

Risk management in insurance

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Operační program Výzkum, vývoj a vzdělávání

AGENDA

- General risk management
- Risk management process
- Solvency II
- Underwriting risk
- Investment risk: market, credit, liquidity

GENERAL RISK MANAGEMENT

- Risk
 - Deviation of an outcome from its expectation, causing a loss or decrease in value
 - Derived from ancient Arabic „rizq“ = profit or gain, but this profit was uncertain due to the intervention of Allah

Definition of risk

- A risk is often specified in terms of an **event** or circumstance and the **consequences** that may flow from it.'
- 'Risk is measured in terms of a combination of the **consequences** of an event [...] *and* their **likelihood** [...].'
- 'Risk may have a positive [then it is often called a chance] or negative impact.'

Example of Risk

Peril Accident

Asset Car

Incident Mr. Smiht damaged
Mrs. Dupont's BMW

LOSS Damage was insured
and accouts for 5 000,-



RISK

Key components of risk

- Peril
 - Particular set of circumstance/events, risk source
 - Examples: Credit default, Insured liability events
- Asset
 - Is vulnerable to a certain type of threat
 - Examples: Insured object, IT component

Key components of risk

- Incident
 - Occurrence of an event which could eventually generate losses
 - Examples: Natural disaster, Damage to physical assets due to a flooding
- Loss
 - Financial negative outcome or impact of an event
 - Examples: storm catastrophe that leads to claims of 4 m. Euro. or loss of 0,1 m. Euro due to a delay

Risk Measures

Definition

- Risk Measure is a function of the probability distribution of losses.

Function

- Risk Measure is used to determine either the total capital requirement or an indicated capital requirement for a component. Risk Measures can be visualised with data in a Normal distribution. A bell curve (normally distributed random variable) can be described by mean (expectation) and standard deviation.

Risk Measures

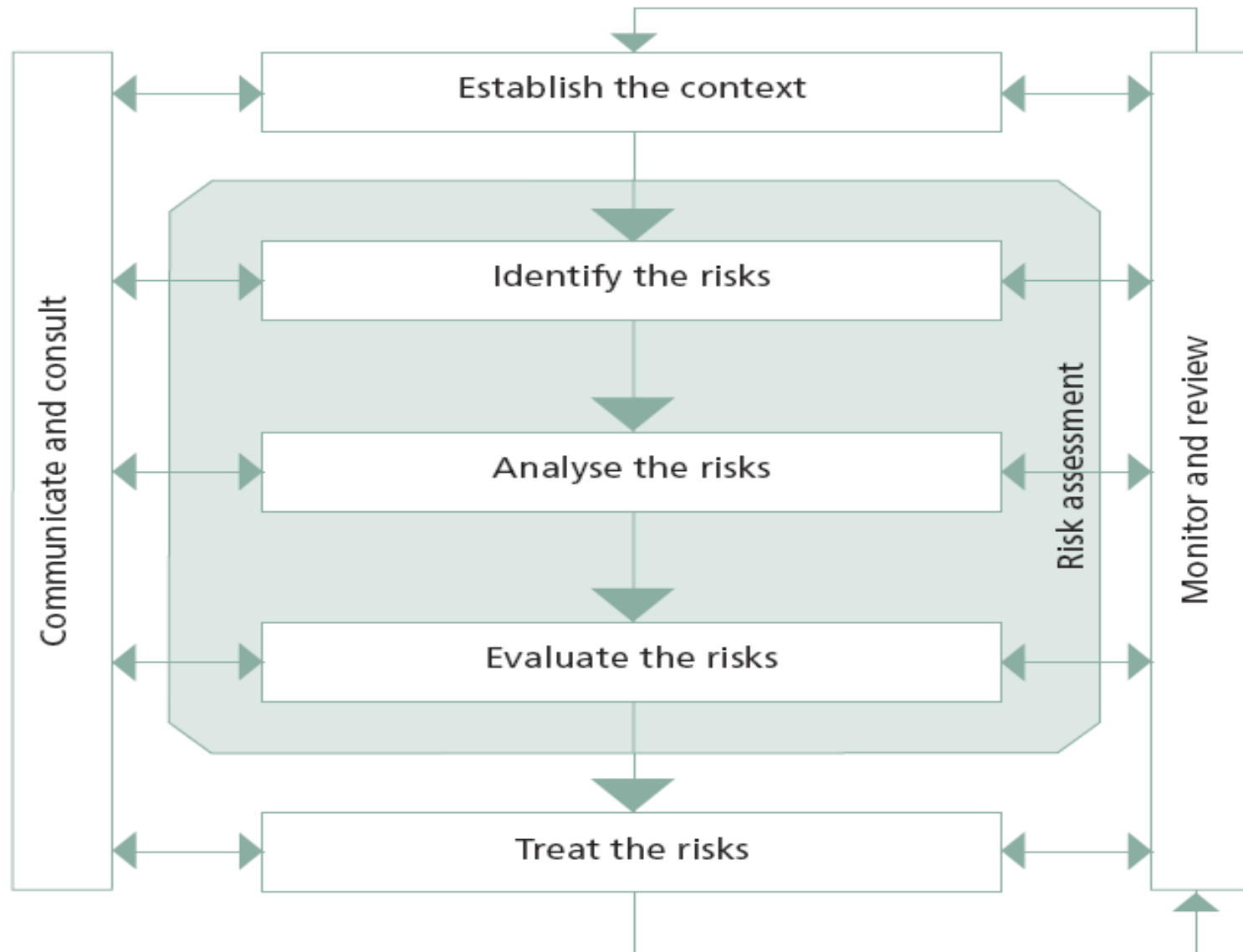
Examples

- Value at Risk (VaR) that is used to determine the solvency capital requirement, is a quantile of a distribution. The 99,5th percentile of the distribution is the value for which there is a probability of exceedence of 0,5%.
- The volatility is a measure for price variation of a financial instrument over time.
- The risk margin represents the value of the deviation risk of the actual outcome compared with the best estimate.

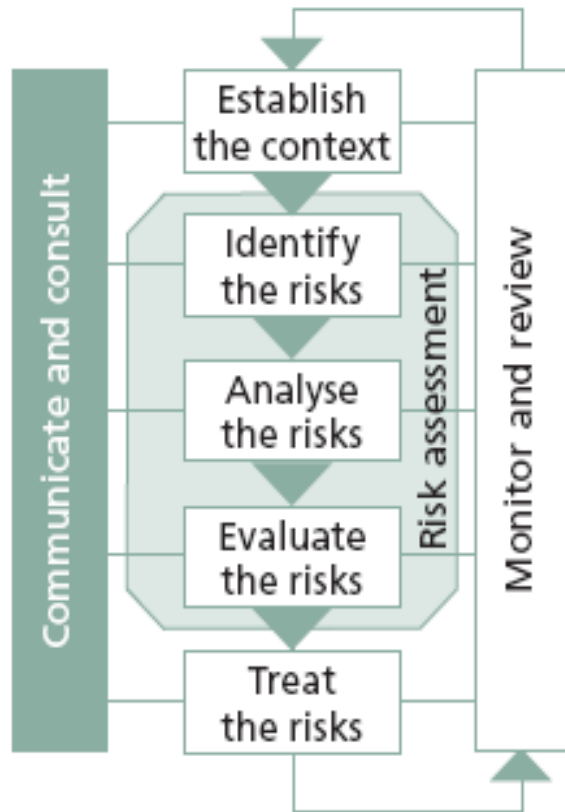
Risk management process

Risk management process

- The Risk Management Process consists of a series of steps that, when undertaken in sequence, enable continual improvement in decision-making.
 - Step 1. Communicate and consult.
 - Step 2. Establish the context.
 - Step 3. Identify the risks.
 - Step 4. Analyze the risks.
 - Step 5. Evaluate the risks.
 - Step 6. Treat the risks.
 - Step 7. Monitor and review.



Step 1. Communicate and consult



- Communication and consultation aims to identify who should be involved in assessment of risk (including identification, analysis and evaluation) and it should engage those who will be involved in the treatment, monitoring and review of risk.
- Aimed at:
 - Eliciting risk information
 - Managing stakeholder perceptions for management of risk.

A- Eliciting risk information

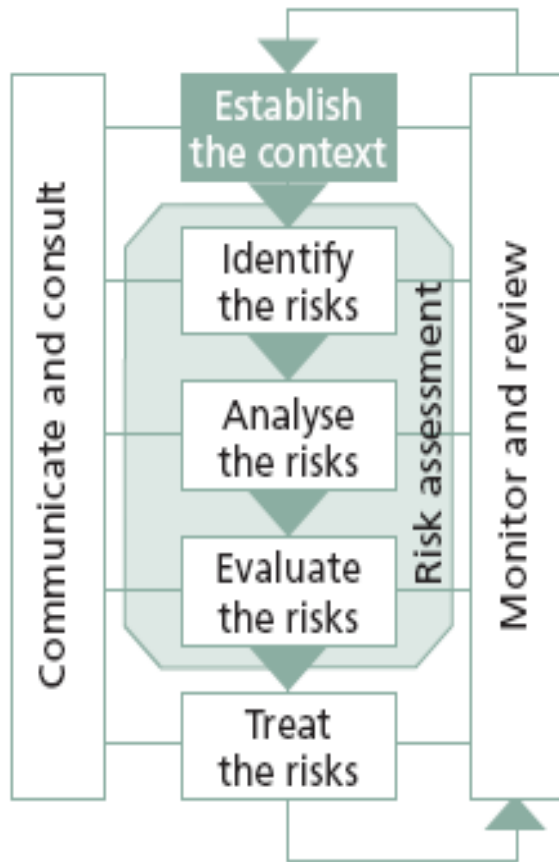
- Communication and consultation may occur within the organization or between the organization and its stakeholders.
- It is very rare that only one person will hold all the information needed to identify the risks to a business or even to an activity or project.
- It therefore important to identify the range of stakeholders who will assist in making this information complete.

B-Managing stakeholder perceptions for risk



Source:
<https://www.slideshare.net/mcurtis2010/presentation-manage-risk>

Step 2. Establish the context



1. Establish the internal context
2. Establish the external context
3. Establish the risk management context
4. Develop risk criteria
5. Define the structure for risk analysis

Source:

<https://www.slideshare.net/mcurtis2010/presentation-manage-risk>

1- Establish the internal context

- As previously discussed, risk is the chance of something happening that will impact on objectives.
- As such, the objectives and goals of a business, project or activity must first be identified to ensure that all significant risks are understood.
- This ensures that risk decisions always support the broader goals and objectives of the business. This approach encourages long-term and strategic thinking.

2 - Establish the external context

- This step defines the overall environment in which a business operates and includes an understanding of the clients' or customers' perceptions of the business. An analysis of these factors will identify the strengths, weaknesses, opportunities and threats to the business in the external environment.

3- Establish the risk management context

- Before beginning a risk identification exercise, it is important to define the limits, objectives and scope of the activity or issue under examination.
- For example, in conducting a risk analysis for a new project, such as the introduction of a new piece of equipment or a new product line, it is important to clearly identify the parameters for this activity to ensure that all significant risks are identified.

4 - Develop risk criteria

- Risk criteria allow a business to clearly define unacceptable levels of risk. Conversely, risk criteria may include the acceptable level of risk for a specific activity or event. In this step the risk criteria may be broadly defined and then further refined later in the risk management process.

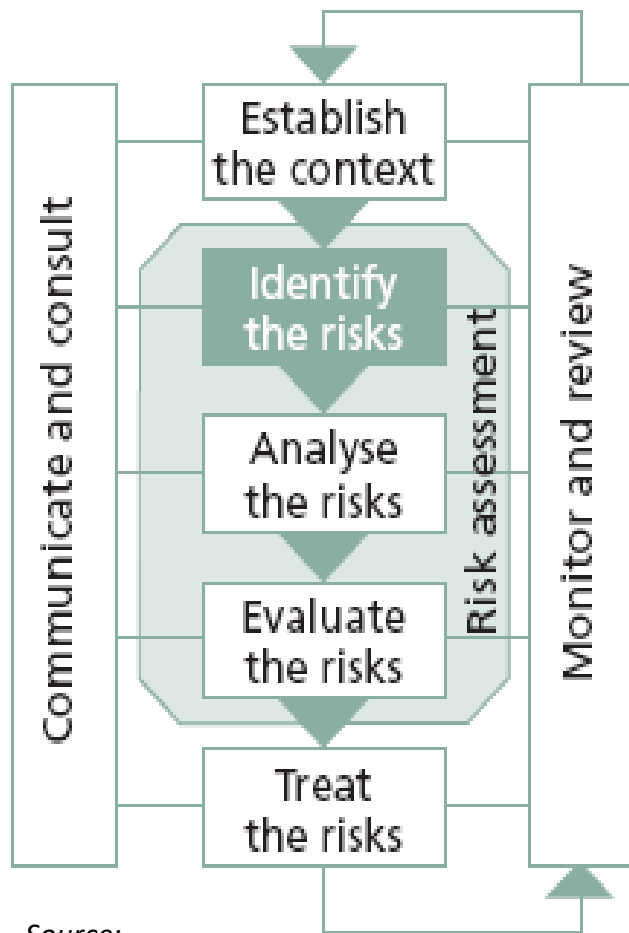
Tips for developing risk criteria

- Decide or define the acceptable level of risk for each activity
- Determine what is unacceptable
- Clearly identify who is responsible for accepting risk and at what level.

5 - Define the structure for risk analysis

- Isolate the categories of risk that you want to manage. This will provide greater depth and accuracy in identifying significant risks.
- The chosen structure for risk analysis will depend upon the type of activity or issue, its complexity and the context of the risks.

Step 3. Identify the risks

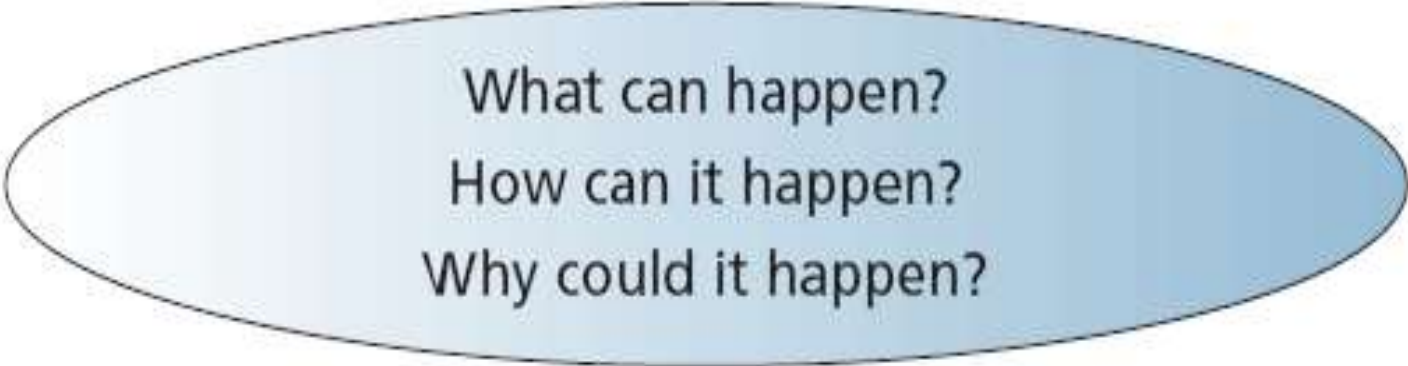


- Risk cannot be managed unless it is first identified. Once the context of the business has been defined, the next step is to utilize the information to identify as many risks as possible.

Source:

<https://www.slideshare.net/mcurtis2010/presentation-manage-risk>

- The aim of risk identification is to identify possible risks that may affect, either negatively or positively, the objectives of the business and the activity under analysis. Answering the following questions identifies the risk:



What can happen?
How can it happen?
Why could it happen?

There are two main ways to identify risk:

1- Identifying retrospective risks

- Retrospective risks are those that have previously occurred, such as incidents or accidents.
- Retrospective risk identification is often the most common way to identify risk, and the easiest.
- It's easier to believe something if it has happened before.
- It is also easier to quantify its impact and to see the damage it has caused.

There are many sources of information about retrospective risk. These include:

- Hazard or incident logs or registers
- Audit reports
- Customer complaints
- Accreditation documents and reports
- Past staff or client surveys
- Newspapers or professional media, such as journals or websites.

2 - Identifying prospective risks

- Prospective risks are often harder to identify. These are things that have not yet happened, but might happen some time in the future.
- Identification should include all risks, whether or not they are currently being managed. The rationale here is to record all significant risks and monitor or review the effectiveness of their control.

