187th year

2018
Own Funds & New Business Supplementary Information

Assicurazioni Generali

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Index

Assicurazioni Generali

2018 Own Funds & New Business Supplementary Information

1 Introduction and key results

This document reports the main results, methodology and assumptions concerning the valuation of 2018 Group Own Funds (hereinafter, GOF) and New Business (hereinafter, NB).

GOF results presented in Section 2 are based on preliminary regulatory figures consistent with the Group's external disclosure of full year results: differences may arise in comparison to the official GOF which will be finalised later during 2019 for the year-end 2018 Solvency and Financial Condition Report (SFCR) and Quantitative Reporting Templates (QRT).[1]

GOF results reported in Section 2 include the analyses of GOF economic movement from 2017 to 2018 (§2.1), GOF regulatory components (§2.2), GOF reconciliation to IFRS shareholders' equity (§2.3), GOF split by tiers (§2.4), GOF split by segment and region (§2.5), and GOF sensitivity to selected economic variables (§2.6).

NB results presented in Section 3 are calculated as the sum of separate quarterly valuations, based on the Market Consistent Embedded Value (hereinafter, MCEV) principles.

NB results include the analysis of NB main results (§3.1), NB profitability movement (§3.2), NB split by main lines of business (§3.3), NB sensitivity to economic and operating factors (§3.4) and NB industrial profits expected release (§3.5). The reconciliation between MCEV NB Value (hereinafter, NBV) and the Solvency II Value of New Production included within GOF is described in §3.6, and the split of NB results by region is reported in §3.7.

The main financial assumptions and the methodology underlying the valuation of GOF and NBV are described in Section 4 and Annex A respectively. Finally, Annex B contains the main definitions and acronyms used in the document.

Monetary terms reported in the tables included in this document are in € million.

[1] In this document, year-end 2017 GOF preliminary results (disclosed in the 2017 Own Funds & New Business Supplementary Information) have been replaced, for comparison purposes, by the official regulatory results disclosed in the 2017 Solvency and Financial Condition Report.

1.1. Group Own Funds key results

The following table reports the 2018 GOF key preliminary results, compared with 2017 official results.

Group Own Funds

€ mln	2018	2017	Change
Group Own Funds	**44,146**	**45,880**	-3.8%
Normalised Own Funds generation	3,312	3,332	-0.6%
Total Own Funds generation	-71	5,902	n/m

Preliminary figures for 2018, official figures for 2017

From year-end 2017 to year-end 2018 GOF moves from € 45.9 billion to € 44.1 billion.

The total Own Funds generation, defined as the variation of GOF before capital movements (foreseeable dividends and early redemption of subordinated debt), amounts to € -71 million, mainly impacted by the negative economic variances linked to the unfavourable financial markets' development (especially in terms of spreads widening and equity performance).

Normalised Own Funds generation (defined as the variation of Own Funds attributable to activities and factors under management control or influence – see §5.1.3) is still well supported by both the Life and Non-Life segments, and remains solid at € 3.3 billion. This corresponds to a 7.2% return on initial GOF.

1.2. New Business key results

The following table reports the 2018 NB key results, compared with 2017 results.

New Business Value

€ mln	2018	2017	Change
New Business Value	**1,877**	**1,820**	4.3%
PVNBP	43,202	45,429	-1.8%
Profitability on PVNBP	4.35%	4.01%	0.26 pts

Changes are on a comparable basis

The value of New Business written in 2018 reaches € 1.9 billion and increases by 4.3% on homogeneous basis (i.e. neutralising the impacts of variations in perimeter and exchange rates) compared to 2017, with the contraction of volumes (measured in terms of Present Value of New Business Premiums, hereinafter PVNBP) being more than compensated by the further improvement in profitability.

The contraction of PVNBP (-1.8%) comes mainly from Germany (due to the run-off process of Generali Leben and also due to a more stringent methodological definition of NB premiums), and to a lesser extent from Italy (due to the reduction of traditional Saving business).

The further growth of the NB profitability (measured as ratio of NBV on PVNBP, up from 4.01% to 4.35%) is substantially supported by the management actions performed to improve the new products' features (for example by means of a further reduction of financial guarantees) and to shift the business towards more profitable and less capital-intensive products (such as Protection business).

2 Group Own Funds

2.1. Group Own Funds analysis of movement

The **2018 total Own Funds generation** (total variation of GOF from 2017 to 2018, net of foreseeable dividends and variations of subordinated debt eligible in Basic Own Funds) amount to € -71 million: the positive contributions of the solid normalised Own Funds generation (€ 3.3 billion), of the technical operating variances (€ 0.3 billion) and of the regulatory model changes (€ 0.4 billion) have been offset by the negative impact of the financial market conditions (€ -3.3 billion), as well as by negative other variances (€ -0.8 billion) mainly attributable to the movement of the French IORP business contribution recognised in GOF (see §5.1.1).

