

# Risk management report 2011

Tryg | 



# Risk management

## Risk management principles

Risk management is an integral part of Tryg's business operations. Tryg continuously seeks to minimise the risk of unnecessary losses in order to optimise returns relative to the capital available in the company at any time. This requires the proactive identification and control of all significant risks.

The Supervisory Board defines the acceptable level of risk. Tryg wishes to take risks associated with business activities on the condition that they can be managed and can contribute an acceptable return on equity. Risk management at Tryg is organised on the basis of three lines of defence:

1. Business managers are responsible for the management and control of all risks associated with their own activities.
2. A central risk management function, the actuarial function and a compliance function take care of coordinated risk management and ensure the balance between Tryg's overall risk and the capital available.
3. Internal audit performs an independent assessment of the risk environment, etc. for the Supervisory Board.

## Risk management environment

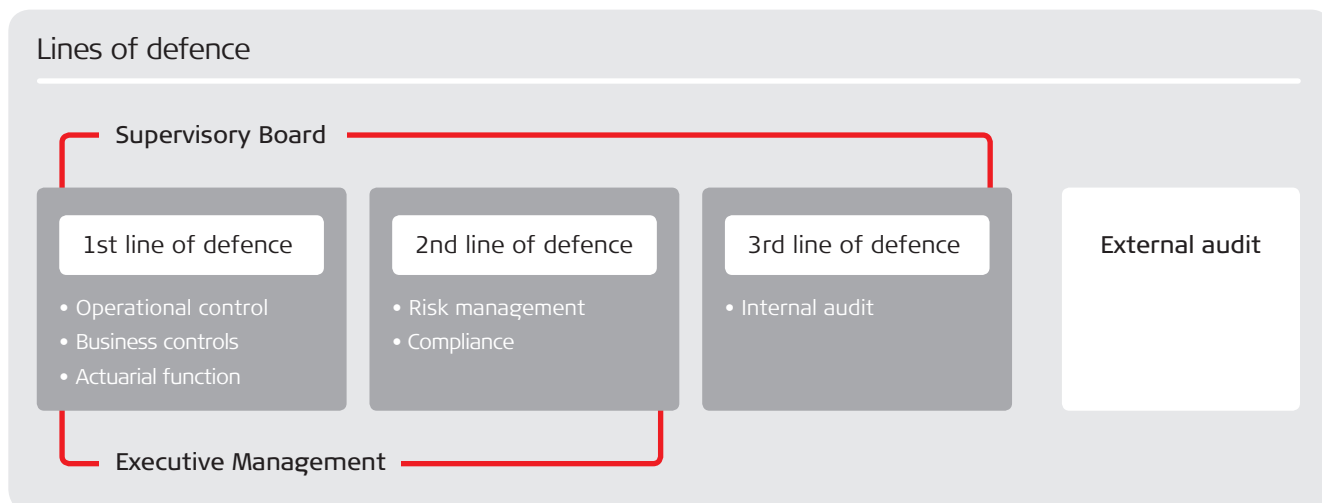
For several years, Tryg has worked with risk management and modelling of the company's risks by means of a risk management environment. The introduction of Solvency II will imply stricter demands on how insurance companies work with and

control risks, including the Supervisory Board's involvement in risk and asset management.

The Supervisory Board has the overall responsibility for the company's risk management and proactively defines risk appetite and the framework for risk management, assessing the total risk and capital requirement within Tryg on an on-going basis. This is achieved by means of policies and guidelines drawn up in accordance with Section 71 of the Danish Financial Business Act and by continuously evaluating the calculation of the company's capital requirement. In order to be able to monitor the organisation's risk management work closely, the Supervisory Board has appointed a Risk Committee with representatives from the Supervisory Board, which reviews Tryg's capital and risk status on a quarterly basis.

Tryg's risk management is administered through a risk management environment, in which the Risk Management Committee, with representatives from the Executive Management, monitors the entire risk and asset management process. The areas of underwriting and reinsurance, provisioning, investment risk as well as operational risk and security are administered by corresponding sub-committees. Risk management is underpinned by Tryg's internal capital model.

