financial results and capital base caused by changes in market values of financial assets and liabilities, as well as by changes in the economic value of insurance liabilities.

Furthermore, market risks also include the risk of worsening market liquidity in terms of widening bid-ask spreads and the risk of unexpected changes in the repayment schedules of assets. In both cases the market values of financial instruments in investment portfolios may change.

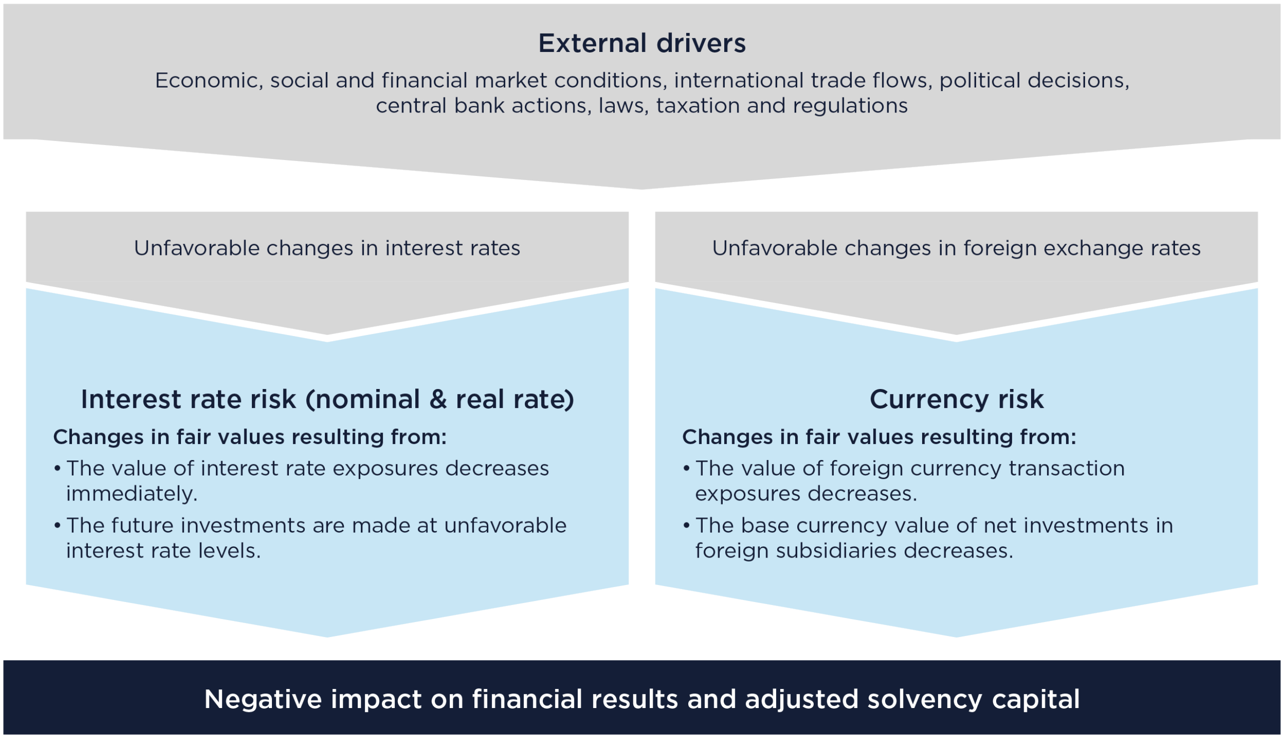
The risks caused by changes in interest rates, foreign exchange rates and inflation together with a general trend of credit spreads and equity prices are defined as **general market risks** and are managed by allocation limits and other risk limits.

The risk related to debt and equity instruments issued by a specific issuer can be defined as **issuer specific market risk** that is managed by issuer specific limits.

Interest Rate and Currency Risks

Many external drivers are affecting interest rates, inflation, inflation expectations and foreign exchange rates as illustrated by the following figure Interest Rate and Currency Risks.

Interest Rate and Currency Risks



Currency risk can be divided into transaction and translation risk. Transaction risk refers to currency risk arising from contractual cash flows in foreign currencies which are related to insurance activities, investment operations and foreign exchange transactions. Translation risk refers to currency risk that may realize when balance sheet values or measures such as SCRs expressed in base currency are converted to other currencies.

Equity and Spread Risks

Sampo Group is exposed to price risk dependent on changes in equity prices and spreads arising from its fixed income and equity investments, as illustrated by the below table Equity and Spread Risks. Equity price and spread movements are affected by general market trends and by risk factors that are related specifically to a certain issuer or a specific issue.

Equity and Spread Risks

External drivers

Economic, social and financial market conditions, laws, taxation and regulations, technical development and innovations

- Changes in issuer's financial position and future prospects
- Changes in market expectation on issuer's financial future
- Volatility of markets in general

Equity risk

Fair value changes and credit losses resulting from:

- Increasing risk premiums and respective negative changes in valuations are decreasing the fair value of long positions in equity instruments.
- Decreasing risk premiums and respective positive changes in valuations are decreasing the fair value of short positions in equity instruments.

