The COMPLEXITY of the insurance reporting system

The Financial Statement of an insurance company

- ☑ It is a **public document** usually also on the website of the company
- ☑ Main objective: to inform all external stakeholders (shareholders, policyholders, creditors, authorities) about company performance and financial strength.
  According IAS/IFRS the objective of the financial statement is "*To provide financial information that is useful to users in making decisions relating to providing resources to the entity*".

According to international accounting standard (IAS 1), a complete set of financial statements includes:

- **Balance sheet**** at the end of the period: to represent assets, liability and equity
- **Income statement** (P&L and other comprehensive income or OCI) for the period
  Represents the revenues and the expensive and it's the net profit of the company
- A **Statement of changes in equity** for the period
- A **Statement of cash flows** for the period
- **Notes**, comprising a summary of significant accounting policies and other explanatory notes comparative information prescribed by the standard.

The **reporting system of insurance companies is very complex** hence:

- The differences in insurance accounting and accounting of the other enterprises (non-insurance company)
- The differences between non-life and life insurance business
  Life and non-life words are very very different and this is also the reason why the companies usually cannot issue them together
- The differences in insurance accounting and reporting worldwide;
  The financial statement of a country is in general very different from the one of another country, even if – with the introduction of Solvency II framework (in Europe; but ! also worldwide it is an important benchmark for regulation authorities, with exception of US) – some of these different are less evident. A common framework will be improved by the introduction in the near future of IFR 17, that will be applied worldwide (not only in Europe, but not in US).
- The differences in metrics currently used (accounting standards
  i.e. **different criteria for evaluation of assets (investments) and liabilities (technical provisions)**
  Insurance financial statement is driven by the balance sheet -> the measurement of assets and liabilities is the core of it -> different ways in computing them change a lot

For example, in Italy:

- **Single entity** (or solo) financial statement uses **local accounting standards (local GAAP)**;
- **Group** financial statement uses **international accounting standards** (IAS/IFRS);
  The current most important IFRSs for insurers are **IAS 39 (financial instruments)** and **IFRS 4 (insurance contracts)**

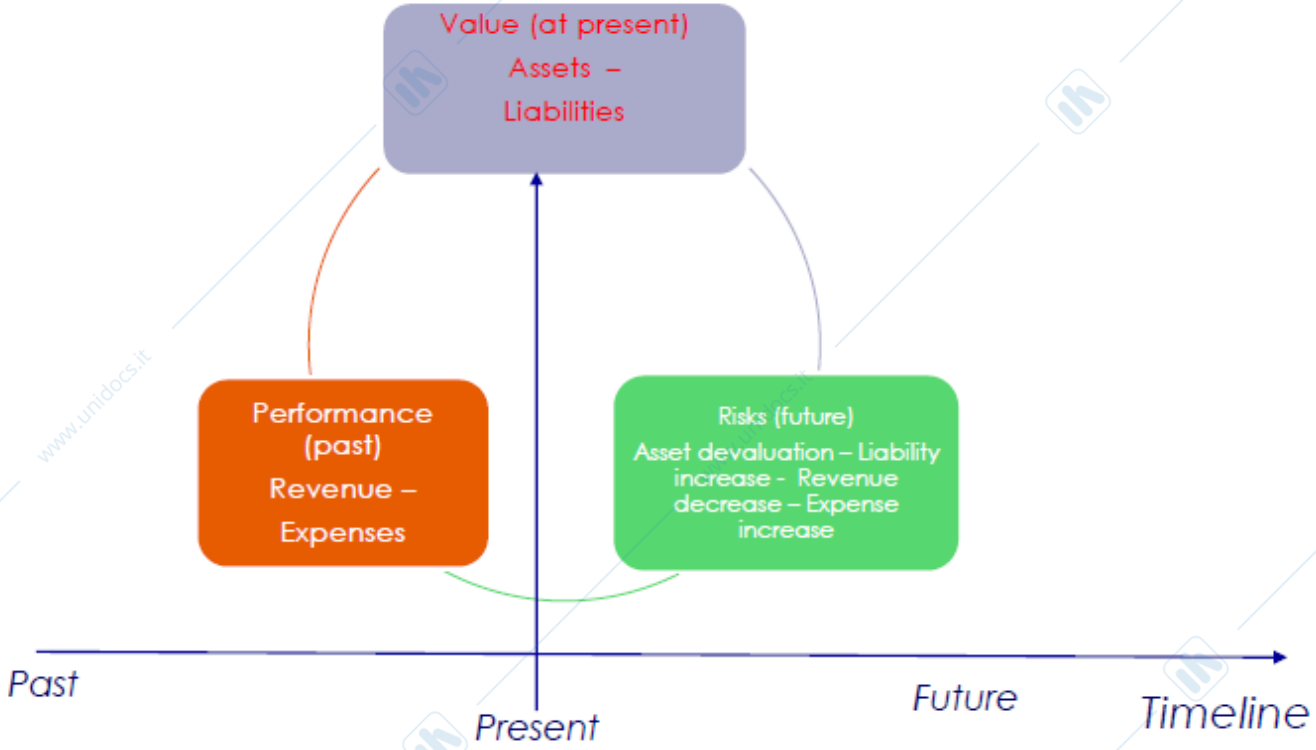
Assicurazioni Generali has a financial statement with Italian regulation while Generali Group, has one with IAS/IFRS
In Italy an actuary or on the other hand an accountants shall know all…

- EU prudential regulation (**Solvency II**) uses specific regulation (**full fair value approach**) and reporting system (Market value balance sheet and SFCR)
  the Solvency II approach is different from local accounting standards and international ones: it involves actuaries with their actuarial techniques
- Life insurance companies use an additional metric to measure values and performances (Market consistent **embedded value**, MCEV, or European embedded value, EEV)
  So another metric, approach, model and computation…
- In 2023, new international accounting standards for financial instruments (**IFRS 9**) and insurance contracts (**IFRS 17)** shall enter in force for insurance companies, with new evaluating criteria for financial instruments, technical provisions and a new P&L representation.
  So we don't focus on IFRS 39 and IFRS 4 because they won't be relevant for our future at work

Couses involved

The single entity financial statement (local GAAPs)	The insurance group financial statement (IAS/IFRS)	The Solvency II balance sheet	Embedded value
→Introduction to …. (M1) and Economia delle aziende di Assicurazioni (non life) →This course (life –M1-section 3) →Actuarial courses (technical provisions)	→This course (in particular, IFRS 9 and IFRS 17 -M2-Section 1 and 4	→This course (M1-section 2 and M2-Section 4) →Actuarial courses (technical provisions)	→This course(M1-section 3)

The three dimensions of insurance company management: Value, risks and performance



** The "core" of the financial statement of an insurance company is the **balance sheet** and the **measurement criteria for assets and liabilities** -> since assets are mainly composed by financial instruments and liabilities by technical provisions, the measurement criteria for **financial instruments** and **insurance contracts** are central in the financial statement of an insurance company.
The measurement criteria for assets and liabilities are relevant also for the income statement since a variation in the value in them originates an economic flow that directly affects income statement.