The control environment consists of a series of business processes that define controls of areas of activity and authorisation levels. To support the organisation's work, a new structure



was established in 2011, in which risk management activities in the business areas are coordinated by decentralised risk managers. Each business area will thus have its own risk manager with responsibility for matters including risk identification, risk control, event registration, contingency plans and compliance. The decentralised risk managers must ensure close interaction between the business and the risk management environment.

### Risk management

Every year, Tryg carries out a risk mapping process, which aims to identify new risks that cannot be assessed using statistical analyses. These assessments are compiled in Tryg's risk database and form the basis of ongoing risk reporting. Selected risk scenarios based on this work are incorporated directly into Tryg's calculation of the necessary capital requirement (Individual Solvency Requirement) and in Tryg's 'Own Risk and Solvency Assessment' (ORSA).

ORSA is one of the most important elements of compliance within the Solvency II regime. The ORSA is a top-down process, owned by the Supervisory Board, connecting strategy, risk management and capital planning. The most important purpose of the ORSA is that the business commits to assessing all risks in the business and decides its associated capital requirement. The result of the ORSA should ensure that over a planning period of three to five years there is a reasonable balance between the company's risk adoption strategy and the capital available to support the strategy.

## Major risk types

### Underwriting risk

The risk related to entering into insurance contracts. The risk that claims at the end of an insurance contract deviate significantly from our assumptions when pricing at inception of the contract.

**Handled by the Underwriting Reinsurance Committee**

### Reserving risk

Technical provisions are made at the end of a financial period to cover expected future payments for claims already incurred. Reserving risk is the risk that future payments deviate significantly from the technical provisions.

**Handled by the Claims Reserving Committee**

### Investment risk

The risk that volatility in the financial markets impacts the Group's results. Investment risk includes elements such as interest rate risk, equity risk, foreign exchange risk and liquidity risk.

**Handled by the Investment Risk Committee**

### Operational risk

The risk of errors, fraud or failures in internal procedures, systems and processes.

**Handled by the Operational Risk Committee**

### Strategic risk

The risk of changes to the conditions under which we operate, including changed legislation, competition, partnerships or market conditions.

**Handled by the Risk Management Committee**

## Tryg's risk management environment



## Description of risk types

### Underwriting risk

Underwriting risk is the risk relating to entering into insurance contracts and thus the risk that premiums charged do not adequately cover the claims that Tryg is obliged to pay when a claim has occurred. This risk can be assessed and managed based on statistical analyses of historical experience within various business sectors.

The insurance premium must be adequate to cover expected claims, but must also comprise a risk premium equal to the return on the part of Tryg's capital that is used to protect against random fluctuations. All other things being equal, this means that insurance sectors or areas which, from experience, are subject to major fluctuations, must comprise a larger risk premium.

The figures below for Norwegian buildings/contents and liability insurance policies show how there can be major differences in practice in the fluctuations observed in different sectors and thus in the underwriting risk for the sectors in question. The ongoing assessment of the underwriting risk is based on Tryg's internal capital model, which defines the target premium levels for each part of the insurance business. This applies partly when defining and updating tariffs, and partly when individually pricing major agreements for the corporate and partner areas. The underwriting risk is also managed by means of ongoing profitability monitoring, business processes, acceptance policy, proxies and reinsurance.

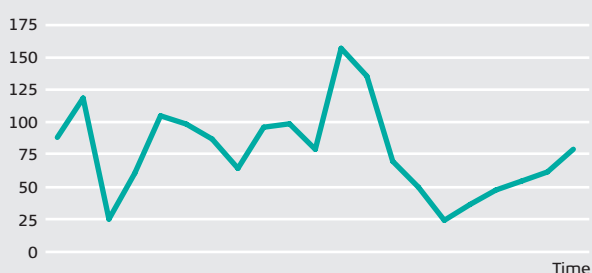
Reinsurance is used to reduce the risk in areas where a special need for this exists. The need for reinsurance is assessed on an ongoing basis using Tryg's internal capital model, in which the price of purchasing reinsurance is compared with the reduction in the capital requirement that can be achieved. In light of the major cloudburst claims in Denmark in 2010 and 2011 and equivalent weather claims in the rest of Europe, Tryg adjusted its risk assessment associated with weather-related events upwards in 2011. As a consequence of this, in 2011 Tryg purchased what is known as lateral cover for combinations of small or medium-sized events generating nature-related claims. This covers a total of DKK 500m, with an aggregated retention of DKK 400m.