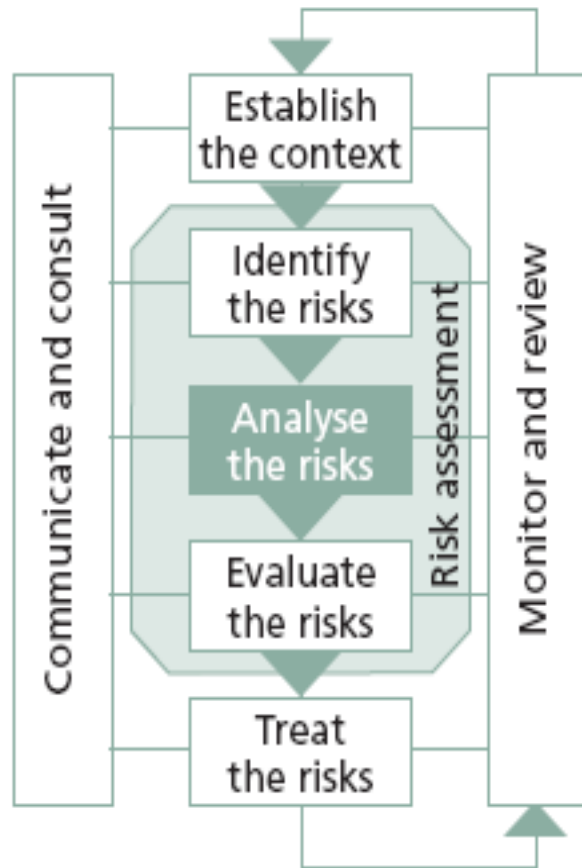
Methods for identifying prospective risks

- Brainstorming with staff or external stakeholders
- Researching the economic, political, legislative and operating environment
- Conducting interviews with relevant people and/or organizations
- Undertaking surveys of staff or clients to identify anticipated issues or problems
- Flow charting a process
- Reviewing system design or preparing system analysis techniques.

Risks Identification - Illustration

Corporate finance	Agency services	Retail banking	Commercial banking	Payment & settlement	Trading & sales	Asset Management	Retail Brokerage
PROCESS	RISKS IDENTIFIED						IMPACTS
P1 – Opening a bank account	R1 – Delay/default while updating a customer in the order book						<ul style="list-style-type: none"> ▪ Clients issue ▪ Losses generated by erroneous operation
P2 – Orders reception	R2 – Order issued while the client has insufficient funds						<ul style="list-style-type: none"> ▪ Losses generated by erroneous operation
P3 – Giving orders to brokers or trust company	R3 – Broker mistake (on prices and/or quantities)						<ul style="list-style-type: none"> ▪ Losses generated by erroneous operation ▪ Clients issue
P4 – Back-office processing	R4 – No ordering party powers check (identity, juridical power...)						<ul style="list-style-type: none"> ▪ Fines and penalties ▪ Losses generated by erroneous operation
P5 – Customer communication	R5 – ...						
P6 – ...							

Step 4. Analyze the risks



- During the risk identification step, a business owner may have identified many risks and it is often not possible to try to address all those identified.
- The risk analysis step will assist in determining which risks have a greater consequence or impact than others.

What is risk analysis?

- Risk analysis involves combining the possible consequences, or impact, of an event. with the likelihood of that event occurring.
- The result is a 'level of risk'. That is:

Risk = consequence x likelihood

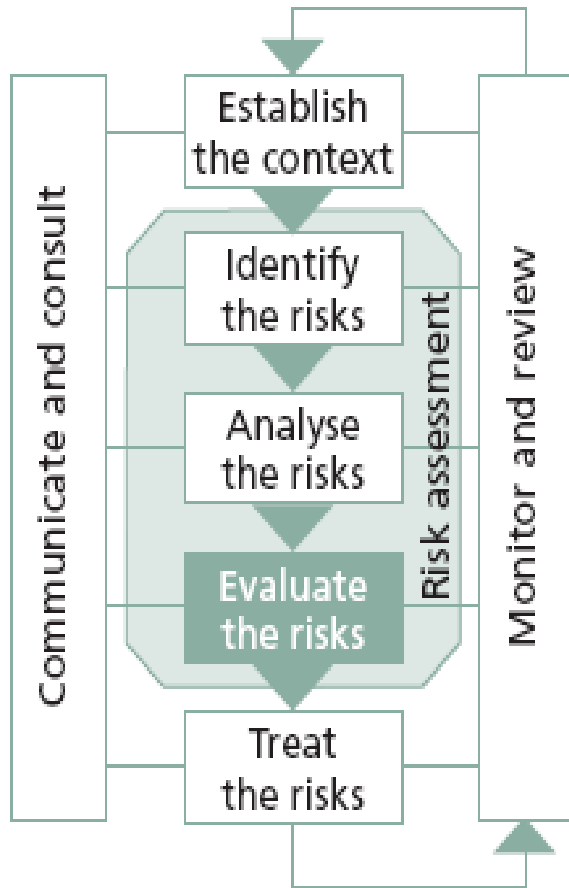
Elements of risk analysis

1. Identify existing strategies and controls that act to minimize negative risk and enhance opportunities.
2. Determine the consequences of a negative impact or an opportunity (these may be positive or negative).
3. Determine the likelihood of a negative consequence or an opportunity.
4. Estimate the level of risk by combining consequence and likelihood.
5. Consider and identify any uncertainties in the estimates.

Types of analysis

- Qualitative
 - Semi-quantitative
 - Quantitative
-
- The most common type of risk analysis is the qualitative method. The type of analysis chosen will be based upon the area of risk being analysed.

Step 5. Evaluate the risks



- Risk evaluation involves comparing the level of risk found during the analysis process with previously established risk criteria, and deciding whether these risks require treatment.
- The result of a risk evaluation is a prioritized list of risks that require further action.
- This step is about deciding whether risks are acceptable or need treatment.

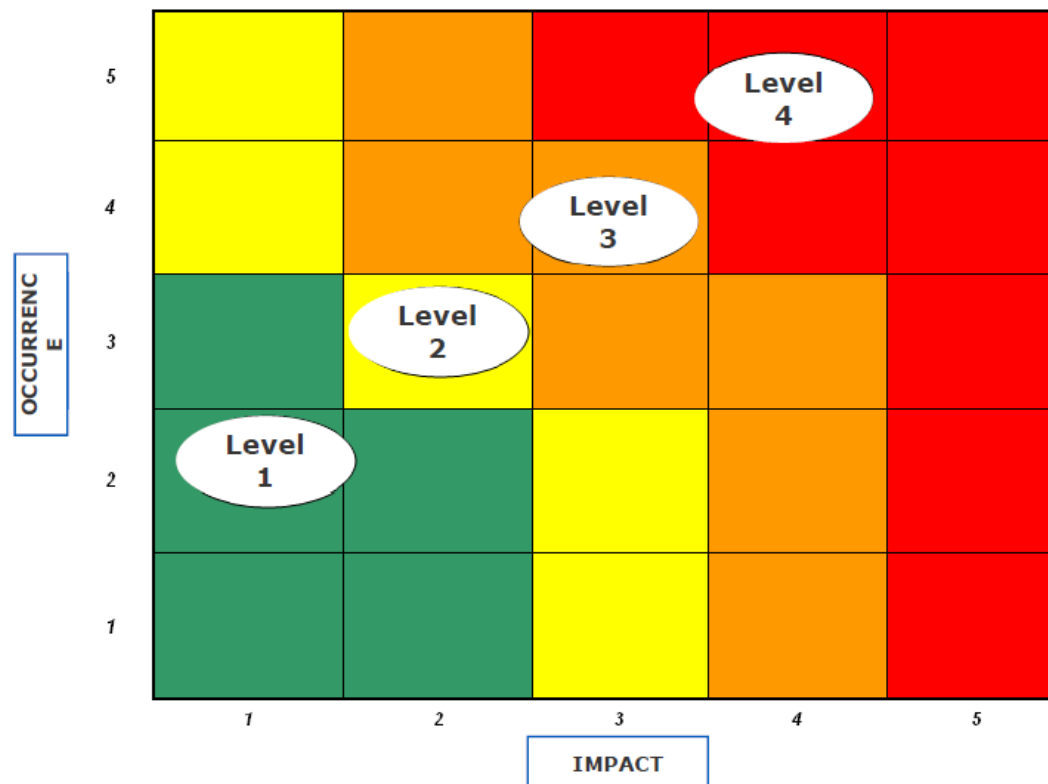
Source:

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Risks Identification - How to evaluate risks ?

Risks are evaluated through 2 axes:

- Potential risk frequency (occurrence)
- Impact if occurring



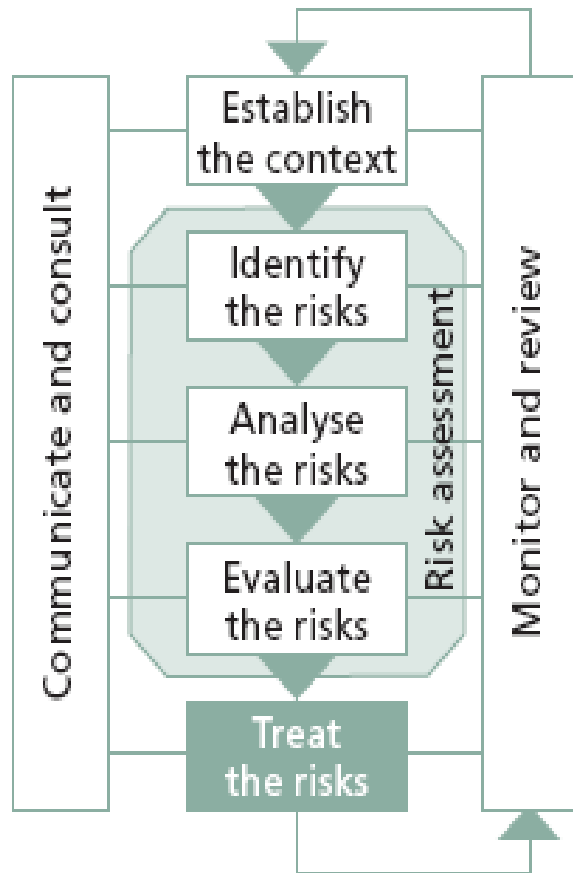
Source: Logica business consulting, 2013

Risk acceptance

A risk may be accepted for the following reasons:

- The cost of treatment far exceeds the benefit, so that acceptance is the only option (applies particularly to lower ranked risks)
- The level of the risk is so low that specific treatment is not appropriate with available resources
- The opportunities presented outweigh the threats to such a degree that the risks justified
- The risk is such that there is no treatment available, for example the risk that the business may suffer storm damage.

Step 6. Treat the risks

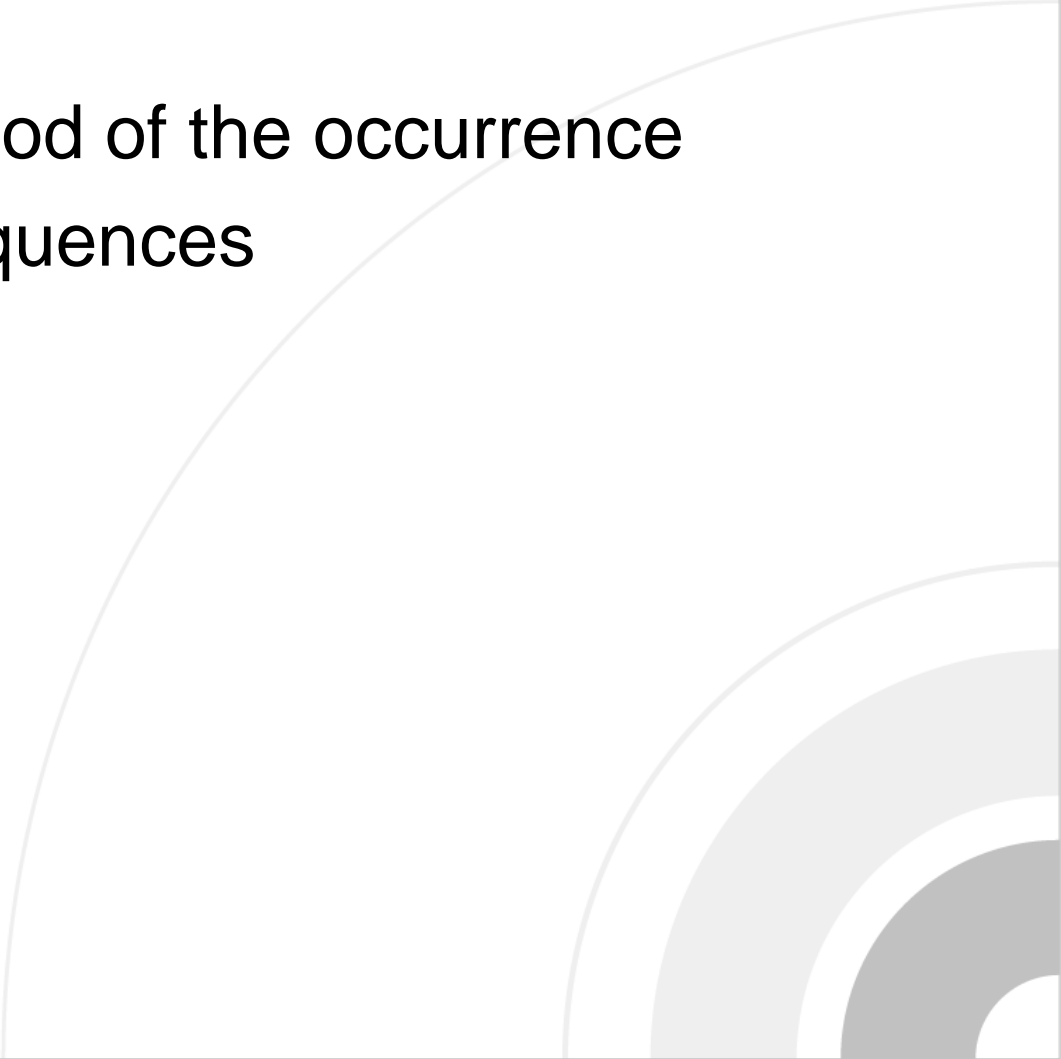


- Risk treatment is about considering options for treating risks that were not considered acceptable or tolerable at Step 5.
- Risk treatment involves identifying options for treating or controlling risk, in order to either reduce or eliminate negative consequences, or to reduce the likelihood of an adverse occurrence. Risk treatment should also aim to enhance positive outcomes.

Source:

<https://www.slideshare.net/mcurtis2010/presentation-manage-risk>

Options for risk treatment:

1. Avoid the risk
 2. Change the likelihood of the occurrence
 3. Change the consequences
 4. Share the risk
 5. Retain the risk
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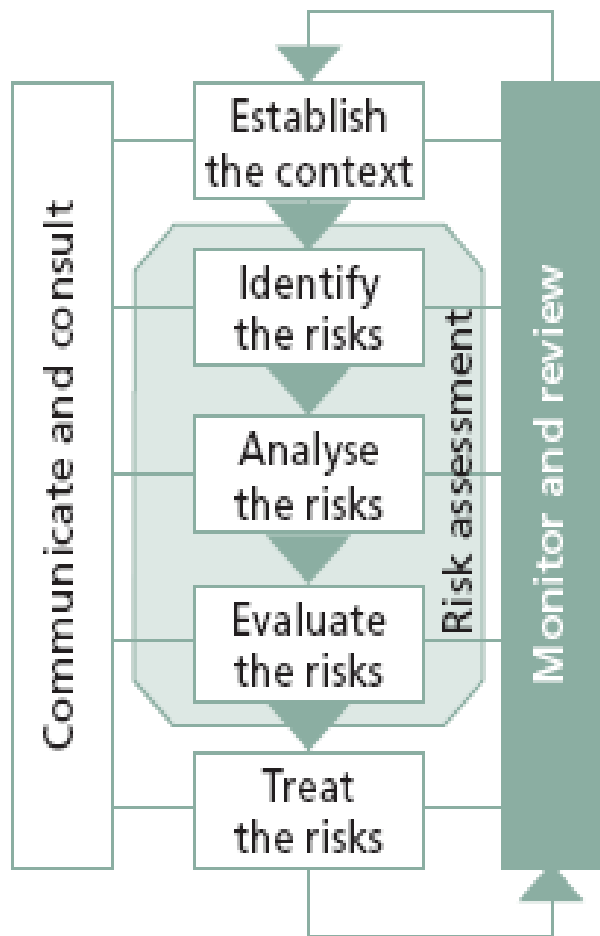
Tips for implementing risk treatments

- The key to managing risk is in implementing effective treatment options
- When implementing the risk treatment plan, ensure that adequate resources are available, and define a timeframe, responsibilities and a method for monitoring progress against the plan
- Physically check that the treatment implemented reduces the residual risk level
- In order of priority, undertake remedial measures to reduce the risk.