The allowance for the proposed 2018 dividend (€ 1.4 billion, to be paid in 2019) and the early redemption of part of the subordinated debt eligible in the Basic Own Funds (€ 250 million) lead to the overall € -1.7 billion net variation of GOF from 2017 to 2018.

The following table presents the development of the Group Own Funds from 2017 to 2018, on a net of tax basis.

Group Own Funds analysis of movement

€ mln	
2017 Group Own Funds	**45,880**
Regulatory model changes and opening adjustments	412
Normalised Own Funds generation	**3,312**
Life	2,902
Non-Life	1,017
Holdings & Sectorals	-607
Operating variances	309
Economic variances	-3,306
Other variances	-798
Model refinements	-98
Non recurring expenses, taxes & other	-699
Total Own Funds generation	**-71**
Foreseeable dividend	-1,413
Redemption of subordinated debt eligible in GOF	-250
2018 Group Own Funds	**44,146**

Preliminary figures for 2018, official figures for 2017

2018 Regulatory model changes and opening adjustments (€ 0.4 billion) mainly refer to the extension of Generali's risk capital Partial Internal Model to Austria (excluding health business) and Switzerland, approved by the regulators during 2018. Its positive impact on GOF (€ 0.4 billion) reflects the lower amount of Risk Margin included within Technical Provisions, direct consequence of the lower risk capital considered in its calculation.

Regulatory model changes also include the impacts on Own Funds stemming from model changes affecting actuarial models, which obtained regulatory approval within the Group's Partial Internal Model. These changes concern refinements in the modelling of dynamic policyholders' behaviour in France and in Italy, and in the modelling (due to a change in legislation) of the "ZZR" reserve in Germany. The aggregate impact of such changes on GOF is nil.

Finally, the opening adjustments include the impact on GOF (substantially neutral) stemming from the M&A operations concluded during 2018 (mainly the sale of the operations in Ireland and in the Netherlands).

2018 Normalised Own Funds generation (€ 3.3 billion) is driven by the solid performance of Life and Non-Life segments, partially offset by the contribution of the Holding & Sectorals segment, which is affected by the interest costs on subordinated debt. More in detail:

- **Life normalised Own Funds generation** (€ 2.9 billion) components are:
    - the Solvency II Value of New Production (€ 1.6 billion), representing the contribution to GOF originated by the new business sold during the year, calculated according to Solvency II principles (refer to §3.6 for the reconciliation of such value with the € 1.9 billion NBV calculated on MCEV basis)
    - the expected release, from the business in-force at the beginning of the year, of the prudence implicitly included in the Solvency II valuation (€ 1.3 billion), deriving from the expected release of the Risk Margin and from the higher profit release expected in the year, originated by the difference between the Real-World financial return expected by the shareholder (see §4.4) and the Risk-Neutral return adopted within the Solvency II valuation
    - the unwinding of the beginning of period GOF, with allowance of assets management expenses
- **Non-Life normalised Own Funds generation** (€ 1.0 billion) stems from the technical result based on best estimate assumptions, the expected movement of the Risk Margin and the unwinding of investments (derived from expected Real-World returns) and liabilities (calculated using Risk-Neutral returns), offset by the assets management expenses
- **Holdings and Sectoral normalised Own Funds generation** (€ -0.6 billion) mainly relates to the payment of the interest on the subordinated debt (€ -0.4 billion), to recurring holding costs (€ -0.3 billion) and to the unwinding of assets and liabilities (including senior debt), partially offset by the net result of the financial segment (€ 0.4 billion)

2018 Operating variances positively contribute to the GOF movement (€ 0.3 billion) and mainly come from the Life segment, in view of the positive experience of the year (for example from higher than expected renewals in Germany and maturity extensions in France) and from favourable changes in future operating assumptions (for example in Germany concerning future profit sharing). Operating variances in Non-Life are, on aggregate, neutral on GOF.

2018 Economic variances have an impact of € -3.3 billion, which can be split into the following main sources:

- Interest rates (€ -0.2 billion), due to the decrease of swap curve (e.g. -8 bps on Euro swap 10y par rate);
- Spreads and Volatility Adjustment (€ -2.2 billion), due to the fact that the negative impact of the significant credit spreads widening on both corporate bonds and the Italian government bonds has not been adequately offset by the increase of the Volatility Adjustment (+20 bps on Euro area). This was essentially driven by the missed application of the Country-specific VA in Italy, which would have counter-balanced on the liability side the impact suffered from the assets side. At year-end, the Country-specific VA formula currently prescribed by EIOPA (which, by means of its on/off and point-in-time triggers, creates major cliff-edge effects) has proven not to work properly, producing (rather than smoothing) a significant volatility: had the year-end Italian government spread been higher by only 2 basis points (as it was often the case during the last months of the year), the EIOPA Country-specific VA would have been activated, and the VA applied in Italy would have been 41 bps instead of the standard 24 bps applied within Euro area. This would have caused a significant reduction in the valuation of Italian liabilities, with an impact on officially reported GOF which can be estimated in the region of € 0.8 billion, significantly smoothing the overall effect of market variances on GOF;

- Equities and real estate (€ -0.7 billion), due to the combined effect of the negative equity market performance, only partially offset by the positive development of the Group's real estate assets;
- Volatilities (€ 0.2 billion), due to the observed decrease of both interest rate and equity volatilities;
- UFR reduction (€ -0.1 billion), as a consequence of the review of the assumptions adopted by EIOPA for the determination of the Ultimate Forward Rate used in the definition of the long-term tail of the risk-free curves (for Euro, the UFR has been reduced from 4.20% to 4.05%);
- Other economic variances (€ -0.2 billion), due to residual or cross-effects among above quoted factors.