In the area of buildings and contents insurance, major events in 2011 were covered by catastrophe reinsurance of DKK 5.5bn. For gross claims in the range of DKK 100-175m, retention increases from DKK 100m to DKK 141m. For gross claims above DKK 175m, retention is a maximum of DKK 141m. The primary risk for individual events is storms, and the scope of the cover is defined using simulation models such that the cover statistically will prove insufficient less than once every 250 years. The reinsurance programme for catastrophe also covers other catastrophe events, including terrorist incidents, up to a maximum of DKK 4bn.

For accident and workers' compensation policies, Tryg has bought reinsurance with retention of DKK 50m and with coverage of up to DKK 1.5bn for claims that originate from the same event, including terrorism.

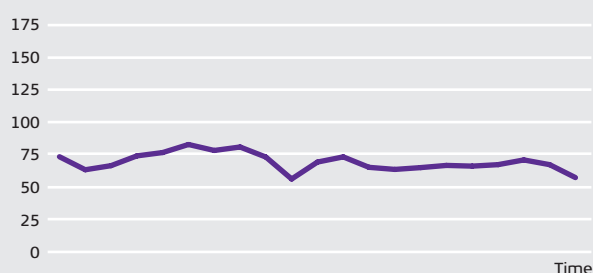
### Building/contents fluctuations in Norway

Claims ratio



### Liability insurance development in Norway

Claims ratio



A national guarantee scheme was established in Denmark in 2010 to cover NBCR (Nuclear Biological Chemical Radioactive) terrorist attacks. This scheme involves the State providing a guarantee of up to DKK 15bn for the entire Danish market to cover the total claims expense over DKK 5bn with reinsurance cover of DKK 4.5bn after retention of DKK 500m. Tryg's share of this will be approximately DKK 100m, which will be the maximum claim resulting from NBCR events.

Reinsurance is also bought for a number of sectors in which experience has shown that claims vary considerably. The largest single risks in our corporate portfolio are in the area of buildings and contents insurance, protected by reinsurance cover of DKK 1.7bn and with retention of DKK 50m, but with additional annual retention of DKK 75m. Tryg buys facultative reinsurance for buildings and contents risks above this limit. Other sectors covered by reinsurance include liability, motor, fish farming and guarantee insurance.

In the event of a major insurance event covered by the reinsurance programme, there may be major receivables from reinsurers and thus also a credit risk. This risk is managed through requirements to assess the reinsurers' credit ratings and to spread reinsurance across several reinsurers.

### Provisioning risk

When the term of insurance expires, insurance risk relates to the provisions for claims made to cover future payments of claims already incurred. When a claim has occurred, there is a certain delay before the customer submits a claim. Depending on the complexity of the claim, a longer or shorter period of time may pass before the size of the claim is finally agreed. This may be a prolonged process, particularly for personal injuries. Even once the claim has been settled, there is a risk that it will be resumed at a later date, triggering further payments.

The size of the provisions for claims is determined both through individual assessments and statistical calculations. As of 31 December 2011, provisions for claims totalled DKK 26.9bn. The duration of these provisions, i.e. the average time until these amounts are paid out to customers, was 3.5 years as of 31 December 2011. Most of the provisions for claims relate to personal injury claims. These provisions are exposed to changes in wage developments, the discount rate, payout patterns, economic trends, legislation and court decisions.

The calculation of provisions for claims will always be subject to uncertainty. Historically, many insurers have experienced substantial positive as well as negative impacts on profit (run-off) resulting from provisioning risk, and this may also be expected to happen in future. Tryg manages the provisioning risk by pursuing a provisioning policy that guarantees an updated, uniform process for determining provisions at all times. This implies that it is based on an underlying model analysis, and that internal control calculations and evaluations are performed.

Provisions for claims relating to annuities in Danish workers' compensation insurance are discounted using the current market rate and simultaneously revalued by the wage inflation rate each year. This exposes Tryg to an explicit inflation risk. To hedge this, Tryg uses a number of zero coupon inflation swaps in Danish kroner, in which Tryg receives a fixed amount in return for payment of an amount based on the trend in Danish consumer prices.