Assets and liabilities measurement means that a **value** for each asset and liability shall be assigned at the end of each accounting period

=> The concept of "value" is discussed in economic theory: a value is a **measure** of the benefit provided by a good, service or financial instrument to an economic agent.

How can we find out this "value"?

In accounting, there are basically two measurement/accounting bases for assets and liabilities measurement

Historical cost measurement bases	Current value measurement bases
Amortised cost (financial instruments) →IFRS 9 →M2 –Section **Technical provisions using a locked-in approach** →Liability for remaining coverage and Mathematical provision using Italian local gaap (insurance contracts) →Introduction and M1 –Section 3 Locked-in means that the hp in the estimation are fixed at the time in which the first computation is made and then not changed in the future.	Most common measurement in modern approaches **Fair value** →financial instruments (IFRS 9 and Solvency II) and insurance contracts (Solvency II) →M1 Section 2 **Fulfilment value** →insurance contracts (IFRS 17) →M2 Section 1 **Embedded value** →insurance contracts →M1 Section 3

Introduction to Solvency II

Solvency II –Directive 138/2009 (in force from 1/1/2016)

Agenda… :
1.1. Introduction
1.2. The first pillar of Solvency II
1.2.1. Market value balance sheet and own funds
1.2.2. SCR, MCR and the Solvency Ratio
Prerequisites: Assets, liabilities, equity and the balance sheet of an insurance company (see also Introduction, section 2, 1-10)

Story of the regulation:

Introduction

Solvency II main principles

1) Policy holders and beneficiaries' protection

"*The **main objective** of insurance and reinsurance regulation and supervision is the adequate **protection of policy holders and beneficiaries.**…*secondary objective ***Financial stability*** *and* ***fair and stable markets**** *are other objectives of insurance and reinsurance regulation and supervision which should also be taken into account but should not undermine the main objective*"
(premise n. 16 to SII directive)

Basic principles:

*In the financial statement, capital («**equity**») is the shareholder value of the insurance company ; in Solvency II, capital («**own funds**») is a loss absorber to protect policy holders and beneficiaries* *=> instrument used:* *Capital requirements (see M2.2);*	*Regulation and supervision should avoid procicality* First draft of this regulation before 2005/2006 -> financial crisis of 2008 => this showed that also in insurance as for bank there were some procyclical effects -> if there is crise, it's even more deeper -> the risk based regulation it's okay, but not enough: there was the need also of some antiprocyclicality measures -> they were added before the introduction of the Solvency II framework (so that's way only in 2019 **In financial area there are two main regulations: Solvency II and IDD (Insurance distribution directive)…the object is the same but the instruments are different: Idd it's about distribution (policy holders are protected avoiding unfair products to be sold; this affects less the actuarial part), on the other hand Solvency II it's about the financial strength of the company (policy holders are protected is the insurance company is strong = it's able to pay its debt) *=>instruments used: Anti-procyclicality measures (see volatility adjustment M1.2 and symmetric adjustment M2.2).*

2) Risk based approach and the three pillars of Solvency II

RISK-BASED APPROACH

"*In line with the latest developments in risk management, […] and with recent developments in other financial sectors an **economic risk-based approach** should be adopted which provides **incentives** for insurance and reinsurance undertakings **to properly measure and manage their risks***." (premise n. 15 to SII directive).

= More risks, more capital

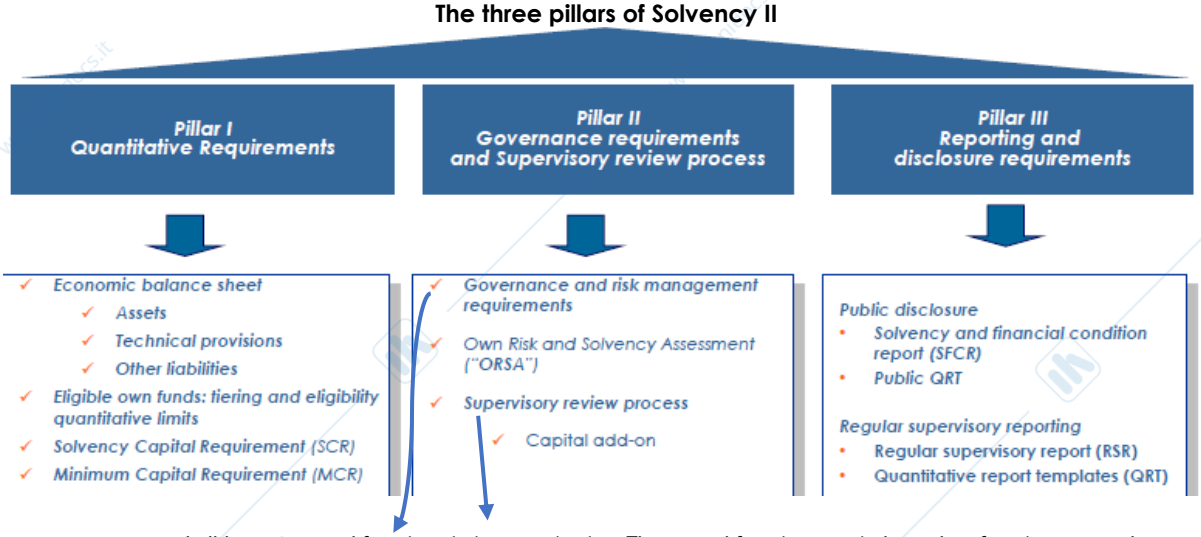
- *This is the most innovative part in Solvency II*
- *It's a very intuitive principle*
- *This principle requires so the quantitative measurement of risks involved*
- *It's a much more liberatory principle: in the past insurance company had very restrictive regulation who said to them which investments the company could do, which business could perform and so on while thanks to this simple "idea" there's no need to impose things like that, it's sufficient to have a correct correspondence between risk and capital*

It means also you can do what you want but you have to know what you are doing -> the company has to have an appropriate structure and organization to manage risks

=> Main instruments used :

- *Fair value measurement of assets and technical provisions (see M1.2);*
- *Quantitative measurement of risks (see M2.2);*
- *Governance requirements (see M2.3);*
- *Disclosure requirements (see group works).*

The three pillars of Solvency II



Each insurance company shall have 4 control functions in its organization. The control functions are independent functions = employees of the insurance company but that have to control

1. Risk management function
2. Compliance function
3. Internal audit function
4. Actuarial function = controls the actuarial department -> it's one of the apical role for an actuary …from it you can see all the company, it's a very good work.