2018 Other variances (€ -0.8 billion) reflect the impact of minor refinements applied on the actuarial projection models (€ -0.1 billion in aggregate), the impact of non-recurring holding expenses (€ -0.2 billion) and the combined effect of a number of variations in the elements which move the excess of assets over liabilities towards the official GOF (such as filters and other deductions – see §5.1). Among these items, the most relevant is the impact (€ -0.7 billion) of the further haircut prescribed by the French regulator on the amount of unrealised gains on IORP pension business, which is recognised as an eligible item for GOF.

The movement of GOF from 2017 to 2018 is completed with the impacts related to the **2018 proposed dividend to be paid in 2019**[2] (€ -1.4 billion) and to the early repayment of part (€ 250 million) of the Group's subordinated debt eligible in the GOF.

2.2. Group Own Funds results by component

In compliance with the Solvency II regulatory requirements, Group Own Funds are defined as the sum of consolidated Basic Own Funds related to insurance entities, holding and ancillary undertakings attributable to insurance activity and the Own Funds attributable to non-insurance entities, defined according to their sectoral regulatory regimes.

Basic Own Funds, in turn, can be further analysed as the sum of the following components:

- the Excess of Assets over Liabilities as defined in accordance to art. 75 of Directive 2009/138/EC;
- plus subordinated debt eligible in Basic Own Funds;
- less foreseeable dividends;
- plus additional Own Funds related to unrealised capital gains from French pension activities arising from the application of the IORP transitory regime;
- less deductions for participations in other sectoral entities;
- less deductions for regulatory filters applied to non-available items at Group level, restricted Own Fund items and shares of the parent company.

The contribution to the Group Own Funds of each element listed above is detailed in the following table.

[2] 2018 dividends are proposed by the Board of Directors and approved during the 2019 Shareholders' Annual meeting.

Group Own Funds components

€ mln	2018	2017
Excess of Assets over Liabilities	**38,225**	**39,520**
Subordinated liabilities eligible in Basic Own Funds	8,625	8,931
Foreseeable dividend	-1,413	-1,330
Unrealised gains on French IORP business	933	1,703
Deductions for participations in sectoral entities	-2,089	-2,535
Impact of filter for non availability & minorities and other deductions	-1,389	-1,483
Basic Own Funds after deductions	**42,893**	**44,806**
Contribution of sectoral entities	1,253	1,074
Group Own Funds	**44,146**	**45,880**

Preliminary figures for 2018, official figures for 2017

Commenting on the items contributing to the GOF, it can be noted that:

– the decrease of the Excess of Assets over Liabilities (€ -1.3 billion), considering the immaterial contribution of the total Own Funds generation of the year (€ -71 million), is mainly attributable to the payment of the 2017 dividend made during 2018;
– the change in the amount of subordinated debt eligible in Basic Own Funds is due to its € 250 million early redemption occurred during 2018;
– the foreseeable dividend increases to € 1.4 billion;
– the reduced contribution of the unrealised gains on IORP business stems from their progressive yearly haircut required by the French regulator;
– the lower impact of other deductions (related to participations in sectoral entities and to filters for minorities and non-available items) mainly comes from the lower value (quoted market price) of the participation in Banca Generali;
– the increased contribution of sectoral entities reflects the higher capital held by Group entities operating within the financial segment.

2.3. Reconciliation between IFRS equity and Solvency II Excess of Assets over Liabilities

Under the Solvency II regime, Solvency II Excess of Assets over Liabilities is valuated starting from IFRS shareholders' equity and by adjusting at fair value consolidated assets and liabilities in accordance with Article 75 and Section 2 of the Solvency II Directive.

More precisely, these adjustments consist of:

– eliminating intangible assets (e.g. goodwill);
– revaluating investments not accounted at fair value, such as loans, held to maturity investments and real estate;
– accounting for the Technical Provisions according to Solvency II rules as a sum of Best Estimate of Labilities and Risk Margin;
– including the fair value of financial liabilities and recognising material contingent liabilities;
– recalculating the impact of net deferred taxes on the above adjustments.

The following table presents the reconciliation between IFRS shareholders' equity and Solvency II Excess of Assets over Liabilities at year-end 2018 and, for comparative purposes, at year-end 2017.