Definition of KRI and action plans

- Work to carry out
 - Identify indicators for the risks considered as significant by the bank, in order to follow them (indicators of exposure, warnings, indicators of occurrence)
 - Implement the tool to collect and update these indicators periodically
 - Build monitoring dashboards
 - Write risks reports for risks staff or for operational use
 - Define thresholds of alarm beyond which it is necessary to take preventive measures
 - Define actions to reduce or control the risks

Step 7. Monitor and review



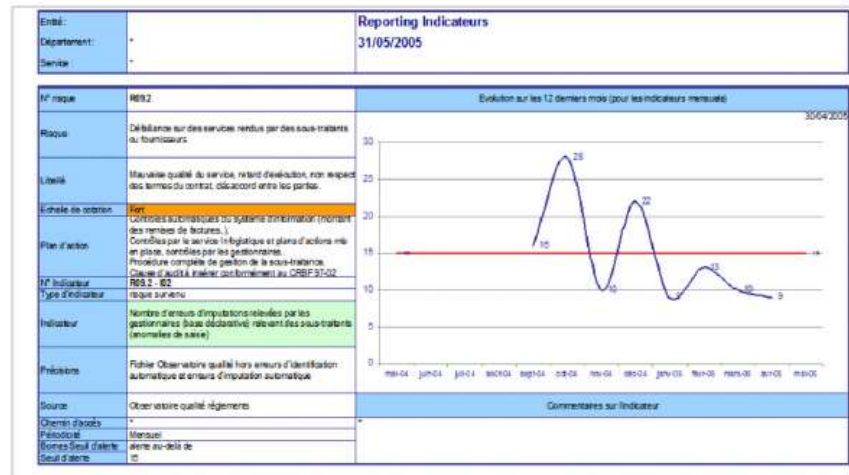
- Monitor and review is an essential and integral step in the risk management process.
- A business owner must monitor risks and review the effectiveness of the treatment plan, strategies and management system that have been set up to effectively manage risk.

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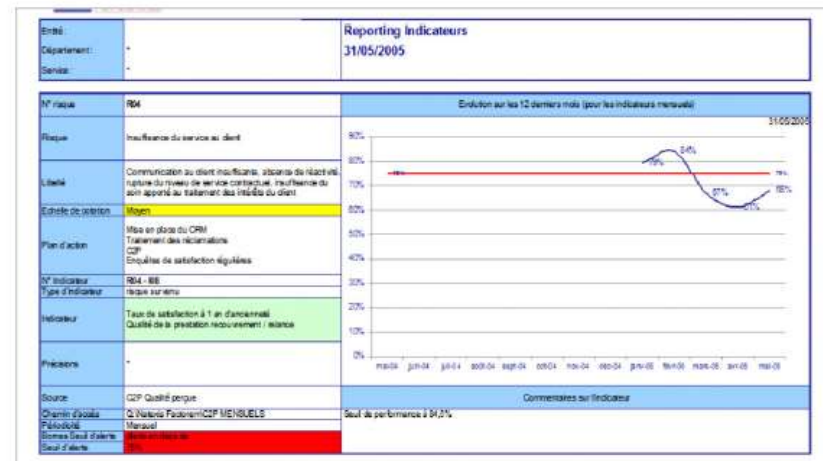
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- Risks need to be monitored periodically to ensure changing circumstances do not alter the risk priorities. Very few risks will remain static, therefore the risk management process needs to be regularly repeated, so that new risks are captured in the process and effectively managed.
- A risk management plan at a business level should be reviewed at least on an annual basis. An effective way to ensure that this occurs is to combine risk planning or risk review with annual business planning.

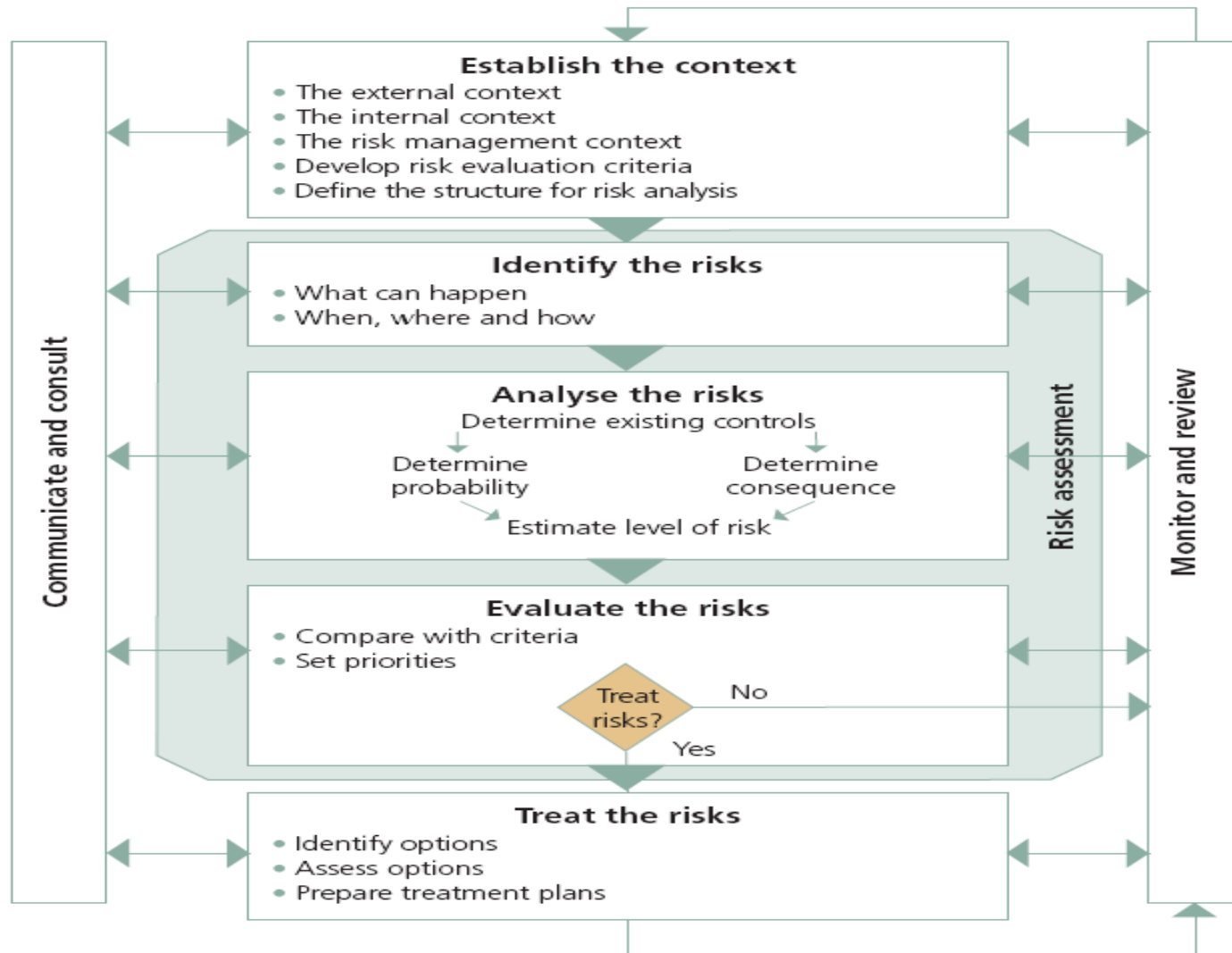
Definition of KRI and action plans – Illustrations



Examples of dashboards of indicators



Summary of risk management steps



CASE STUDY

Risk assessment of AEGON

Executive Summary

- Executive RSA as an integral part of the B/MTP and ORSA process was performed on a basis of the interviews organized with 5 management board members, the background is based on known business strategy, risk strategy and the most recent top risk list reassessment, facilitated by Risk Officer,
- The Strategy Risk Self-Assessment survey has been performed and evaluated as a pilot for the B/MTP and ORSA purposes, management board members received the results, the business strategy is understandable for them, they are aware about the connected risks as well,
- The overview of the 10 top risks arranged by net risk score underpinned by the impact and likelihood reassessment by management board members is presented in slides below, the possible deviations of the RSA comparing to the most recent risk assessment (RA vs. RSA) are commented,
- We evaluate the top risk of our business strategy is linked to the new business drop down,
- The root cause of the combination of the 3 top risks according to net risk score is explained on stand alone slide,
- We evaluate a back book existing client portfolio in terms of clients dragging, lapses and churning as the lowest top risk in the top risk list,
- Risk of the additional cash requirement or/and reduced profitability due to competitors activities caused by different reasons was raised by CEO as possible forward looking risk,
- Management board is aware that the mono distribution and one product line is limiting the execution of the business strategy,
- If the most recent Risk assessment differs from the Executive RSA, the final Top Risk List is based on final RSA results and possible differences will be adjusted within the next reporting accordingly.

Executive RSA by Board

No	Risk Name (simplified)	Management Executive RSA			Trend
		Net (I)	Net (L)	Net Risk Score	
1	New Business Drop Down Risk	3,80	4,60	17,48	↑
2	High concentration risk in distribution process	4,20	3,80	15,96	↓
3	Risk of cost/expense overrun	3,20	3,60	11,52	↑
5	Risk of unsecured receivables increase to the broker	3,20	3,20	10,24	↓
10	Risk of projects default	3,00	3,40	10,20	↓
8	Risk of key people departure	3,20	2,80	8,96	↔
4	Risk of the penalties and extra costs from critical projects	2,40	2,40	5,76	↔
6	Tax benefits termination risk	2,60	2,20	5,72	↓
7	AML Project Risk	2,80	2,00	5,60	↔
9	Risk of client portfolio damage ("dragging of clients")	3,00	1,60	4,80	↔

Initial Risk Assessment arrangement

No	Risk Name (simplified)	Risk Assessment			Management Executive RSA			Differenc	Trend
		Impact	Likeliho	Risk sco	Net (I)	Net (L)	Net Risk Sco		
1	New Business Drop Down Risk	5	4	20	3,80	4,60	17,48	2,52	↑
2	High concentration risk in distribution process	5	4	20	4,20	3,80	15,96	4,04	↓
3	Risk of cost/expense overrun	5	4	20	3,20	3,60	11,52	8,48	↑
4	Risk of the penalties and extra costs from critical projects	3	3	9	2,40	2,40	5,76	3,24	↔
5	Risk of unsecured receivables increase to the broker	3	3	9	3,20	3,20	10,24	-1,24	↓
8	Risk of key people departure	3	3	9	3,20	2,80	8,96	0,04	↔
6	Tax benefits termination risk	3	2	6	2,60	2,20	5,72	0,28	↓
7	AML Project Risk	3	2	6	2,80	2,00	5,60	0,40	↔
10	Risk of projects default	2	2	4	3,00	3,40	10,20	-6,20	↓
9	Risk of client portfolio damage ("dragging of clients")	3	1	3	3,00	1,60	4,80	-1,80	↔

Executive RSA by MB comparing to Risk Assessment by CRO

No	Risk Name (simplified)	Risk Assessment			Management Executive RSA			Differenc	Trend	CRO commentary
		Impact	Likeliho	Risk sco	Net (I)	Net (L)	Net Risk Sco			
1	New Business Drop Down Risk	5	4	20	3,80	4,60	17,48	2,52	↑	RA > RSA, the most relevant top risk, MB evaluate higher likelihood and lower impact
2	High concentration risk in distribution process	5	4	20	4,20	3,80	15,96	4,04	↓	RA > RSA, MB evaluate lower impact
3	Risk of cost/expense overrun	5	4	20	3,20	3,60	11,52	8,48	↑	RA > RSA, MB evaluate significantly lower impact
5	Risk of unsecured receivables increase to the broker	3	3	9	3,20	3,20	10,24	-1,24	↓	RA < RSA, MB evaluate impact and likelihood as a little bit higher
10	Risk of projects default	2	2	4	3,00	3,40	10,20	-6,20	↓	RA < RSA, MB evaluate impact and likelihood as a significantly higher
8	Risk of key people departure	3	3	9	3,20	2,80	8,96	0,04	↔	RA = RSA, MB evaluate the risk similarly
4	Risk of the penalties and extra costs from critical projects	3	3	9	2,40	2,40	5,76	3,24	↔	RA > RSA, MB evaluate lower impact and likelihood
6	Tax benefits termination risk	3	2	6	2,60	2,20	5,72	0,28	↓	RA = RSA, MB evaluate the risk similarly
7	AML Project Risk	3	2	6	2,80	2,00	5,60	0,40	↔	RA = RSA, MB evaluate the risk similarly
9	Risk of client portfolio damage ("dragging of clients")	3	1	3	3,00	1,60	4,80	-1,80	↔	RA < RSA, MB evaluate slightly higher likelihood

Source: Aegon pojišťovna, a.s.

Top 3 Risks executive explanation

- The main risk driver for the new business drop down is regulation and regulatory changes and their combination. Nowadays the Czech regulatory environment is the most crucial with the strong possible impact on the business (Commission regulation, Solvency II and consumer protection). According to Insurance Banana Skins Survey (2013) Regulation is ranked on first order (1.) Top Risk from 27 scale to which insurance industry is facing.
- Behind the root cause of the regulation the main impact will cause the changes within the distribution models, especially in the external distribution. In the situation where the Aegon CZ is tied on the external distribution channel only, the big challenge as a „regulatory business opportunity“ is to try to develop diversified distribution, not based on number of brokers only (concentration risk decrease) but also based on omni-channel business model.
- In terms of market business volume we expect several brokers will disappear from the market, the MLM business model will have problems with their inside structure in terms of number of levels, to be able to finance them.
- The umbrella pool brokers could have problems with their profit margin, so it can result the production in the whole market could drop down.
- Particularly in our distribution profile, in terms of commission motivation on side of brokers:
- 2 of 3 main top brokers (PLP, BC) have better alternatives how their agents can earn money to cover their commission decline in insurance products (e.g. investments and mortgages), so they will have motivation to switch to another products in their product portfolio. In insurance portfolio they will probably prefer pure risk insurance products as a complement for their investments,

Top 3 Risks executive explanation

- 1 of 3 main top brokers (ZFP) is more sensitive and more focused on insurance products, here we can expect some change in their business model (now they offer 'financial education' as a package in which the products are included (mainly insurance) – so called self-consuming business model,
- Other brokers (with exception of umbrella pool model) with minority share in our sales distribution probably will have problems with existence, so their production will be negligible,
- Umbrella broker pool (particularly Broker Trust) in the market have higher generic chance to succeed in commission changes because they have no inside managerial levels and their profit margin can be still covered by another products (investments), less by mortgages (strong competition).
- Generally umbrella broker pools are not able to consistently push the product into the „not-unified agent structure“ of different broker companies under the pool and several companies organized under the pool might also disappear from the market,
- We expect movement of the agents across the market from the MLM networks towards umbrella models and into the internal insurance networks, the recruitment of new agents into the broker companies will decrease and will be bound on broker capability on guarantee for claw-backs,
- We expect push of the brokers on PAYG products launch,
- All things above considered we expect decline in new business on the market
- In terms of the current broker portfolio we evaluate the PLP could be better prepared – they also have franchise business model in place (similar to Gepard Finance), so they can better continue with their sales volume.



SOLVENCY II

Solvency II is not just about Capital. It is a change of Behaviour.

Thomas Steffen, former Chairman of CEIOPS

Agenda

1. What is Solvency II?
2. Why regulate the insurance industry? Why SII?
3. Pillar I: Capital requirements
4. Pillar II: ORSA and System of Governance
5. Pillar III: Quantitative reporting & Public disclosure
6. Solvency II: The political process

Solvency II is a law (EU Directive)

Main aim: avoid bankruptcies in the EU insurance industry

Regulatory regime on risk- and capital management

A very advanced and comprehensive set of rules and regulations

Shall be implemented in the 28 EU states + EEA

A fully harmonised regulatory framework within the EU

Most EU life- and non-life insurers are obliged to implement Solvency II

- Only insurers with a premium income of less than €5m or provisions less than €25 million are exempted
- Reinsurers are subject to Solvency II
- Pension funds are not, but will face similar regulations as they are in direct competition with life insurers

Why regulate the insurance industry?

The main driver of financial regulation is to avoid bankruptcies and systemic risk

Protecting policy holders across the EU

Optimizing capital allocation by aligning capital requirements to actual risk

Create an equal and consistent regulatory regime across the EU

Create regulations that are consistent with the ones in comparable industries (particularly banking)

Create an improved «platform» for proper regulation and supervision, based on increased transparency, more data and better documentation

Regulation is costly – is it worth it?

- It is very costly to create and implement Solvency
- What are the gains from regulation?
 - Usually regulation is about making a market work well
 - In insurance (and banking) the main priority is rather to avoid bankruptcy
 - The market mechanism does not work well when the claims are very long tailed → very hard to know what the right price is, and thus whether a company is profitable, until a long time has passed

Regulation is costly – is it worth it?

- What are the gains from regulation?
 - The consequences of bankruptcies in the financial industry are potentially very severe → E.g. retired people who lose their pension
- Why European-wide regulations?
 - Having one regulatory system is more efficient than having 30
 - More transparent and easy for customers and companies to move across borders
 - Lesson from financial crisis: The risks do not stop at borders

Why Solvency II?

Solvency I is....

Based on a number of individual directives from the 1970s – Solvency I was formally established in 2002

Not a harmonised framework at the EU-level: Significant differences between the various countries e.g. in the valuation of provisions

Very basic in terms of risk measurement: Insurance risk is the only type of risk taken into account; and only at a high level

Often supplemented by other, national regulations. E.g. in Norway insurers were also required to comply with banking regulations (Basel I)

«good» at preventing insolvencies, but it has not required insurers to maintain a level of capital corresponding to the risk exposure of the entity

Analyst's views [General information – Why Solvency II?]

Analyst's views:

- Gartner states that "**Solvency II will lead to major changes for European insurers** and will affect most core insurance processes, including product development, underwriting, marketing and sales."
- Ovum states that: "the move [to Solvency II] provides CIOs with a **golden opportunity** to transform the information management landscape in their business and provide a sharper competitive edge."
- The same analyst quotes that "This is likely to be the largest IT project since Y2K."
- Firms need a partner they trust to deliver and respond to future changes



Financial crisis and Solvency II [General information – Financial Crisis & News]

Financial markets are complex. The insurance industry has not been immune to the effects of the financial crisis as insurers have significant asset bases that were affected by the depressed market values of assets.