### Investment risk

Investment risk is the risk that volatility in financial markets impacts results and thus the company's financial position.

### Interest rate risk

Both investment assets and provisions for claims are exposed to interest rate changes. Tryg aims to match the payout profile for discounted provisions for claims with corresponding interest-bearing assets as closely as possible. If interest rates decline, this structure would cause a similar increase in the provisions for claims and the value of the bond portfolio, thereby considerably reducing Tryg's overall exposure to changes in interest rates.

## Provisions for claims<sup>a)</sup> (gross)

Expected cash flow	DKK m
0-1 years	10.2
1-2 years	4.4
2-3 years	2.8
> 3 years	8.8
<b>Total</b>	<b>26.2</b>

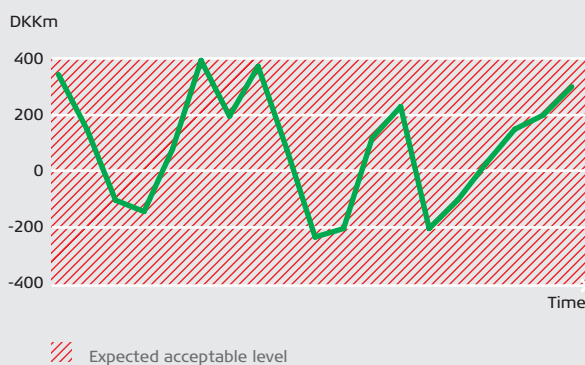
a) The provisions for claims are excluding Finland and Tryg Garanti.

Investment assets comprise not only assets corresponding to the technical provisions, but also Tryg's equity. Tryg has divided investment activities into two investment portfolios, the free investment portfolio and a match portfolio. The element that corresponds to technical provisions is invested exclusively in interest-related assets and serves solely to cover interest rate sensitivity in the discounted provisions. The remaining element, which corresponds to equity, is a free investment portfolio, the purpose of which is to generate the best possible return compared to the risk.

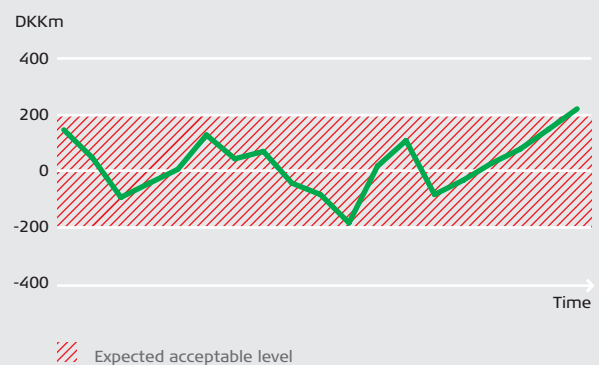
Following this division, fluctuations in the match portfolio will in principle correspond in full to fluctuations in liabilities. In practice it will not be appropriate to strive to achieve a complete match, purely because of the administrative expenses that this would generate. In practice, Tryg expects that it will, as a general rule, be possible to keep the net interest rate in the match portfolio within a limit of DKK +/- 50m per quarter.

Tryg is also exposed to interest rate changes in relation to obligations concerning the Norwegian pension scheme, which covers