Reconciliation between IFRS Shareholders' Equity and Solvency II Excess of Assets over Liabilities

€ mln	2018	2017
IFRS Shareholders' Equity (gross of minorities)	**24,643**	**26,177**
Intangibles	**-10,712**	**-10,790**
Goodwill	-6,663	-6,662
DAC	-2,143	-2,141
Other intangibles	-1,906	-1,987
Mark to market of Assets	**9,310**	**9,867**
Bonds	404	1,370
Real estate	8,541	7,499
Loans	255	357
Participations	405	964
Other assets	-296	-322
Mark to market of Liabilities	**22,826**	**21,669**
Net Technical Provisions	23,898	22,467
Financial debt	-395	-439
Subordinated debt	-502	-552
Other liabilities	-174	193
Impact of net deferred taxes	**-7,843**	**-7,404**
Excess of Assets over Liabilities	**38,225**	**39,520**

Preliminary figures for 2018, official figures for 2017

The main elements of reconciliation from the IFRS shareholders' equity (€ 24.6 billion) to the Solvency II Excess of Assets over Liabilities (€ 38.2 billion) are the following:

- **Intangibles** (€ -10.7 billion), not recognised under Solvency II,
- **Mark to market of Assets:** this adjustment (€ 9.3 billion) is primarily due to the fair valuation of real estate,
- **Mark to market of Liabilities**: this adjustment (€ 22.8 billion) is primarily due to net Technical Provisions (€ 23.9 billion deriving from the difference between IFRS and Solvency II valuation),
- **Impact of net deferred taxes** (€ -7.8 billion) is a consequence of the change to fair value of the items reported above.

2.4. Group Own Funds tiering

According to Solvency II regulation, Group Own Funds items are classified into three Tiers representing different level of quality, depending on the ability to absorb losses due to adverse business fluctuations on a going-concern basis and in the case of winding-up.

The Group's tiering is described below.

- Tier 1 unrestricted Own Funds includes the following items:
  - ordinary share capital and the related share premium account,
  - surplus funds (from German and Austrian business),
  - reconciliation reserve,
  - additional Own Funds from French pension activities
- Tier 1 restricted is composed of undated subordinated debt
- Tier 2 includes the remaining part of subordinated debt which is classified as dated
- Tier 3 is composed by net deferred tax assets, which are characterised by lower capital quality being not immediately available to absorb losses.

The GOF split by tiers is reported in the following table.

Group Own Funds by Tiering

€ mln	Total	Tier 1 (unrestricted)	Tier 1 (restricted)	Tier 2	Tier 3
2018 Group Own Funds	**44,146**	**35,459**	**3,276**	**5,349**	**62**
2017 Group Own Funds	45,880	36,870	3,603	5,328	79
Change (%)	-3.8%	-3.8%	-9.1%	0.4%	-21.8%

Preliminary figures for 2018, official figures for 2017

2018 Group Own Funds are mainly composed by high-quality capital. Tier 1 counts for about 87.7% of the total (88.2% in 2017), Tier 2 represents 12.1% (11.6% in 2017) and Tier 3 only 0.1% of the total (0.2% in 2017).

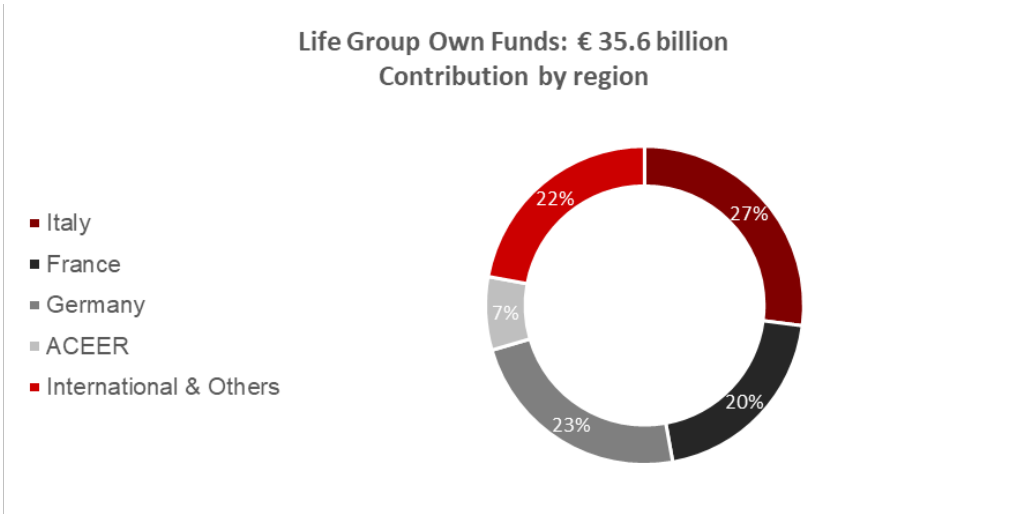
No eligibility filters are triggered thanks to the high-quality of the capital-tiering.