3) EU harmonization and the Lamfalussy approach

«..it is necessary to eliminate the most serious differences between the laws of the Member States as regards the rules to which insurance and reinsurance undertakings are subject" (premise n. 2 to SII directive).
we can understand this immediately for instance thinking about the currencies in EU: in Italy and other € but also others

=>Basic principles and instruments … here we can say there are two perspectives:

Regulatory harmonization at EU level

↳ **Lamfalussy approach**

Solvency II regulation
Different levels of rules:

Level 1: Framework directive
Level 2: Implementing measures – delegated acts (Commission)
Level 2.5: Technical Standards EIOPA
Level 3: Guidance by EIOPA to ensure consistent implementation and cooperation between MS
Level 4: Rigorous enforcement of Community legislation by the Commission

General idea: At level 1 we have we have a directive, but it's not enough to guarantee an harmonization so we have other levels: so the core are level 2 and 3

Supervisory harmonization at EU level

↳ **Home country control → Single set of rules**
"The supervisory authorities of the home Member State should be responsible for monitoring the financial health of insurance and reinsurance undertakings". (premise n. 24 to SII directive).
So for instance Generali assicurazioni is supervised by IVASS; Allianz is supervised by the German supervisor authority
≠ from banking system: here there is only one supervisor authority for the largest groups in Europe: European Central bank

↳ **Coordination of National supervisors by EIOPA** (see Guidelines)
Eiopa has no direct supervisory power on the company, it's task is to guarantee the Supervisory harmonization. It's made by people from all European supervisor authorities and issue the guidelines for instance in order to have a more common abroad. This objected is not well reached right now since the different supervisory authorities have different practices.
So: in UK (until it was in European union) the supervisor authority looked at the internal model with a good perspective, so there the vast majority of insurance companies have it (since we will see that internal models shall be approved by the supervisor authority), in Italy we have half and half, while in Spain internal models are seen as not good and so there is very difficult to obtain the approval for it.

↳ **College of supervisions for group supervision**
Aim: coordination for group supervision
Generali group for instance is an European group (not Italian one, about 60% of the business is made abroad), and so it's for Allianz: there are more supervisors involved and so the need of a coordination

Level 1: Solvency II directive (138/2009) modified by directive 51/2014 (named **Omnibus II**)

• It introduces the *essential* principles of the new regime

!!! "A directive is a legal act of the European Union, which requires member states to achieve a particular result without dictating the means of achieving that result. It can be distinguished from regulations which are self-executing and do not require any implementing measures. Directives normally leave member states with a certain amount of leeway as to the exact rules to be adopted. The text of a draft directive is prepared by the Commission after consultation with its own and national experts. The draft is presented to the Parliament and the Council, initially for evaluation and comment, then subsequently for approval or rejection". (source "Wikipedia") So it's a general rule, a set of generic indications

• This implies not a full harmonization since there can be leeways BUT in insurance context -due to Level 2-3 regulation – SII left only marginal leeway to member states

•It requires the enforcement in the specific country: in Italy, the directive was implemented by legislative decree 74/2015, which updated the Code of Private Insurance.

Level 2 - Implementing measures

• they are detailed and technical measures on the new regime(more formulas than words, so they are for an actuary or a risk manager, not for a layer)

• they are adopted by the European Commission and **directly** in force in all EU member states without the need of implementing measures at national level since they are in the form of "regulation":

- **regulation 2015/35/EU** (**Delegated acts)**
- **regulation 2016/467, 2017/1542, 2018/1221, 2019/981** with some marginal changes to the original regulation.
- In 2021 a more structured review is expected in 2022-23 (**revision 2020**)
  (The Solvency II structure will remain unchanged)

• they are "technical" but they implies some political decisions -> political debate

Which are the political debates area involved?

1. Debate among:
   - Stakeholders -> profitability and this means less capital, so less financial strength
   - Policy holders represented by Supervisor authority -> more financial strength
2. Debate between countries: countries have different ideas and interests and different visions about regulations

Level 2.5 –Technical standard

• named like that because are enforced after the level 2 but before the 3
• Similar to level 2 but completely technical (no political -> no debates)
• Proposed by EIOPA (European insurance and Occupation pension authority) and adopted by the Commission
• Directly in force in all EU members without the need of implementing measures at national level.
• They are : 1. **Regulatory Technical Standard (RTS) 2. Implementing Technical Standard (ITS)**
RTS and ITS introduce measures to regulate in detail the provisions of the new regime with a view to regulatory convergence

Level 3 –Guidelines = Guidance by EIOPA to ensure consistent implementation and cooperation between MS

• They are technical
•Issued by EIOPA which are also aimed to support supervisory convergence.
•The guidelines are subject to a **comply or explain mechanism** by which the national Supervisory Authority must state to EIOPA whether it intends to comply with the guidelines or indicate the reasons for not complying.
"comply" = the guideline is introduced by the country / "Explain" = explanation of why a country decided why not introducing them, so they have to motivate why they are not relevant and adopted
• In Italy all Guidelines are implemented by IVASS regulation.

Level 4: Rigorous enforcement of Community legislation by the Commission

Typically when we talk about Solvency II in this course we refer to Directive or to the second level regulation

Group regulation

Solvency I is mainly a single entity regulation (solo level) and supervisory system -> in Solvency II similar rules apply either to solo or group level ()
More or les the same rules will be applied -> in our course we mainly refer onto single entity regulation but all things that we can say are the same for groups
i.e: Assicurazioni Generali as single entity and then Generali group -> Generali Assicurazioni must be solvent and respect all rules for the single entity but at the same time also on the group formed by all single entities that belongs to the same shareholders or the same properties

4) Group supervision

•Cross-border group supervision is improved by national authority coordination.
•"*All insurance and reinsurance groups subject to group supervision should have a group supervisor appointed from among the supervisory authorities involved*" (premise n. 111 to SII directive)
•"*Supervisors from all Member States in which undertakings of the group are established should be involved in group supervision through a "college of supervisors"* " (premise n. 113 to SII directive)
= a board made of the supervisors of each company. In this college there is a leader, taken from the company which has in the group the majority.

Solvency II:

- "*should not be too burdensome for **small and medium-sized insurance** undertakings*"
- "*should not be too burdensome for insurance undertakings that **specialize** in providing specific types of insurance or services to specific customer segments*"
- "*should also take account of the specific nature of **captive insurance** and captive reinsurance undertakings*".

Reasoning: Solvency II is quite revolutionary in actuarial management, so it has required huge investments (to have a good level of compliance with the regulation + to organize the complex structure of the 4 control functions i.e) …