- 'The economic crisis has triggered a phase of profound reflections for all — European institutions and industry — on the lessons to be learned from the financial crisis. **A key lesson is that financial supervision must be improved.**' (Insurance Europe, formerly CEA, Comité Européen des Assurances)
- '**EU legislators should not water down the Solvency II directive or postpone the legislative process.** This would be like terminating a marathon at the 40 kilometer mark.' (CRO Forum)
- '**The crisis originated and developed in the banking sector, subsequently spreading to the insurance sector.** Our main lesson of the current events is that **Solvency II must be adopted.** [...] The crisis has highlighted needs for a further refinement of the existing Solvency II calibrations, both at module and sub-module levels. [...] As in the financial sector at large, governance, risk management, and internal controls in the insurance sector need to be strengthened. [...]' (European Insurance and Occupational Pensions Authority, formerly CEIOPS)

Solvency II News today [General information – Financial Crisis & News, Germany specific]

Recent headlines from daily press, legislation and jurisdiction create an image about the responses of the insurance industry to Solvency II.

Solvency II provides for higher risk awareness in Solvency II

Solvency II shift to 2015 gathers momentum

Provider change their business model

New Solvency II model creates stormy times

Employer associations and labour union NGG refuse Solvency II

Solvency II discriminates Corporate Bonds

Profit declines

Insurance study: Long-term guarantees jeopardised

German insurer ERGO votes for parallel operation of Solvency I and II



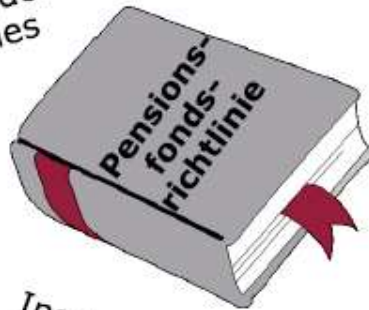
Solvency II: German insurers still have to do a lot

Solvency II in 2016?

New rules for insurance regulation are expected to arrive later!

German insurer Itzehoer criticizes Solvency II nature catastrophe model

Solvency II Directive



Source: Nov. 2012

Source: Logica business consulting, 2013



Pilar I

WWW.VSE.CZ



Solvency II

Pillar I: Quantitative

- Balance sheet valuation
- Solvency Capital Requirements (SCR)
- Minimum Capital Requirements (MCR)
- Standard formula
- Internal model

Pillar II: Qualitativ

- System of governance
- Three lines of Defense
- Own Risk and Solvency Assessment (ORSA)

Pillar III: Reporting

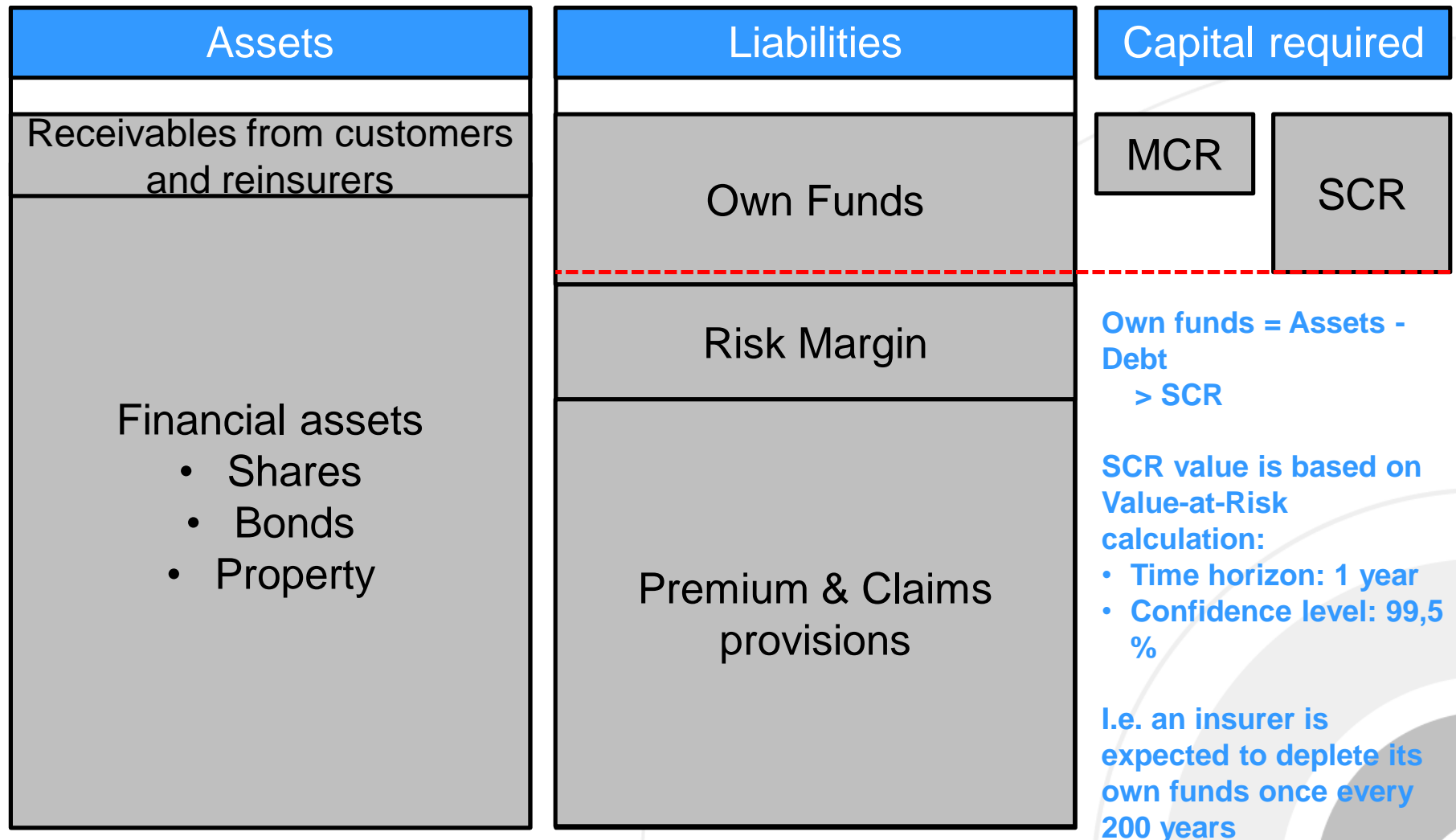
- Solvency and Financial Condition Report (SFCR)
- Report to Supervisor (RTS)
- Quantitative Reporting Templates (QRT)

Typical Solvency II balance sheet of a Non-Life company

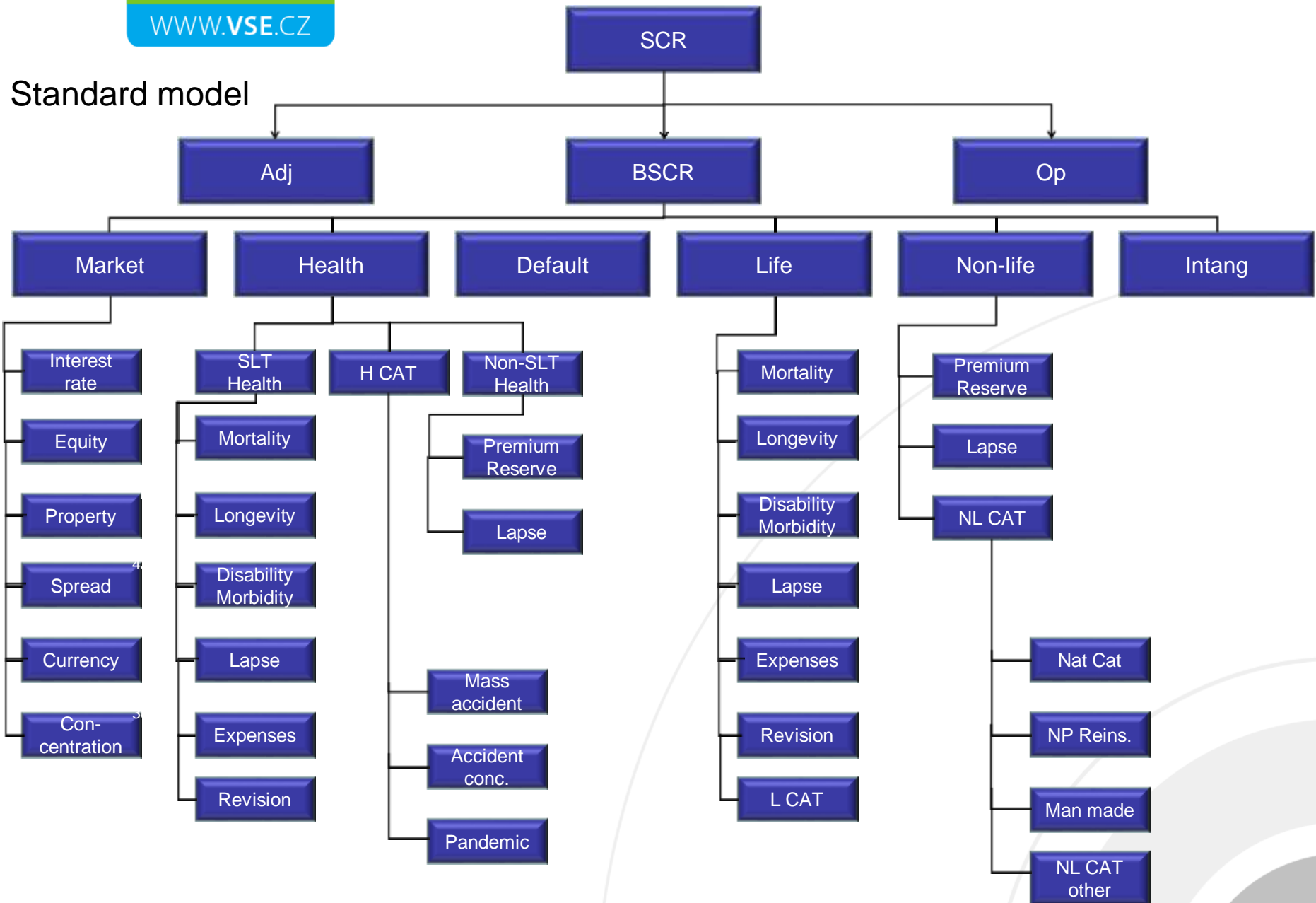
Assets	Liabilities	
Receivables from customers and reinsurers		
	Own Funds	Equity
	Risk Margin	
Financial assets <ul style="list-style-type: none">• Shares• Bonds• Property	Premium & Claims provisions	Technical Provisions (Debt)

**Own funds =
Assets - Debt**

The insurer is maintained to keep the level of Own Funds above the capital requirements



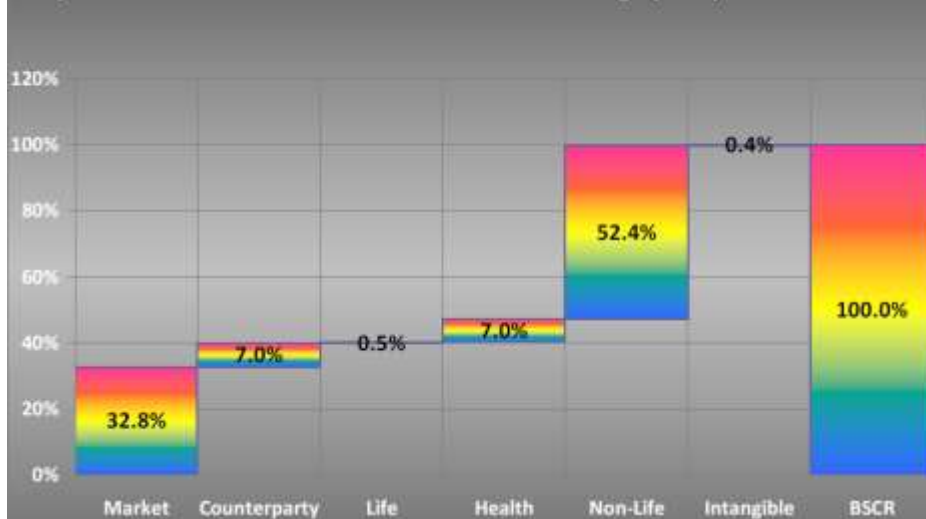
Standard model



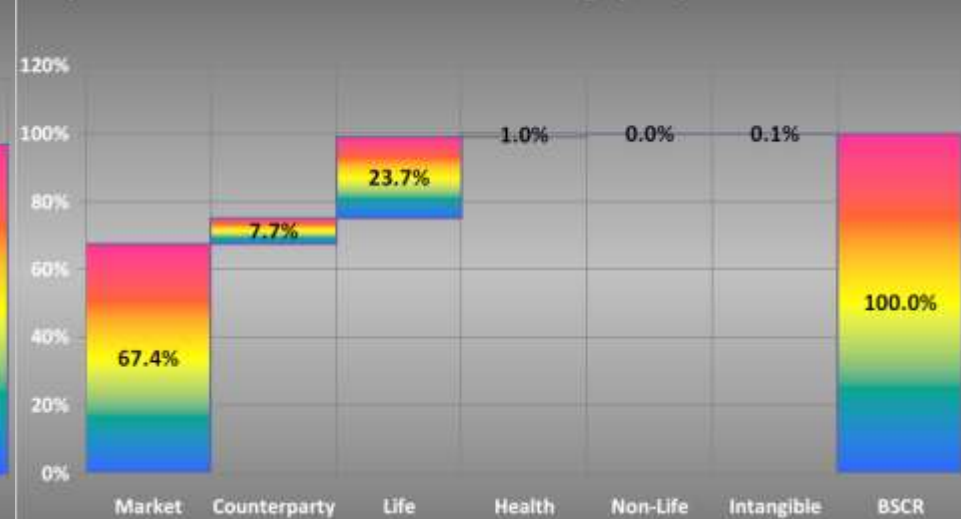
Source: Author

Non-life: Non-life risk is most significant Life: Market risk is most significant

Graph 36: Diversified BSCR - Non-life undertakings (solo)



Graph 35: Diversified BSCR - Life undertakings (solo)



Source: EIOPA report on the 5th quantitative impact study

Main rule of Solvency II: Level of Own Funds > SCR

- The standard model calculates the SCR as well as the own funds the ratio of which must be greater than one:

$$\text{Solvency margin} = \frac{\text{Own funds}}{\text{Solvency capital requirement (SCR)}} > 1$$

- A low solvency margin implies that the risk exposure of the insurance company is too high relative to the buffer (i.e. the level of own funds)

Standard Formula

- The SCR finally accumulates the Basic Solvency Capital Requirement (SCR), the SCR for operational risk and the adjustment as input data.

$$SCR = BSCR + SCR_{Op} + Adj$$

Source: Author

- The standard formula is the method undertakings are expected to use to calculate the SCR when they do not have their own internal model.