- Changes in issuer's financial position and future prospects
- Changes in market expectation on issuer's probability of default or issuer's loss given default
- Volatility of markets in general
- Terms of debt instruments and related collaterals

Spread risk

Fair value changes and credit losses resulting from:

- Widening credit spreads are decreasing the value of long positions in debt instruments.
- Tightening credit spreads are decreasing the value of short positions in debt instruments.
- Value of collateral differs from expected.
- Ultimately borrower is not able to meet its financial obligations when they fall due.

Negative impact on financial results

Counterparty Default Risks

Credit risk by definition comprises default, spread and settlement risks. Default risk refers to losses arising from occurred defaults of contractual counterparties (counterparty risk) or debtors (issuer risk).

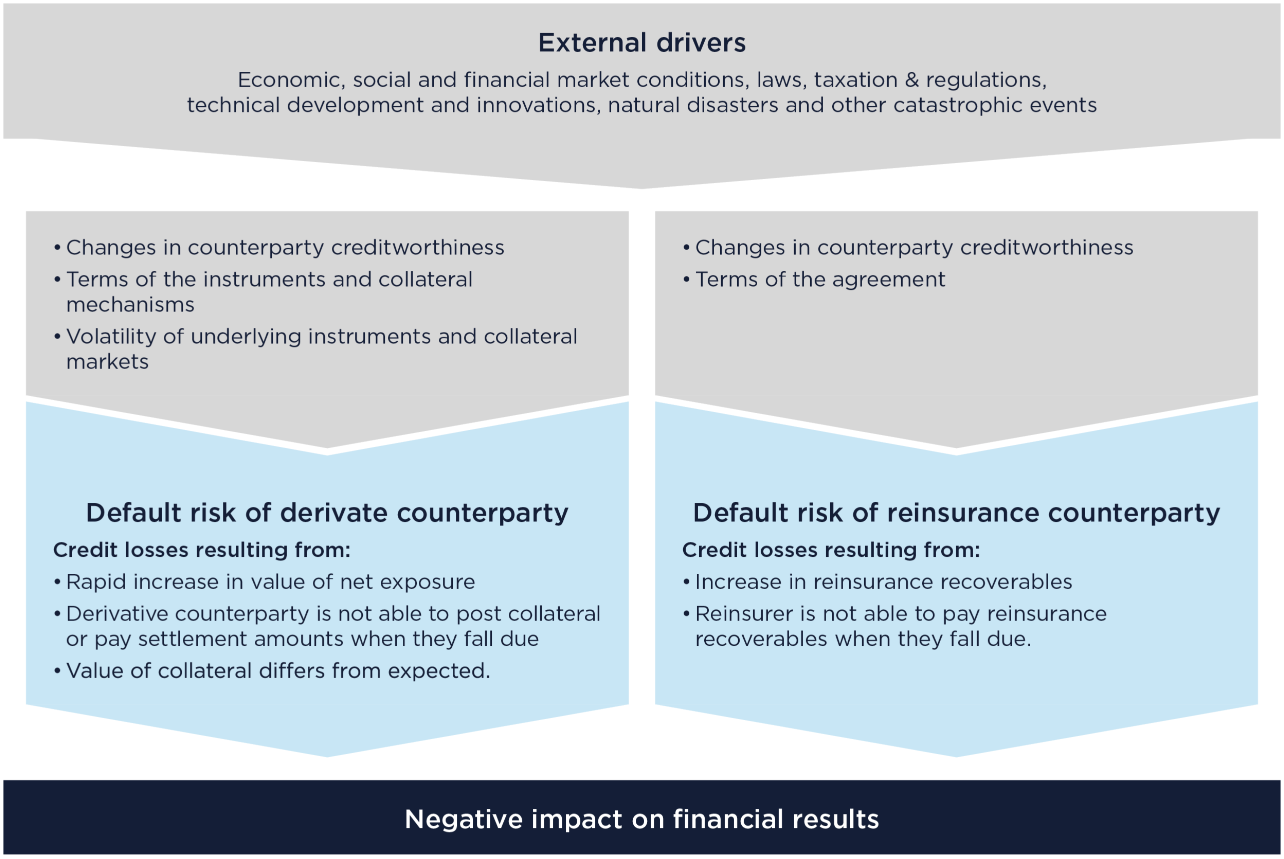
In the case of counterparty risk, the final loss depends on the positive mark-to-market value of derivatives or reinsurance recoverables at the time of default and on the recovery rate which is affected by collaterals.

In the case of issuer risk the final loss depends on the investor's holding of the security or deposit at the time of default, mitigated by the recovery rate.

Spread risk refers to losses resulting from changes in the credit spreads of debt instruments and credit derivatives. Credit spreads are affected when the market's estimation of the probability of defaults is changing. In essence, credit spread is the market price of default risk which is priced into the market value of the debt instrument. Hence the debt instrument's value should lower before the event of default occurs. Because of these features, spread risk, including also the default risk of debt instruments, is categorized in Sampo Group under investment portfolio market risks.