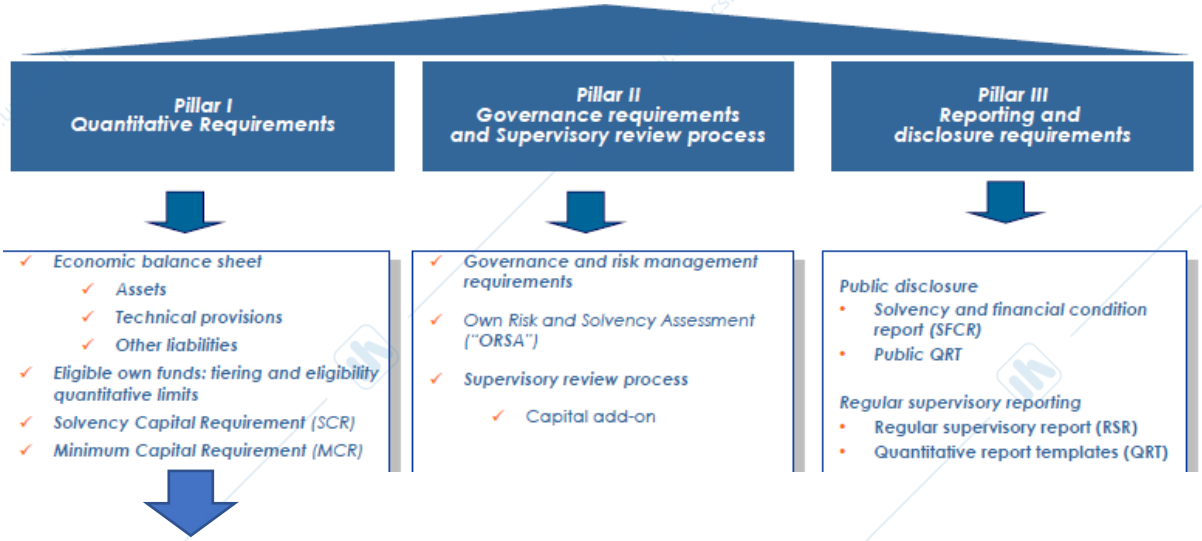
"*One of the tools by which to achieve that objective is the proper application of*

5) Proportionality principle

→ *That principle should apply both to the requirements imposed on the insurance and reinsurance undertakings and to the exercise of supervisory powers*" (premise n. 19-20-21 to SII directive).

→ The proportionality principle is the hardest to be effective. In fact:

- The Solvency II **implementation and maintenance costs** are not proportional with size but less than proportional
  The regulation shall be not too costly for/disadvantage specialized/too small/medium company, therefore there will be some simplifications of the rules… but the costs are not proportional with the size: Generali/Allianz group can have a 15 – for instance - of people in the actuarial function but the size of Generali is 1000 times the size of Vittoria group and there in order to perform the actuarial functions controls at least 5 people are required…
- Solvency II account for **diversification** which penalize small and specialized insurance companies
  They have in general small volume and they are often even more specialized than bigger ones.



The first pillar of Solvency II

There are mainly 2 measurements: a value one and a risk one.

VALUE

1.Market value balance sheet (i.e. a full **fair value** balance sheet);

This means that the company shall measure the money it has on pockets, but using Solvency II criteria ("market value" -> FV)

2.Calculation of **eligible own funds** to cover SCR (EOFSCR) and MCR (EOFMCR).

We will see in fact that there are different configurations of the own funds

RISKS

3.Calculation of the **Solvency Capital Requirement (SCR)** taking account of all **quantifiable risks** (i.e. using a complex approach based on the standard formula or an internal model);
Calculation of **Minimum Capital Requirement (MCR)** using a simple formula

QUANTITATIVE REQUIREMENTS

4.It should be that:

EOF_{SCR} > SCR or SCR Solvency Ratio=EOF_{SCR}/SCR > 100%

EOF_{MCR} > MCR or MCR Solvency Ratio=EOF_{MCR}/MCR > 100%

5. If [EOF_{SCR} < SCR and EOF_{MCR} > MCR] or [EOF_{SCR} < SCR and EOF_{MCR} < MCR], the quantitative requirements must be promptly restored.

The market value balance sheet (MVBS) and own funds

Market value balance sheet (MVBS) composition (%) at 31/12/2016 (source: EIOPA)

(there is also UK because they're not updated but that's not relevant)

ASSETS

	UK	France	Germany	Italy	Netherland	Ireland	Belgium	Spain	Sweden	Other
Inv - Participations	3,7%	5,3%	29,6%	8,8%	4,3%	0,2%	1,7%	3,3%	4,5%	7,0%
Inv - Equities	3,0%	3,0%	0,6%	1,1%	2,0%	0,9%	3,1%	1,3%	13,9%	1,6%
Inv - Govies	7,9%	25,1%	15,9%	40,7%	26,4%	8,7%	43,0%	47,2%	9,2%	16,3%
Inv - Corporate + Structured	12,6%	29,7%	26,4%	17,7%	9,2%	8,1%	19,6%	20,2%	16,8%	16,6%
Inv - Collective investment	3,7%	13,6%	8,4%	6,7%	3,6%	1,3%	4,2%	3,6%	9,8%	9,7%
Other investments	4,3%	2,2%	2,2%	0,9%	7,8%	3,5%	3,4%	7,0%	2,7%	2,7%
Inv - Unit-index	46,0%	11,4%	4,6%	15,8%	19,5%	57,2%	9,7%	5,1%	36,5%	31,2%
Reinsurance recoverables	11,2%	3,8%	2,0%	1,5%	1,4%	10,4%	2,0%	1,6%	0,8%	6,3%
Loans and receivables	7,4%	5,0%	8,6%	4,9%	24,5%	8,4%	12,1%	7,5%	5,3%	7,4%
Other assets	0,2%	0,8%	1,7%	1,8%	1,4%	1,4%	1,2%	3,3%	0,7%	1,3%
Total (billions €)	2.706,90	2.595,76	2.177,17	885,19	510,37	346,58	326,65	298,74	297,15	813,92

LIABILITIES

	UK	France	Germany	Italy	Netherland	Ireland	Belgium	Spain	Sweden	Other
TP Non-Life	5,5%	4,3%	7,8%	5,9%	2,1%	12,1%	5,2%	7,6%	4,1%	6,9%
TP Health STNL	0,1%	1,1%	0,5%	0,5%	3,5%	0,5%	0,8%	0,7%	2,0%	0,9%
TP Health STL	0,2%	1,6%	13,6%	0,0%	2,5%	0,6%	3,8%	0,0%	2,6%	1,3%
TP Life ex Unit	26,4%	61,2%	41,7%	59,3%	49,8%	11,9%	61,2%	57,0%	27,1%	35,7%
TP life unit	51,1%	11,1%	4,9%	15,1%	21,6%	57,0%	9,6%	4,9%	35,2%	30,2%
Total TP	83,4%	79,2%	68,5%	80,8%	79,4%	82,0%	80,6%	70,2%	70,9%	75,1%
Deferred tax liabilities	0,4%	1,4%	3,0%	1,1%	0,5%	0,6%	1,1%	3,8%	0,8%	2,3%
Other liabilities	8,3%	7,0%	7,1%	4,3%	7,8%	6,1%	7,7%	8,8%	3,2%	4,9%
Subordinated liabilities in BOF	0,4%	1,3%	1,2%	1,8%	0,8%	0,4%	1,2%	0,3%	0,1%	1,1%
Total Liabilities	92,5%	88,9%	79,8%	88,1%	88,5%	89,1%	90,5%	83,1%	75,0%	83,4%
Excess of assets over liabilities	7,5%	11,1%	20,2%	11,9%	11,5%	10,9%	9,5%	16,9%	25,0%	16,6%

The market value balance sheet (MVBS) represents the assets and liabilities of an insurance company or a group in order to compute the **basic own funds (BOF)** and subsequentely the **eligible own funds**.