There are three main types of risk affecting insurers

Non-life risk:

- Premium risk: Loss ratio volatility
- Reserve risk: Volatility in claims provision

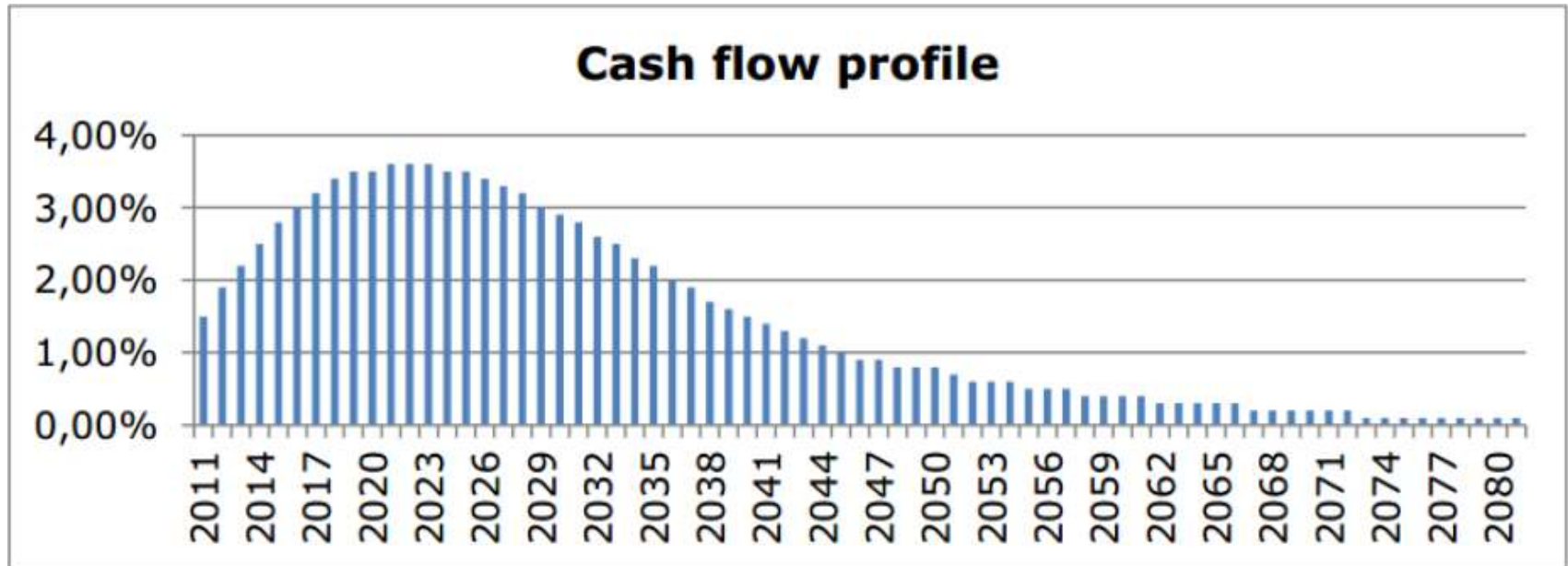
Life risk:

- Survival: Customers live for longer than expected
- Disability: More customers than expected become disabled

Market risk:

- The value of financial assets – shares, bonds, property investments - decline
- The present value of technical provisions increase as interest rates decline

Low interest rate is a major risk for a Life insurer under a defined benefit scheme



Source: BaFin report

Discounting effect is very important when valuing long-term provisions:
Low interest rate → Low discounting of future claims → Increased provisions
and capital requirement → Low risk-adjusted return → Problems

Non-Life risk in the standard formula

<i>Segment</i>	<i>Standard deviation for premium risk (gross of reinsurance)</i>
<i>1. Motor vehicle liability insurance and proportional reinsurance</i>	$10\% \cdot NP_{lob}$
<i>2. Other motor insurance and proportional reinsurance</i>	$8\% \cdot NP_{lob}$
<i>3. MAT insurance and proportional reinsurance</i>	$15\% \cdot NP_{lob}$
<i>4. Fire insurance and proportional reinsurance</i>	$8\% \cdot NP_{lob}$
<i>5. 3rd-party liability insurance and proportional reinsurance</i>	$14\% \cdot NP_{lob}$
<i>6. Credit insurance and proportional reinsurance</i>	$12\% \cdot NP_{lob}$
<i>7. Legal expenses insurance and proportional reinsurance</i>	$7\% \cdot NP_{lob}$
<i>8. Assistance insurance and proportional reinsurance</i>	$9\% \cdot NP_{lob}$
<i>9. Miscellaneous insurance and proportional reinsurance</i>	$13\% \cdot NP_{lob}$
<i>10. Np reins (cas)</i>	17%
<i>11. Np reins (MAT)</i>	17%
<i>12. Np reins (prop)</i>	17%

Non-life insurance risk is also affected by

- Catastrophe risk
- Separated from underwriting risk in the standard model
- Distinction between Man-made Cat and Nature Cat
- Such large claims are harder to predict (shortage of data) → Appears to be more random
- Reinsurance: Bought by the insurer to offload such risks

Market risk: The asset allocation of the insurer comes with different levels of capital requirement

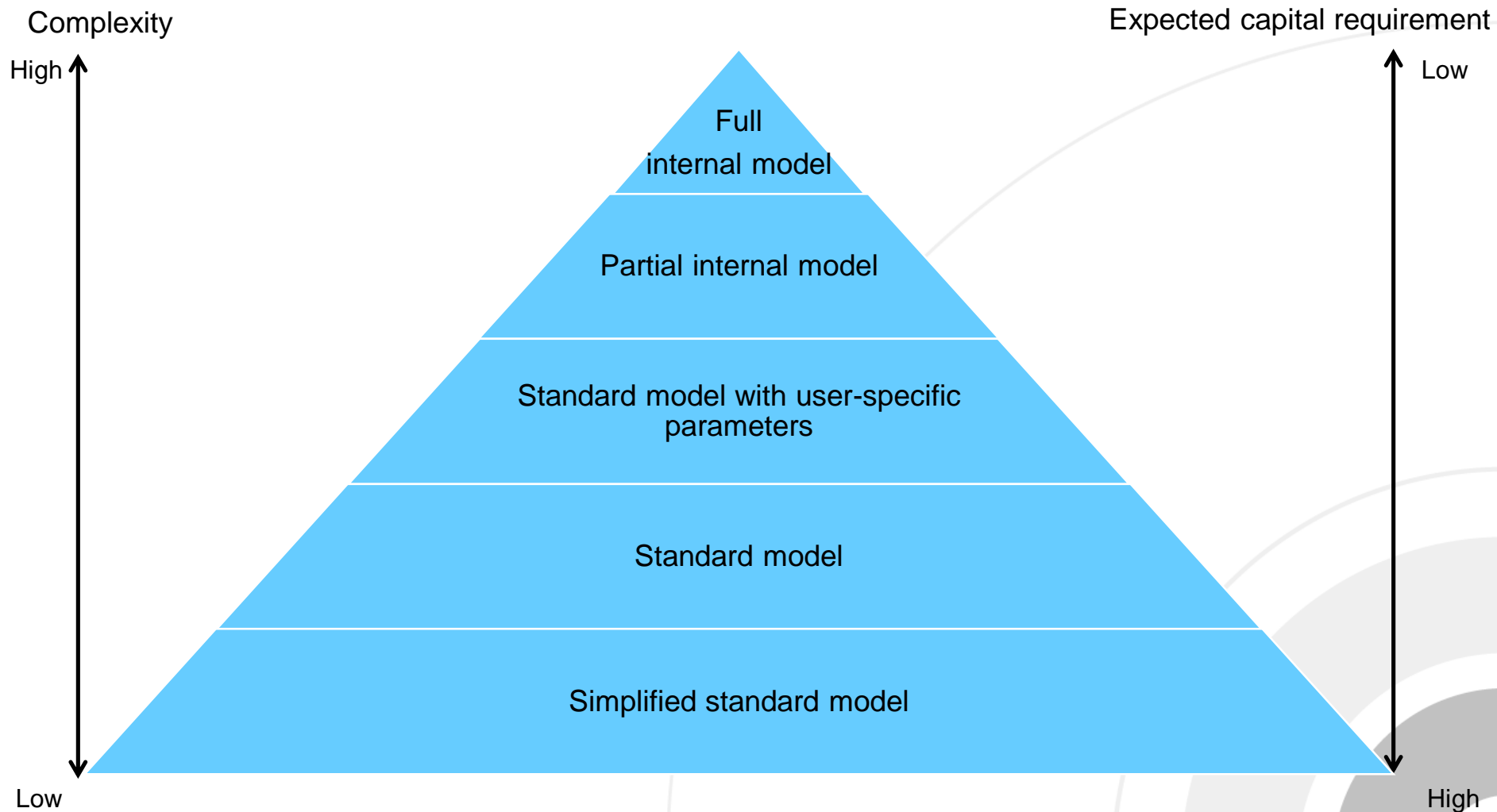


- Insurers have significant investments of reserves (Claims & Premium provisions)
- Risky investments, such as stocks, comes with a higher capital charge than lending money to governments (as the latter is assumed to imply low risk)
- Clearly, this is important. It does not matter that an insurer sets aside sufficient amounts of reserves if all was invested – and lost - in a stock market crash

“Solvency II will transform not just insurance but capital markets, too”

-The Economist, 7.april 2012

The standard model is really not very good (i.e. accurate): It is only the beginning of the ladder of models for SCR- calculation



Summing up Pillar I

Issue	Solvency I	Solvency II
Valuation of assets and liabilities	Valued at (historic) book value	Valued at (current) discounted market value
Capital requirements	Calculated as a percentage of the insurance liabilities	<ul style="list-style-type: none"> - Statistical calculation taking more risks into account - Standard model or internal model
Market risk	No impact on capital requirements	Capital requirements depending on risk of asset portfolio
Operational-, Counterparty-, and disaster risk	No impact on capital requirements	Included in capital requirements calculation
Risk management and regulatory reporting	Limited	Extensive
Life and non-life insurance regulation	Separate regulation	Joint regulation
Insurance liabilities – Level of detail	Homogeneous: Limited variation between lines of business	Heterogeneous: Risk exposure varies with the line of business



Pilar II

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Solvency II

Pillar I: Quantitative

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- Minimum Capital Requirements (MCR)
- Standard formula
- Internal model

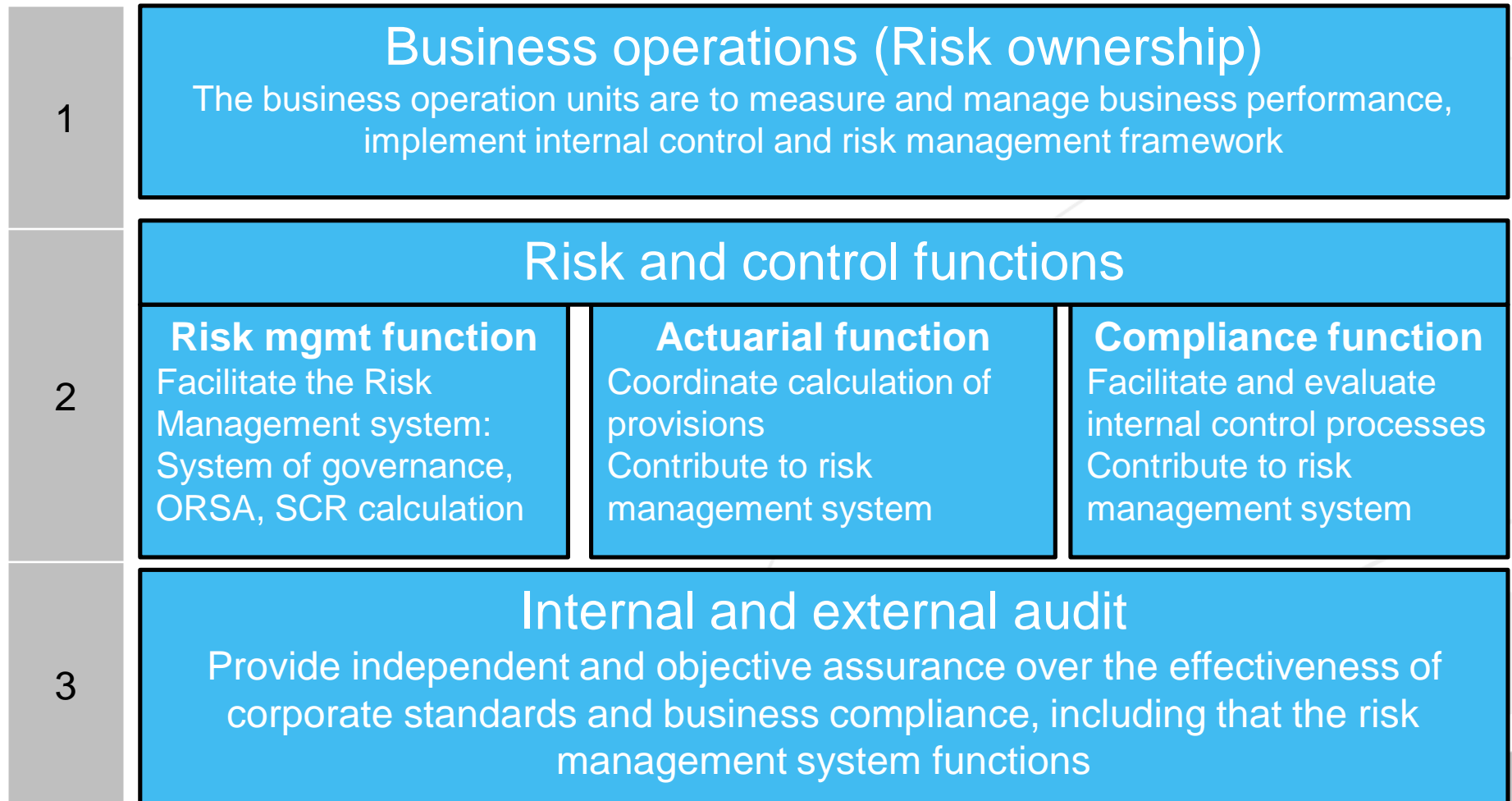
Pillar II: Qualitative

- System of governance
- Three lines of Defence
- Own Risk and Solvency Assessment (ORSA)

Pillar III: Reporting

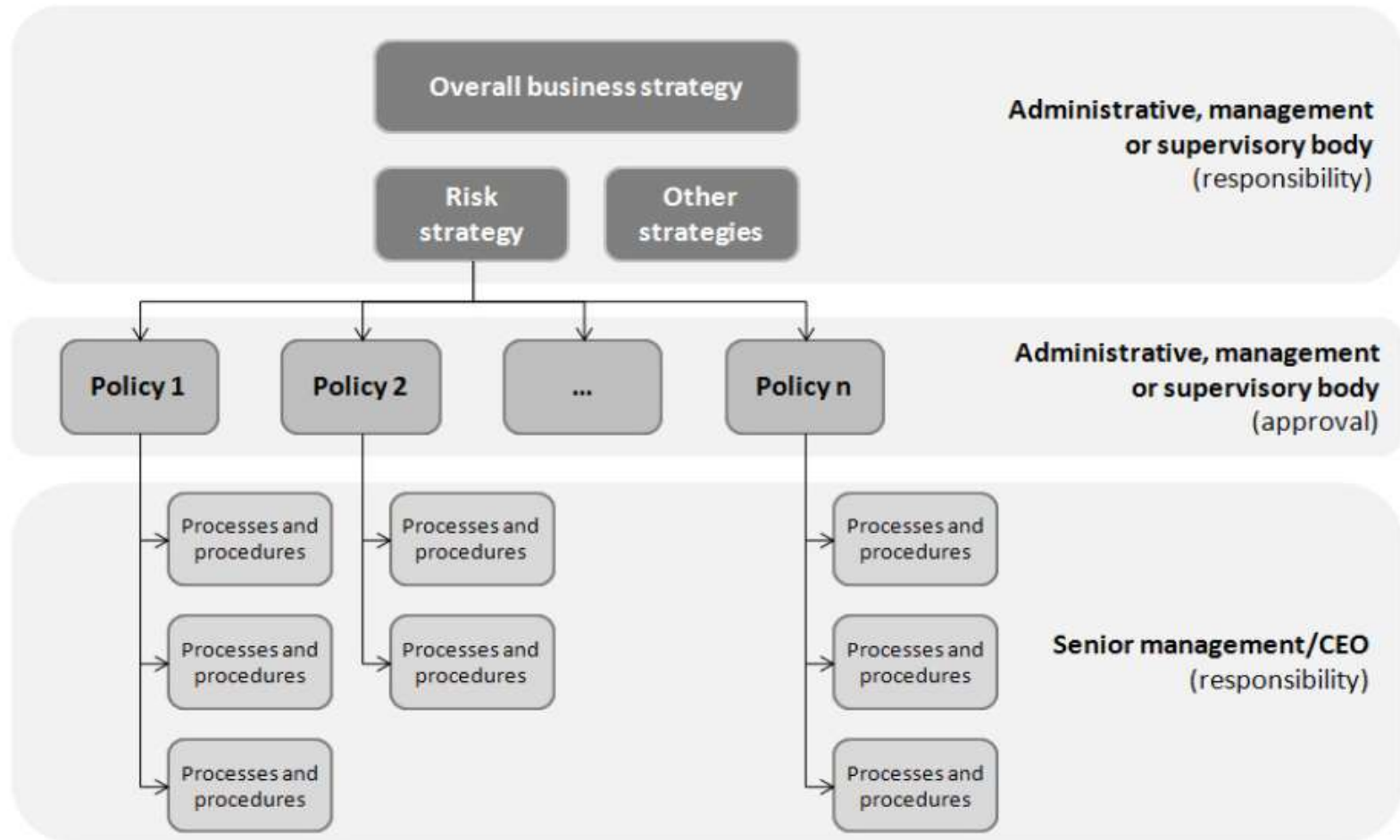
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- Quantitative Reporting Templates (QRT)