2.5. Group Own Funds by segment and by region

The following charts describe the contribution of the Life and Non-Life segment to 2018 GOF, and their split by the main regions where the Group operates (the contribution of entities held for disposal, such as Generali Leben in Germany, is included in the "International & Other" region).

Life segment

2018 GOF are mainly attributable to the Life segment, which accounts for € 35.6 billion. The main contributors to the Life segment are Italy and Germany, representing 50% of the Life GOF.



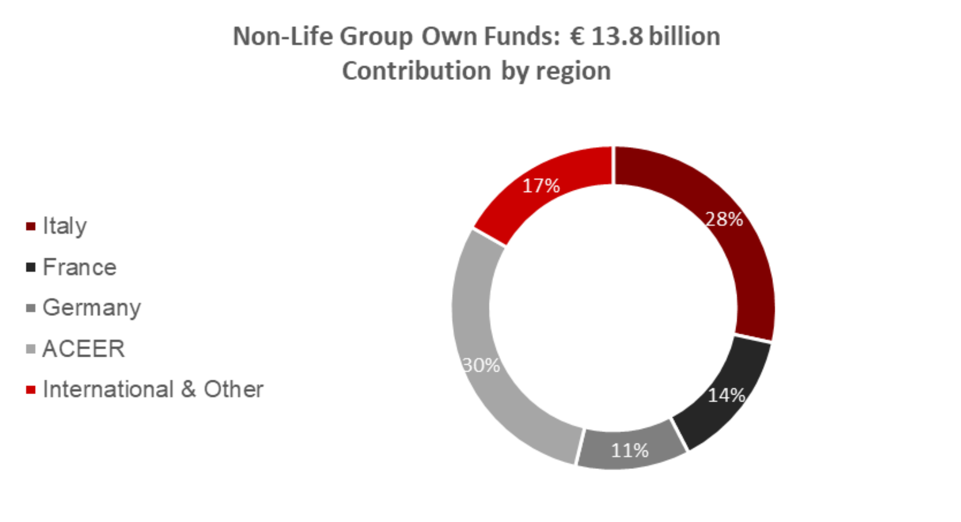
Within 2018 Life GOF, the contribution of the **Solvency II Life Value in-force** to the Excess of Assets over Liabilities (i.e. the after-tax value, before minorities and non-availability filters, expected to emerge from the management of the Life contracts existing at valuation date, calculated according to the Solvency II framework and excluding shareholders' equity components) amounts to € 20.0 billion. This amount can be further split as follows:

– **Basic PVFP** (€ 17.8 billion), representing the present value of future profits expected to flow into shareholders' funds, based on Solvency II market consistent methodology (including the regulatory application of contract boundaries);
– **PVFP allowances** (€ 5.6 billion), representing specific Solvency II valuation allowances such as the value of Surplus Funds and Going Concern Reserves in Germany;

– **Risk Margin** (€ -3.3 billion), which is the prudential allowance prescribed by Solvency II to take account of the volatility of operating assumptions.

Non-Life segment

The Own Funds of the Non-Life segment amount to € 13.8 billion at year-end 2018. The main contributors of the segment are Italy and ACEER, representing 58% of the Non-Life GOF.



Within 2018 Non-Life GOF, the contribution of the **Solvency II Non-Life Value in-force** to the Excess of Assets over Liabilities, defined as the after-tax difference between IFRS reserves and Solvency II Technical Provisions, amounts to € 3.3 billion. This amount can be further split as follows:

– **Basic PVFP** (€ 4.2 billion), representing the difference between IFRS reserves and the Best Estimate of Liabilities component of Non-Life Technical Provisions;
– **Risk Margin** (€ -0.9 billion), which is the prudential allowance prescribed by Solvency II to take account of the volatility of operating assumptions.

2.6. Group Own Funds sensitivity analysis

Generali regularly performs sensitivity analyses of the capital position to changes in specific risk factors (e.g. interest rates, equity shock, credit spreads and interest rate volatility).

The aim of this analysis is to assess the resilience of Generali Group capital position to the main risk drivers and evaluate the impact of a wide range of shocks. As at year-end 2018 the following sensitivity analyses are reported (see §5.1.4 for further explanations):

– increase and decrease of interest rates by 50 bps;
– increase and decrease of equity values by 25%;
– widening of spread related to corporate bonds by 50 bps;
– widening of spread related to Italian government bonds by 100 bps;
– regulatory change of 2019 Ultimate Forward Rate (UFR), as required by EIOPA.

The impact of these sensitivities on year-end 2018 GOF are reported in the following table.