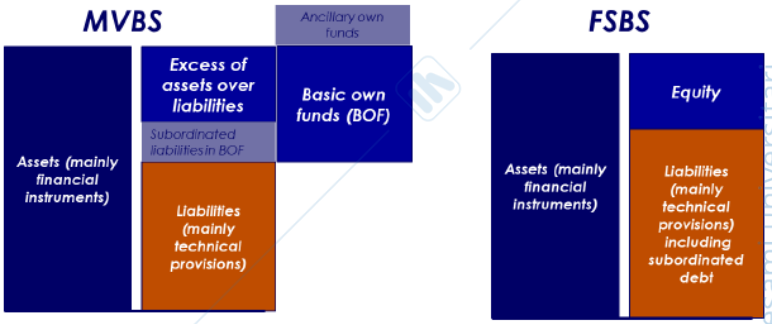
Market Value Balance Sheet(MVBS) vs Financial statement balance sheet(FSBS)

!!!! The Market Value balance sheet (MVBS) and the financial statement balance sheet have the same items, but **Two key differences**

⇨ The difference between MVBS assets and liabilities is named **own funds**
i.e., the patrimonial resources of the insurance company which permit to absorb losses in order to keep the company solvent
while the difference between FSBS assets and liabilities is named **equity**
i.e., the patrimonial resources of the equity-holders.

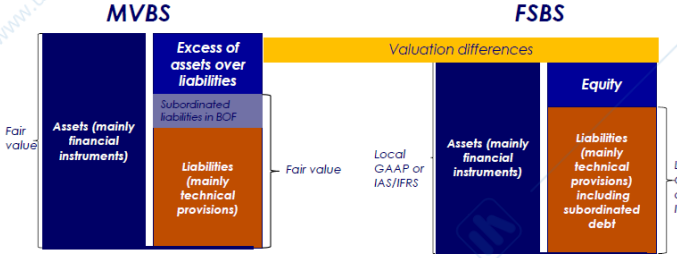
This leads to a different configuration between own funds and equity

Two examples are:
- ⊙ **subordinated debt** may be an own-fund item even if, according to IFRS, subordinated debt is a liability item;
- ⊙ some off-balance sheet items, such as letter of credit or guarantees, may be own-fund items (**ancillary own funds**).



⇨ **Different measurement criteria** of items:
- The MVBS is a **full fair value balance sheet**
i.e., all items are measured using a current and market consistent approach (see also M1.2)
- The FSBS measurement criteria for the different items can be different (e.g., historical cost, fair value, ….) according to the local GAAP or the international accounting standards (IAS/IFRS)

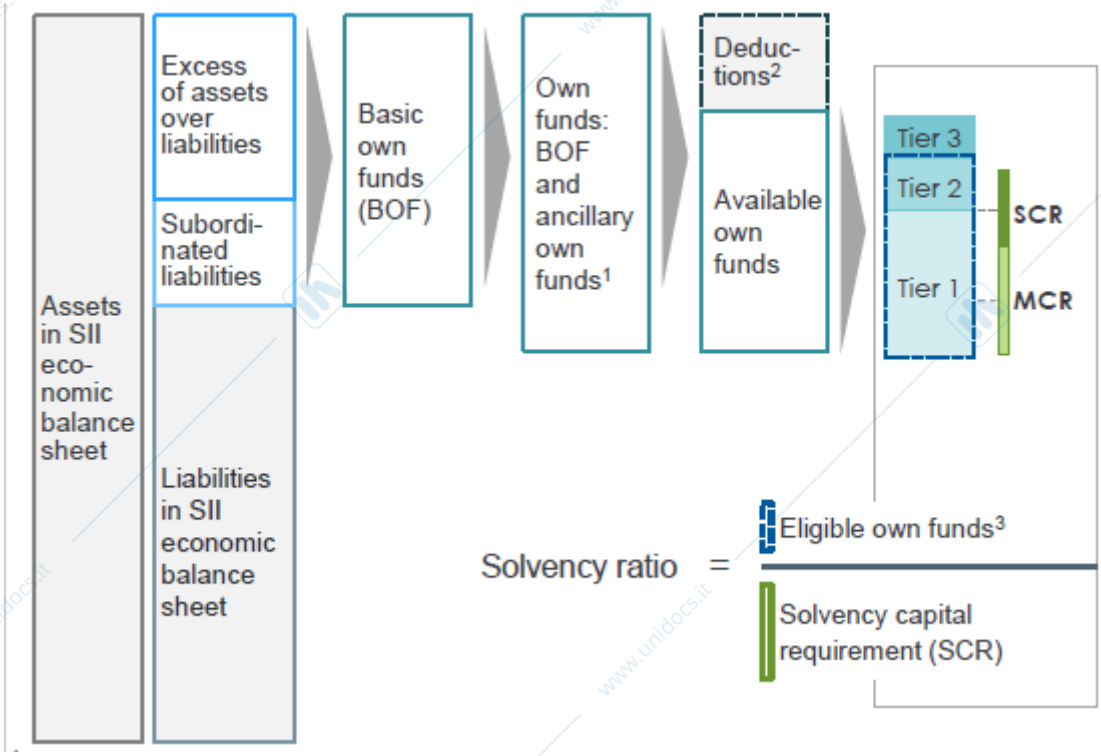
So obviously there you have different numbers/values and therefore the value of the difference between them is different.



➔ The difference between the MVBS excess of assets over liabilities and the FSBS equity shall be **reconciliated**

Motivations of the full fair value approach	*Consequences of the full fair value approach*
✶ FV is a uniform (objective) approach that **limits subjectivity and discretion**, especially for traded financial instruments. In the typical financial statement a basic principle is prudence (=I don't want to over valuate the asset, so it's better to under evaluate them): something not fair and difficult to define quantitatively -> lot of subjectivity involved	→ **The full FV approach is a current approach There is a BOF volatility due to changes in current market conditions. More precisely** •movements in equity and property prices, risk-free rates and credit spreads cause short term volatility in BOF (mainly driven by the asset side of the MVBS) •movements in underwriting risks also cause volatility in BOF (liability side of the MVBS)
✶ In the Solvency II framework, risks (i.e. SCR) are defined as the **loss of basic own funds in a worst case scenario**. Only with a fair value approach, it's possible to **measure risks coherently.**	→ **The BOF volatility leads to a Solvency ratio volatility** The BOF volatility is the most important driver in the Solvency ratio volatility: so, if there is a sudden decrease in the stock market prices than the Solvency ratio changes too ! Given this volatility, each company has to set the SCR so that it can remain enough higher than 100%... obviously in the perspective of the insurance company having a SCR > 100% is not good, it requires more resources (Nowadays the most important financial insurance groups are aounr d150% 200%) → **The full fair value approach leads to procyclicality**

From the economic balance sheet to eligible own funds …



1Off-balance sheet items that can be called up to absorb losses, e.g. letter of credit –subject to supervisory approval. 2E.g. dividends and distributions, own shares, ring fenced funds etc. 3Eligible own funds covering SCR consist of Tier 1, and limited amount of Tier 2 and Tier 3 items.