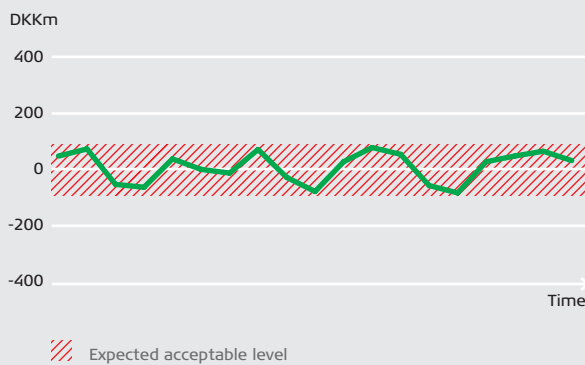
### Scenario 1 | Unmatched



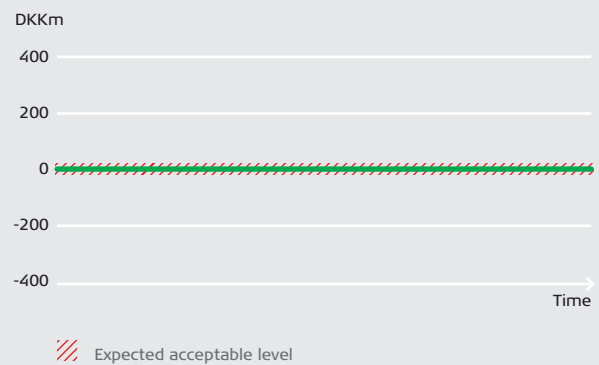
### Scenario 2 | Duration match



### Scenario 3 | Fully matched



### Scenario 4 | Theoretically perfect match



A perfect match means that the match portfolio's return (coupon and market value adjustment) is identical to the return on provisions (market value adjustment of provisions originating from interest rate changes plus technical interest). In practice, the perfect match cannot be achieved. The above illustrations show the differences in fluctuations in the deviation between the value of an interest rate portfolio and the value of a discounted provision portfolio: 1) A scenario in which no attempt is made to match the interest sensitivity of the provisions; 2) A scenario in which the durations of assets and liabilities are matched, providing protection against parallel changes in the interest curve; 3) A scenario in which the sensitivity of assets and liabilities to changes in specific interestpoints is matched; 4) Finally, a scenario in which all payments from the asset portfolio are matched with payments made from the provisions and are 'invested' in the regulatory interest curve. Tryg's matching corresponds to scenario number 3.

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approximately 800 employees. This scheme was closed to new employees in 2008, and the total provision was DKK 978m as of 31 December 2011. Changes in the pension provision are not included in the income statement, but are charged directly to changes in equity.

### **The match portfolio and the free portfolio**

Denmark is one of the only countries in the world that requires insurance companies to discount their technical provisions using a yield curve specified by the Danish Financial Supervisory Authority.

The introduction of Solvency II would mean that all European companies would have to discount provisions in relation to a solvency calculation, and would thus have to control the interest rate risk for both assets and liabilities. Tryg adjusts the bond portfolio on an ongoing basis, in order to minimise the net interest rate risk (price changes caused by yield rate changes) as far as possible. The Danish Financial Supervisory Authority's interest curve for the relevant Nordic countries is designed in such a way that it is not possible in practice to invest precisely in accordance with it. Tryg has therefore designed a model portfolio that matches the individual countries' regulatory yield curve as closely as possible. In the model portfolio, future interest payments match the payout profile of the insurance provisions as perfectly as possible in both economic and cost terms. This structure removes most of the market risks that impact the match portfolio, but the difference between the regulatory curve's return and Tryg's model portfolio's return may still vary. There may also be deviations due to restructuring and investment costs, as well as ongoing changes in the size, time and hedging of provisions.

A perfect match means that the match portfolio's return (coupon and market value adjustment) is identical to the return on provisions (market value adjustment of provisions, taken from interest rate changes plus technical interest). On page 6 there is an illustration of the perfect match, the match achievable in practice (scenario 3), A strategy in which only the duration of assets and liabilities is matched and finally a situation in which no match is made at all.

### **Equity and real estate risk**

The equity and real estate portfolios are exposed risks from changes in equity markets and real estate markets respectively.

As of 31 December 2011, the equity portfolio accounted for 4.5% of the total investment assets. This proportion is expected to be in the range 2.3%-6.0% in 2012. In 2008, Tryg bought the head office in Ballerup, significantly increasing the proportion of real estate. This proportion is expected to be reduced over time. In addition to owner-occupied properties, Tryg's real estate portfolio consists of office and rental properties, which account for 17.8% and 22.3% respectively of total investment assets.

### **Currency risk**

Currency risk is kept at a low level. Tryg's premium income in foreign currency is mostly matched by claims and expenses in the same currencies, and it is therefore only the profit for the period that is exposed to currency risk. The risk of a loss of value in balance sheet items as a consequence of exchange rate fluctuations is hedged by means of currency derivatives in accordance with a general hedging rate of 90-100% per currency. The aim is for the net carrying amount of the Norwegian entity to be hedged 98-100% over time.