Group Own Funds - Impact of Sensitivities

€ mln		
Group Own Funds (preliminary figures)	**44,146**	
Interest rate +50 bps	506	1.1%
Interest rate -50 bps	-722	-1.6%
Equity market + 25%	2,814	6.4%
Equity market - 25%	-2,731	-6.2%
Credit spread corporate bonds +50 bps	-397	-0.9%
Credit spread on BTP +100 bps	71	0.2%
Ultimate forward rate (2019 regulatory change)	-131	-0.3%

Sensitivity on interest rates (€ +0.5 / € -0.7 billion): the impact reflects both the changes in the fair value of investments and non-technical liabilities (such as senior debt and defined benefit plans obligations) and the changes of Technical Provisions (change of Life cash flows and change of discount rates).

The asymmetry of the impacts in the two scenarios mainly reflects the reduced absorption capacity of Life Technical Provisions in the case of lower interest rates, because of the presence of financial guarantees.

The limited interest rate sensitivity confirms the overall resiliency of the Group's portfolio, thanks to the low guarantees and the effective matching of assets and liabilities.

Sensitivity on equity (€ +2.8 / € -2.7 billion): the impact reflects both the changes in the fair value of equity and the changes of Life Technical Provisions (change of cash flows).

The impacts in the two scenarios are almost symmetric (except for the impact of derivatives) also within Life business, because of the possibility to manage the unrealised losses over the future projection horizon.

Sensitivity on credit spread on corporate bonds (€ -0.4 billion): the impact reflects both the changes in the fair value of investments and defined benefit plans obligations and the changes of Technical Provisions (change of Life cash flows and impact on Volatility Adjustment).

In this sensitivity, the negative impact on the assets side is only partially counter-balanced on the liability side by the associated increase of the VA (recalculated according to EIOPA's formula and reference portfolio), which for Euro increases from 24 bps to 37 bps.

Sensitivity on credit spread on Italian government bonds (€ +0.1 billion): the impact reflects both the changes in the fair value of investments and defined benefit plans obligations and the changes of Technical Provisions (change of Life cash flows and impact on Volatility Adjustment).

In this sensitivity, the high starting point of the Italian government bond spread at year-end 2018 triggers not only an increase of the recalculated currency-VA adopted by other European countries (from 24 bps to 29 bps), but also (unlike year-end 2017) the activation of the Italian Country-specific VA, which would amount to 64 bps. This explains the overall positive impact on GOF.

Sensitivity on 2019 UFR (€ -0.1 billion): the impact reflects and anticipates the changes in UFR required by EIOPA during 2019 (15 bps decrease of the UFR in the countries where the Group operates, except for Hungary and China where the UFR increases by 15 bps).

Finally, it can be noted that the impact on the year-end 2018 GOF arising from the further reduction (required by the French regulator) of the contribution of IORP business during 2019 (see §5.1.1) is **€ -0.6 billion.**

3 New Business Value

3.1. New Business Value results

The following table shows the development of New Business Value (hereinafter, NBV) from 2017 to 2018, together with the main profitability indicators. The results are reported after tax and after minorities and the changes are shown on a comparable basis, neutralising the impact of variations in the covered perimeter and foreign exchange rates.

New Business Value

€ mln	2018	2017	Change
Annual premiums	2,170	2,212	-0.1%
Single premiums	23,425	24,325	1.0%
PVNBP	**43,202**	**45,429**	**-1.8%**
Cap Factor	9.1	9.5	-0.4
APE	4,513	4,645	0.5%
NBV	**1,877**	**1,820**	**4.3%**
Profitability			
- on PVNBP	**4.35%**	**4.01%**	**0.26 pts**
- on APE	41.6%	39.2%	1.5 pts
IRR	23.6%	19.4%	4.1 pts

changes are on a comparable basis

The overall PVNBP declines by 1.8% to € 43.2 billion, on account of the contraction of the annual premiums (-0.1%) and of their expected duration (cap factor down from 9.5 to 9.1). The slowdown of PVNBP mainly comes from Germany (-5.6%), due to Generali Leben run-off process and to a stricter definition of NB premiums, and from Italy (-3.5%), especially regarding the traditional Saving business.

The NB profitability (on PVNBP) increases from 4.01% to 4.35%: the further progress is substantially supported by the management actions performed to improve the new products and to shift the business towards more profitable and less capital-intensive products (see §3.2), and affects both Saving and Protection business (see §3.3). In terms of regional development (see §3.7), the improvement mostly affects Italy (also thanks to the contribution of new hybrid products) and the International region (especially thanks to the contribution of Protection business in Spain).

The improved profitability leads to the overall positive development of the NBV, up 4.3% to € 1.9 billion.

The IRR increases by 4.1 pts reaching 23.6%, thanks to the higher profitability, the more favourable Real-World financial assumptions underlying its calculation (refer to §4.4 for more details) and to the refinement of the methodology adopted to project the capital absorbed by the New Business across the projection horizon, to better capture its expected run-off.

3.2. New Business profitability movement and New Business Value components

Movement of New Business Value and profitability

€ mln	NBV	Profitability on PVNBP
2017 New Business Value	**1,820**	**4.01%**
Change in perimeter/Exchange rate fluct.	-20	0.08 pts
Products mix/volume	1	0.07 pts
Economic variance	28	0.08 pts
Products features and others	48	0.11 pts
2018 New Business Value	**1,877**	**4.35%**

The overall NB profitability, neutralising the positive impact (0.08 pts) of the variations in perimeter occurred during 2018 (mainly the sale of the entities in Ireland and in the Netherlands), is up by 0.26 pts to 4.35%.