➔ *Issuing subordinated debt is a way to raise eligible own funds and to improve the Solvency Ratio*

Basic own funds (BOF) **+ Ancillary own funds**
Total own funds **-Deductions**
= Available own funds (or BOF after deduction if, as usual, ancillary own funds are absent) **-Not eligible own funds due to tiering**
= Eligible own funds

Now we will explain one by one:

OWN FUNDS

- ➔ **Total "own funds** comprise the sum of basic own funds and ancillary own funds" (art. 87 directive)
- ➔ **"Basic own funds (BOF)** shall consist of the following items:
  (1) the excess of assets over liabilities
  (2) subordinated liabilities" (art. 88 directive)

  Basic own funds are balance sheet items
- ➔ **"Ancillary own funds shall** consist of items other than basic own funds which can be called up to absorb losses *Money that can enter in the company in case of necessity*

  They may comprise the following items to the extent that they are not basic own-fund items:
  a) unpaid share capital or initial fund that has not been called up;
  b) letters of credit and guarantees
  c) any other legally binding commitments received by insurance and reinsurance undertakings (art. 89 directive).

  Ancillary own funds are typically off-balance sheet items, so by def they are no quality items (they require the promiser to be solvent)

  "The amounts of ancillary own-fund items to be taken into account when determining own funds shall be **subject to prior supervisory approval"**. (art 90).

  Ancillary own funds are usually not used in practice (only in exceptional cases, such as a crisis or a low solvency ratio) -> that's why we generally talk about "own funds" without specifying we talk about TOF

DEDUCTIONS

- » **Expected dividends and distributions to shareholders in the following 12 months** (own funds are patrimonial resources that can be used to cover losses in the following 12 months; these dividends will outflow to the company within 12 months, so they are not able to cover future losses)
- » **Participation** in banks and financial institution (in order to prevent contagion/systemic effects)
  Obviously this is a "political" reasoning: we want to prevent such difficult situations

In reality we have also some others, but these are the more important ones.

SUBORDINATED DEBT

= a debt owed to an unsecured creditor that **in the event of a liquidation** can only be paid after the claims of secured creditors have been met.

The debt of a firm (or an insurance company) is ranked by **seniority**. In the case of winding-up, a lower seniority debt is repaid only after the higher seniority debt has been fully paid.

Observe that the characteristic of subordination is related only to the event of liquidation of the company.

Insurance companies use subordinated debt in the **capital management** process (e.g.solvency ratio optimization). Usually:

- -Listed insurance companies (e.g.Assicurazioni Generali SpA, Allianz AG) issue subordinated debt on capital markets ;
- -The subordinated debt issued by subsidiaries (e.g.GenertelSpA, Allianz Italia SpA) is usually underwritten by the parent company (e.g.Assicurazioni Generali SpA, Allianz AG)

Ex

Tiering …

"Since not all financial resources provide full absorption of losses in the case of winding-up and on a going-concern basis, own-fund items should be classified in accordance with **quality criteria** into 3 tiers, and the *eligible amount of own funds* to cover capital requirements should be limited accordingly" (premise 47 directive).

Tier 1: "own-fund items which are of a high quality, and which fully absorb losses to enable an insurance or reinsurance undertaking to continue as a going concern"
- ➔ **restricted tier 1**
- ➔ **unrestricted tier 1**

Tier 2: intermediate quality own-fund items

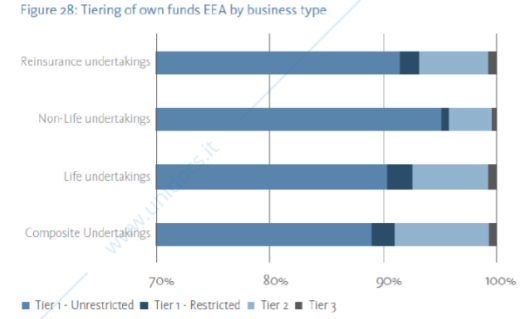
Tier 3: low quality own-fund items

- The **difference between assets and liabilities** is in **tier 1,** especially in **"unrestricted tier 1"** (with minor exceptions, such as **deferred tax assets** in tier 3)
- **Ancillary own-fund** items shall be only classified in **Tier 2** or **Tier 3**
- **Subordinated debt** is classified in **tier 1, 2 or 3** according to their contractual characteristics. However, hybrid tier 1 own-fund items (subordinated debt) shall be less than 20% of the total amount of Tier 1 items. Therefore, the hybrid tier 1 is named "**restricted tier 1**". The tier 1 difference between assets and liabilities is named "**unrestricted tier 1**"

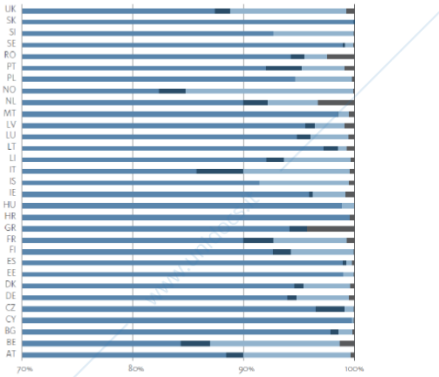
Own-fund items are classified into tier 1, 2 or 3 according to the following characteristics (art 93 directive):
- **Permanent availability**: the item is available, or can be called up on demand, to fully absorb losses on a going-concern basis, as well as in the case of winding-up
- **Subordination:** in the case of winding-up, the total amount of the item is available to absorb losses and the repayment of the item is refused to its holder until all other obligations, including insurance and reinsurance obligations towards policy holders and beneficiaries of insurance and reinsurance contracts, have been met
- **Sufficient duration:** duration of the item, in particular whether the item is dated or not. Where an own-fund item is dated, the relative duration of the item as compared to the duration of the insurance and reinsurance obligations of the undertaking, shall be considered.
- **Absence of incentives to redeem** whether the item is free from requirements or incentives to redeem the nominal sum
- **Absence of mandatory servicing costs:** whether the item is free from mandatory fixed charges
- **Absence of encumbrances:** whether the item is clear of encumbrances.

Example: tier2 characteristics -> According to delegated regulation (art 73), a tier 2 own-fund item should have :
- **Permanent availability**: no requirements (for tier 1 "the basic own fund item is immediately available to absorb losses")
- **Subordination:** the basic own-fund item ranks after the claims of all policy holders and beneficiaries and non-subordinated creditors and the basic own-fund item does not include features which may cause the insolvency of the insurance company or may accelerate the process of the undertaking becoming insolvent
- **Sufficient duration:** the basic own-fund item is undated or has an original maturity of at least 10 years; the first contractual opportunity to repay or redeem the basic own-fund item does not occur before 5 years from the date of issuance
- **Absence of incentives to redeem:** the basic own-fund item is only repayable or redeemable at the option of the insurance or reinsurance undertaking and the repayment or redemption of the basic own-fund item is subject to prior supervisory approval; …. [omitted]
- **Absence of mandatory servicing costs:** the basic own-fund item may only allow for a distribution to be made where there is non-compliance with the Solvency Capital Requirement only in specific circumstances (omitted)

Tier 1 requirements (omitted here) are more restrictive, while tier 3 requirements (also omitted here) less restrictive.