Settlement risk realizes when one party fails to deliver the terms of a contract with another party at the time of settlement. Settlement risk can be the loss associated with default at settlement and any timing differences in settlement between the two parties. Settlement risks are effectively mitigated by using centralized settlement and clearing systems by Sampo Group companies.

Counterparty Default Risk



ALM Risks

When changes in different market risk variables (interest rates, inflation, foreign exchange rates) cause a change in the fair values of investment assets and derivatives that is of a different size than the respective change in the economic value of the insurance liabilities, the company is exposed to ALM risk. It has to be noted that the cash flows of insurance liabilities are modelled estimates and are therefore uncertain in relation to both their timing and amount. This uncertainty is a central component of ALM risk. Interest rate risk was defined earlier in the connection of market risks and hence in this section only liquidity risk is defined.

Liquidity Risks

Liquidity risk is the risk that Group companies are, due to a lack of available liquid funds or access to relevant markets, unable to conduct their regular business activities in accordance with the strategy, or in extreme cases, are unable to settle their financial obligations when they fall due.

Liquidity Risks

External drivers

Economic, social and financial market conditions, laws, taxation and regulations, market turbulences, natural disasters and other catastrophic events

- Policyholders' behavior in general
- Changes in creditworthiness and reputation of the company
- Periodic concentration of large claims and simultaneous reinsurers' insolvency
- Liability structure of the company.

Liquidity risk – Insurance liabilities

- Renewal rate of insurance policies is lower than expected.
- Claim payments over short-term are clearly higher than expected.

- Investors' behavior in general
- Market liquidity in general
- Changes in creditworthiness and funding needs of the company
- Investment portfolio structure of the company.

Liquidity risk – Investment assets and funding

- Financing is not available at reasonable terms or at all.
- Investment assets cannot be sold at reasonable prices or at all.

- Reinsurers' behavior in general
- Derivative counterparties' behavior in general
- Changes in creditworthiness of the company
- Liability structure of the company.

Liquidity risk – Derivatives and reinsurance

- Reinsurance is not available at reasonable terms or at all.
- Financial derivatives are not available at reasonable terms or at all.

Inability to enter into transactions at reasonable terms or settle financial obligations endangers the ability to manage liquidity positions, risk exposures and capital structure according to strategy

The sources of liquidity risk in Sampo Group are either internal or external by their nature. If the company's rating declines or if the company's solvency otherwise appears jeopardized, its ability to raise funding, buy reinsurance cover or enter into financial derivatives at a reasonable price is endangered. Moreover, policyholders may also not be willing to renew their policies because of the company's financial challenges or in the case of reputational issues. If these risks, caused by internal reasons, are realized together with general market turmoil, which makes the selling of investment assets and the refinancing of debt difficult, maintaining adequate liquidity can be a challenge.

Operational Risks

Operational risk refers to the risk of loss resulting from inadequate or failed processes or systems, from personnel or from external events. This definition includes compliance risk but excludes risks resulting from strategic decisions. The risks may realize for instance as a consequence of:

- Internal misconduct;
- External misconduct;
- Insufficient human resources management;
- Insufficiencies in operating policies with regard to customers, products or business activities;
- Damage to physical property;
- Interruption of activities and system failures; or
- Defects in the operating process.

Materialized operational risks can cause an immediate negative impact on the financial results due to additional costs or loss of earnings. In the longer term, materialized operational risks can lead to a loss of

This is a user defined extract from Sampo's Online Annual Report and this kind of extract can in no circumstances be referred to as Sampo's Annual Report or an extract thereof. Sampo's entire Annual Report is available at www.sampo.com/annualreport.

reputation and, eventually, a loss of customers which endangers the company's ability to conduct business activities in accordance with the strategy.

Compliance risk is the risk of legal or regulatory sanctions, material financial losses or loss of reputation resulting from a company's failure to comply with laws, regulations and administrative orders as applicable to its activities. A compliance risk is usually the consequence of internal misconduct and hence it can be seen as a part of operational risk.

Operational Risks

External drivers

Natural disasters, other catastrophic events, epidemics, unauthorized or criminal acts and technological development

- Competence and integrity of human resources
- Hardware, software and data
- Work process.

Operative processes

High cost or low quality of client services or internal processes resulting from:

- Internal processes are not working as expected.
- Client services are not working as expected.

- Source data integrity
- Calculation procedures
- Reporting procedures
- Access to data and reports.

Data and information

Deficiencies in decision-making and actions and non-compliance in reporting resulting from:

- Inadequate, inaccurate or untimely information and reporting.

- Internal events, accidents, failures, misconduct etc.

Resource damages

Discontinuity of operations resulting from:

- Damage to personnel
- Damage to physical property or locations
- Damage to or loss of data.

Negative impact on financial results arising from immediate costs or loss of earnings and inability to conduct business activities in accordance with strategy due to loss of reputation and customers

This is a user defined extract from Sampo's Online Annual Report and this kind of extract can in no circumstances be referred to as Sampo's Annual Report or an extract thereof. Sampo's entire Annual Report is available at www.sampo.com/annualreport.