System of Governance - Organization: Three lines of defence

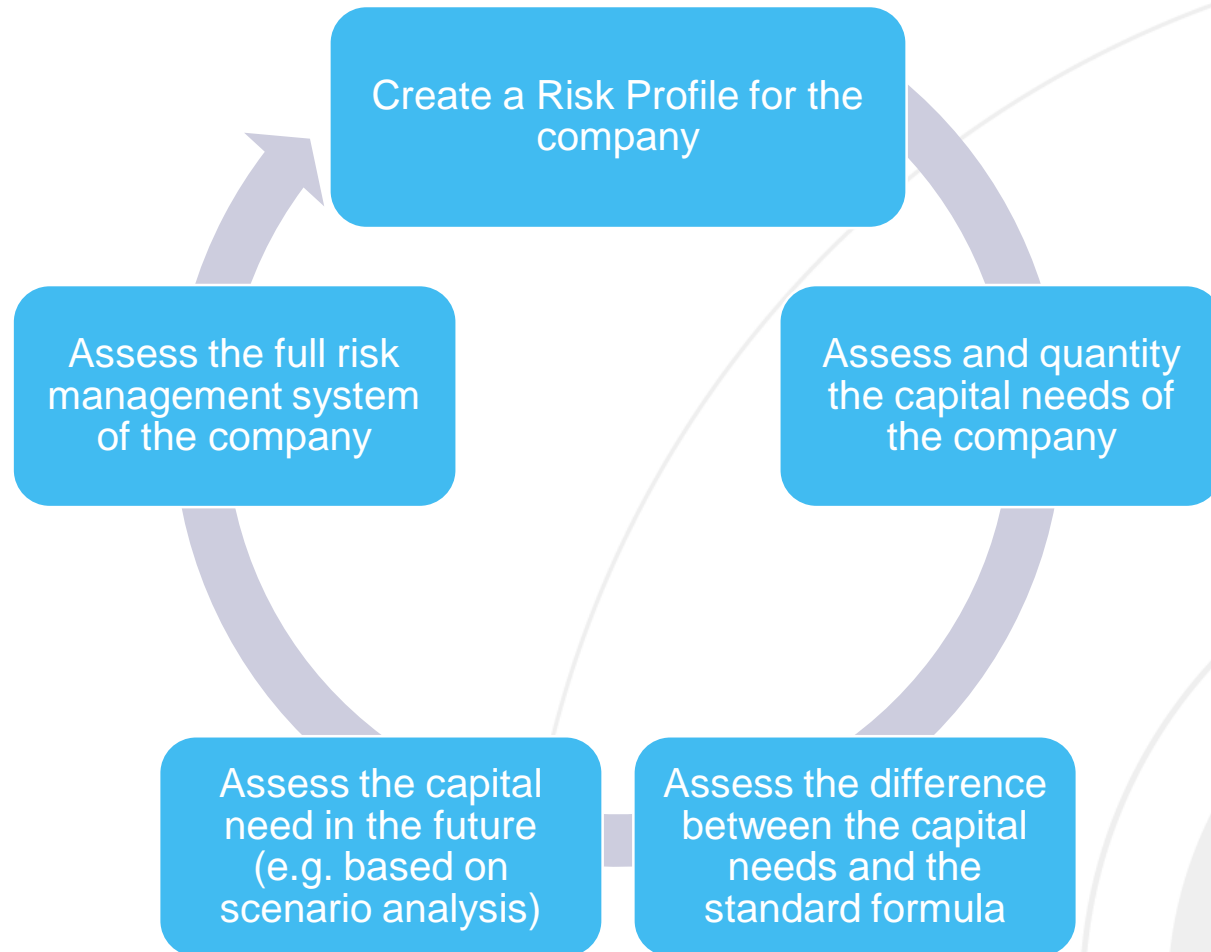


System of governance

A structure of documents connecting business strategy to risk decision and operational processes



The Own Risk and Solvency Assessment (ORSA) process should be integrated with the strategy process and results in an ORSA-report to the supervisor



Key aspect of ORSA

Risk appetite – How much risk does the insurer want to be exposed to?

Type goal	Breach of risk appetite limits	Tolerable, but not within risk appetite limits	Aim – Within the risk appetite
Economic profit	< 10 % Return on equity	10 % - 18 % eller > 40 % Return on equity	18 % - 40 % Return on equity
Growth	< 1 % or > 10 % av total volume	1 % - 2 % or 7 % - 10 % of total volume	2 % - 7 % of total volume
Solvency Margin	< 105 % of SCR	105 % - 115 % of SCR	> 115 % of SCR

Case study

Kooperativa pojišťovna – VIG group

Operational Risk

Definition and Characteristics

„Operational risk is the risk of a loss resulting from inadequacy or failure of internal processes, people, systems, or external events.“

- it can happen virtually anywhere
- is not typically associated with one particular product but with the **process**
- can not (usually) be restricted by setting **limits**
- a single exposure to operational risk may have an very significant impact on the company
- its size can not be determined solely on the basis of historical data (the data is not, it does not reflect changes, it does not capture the loss with extreme impact)

Operational risk in definition I.

a) human factor

(intentional or unintentional error, error)

b) systems

(risk of loss of functionality or insufficient capacity of systems, the Internet, telecommunication networks ...)

Operational risk in definition II.

c) external events

(property damage, vandalism,
natural disasters - fire, floods)



Meteorit
Meteorite



Tornado



Sněhová vánice
Blizzard



Sopečná erupce
Volcano



Tsunami



Silné bouřky
Thunderstorm



Záplavy

Floods



Děšť

Rain



Zemětřesení

Earthquake

d) internal processes

Before you go home

1. Clear your desk
2. Lock your computer
3. Clean sensitive documents in a lockable cabinet

Operational risk management

AIM: To eliminate the impact of risk factors or at least to minimize losses from them. It is basically about identifying risk factors, measuring and securing them.

- a) Risk identification
- b) Risk assessment (risk measurement)
- c) Risk analysis (analysis)
- d) Decisions on how risk management is performed
- e) Monitoring the development of risks (monitoring and control)
- f) Reporting (risk information)



Source: Author

Risk management tools

„SPOC“ are first line of defence

Info about the state of the risks in the given area

TOP management

IKS and risk mapping

BCM

KRI

Risk Database

Aktion planes

ORSA

Reporting for operations risks



RMC reporting

Detection of deficiencies

Department of non-finance risk

Source: <http://www.plan-delegate-manage.com/authority-delegation/>

Audit report

Audit

Selected activities of Non-Financial Risks Department

- Risk Inventory and ICS
 - Risk Inventory
 - Mapping of financial and non-financial risks
- ICS
 - Internal control system for operational and compliance risks

Selected activities of Non-Financial Risks Department

- Action plans
 - This is an activity that serves to remove identified shortcomings in order to:
 - reducing the impact of risk
 - reducing the frequency of risk
- Risk Scan (Global Risk Scan)
 - A top - down method for identifying the most significant risks that may pose a threat to society

Selected activities of Non-Financial Risks Department

- ONR Relationship (SPOCs)
- Risk Management Contact Person
- Appointed as Director of the 1st Management Level
- Experienced worker with good knowledge of department, center or agency activities

- ORSA

- A process that enables the company's top management to assess the amount of capital needed to secure the current and future solvency of the insurance company, including stress conditions

- BCM

- Ensure that the continuity of key activities is maintained even in the event of a non-standard / emergency situation causing extensive destruction or danger (eg. fire, explosions, floods, the risk of a bomb attack, technical infrastructure crash, data center collapse, etc.)

- KRI

- These are indicators or metrics that inform about the state of the control environment within the selected process / risk

- Projects (GDPR, IDD)



Pilar III

www.vse.cz

Solvency II

Pillar I: Quantitative

- Balance sheet valuation
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- Internal model

Pillar II: Qualitativ

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Pillar III: Reporting

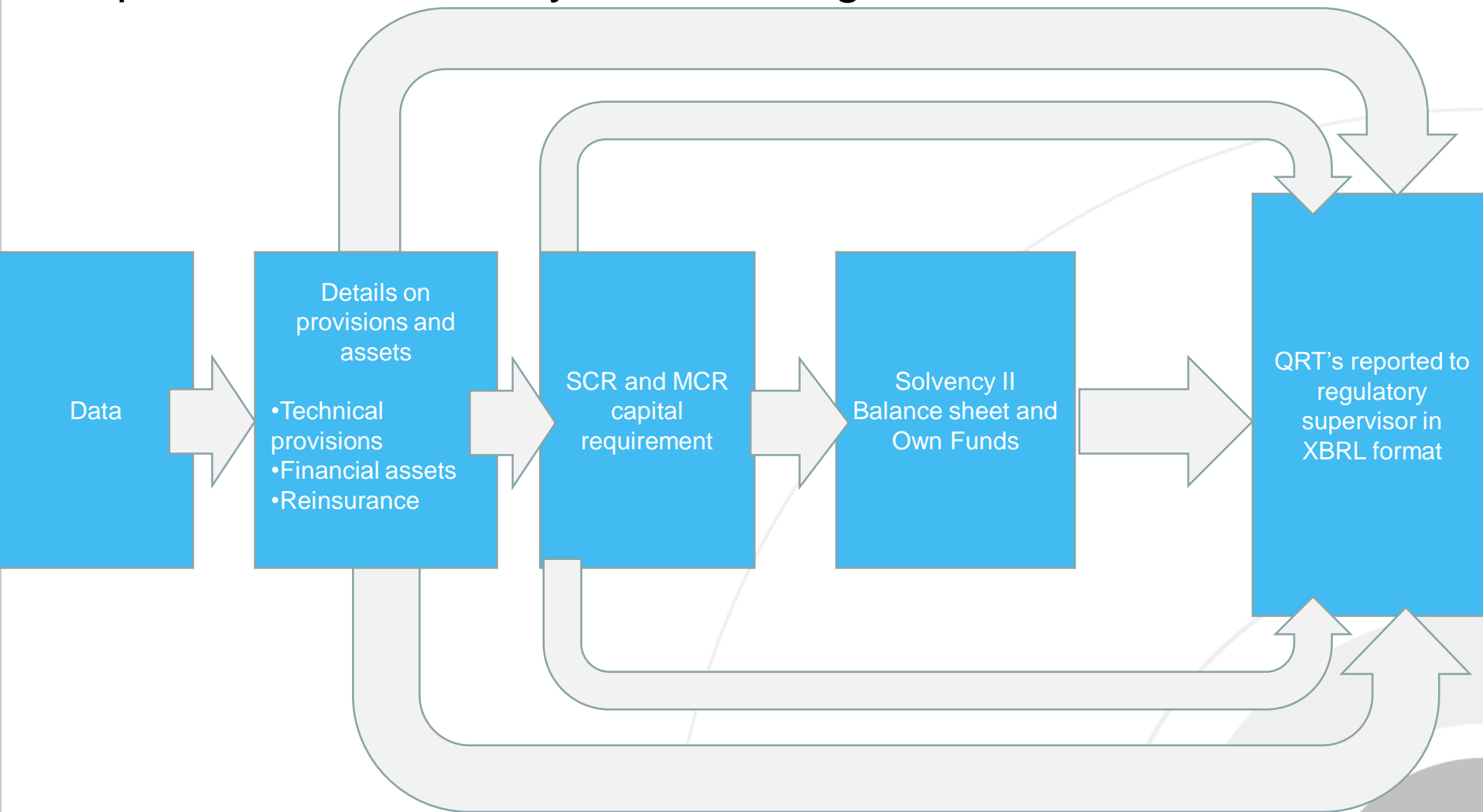
- Solvency and Financial Condition Report (SFCR)
- Report to Supervisor (RTS)
- Quantitative Reporting Templates (QRT)

The reporting requirements of Solvency II surpass anything the insurance industry has had to deal with before:

	Solvency and Financial Condition Report (SFCR)	Quantitative Reporting Templates (QRT)	Report to Supervisors (RSR)
Target group	Public/ insured	Supervisor public/insured (partly)	Supervisor
Contents	<ul style="list-style-type: none"> • Business and Performance • Governance system • Risk profile • Regulatory Balance Sheet • Capital management 	<ul style="list-style-type: none"> • MCR • SCR • Technical Provisions • Assets • Own Funds 	<ul style="list-style-type: none"> • Business and Performance • Governance system • Risk profile • Regulatory Balance Sheet • Capital Management
Information	Quantitative and qualitative	Quantitative	Quantitative and qualitative
Reporting cycle	Yearly	Quarterly (supervisor)/ yearly (supervisor/insured public)	< 5 years (complete report)

Source: CEIOPS. Advice for Level 2 Implementation Measures on Solvency II, Oct. 2009

Data from the same source is to be submitted in different reports → Consistency is a challenge



The total set of Quantitative Reporting Templates is significant

S.01.01	Content of the submission			S.21.02	Underwriting risks non-life		
S.01.02	Basic Information - General			S.21.03	Non-life distribution of underwriting large risks - by sum insured		
S.02.01	Balance Sheet			S.22.01	Impact of long term guarantees measures and transitionals		
S.02.02	Assets and liabilities by currency			S.22.04	Information on the transitional on interest rates calculation		
S.02.03	Additional branch balance sheet information			S.22.05	Overall calculation of the transitional on technical provisions		
S.03.01	Off-balance sheet items -general			S.22.06	Best estimate subject to volatility adjustment by country and currency		
S.03.02	Off-balance sheet items - List of unlimited guarantees r			S.23.01	Own funds		
S.03.03	Off-balance sheet items - List of unlimited guarantees p			S.23.02	Detailed information by tiers on own funds		
S.04.01	Activity by country			S.23.03	Annual movements on own funds		
S.04.02	Information on class 10 in Part A of Annex I of Solvency			S.23.04	List of items on own funds		
S.05.01	Premiums, claims and expenses by line of business			S.24.01	Participations held		
S.05.02	Premiums, claims and expenses by country			S.25.01	Solvency Capital Requirement - Only SF		
S.06.01	Summary of assets			S.25.04	Solvency Capital Requirement		
S.06.02	List of assets			S.26.01	Solvency Capital Requirement - Market risk		
S.06.03	Collective investment undertakings - look-through appr			S.26.02	Solvency Capital Requirement - Counterparty default risk		
S.07.01	Structured products			S.26.05	Solvency Capital Requirement - Non-Life underwriting risk		
S.08.01	Open derivatives			S.26.06	Solvency Capital Requirement - Operational risk		
S.08.02	Derivatives Transactions			S.26.07	Solvency Capital Requirement - Simplifications		
S.09.01	Income/gains and losses in the period			S.27.01	Solvency Capital Requirement - Non-Life Catastrophe risk		
S.10.01	Securities lending and repos			S.28.02	Minimum Capital Requirement - Both life and non-life insurance activity		
S.11.01	Assets held as collateral			S.29.01	Excess of Assets over Liabilities		
S.17.01	Non-Life Technical Provisions			S.29.02	Excess of Assets over Liabilities - explained by investments and financial liabilities		
S.17.02	Non-Life Technical Provisions - By country			S.29.03	Excess of Assets over Liabilities - explained by technical provisions		
S.18.01	Projection of future cash flows			S.29.04	Detailed analysis per period - Technical flows versus Technical provisions		
S.19.01	Non-life insurance claims			S.30.01	Facultative covers for non-life and life business basic data		
S.20.01	Development of the distribution of the claims incurred			S.30.02	Facultative covers for non-life and life business shares data		
S.21.01	Loss distribution risk profile			S.30.03	Outgoing Reinsurance Program basic data		
				S.30.04	Outgoing Reinsurance Program shares data		
				S.31.01	Share of reinsurers		
				S.32.01	Entities in the scope of the group		

Source: Author

SOLVENCY II: POLITICAL PROCESS

Solvency II was developed in the EU according to the Lamfalussy process

(later on this has been altered by the Lisbon process):

Level 1: Directive – High level principles and aims of Solvency II

Level 2: Technical implementing measures – More detailed regulations based on the level 1 directive

Level 3: Guidelines on implementation for national supervisors – «Comply or explain»

Level 4: Compliance control of national supervisors by the European supervisor (EIOPA)

EIOPA – The Supervisor for the European Insurance Industry

Established in 2011, partly in response to the financial crisis of 2008

Similar agencies were established for banking (ECB) and securities as well

An important event in EU History: Supervisory authority was moved from the national to the supranational level

The leadership as well as experts from the national supervisors interact with EIOPA

The predecessor of EIOPA – CEIOPS – was a small unit without the authority to create or implement EU legislation

EIOPA is a much more significant organisation which among other things has the authority to produce and implement technical standards and guidelines that build upon the principles-based regulation produced by the political EU institutions

Insurance companies from all around Europe took part in the studies on which the standard formula for the capital requirement is based

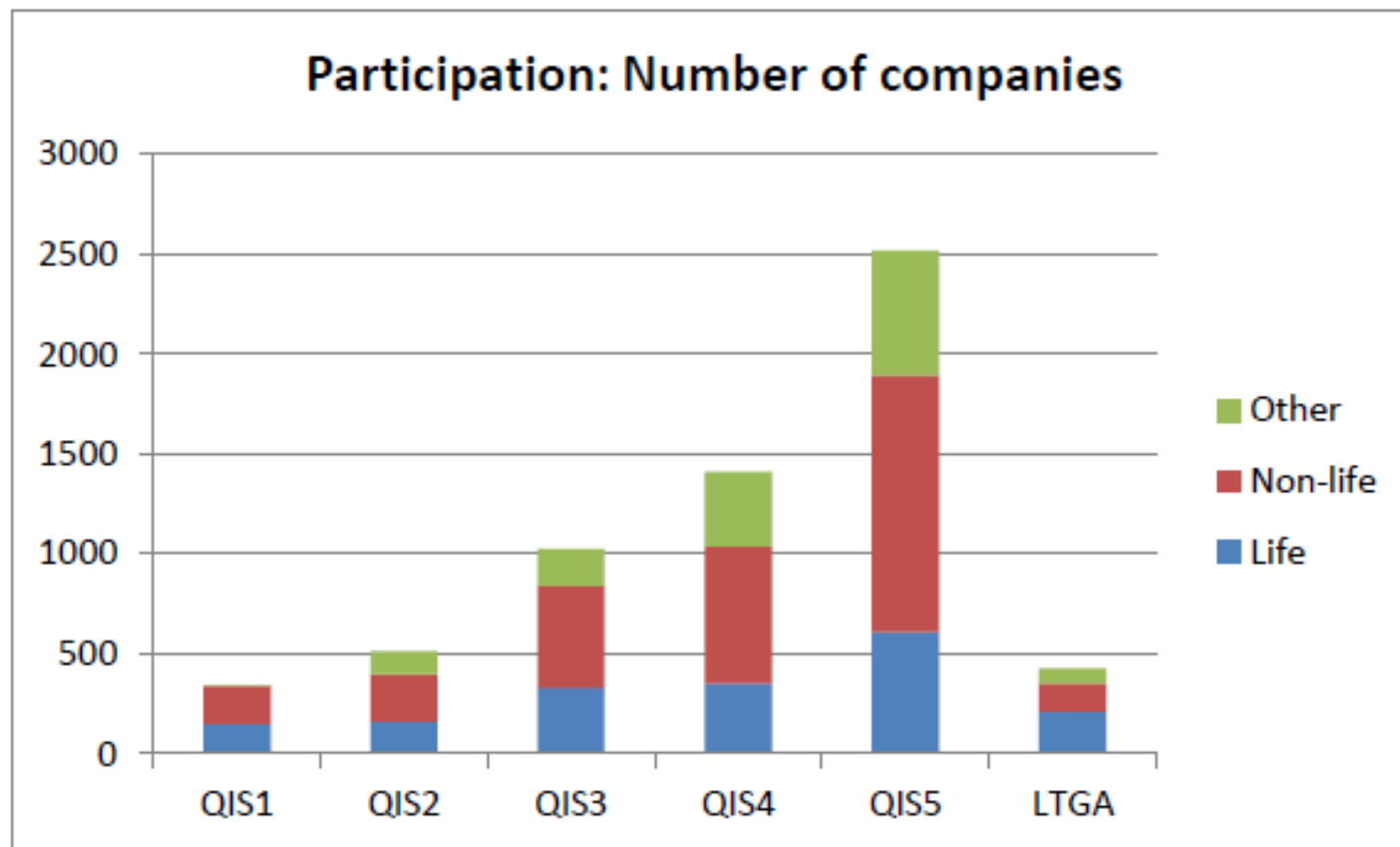


Figure 10: Number of Participants in Solvency II/Omnibus II quantitative impact studies (QIS-reports 1-5 and LTGA report).