Source: EIOPA. European Insurance Overview 2020 (2019 Data)


Source: EIOPA. European Insurance Overview 2020 (2019 Data)

Eligibility limits

ELIGIBLE OWN FUNDS$_{SCR}$ = TIER$_1$ + eligibleTIER$_2$ + eligibleTIER$_3$

The eligible amount of own funds to cover the Solvency Capital Requirement shall be equal to the sum of the amount of Tier 1, the eligible amount of Tier 2 and the eligible amount of Tier 3. (art. 98 direc and 82 del.reg.)
As far as compliance with the Solvency Capital Requirement is concerned, the eligible amounts of Tier 2 and Tier 3 items shall be subject to all ofthe following **quantitative limits**:

a) the proportion of Tier 1 items in the eligible own funds is higher than one third of the total amount of eligible own funds;
b) the eligible amount of Tier 3 items is less than one third of the total amount of eligible own funds.
c) the eligible amount of Tier 1 items shall be at least one half of the Solvency Capital Requirement;
d) the eligible amount of Tier 3 items shall be less than 15% of the Solvency Capital Requirement;
e) the sum of the eligible amounts of Tier 2 and Tier 3 items shall not exceed 50% of the Solvency Capital Requirement.

ELIGIBLE OWN FUNDS$_{MCR}$ = TIER$_1$ + eligibleTIER$_2$

The eligible amount of BOF to cover the Minimum Capital Requirement shall be equal to the sum of the amount of Tier 1 and the eligible amount of basic own-fund items classified in Tier 2 (art. 98 direc and 82 del.reg.)
As far as compliance with the Minimum Capital Requirements is concerned, the eligible amounts of Tier 2 items shall be subject to all of the following **quantitative limits**:

a) the proportion of Tier 1 items in the eligible basic own funds is higher than one half of the total amount of eligible basic own funds.
b) the eligible amount of Tier 1 items shall be at least 80% of the Minimum Capital Requirement;
c) the eligible amount of Tier 2 items shall not exceed 20% of the Minimum Capital Requirement.

Note: In a well-structured **capital management** process subordinated debt and other restricted items (e.g., hybrid instruments, tier 2 and tier 3 items) are issued only if eligible to cover the SCR. Therefore, eligible own funds to cover SCR are usually equal to available own funds (BOF after deductions).

MVBS and own funds: a practical example
Generali Group SFCR 2020 is available on Blackboard.
Section D (Valuation for Solvency Purposes) and Section E (Capital management) are relevant for MVBS and own funds.
-Synthetic MVBS (page 87). Analytic MVBS (QRT) (pages 134-135). Note that in section C also the comparison between IFRS and SII values is reported.
-Group own funds components (page 106)
-Reconciliation of IFRS equity to Group own funds (page 107)
-Group own funds by tiering (page 108). Please observe that "no eligibility filters are triggered thanks to the high-quality of the capital-tiering" (i.e., eligible own funds are equal to available own funds)
-Group own funds to meet the MCR tiering (page 109). Please observe that in this case only tier 1 and tier 2 are considered and not all the tier 2 can be eligible due to the eligibility filters.

The spreadsheet "Own funds examples" is available on Blackboard -> numerical example

The SCR, MCR and the Solvency Ratio (see also M2.3)

SCR : Solvency Capital Requirement

DEF: «it **shall correspond to the *Value-at-Risk* of the basic own funds of an insurance or reinsurance undertaking subject to a confidence level of 99,5 % over a one-year period**»

More detail about value at risk and SCR will be provided in section M2.3

The SCR considers **all quantifiable risks** and, at least:

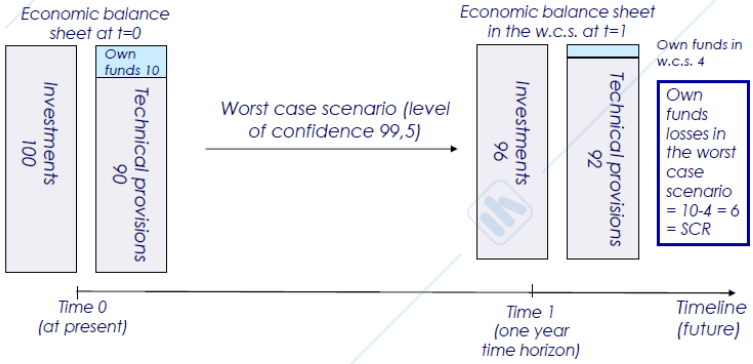
- non-life underwriting risk
- life underwriting risk
- health underwriting risk
- market risk
- credit risk; and
- operational risk

Basic principles in the computation: **1**. Measured in 1 year from now **2**. Usage of a probabilistic approach

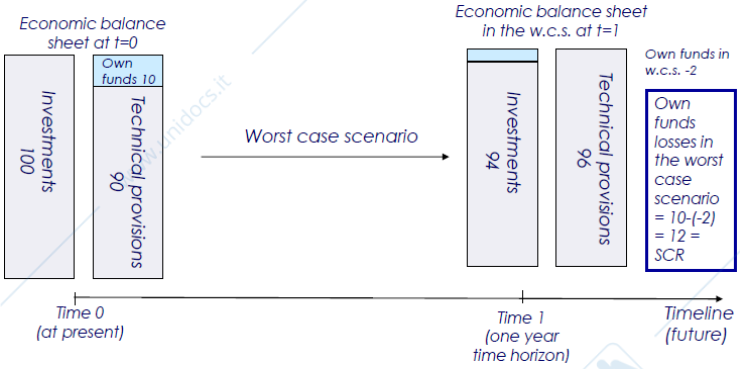
THE LOGIC:

$$\Delta BOF = BOF_0 - BOF_1 = BOF_{CURRENT} - BOF_{STRESSED}$$

- *In SII view, owns funds serve as a **loss absorber***
- ***SCR is the loss in the worst case scenario***



•Solvency II 1°pillar requires each insurer to have at time 0 (i.e., at present, i.e. every time) enough own funds to absorb losses in the worst case scenario without defaulting,
i.e., own funds (10) > SCR (6) , or a Solvency Ratio > 100% (i.e., 10/6 > 100%)



This is the case of a riskier company…

•Here, the solvency requirement is infringed, i.e., own funds (10) < SCR (12), i.e., in the worst case scenario the insurer goes bankrupt, or the Solvency Ratio is lower than 100% (SR=10/12<100%)

•Observe that at time 0 (i.e., at present), even if the solvency requirement is infringed, the insurer is solvent, but it has too much risk (compared to the current capital) or too low capital (compared to the current risk)

!!! obv now it's clear why it's so important the balance sheet to be expressed in market value: if the measurement criteria was for instance the cost we could not have shocks.