Only a marginal part of the improvement (accounting for 0.08 pts) comes from the more favourable economic framework: compared to 2017 framework, the average 2018 scenario benefits from higher reference rates for most countries (e.g. +10 bps on Euro area, refer to §4.3 for more details).

Most of the improvement (0.17 pts), instead, comes from the management actions performed to shift the business towards more profitable and less capital-intensive products and to further improve new products' features.

Products mix/volumes accounts for 0.07 pts increase in profitability: this stems for example from the higher weight of the profitable Protection business (in terms of PVNBP, weight up from 20.1% to 21.0%) and, more in general, from the higher weight (from 86.6% to 88.0% in terms of NB premiums) of capital light products which also include Unit-Linked and Saving business without guarantees or with guarantees equal or lower to 0%.

The technical review and re-styling of products, finally, accounts for 0.11 pts increase in profitability. This affects for example the continuous reduction of the level of financial guarantees: in the Euro area, the average guarantee decreases from 0.12% in 2017 down to 0% in 2018.

The positive impact on profitability stemming from the improved product mix and products features can also be observed in the following table, representing the MCEV components of the NBV, in terms of reduced Time Value of Financial Guarantees and Options and reduced cost of capital.

Breakdown of New Business Value

€ mln	2018	2017
PVFP before Time Value of FG&O	2,304	2,329
Time Value of FG&O	-200	-234
PVFP after Time Value of FG&O	**2,105**	**2,095**
Cost of Capital	-20	-60
Cost of NHR	-208	-216
New Business Value	**1,877**	**1,820**

3.3. New Business Value by Line of Business

New Business Value by LoBs

€ mln	2018	2017	Change
PVNBP	**43,202**	**45,429**	**-1.8%**
o/w Saving	19,798	20,611	-3.7%
o/w Protection	9,068	9,122	2.1%
o/w Unit-Linked	14,336	15,696	-1.5%
NBV	**1,877**	**1,820**	**4.3%**
o/w Saving	554	516	7.3%
o/w Protection	769	715	8.6%
o/w Unit-Linked	554	588	-3.8%
Profitability on PVNBP	**4.35%**	**4.01%**	**0.26 pts**
o/w Saving	2.80%	2.50%	0.29 pts
o/w Protection	8.48%	7.84%	0.51 pts
o/w Unit-Linked	3.86%	3.75%	-0.09 pts

changes are on a comparable basis

In terms of PVNBP, the aggregate slowdown (-1.8%) mainly comes from the further reduction of the traditional Saving business (-3.7%), aligned to the Group's strategy. The reduction mainly affects Italy (-4.7%) and Germany (-10.6%).

Also in alignment with the Group's strategy, the PVNBP of Protection business shows a good increase compared to 2017 (+2.1%), with positive development in all regions except for Germany. The weight of Protection business on total PVNBP moves up from 20.1% to 21.0%.

The contraction of Unit-linked production (-1.5%), instead, is due to the weak production registered during the last quarter of 2018, attributable to negative financial market performance and to the missed renewal of a bank-assurance agreement with a local bank in Italy.

In terms of profitability on PVNBP, the aggregate increase (from 4.01% to 4.35%) affects both Saving (from 2.50% to 2.80%, with a remarkable improvement in Italy) and Protection business (from 7.84% to 8.48%, with positive developments in France and Spain).

The small contraction of the profitability of Unit-linked products (-0.09 pts on comparable basis) comes from France, and is due to the lower weight of more profitable pension products.

3.4. New Business Value sensitivity analysis

The NBV sensitivities are assumed to occur before the sale of the contract. Therefore, the NBV sensitivities give an indication of how the NBV might be affected by a different market environment.

The following table reports the impacts of the sensitivity analyses on NBV. The sensitivities have been derived from a specific NBV run set with financial and operating assumptions based on the latest beginning of period assumptions, i.e. at the end of September 2018 – rescaled (for presentational purposes) to match official 2018 figures.

Each sensitivity test is performed in isolation, i.e. all assumptions remain unchanged except the one directly impacted by the changed assumption.

The NB sensitivity to the EIOPA Ultimate Forward Rate (UFR) anticipates the impact of the change in the UFR (e.g. -15 bps on Euro area) required by EIOPA during 2019. The impact is not material and affects only long-term businesses.