Later on, the development process became very political and there has been a lot of bargaining, lobbying and compromises

Years	Phase/Process	Main topics & activities	Notable actors involved (non-exhaustive list)
2008-2009	Solvency II – The Political Phase	<ul style="list-style-type: none"> • Quantitative Impact Study (QIS4) • Legislative process in the Council and the EP • Implementing measures • Trialogue debate: <ul style="list-style-type: none"> ○ Group support regime ○ Equity issues 	Trialogue: EP, Council, Commission. Lobbyists. Insurance companies (in the QIS)
2009-2011	Financial crisis and legislative change	<ul style="list-style-type: none"> • Financial Crisis • Lisbon Treaty: Altered Lamfalussy process • The de Larosi�re report • Establishment of EIOPA 	EIOPA, Trialogue

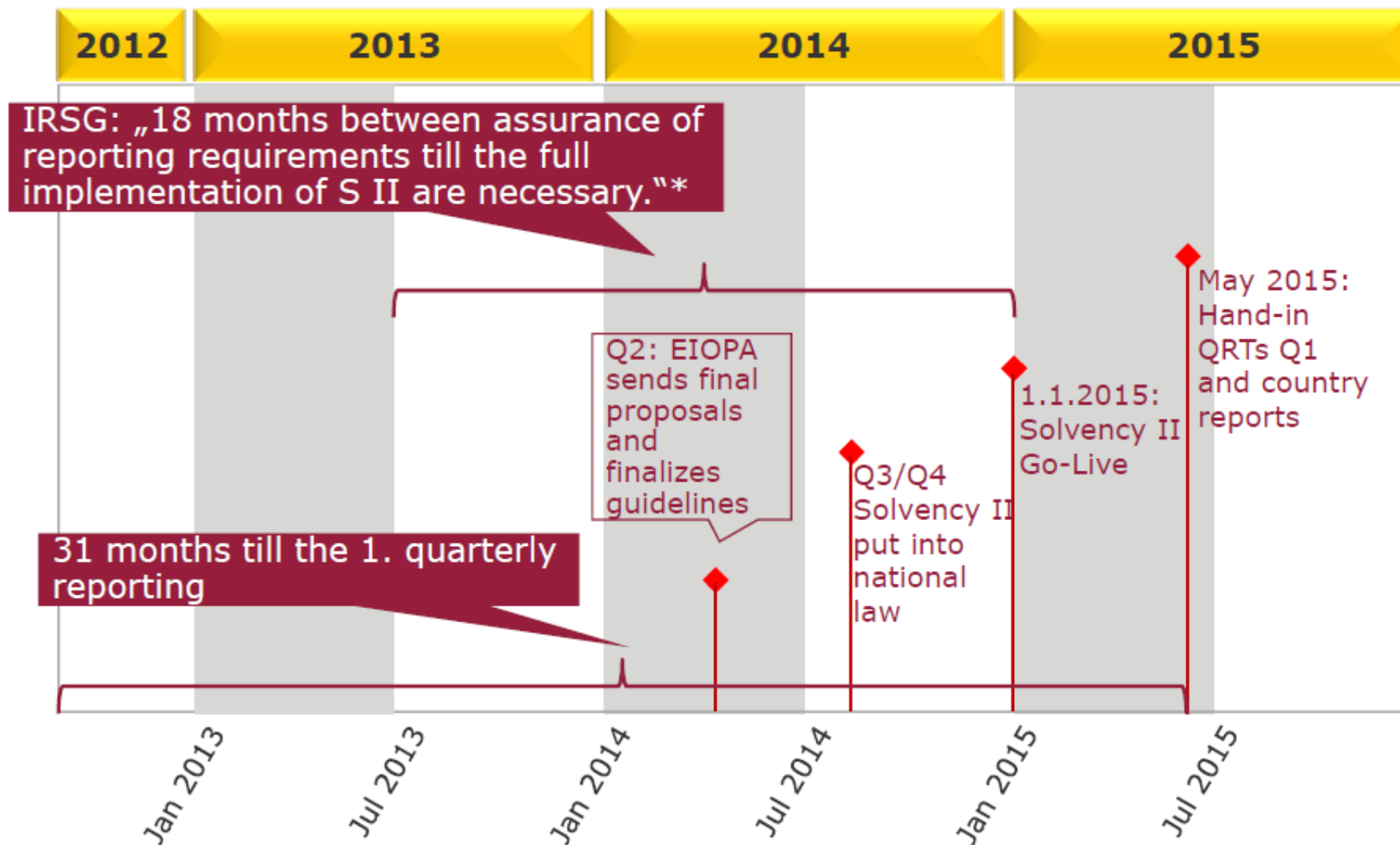
Timelines Solvency II [General information – Solvency II Regulation]

On 31st December 2013 every insurer is supposed to comply with the Solvency II regulation.



Timelines Solvency II [General information – Solvency II Regulation]

There are just 31 months left till the first quarterly reporting.



* Source: EIOPA Insurance and Reinsurance Stakeholder Group – Opinion Consultation – Reporting Package; Nov. 2012

The financial crisis: Low interest rates implied that many life insurers were no longer able to satisfy the projected solvency capital requirement (SCR)

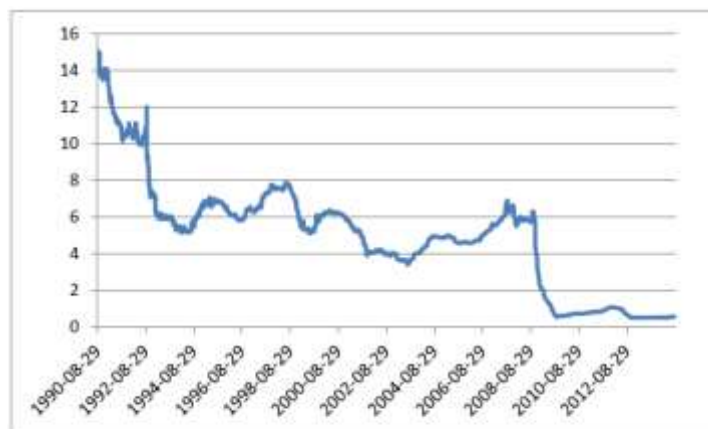


Figure 14: 3-Month London Interbank Offered Rate (LIBOR), based on British Pound
(Federal reserve bank St.Louis, 2014)

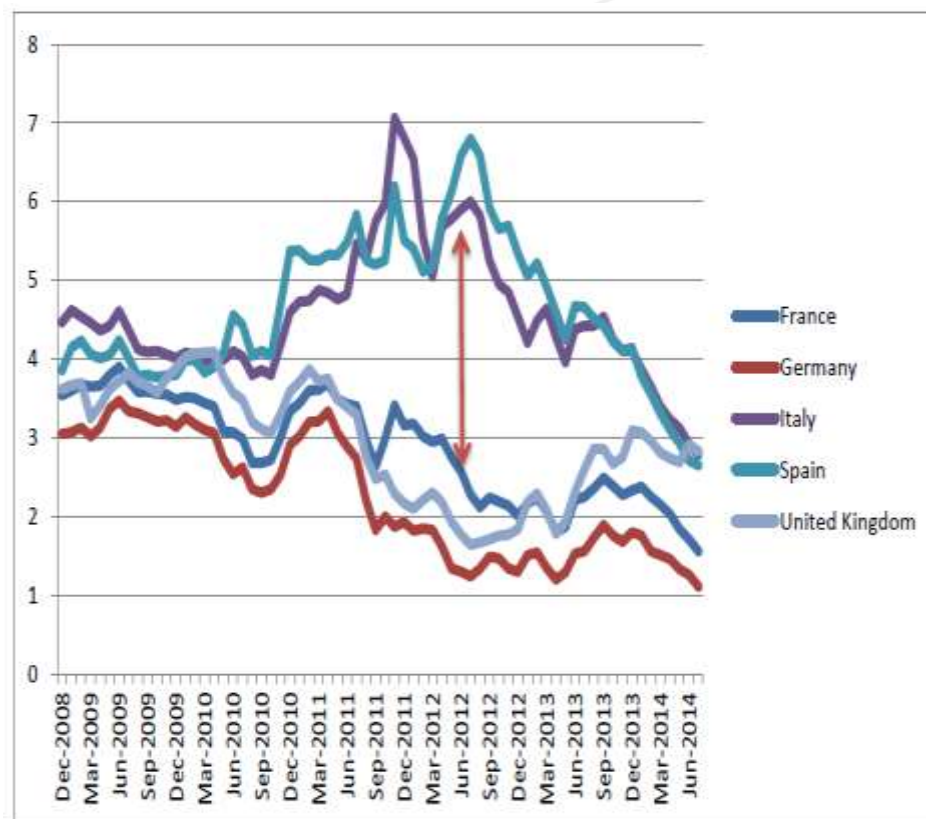


Figure 13: Sovereign debt interest rates of selected European countries (OECD, 2014).

The Omnibus II process amended Solvency II:

The main issue was how the low interest rates were to affect the discounting of long-term liabilities

Years	Phase/Process	Main topics & activities	Notable actors involved (non-exhaustive list)
2011-2012	Omnibus II – Pre-Trialogue process	<ul style="list-style-type: none"> Quantitative Impact Study (QIS5) Development of the OII Directive Legislative process of the EP and Council 	EIOPA, Commission, EP, Council, Insurance companies (in the QIS)
2012-2016	Omnibus II – trialogue process and implementation	<ul style="list-style-type: none"> LTGA report: Triologue debate: <ul style="list-style-type: none"> LTGA Issues Adjustments to the Lamfalussy process Third Country Equivalence Delegated acts & Implementing acts 	EIOPA, trialogue: EP, EC, Commission. Insurance companies (In the LTGA study)

Source: <https://slideplayer.com/slide/8937728/>

- Dilemma: Should short-term fluctuations in the long-term interest rate lead to volatility in current balance sheets?
- Yes: If the market is right about these interest rates, this is the true value of the liabilities
- No: Short term volatility may be excessive and should not have full effect
- The Omnibus II process: Purpose was rather straight forward amendments of the Solvency II directive
- The interest rate issue caused significant lobbying; Long-Term Guarantee package increased the discounting effect → reduced provisions for life insurers
- Significant delays and a less prudent regulatory regime

CASE STUDY - ČAP

Consumer's Protection Information Overload

Insurance Industry – Applicable Law

Introduction into the Knotty and Patchwork Legislative World



The EU has recently adopted many acts significantly changing the whole sector (e.g. regulatory frameworks, distribution and selling channels, manufacturing of products).

- Examples of adopted insurance related EU legislative acts: Solvency II, MiFID II, IDD, PRIIPs.
- Examples of adopted EU legislative acts with significant impact on insurers: GDPR, CSR Dir., Package Travel Dir.
- Examples of planned insurance related legislative adoptions and revisions in 2017/2018: MID, AML, IORP II, PEPP.



Notwithstanding, the majority of those acts is further specified in the delegated and implementing acts of the European Commission (Level2) as well as in the guidelines and other Level3 measures adopted by the ESAs (European Supervisory Authorities).

- Example: Solvency II: 22 implementing acts, 2 delegated acts, 29 EIOPA guidelines.



Majority of the recently adopted acts shall be transposed into the national legal order by the 2018.



The ramified and inconsistent Union adoption process results not only in tight implementation deadlines and high administrative costs but moreover triggers consumers' confusion due to the bursting avalanche of regulatory and information overload.

Relevant Legislation – Consumer’s Information:

Basic Overview

All these instruments contain information and disclosure rules which vary in accordance with the different objectives and scopes of the legislative acts in question.

IDD

sets the legislative framework for the distribution of insurances in the EU. It imposes **specific information requirements**.

SOLVENCY II

lays down rules for the pursuit of the business and reinsurance in the EU. It contains **requirements on information** to be provided to policy holders before the conclusion of an insurance contract.

PRIIPs

introduces **Key Information Document** for the distribution of packaged retail and insurance-based investment products to retail investor.

Directives on distance marketing and on e-commerce

provide targeted rules for very specific and well-defined distribution channels, namely distance marketing of consumer financial services and information society services, including all forms of e-commerce. It contain **additional information and disclosure requirements**.

Relevant Legislation – Consumer's Information:

Information Disclosures Increase



Increase in numbers

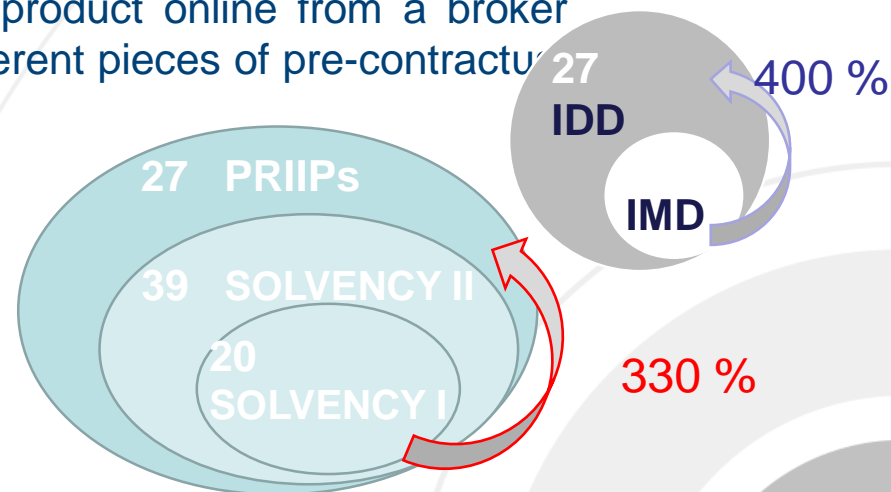


Solvency I – based on the third 3rd Life. Insurance Directive: **20** disclosures.

Prior PRIIPs, Solvency II & IDD: a consumer purchasing an insurance-based investment product online from a broker must be provided with **79** different pieces of pre-contractual information.

Following PRIIPs, Solvency II & IDD: **161** different pieces of pre-contractual information.

- IDD: **36** disclosures.
- PRIIPs: **27** disclosures.
- Solvency II: **39** disclosures.
- Distance marketing directive: additional **29** disclosures.
- E-commerce directive: additional **17** disclosures.
- GDPR: **13** disclosure requirements.