IN PRACTISE…:

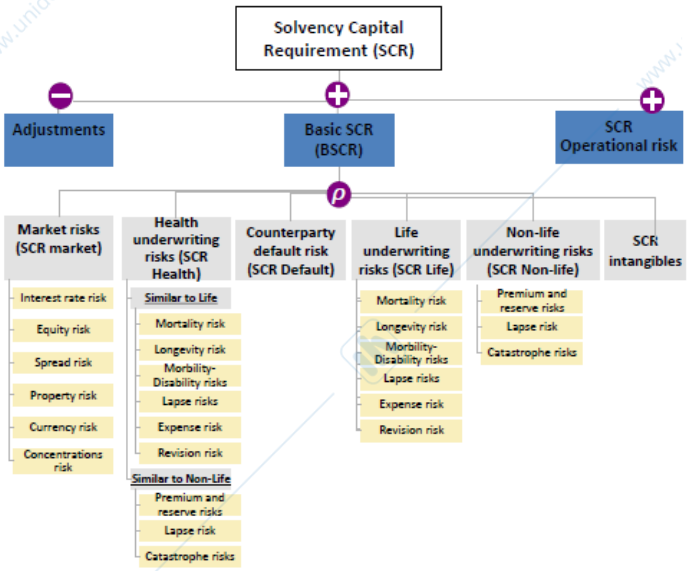
the previous approach is applied to individual risks (modules) → an SCR for each risk is computed …This can appear a complex manner but it would be much more complex preparing a worst case scenario that considered at the same time all the risks involved: so for each risk a worst case scenario is imposed by regulation (i.e: for mortality risk in standard formula you should impose an increase of the 20% of it)	The total SCR is computed through the **aggregation** of the individual SCRs (not sum!!!!) considering the **diversification effects** =risks are not additive, 2+2 < 4

The computation is made through:

- The **standard formula**, where the risk map, the worst-case scenarios and the aggregation parameters (correlation coefficients = correlation between risks) are set by second level regulation
  The risk map of the standard formula
  The standard formula will be illustrated also in section M2.3

Or

- An **internal model**, where the risk map and the parameters of the model are calibrated internally by the company (using the value at risk with 99,5% of confidence).
  It requires several investments and so it can be applied by big companies, not by small ones (they haven't the necessary resources) : nowadays the most important groups (Generali, Allianz, …) had it
  It requires prior approval by supervisory authority



LEVEL OF CONFIDENCE AND DEFAULT PROBABILITY

If an insurance company operates with…

- ↘ own funds less than the SCR, then it has more than 0.5% probability to be bankrupted
- ↘ **own funds equal to the SCR, then it has exactly 0.5% probability to be bankrupted**
  = default occurs on average to 1 company over 200 cases each year
- ↘ own funds higher than the SCR, then it has less than 0.5% probability to be bankrupted

In practice:

- → Most insurance companies satisfy the SCR capital requirement -> they have a default probability less than 0.5% over a one-year time horizon
- → If SCR capital requirement is infringed, the insurance company shall immediately act to recover. Therefore, the real default probability in this dynamic situation is less than 0.5%.

⇨ In a Solvency II world an insurance company default (with loss for policyholders of beneficiaries) is expected to occur much less than once every 200 cases each year.

In Italy – but also abroad – no critical situations = the strength of the insurance market is very high

NON-COMPLIANCE WITH SCR (ART 138 DIR)

«Insurance and reinsurance undertakings shall **immediately inform** the supervisory authority as soon as they observe that the Solvency Capital Requirement is no longer complied with, or where there is a risk of non-compliance in the following three months.»

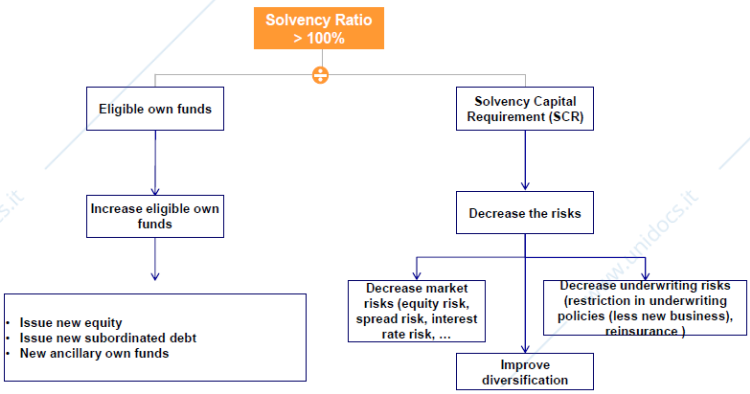
«Within **2 months** from the observation of non-compliance with the SCR the insurance or reinsurance under taking concerned shall submit a realistic **recovery plan** or approval by the supervisory authority.»

The compliance shall be restored within **6 months**, increasing eligible own funds or decreasing risks.

Anti-procyclical measure: In the event of **exceptional adverse insurance market situations**, as declared by EIOPA, the supervisory authority may extend, for affected undertakings, the 6 month period up to a max of **7 years**.

(i.e if all the market has Solvency ratio <100%, in order to avoid market bankrupt)

HOW TO RAISE THE SOLVENCY RATIO



MCR: Minimum capital requirement

DEF: «**minimum level of security below which the amount of financial resources should not fall**».
When the amount of eligible basic own funds falls below the Minimum Capital Requirement, the **authorization should be withdrawn** where the insurer is unable to re-establish the amount of eligible basic own funds at the level of the Minimum Capital Requirement within a short period of time.
In fact, «it shall correspond to an amount of eligible basic own funds below which policy holders and beneficiaries are exposed to an **unacceptable level of risk** were insurers allowed to continue their operations»;

COMPUTATION (art. 129)

- It shall be calculated **every 3 months** in a **clear and simple manner**
- It shall have an **absolute floor** (for instance 3,700,000 euro for life insurers)
- It shall be calculated as a **linear function of** a set or sub-set of the following variables: the undertaking's **technical provisions**, **written premiums**, capital-at-risk, deferred tax and administrative expenses.
- This linear function shall be calibrated to the **Value-at-Risk** of the basic own funds of an insurer subject to a **confidence level of 85 %**over a one-year period;
  The delegated act specifies the linear functions. For instance:

$$MCR_{NL} = \sum_j \max\left(\alpha_j \cdot TP_j ; \beta_j \cdot P_j\right)$$

!!! In any case, it shall **neither fall below 25 % nor exceed 45 % o f**the undertaking's **SCR**

NON-COMPLIANCE WITH MCR
Insurers **shall inform** the supervisory authority immediately where they observe that the MCR is no longer complied with or where there is a risk of non-compliance in the following 3 months.
Within **one month** from the observation of non-compliance with the MCR, the insurer concerned shall submit, for approval by the supervisory authority, a short-term realistic **finance scheme** to restore, within **three months** from that observation, the eligible basic own funds, at least to the level of the MCR or to reduce its risk profile to ensure compliance with the MCR (art. 139).
The supervisory authority shall **withdraw the authorization** in the event that the insurer does not comply with the MCR and the supervisory authority considers that the finance scheme submitted is manifestly inadequate or the undertaking concerned fails to comply with the approved scheme within three months from the observation of non-compliance with the MCR (art. 144).

So we can have 3 situations…:

SCR *… It's a <u>true</u> risk measure* → *Complex computation*	***MCR*** *… It's a <u>minimum</u> measure* → *Really simple computation (that's why it can't be a real risk measure)*