Exchange rate adjustments and hedging of foreign entities are charged directly to equity. The profit from currency derivatives is included in tax, while adjustments of equity are not included in the taxable amount. In years with a value increase in derivatives and a loss in the adjustment of equity, tax must be paid on the value increase without a deduction for the loss on the adjustment of equity. Contrary to this, in years where there is a loss on derivatives and a positive adjustment of equity, a tax deduction arises. Over time, it is expected that years when tax is paid and years when tax is deducted will balance one another.

To manage currency risk, Tryg uses currency spots as well as forward exchanges and currency swaps (a spot and opposite term transaction) with a typical duration of one to three months.

### **Credit risk**

Credit risk is the risk of incurring a loss if counterparties fail to meet their obligations. In connection with investment activities, the primary counterparties are bond issuers and counterparties in other financial instruments. Tryg uses limits and rating requirements to manage credit risk and concentration risk.

Tryg matches provisions, hence naturally has a high level of exposure to various forms of mortgages, including mortgage

bonds in the Nordic region, not least in Denmark, where the regulatory yield curve explicitly contains mortgage elements that must be hedged. In particular, Tryg have exposure of this kind at the short end of the yield curve, partly because the use of derivatives here increases the investment requirement. The risk is primarily rated AAA, with an AA rated risk in exceptional circumstances, and is diversified with a broad range of issuers, ensuring that Tryg can comply comfortably with the rules of Solvency II regarding limited concentration risk.

Credit risks from reinsurance counterparties are managed according to framework conditions, such as minimum rating requirements and through the Credit Committee, which monitors the quality of reinsurance counterparties on an ongoing basis. The minimum requirements include a BBB rating from Standard & Poor's for short-tailed business and an 'A-' rating from Standard & Poor's for long-tailed business.

#### Liquidity risk

A general insurance company such as Tryg naturally has extremely good liquidity, as premium payments fall due before claims are paid. Payments received are largely invested in securities that can easily be realised and/or mortgaged (repos). Tryg also has access to funding and liquidity from cash accounts and the bond market. Tryg continuously monitors the liquidity requirement and adapts its contingency plans so that it can at all times obtain the necessary liquidity.

#### Operational risk

Operational risk relates to errors or failures in internal procedures, fraud, breakdown of infrastructure, IT security and similar factors. As operational risks are mainly internal, Tryg focuses on establishing an adequate control environment for its operations. In practice, this work is organised by means of procedures, controls and guidelines that cover the various aspects of Tryg's operations, including the IT security policy. Tryg has also set up a security and investigation unit to handle internal fraud, IT security, physical security and contingency plans.

Tryg has prepared contingency plans to handle the most important areas, such as the contingency plans in the individual parts of the business to handle an event of a prolonged IT break-

## Sensitivity analysis

DKK m	2010	2011
<b>Insurance risk</b>		
<b>Underwriting risk</b>		
Effect of 1% change in:		
Combined ratio (1 percentage point)	+/- 191	+/- 202
Claim frequency (1 percentage point)	+/- 1,761	+/- 1,706
Average claim	+/- 151	+/- 158
Premium rates	+/- 189	+/- 200
<b>Provisioning risk</b>		
Effect of 1% change in:		
Social inflation	+/- 614	+/- 706
Annual provision for long-tailed sectors (workers' compensation, motor liability, liability, accident)	+/- 36	+/- 35
<b>Investment risk</b>		
<b>Interest rate market</b>		
Effect of 1% increase in interest curve:		
Impact of interest-bearing securities	-795	-850
Discounting of provisions for claims	706	889
Net effect of interest rate rise	-89	39
Impact of Norwegian pension liability	225	296
<b>Equity market</b>		
15% decline in equity market	-290	-279
Effect of derivatives	37	7
<b>Real estate market</b>		
15% decline in real estate markets	-584	-593
<b>Currency market</b>		
15% decline in exposed currency relative to DKK		
	-655	-659
Impact of derivatives	647	629

down. Tryg have also set up a crisis management structure to deal with the eventuality that the Group is hit by a major crisis.

#### Strategic risk

Strategic risk relates to Tryg's choice of strategic position, including IT strategy, flexibility relative to the market, business partners and reputation, as well as changed market conditions. The Supervisory Board is closely involved in the management of strategic risk.