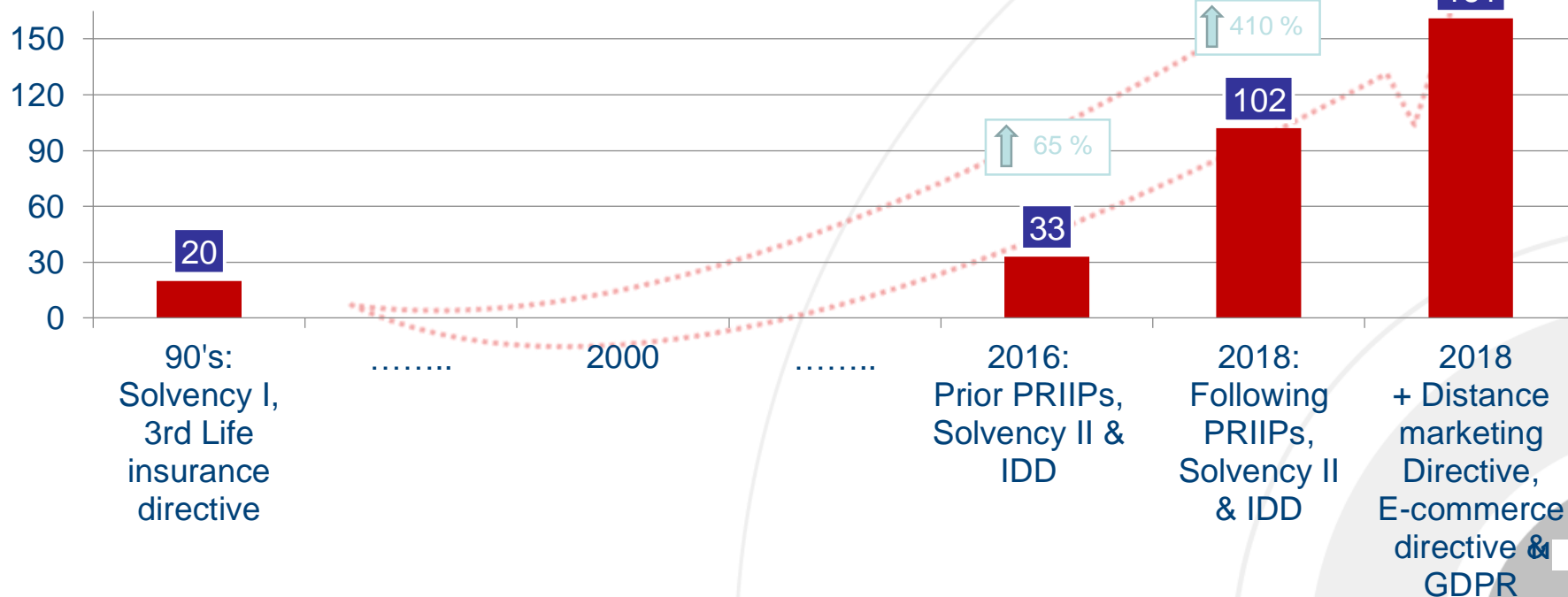


All those rules have been adopted with an aim of improving disclosures and increase the level of consumer protection. Unfortunately, these rules have been drafted and adopted in silos, while in a real life they all apply in combination and on top of existing legislation.

Relevant Legislation – Consumer's Information: Information Disclosures Increase

- Overall numbers of disclosures to be increased by **705 % (!)** comparing to Solvency I situation under the third Life Insurance Directive.
- Volume and complexity of disclosures may substantially limit the consumer's willingness and ability to digest provided information and to execute well-informed decision.

Increasing number of disclosures for investment based insurance product



Relevant Legislation – Consumer's Information:

Information Disclosures Increase

- ❑ The new EU rules combined with the existing ones will require insurers to provide consumers with **161 pre-contractual information in the case of a consumer purchasing an insurance-based investment product online from an intermediary.**
- ❑ This number **only takes account of Level 1 EU legislation** and **disregards EU level 2 and 3 measures as well as additional national rules.** The Level 2 and 3 measures of the IDD will require even more information to be given to consumers.
 - Example: IDD – further specification by the EC: Art. 18-20, 23 (all insurance products), 28-30 (insurance based investment products).
- ❑ On top of it, the **national legislation** quite often requests additional information to be disclosed which may amount up to approx. 50 pages of pre-contractual information to be provided to the customer.

Result:

- Same type of information (e.g. costs (see further) appears in different documents differently as each act uses its own methodology and concrete requirements.
- Consumer may be puzzled and risk to easily overlook important information.
- In general, some of these information expect high financial literacy of the client. Instead of focusing on that, those acts simplify the parameters of the product down to the point of misleading.
 - Example: **PRIPs: KID** (Key Information Document): document requires to present actuary calculations of comprehension alert and performance scenarios in such a simplified way on 3 A4 pages long that is not even feasible (especially in certain language versions) but also triggers potential risk of losing comprehension of the insurance based investment products.

Risks of the Regulation and Information Overload: Concrete Examples

Receiving the same type of information twice, but in a different wording and format

Examples:

PRIPs x IDD x Solvency II: each proposal developed on its own without enough attention being paid to the effect of the rules when they are combined: [art. 8\(3\)f\) PRIPs](#) x [art. 29 IDD](#) x [art. 185\(3\)d\) Solvency II \(information on costs\)](#).

Risk: information on costs calculated differently and provided to consumer in different document = misleading consumer.

Solvency II x PRIPs: The Solvency II disclosures will have to be provided on top of the KID, preventing connected consumers from effectively comparing insurance-based investment products on-line ([Recital 9, Article 3\(2\) PRIPs](#)).

Risk: identical information will have to be presented in different documents.

The number of pieces of information that distributors will need to provide to consumers before selling them an insurance-based investment product will almost **triple**, due to the requirements of the PRIPs, IDD, GDPR and Solvency II.

Risks of the Regulation and Information Overload: Concrete Examples

Consumer purchasing an insurance-based investment product

The PRIIPs Regulation contains general pre-contractual information requirements for the sale of IBIPs. The Solvency II Directive also contains pre-contractual information requirements for all insurance products, which means that the PRIIPs Regulation duplicates the requirements already contained in Solvency II.

Duplication requirements	SOLVENCY II		PRIIPs
Insurer's identity	Article 185.2(a) „the name of the undertaking“	+	Article 8.3(a)c „the identity and contract details of the PRIIP manufacturer“
Description of the underlying instruments	Article 185.3(i) „an indication of the underlying assets for unit-linked policies“		Article 8(3)(c)(ii) „a description of the underlying instruments of preference values, including a specification of the markets the PRIIPs invests in“
Duration of the contract	Article 185.3(b) „the term of the contract“		Article 8(3)(c)(v) „the term of the PRIIP, if known“
Out-of-court claims settlement procedures and/or complaints mechanisms	Article 185.3(l) „the arrangements for handling complaints concerning contracts by policy holders, lives assured or beneficiaries under contracts including, where appropriate, the existence of a complaint body, without prejudice to the right to take legal proceedings“		Article 8(3)(c)(h) „information about how and to whom a retail investor can make a complaint about the product or the conduct of the PRIIP manufacturer or a person advising on, of selling, the product“
Products benefits	Article 185.3(a) „the definition of each benefits and each option“		Article 8(3)(c)(iv) „where the PRIIPs offers insurance benefits, details of those insurance benefits, including the circumstances that would trigger them“
Payments/ Costs	Article 185.3(d) „the means of payment of premiums and duration of payments“		Article 8(3)(f) „the costs associates with an investment in the PRIIP“
Surrender/ cooling-off period	Article 185.3(f) „an indication of the surrender and paid-up values and the extent to which they are guaranteed“ Article 185.3(j) „arrangements for application of the cooling-off period“		Article 8(3)(g)(i) „where applicable, where there is a cooling off period or cancellation period for the PRIIP“
Tax arrangements	Article 185.3(k) „general information on the tax arrangements applicable to the type of policy“		Article 8(3)(d)(v) „a statement that the tax legislation of the retail investor's home Member State may have an impact on the actual payout“
Risks	Article 185.4 „information shall be supplied in order to provide a proper understanding of the risks underlying the contract“		Article 8(3)(d) „a brief description of the risk-reward profile“

Risks of the Regulation and Information Overload: Concrete Examples

Format: Paper based x digital single market idea (digital and non-digital access)

Example: Both the IDD and the PRIIPs oblige insurers to provide all pre-contractual information on paper, as a default requirement. The use of websites and durable mediums can only be used by way of derogation and subject to meeting additional conditions. (art. 23 IDD and art. 14(2) PRIIPs). While the PRIIPs provides that the KID should not exceed 3 A4 pages (art. 6(4) PRIIPs), it will be no less than 6 A4 pages in real life (considering all required information if not be written by any font lower than 8points). This is simply too long to fit with screens, in particular those of increasingly popular smartphones.

Detrimental impact on financial sector caused by overwhelming EU approach

Example: Due to the subsequent adoptions of Level2 and Level3 measures that bring **significant** limps, the overall timeline for implementation is too short (e.g. IDD Level 2 measures following final publication in the Official Journal will leave approx. just 2 months till the date of their applicability. Insurers need to wait for the Level2 measures as they will significantly determine crucial parts of the IDD needed for any product manufacture and sale such as product oversight and governance, tests of suitability, reporting, etc.)

Detrimental impact on customers

Example: Lack of transparency for customers & financial literacy: Better information doesn't mean more information if the **duplicative or too long information** does not bring any added value for consumers. IMD: 2 simple articles on information obligations (art. 12 and 13 IMD) x IDD: 7 long complicated articles (art. 18, 19, 20, 23, 28, 29, 30 IDD)
Risk: Too much information is counterproductive, and risks distracting and confusing consumers and, eventually, moving them away from informed decisions.



UNDERWRITING RISK

Underwriting risk - definition

- The risk of a change in value due to a deviation of the actual claims payments from the expected amount of claims payments (including expenses). From the nature of the administration of risk within the company, one can distinguish between risks of claims which have already happened in the past – the reserve risk, and the risk of claims which will happen in the future – the premium risk.
- Examples: life underwriting risk, windstorm underwriting risk

Premium risk

- The risk of loss, or of adverse change in the value of insurance liabilities, resulting from fluctuations in the timing, frequency and severity of insured events. Premium risk relates to policies to be written during the period, and to unexpired risks on existing contracts.

Reserve risk

- The risk of loss, or of adverse change in the value of insurance liabilities, resulting from fluctuations in the timing and amount of claim settlements.

Catastrophe risk

- The risk of loss, or of adverse change in the value of insurance liabilities, resulting from significant uncertainty of pricing and provisioning assumptions related to extreme or exceptional events

Lapse risk

- The risks of a change in value caused by deviations from the actual rate of policy lapses from their expected rates.

Investment risk: market, credit, liquidity

Market risk - definition

- The risk of changes in values caused by market prices of financial instruments or volatilities of market prices differing from their expected values. Exposure to market risk is measured by the impact of movements in the level of financial variables such as stock prices, interest rates, real estate prices and exchange rates.
- Example: interest rate risk

Market risk

- Risk of decrease in value by changes in the market variables such as interest rates, share prices, Exchange rates, real estate prices the like.
- Included asset and liability management

ALM

Market risk

We can divide market risk into several subcategories, parallel to the market variables:

- Interest rate risk
 - Risk of decrease in value due to changes in the interest rates.
 - Interest rates have an effect on the value of both the assets and the liabilities

Market risk

- Equity risk
- Currency risk
 - Also called foreign exchange risk – FX
- Inflation risk
- Real estate risk
 - Also called property risk
- Private equity risk

Market risk

- Concentration risk
 - The exposure to increased losses associated with inadequately diversified portfolios of assets and/or obligations. Concentration risk for an insurer may arise with respect to investments in a geographical area, economic sector, or individual investments, or due to a concentration of business written within a geographical area, of a policy type, or of underlying risks covered.

Market risk

- Concentration risk
 - The exposure to increased losses associated with inadequately diversified portfolios of assets and/or obligations. Concentration risk for an insurer may arise with respect to investments in a geographical area, economic sector, or individual investments, or due to a concentration of business written within a geographical area, of a policy type, or of underlying risks covered.

Market risk

- Credit spread risk
 - The risk of decrease in value due to changes in the credit spread. The credit spread is an extra compensation as a part of the interest rates bond on top government bond interest rate.
 - Credit spread risk played an important role during the financial crisis

Credit risk

- Credit risk is the risk of decrease in value when counterparties are not capable of fulfilling their obligations or when there are changes in the credit standing of counterparties
- Components:
 - Bonds
 - Reinsurance counterparties
 - Derivatives counterparties

Measuring credit risk

- Instrument are highly developer within the banking industry
- Credit rating
 - Moody's Investors Service, Inc.
 - Standard & Poor's Ratings (owned by McGraw-Hill, Inc.)
 - Fitch Ratings Service (owned by Fimalac, S.A.)



FitchRatings
KNOW YOUR RISK

*Source: Moody's,
Standard&Poor's, Fitch
Ratings*

Rating Agencies' Role

- Called Nationally Recognized Statistical Rating Organizations (NRSROs) by the SEC:
 - “official arbiters of financial soundness.”*
- Many investors have guidelines or requirements that permit investments only in “investment grade debt”:
 - Moody’s: Aaa, Aa, A, Baa
 - S & P/Fitch: AAA, AA, A, BBB
- Effective marketing of securities requires rating by an NRSRO
- Ratings particularly important in “alphabet soup” financial products
 - Capital structure relies on subordination and diversification

Crisis Effects – Beyond the Big Banks

- FDIC has seized/closed 127 institutions since 2007
- AIG – problems with derivatives
- December 2008 - Bernard Madoff - \$64 billion Ponzi scheme
- Massive government support to General Motors & Chrysler



Source: AIG



Source: Chrysler



*Source:
General Motors*

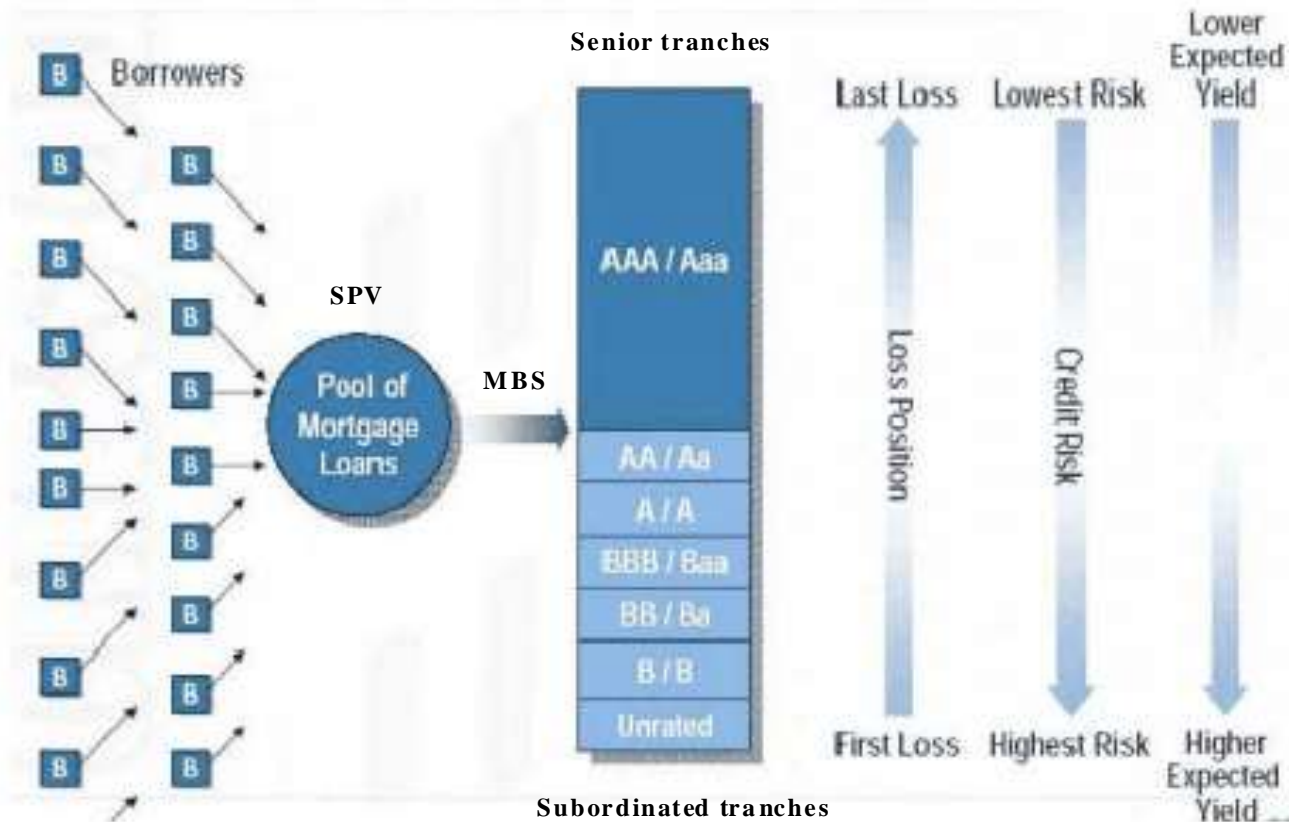
How did they get it wrong?

- Outdated models
- Structural conflicts of interest
- Exemption from liability

Securitization process

Mortgages from many different borrowers are sold/transferred to a SPV to form a pool of mortgage loans.

SPV issues securities in multiple tranches where the holders of the highest rated tranche are paid before the lower rated tranches. Due to the favored status of the higher rated tranches they face lower risk of loss and lower credit risk which results in a lower expected yield.



Liquidity risk

- Risk of unexpected or unexpectedly high payments, where complying the liabilities involves a loss
 - Liquidity and solvency are not identical – a perfectly solvent insurance may have large liquidity problems
 - Timing of payments
 - Market sentiments
 - NOT only impact assets, but also liabilities.

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