NBV Sensitivity Analysis

	Total	Italy	France	Germany	ACEER	International
Base - NBV (€ mln)	**1,877**	**978**	**219**	**228**	**143**	**310**
Yield Curve +0,5%	5.7%	8.9%	6.0%	-4.4%	-1.8%	6.5%
Yield Curve -0,5%	-8.2%	-11.7%	-12.2%	2.9%	1.6%	-7.2%
Equity Implied Volatilities +25%	-1.0%	-0.8%	-4.8%	-0.3%	-0.6%	0.0%
Swaption Implied Volatilities +25%	-1.2%	-1.2%	-2.5%	-1.0%	-0.8%	-0.7%
Ultimate Forward Rate (EIOPA 2019)	-0.7%	-0.2%	-5.0%	-1.0%	-0.4%	0.9%
Administrative & Invest.Manag. expenses -10%	3.3%	1.5%	7.4%	1.3%	7.3%	5.8%
Lapse rate +10%	-8.0%	-6.0%	-14.5%	-9.3%	-6.1%	-9.7%
Lapse rate -10%	8.3%	6.5%	11.5%	10.4%	6.6%	11.3%
Mortality/Morbidity for Risk Business -5%	5.4%	0.5%	26.4%	2.0%	9.3%	6.9%
Mortality for Annuity Business -5%	-0.2%	0.0%	-1.3%	-0.4%	0.0%	-0.1%

3.5. New Business industrial profits

The following table shows the expected future emergence of undiscounted after-tax industrial profits stemming from the NB, estimated using Real-World financial assumptions (see §4.4).

New Business industrial profits

€ mln	**2018**	**2017**
Year 0	-743	-806
Year 1 - 5	1,323	1,371
Year 6 - 10	823	857
Year 11 - 15	592	593
Year 16 - 20	468	424
Year 21 - 25	318	280
Year 26 - 30	195	188
Year 31 onwards	417	449

The cumulative undiscounted industrial profits in 2018 amount to € 3.4 billion, in line with the total amount of 2017. Almost 82% of the industrial profits are generated in the first 25 years of the projection.

3.6. Reconciliation between New Business Value and Solvency II Value of New Production

The Solvency II Value of New Production is defined as the value generated at issue by the Life new production within Solvency II Own Funds.

In order to move from NBV to Solvency II Value of New Production, the following adjustments are considered:

- Scope: gross up of the minorities in line with Own Funds requirements;
- Alternative approach of Cost of Capital (CoC) and Cost of Non Hedgeable Risks (NHR): removal of MCEV CoC and Cost of NHR (under MCEV based on a 4% net of tax charge) and inclusion of Solvency II Risk Margin (under Solvency II based on 6% charge);
- Other: this is mainly due to removal of look-through profits not recognised under the Solvency II framework and to the removal of French NB pensions products which are treated under the IORP transitory regime.

No adjustment is needed regarding the definition and application of contract boundaries, as both NBV and Solvency II Value of New Production are aligned to the approach prescribed by Solvency II.

The following table shows the main elements of the reconciliation between NBV and Solvency II Value of New Production.

From NBV to Solvency II VNP

€ mln	**Total**
NBV	**1,877**
Minority impact	173
NBV gross up of the minorities	**2,050**
Alternative approach of CoC&NHR	-215
Other	-191
Solvency II Value of New Production	**1,643**

3.7. New Business Value by region

3.7.1. Italy

New Business - Italy

New Business Production

€ mln	2018	2017	Change
Annual premiums	995	997	-0.2%
Single premiums	9,840	10,063	-2.2%
PVNBP	**18,443**	**19,116**	**-3.5%**
Cap Factor	8.6	9.1	-0.4
APE	**1,979**	**2,004**	**-1.2%**

changes are on a comparable basis

Breakdown of New Business Value

€ mln	2018	2017
PVFP before Time Value of FG&O	1,209	1,203
Time Value of FG&O	-165	-194
PVFP after Time Value of FG&O	**1,044**	**1,009**
Cost of Capital	-1	-36
Cost of NHR	-64	-70
New Business Value	**978**	**903**

New Business Value and Profitability

€ mln	2018	2017	Change
New Business Value	**978**	**903**	**8.3%**
Profitability			
-on PVNBP	5.30%	4.72%	0.58 pts
-on APE	49.4%	45.1%	4.3 pts
IRR	28.4%	20.5%	7.9 pts

changes are on a comparable basis

Movement of New Business Value and Profitability

€ mln	NBV	Profitability on PVNBP
New business value 2017	**903**	**4.72%**
Change in perimeter/Exchange rate fluct.	0	0.00 pts
Products mix/volume	3	0.18 pts
Economic Variance	33	0.20 pts
Products features and others	38	0.21 pts
New business value 2018	**978**	**5.30%**

NB Production (measured in terms of PVNBP) decreases by 3.5%, as a consequence of the slowdown of both Single premiums (-2.2%) and Annual premiums (-0.2%), whose projection displays a shorter expected duration compared to previous year (cap factor from 9.1 to 8.6).

In terms of lines of business, the PVNBP reduction is aligned with the Group's strategy for what concerns both the further contraction of the traditional Saving business (-4.7%) and the further progress of the Protection business (+16.6%). The slowdown of Unit-linked business (-2.2%), instead, is mainly driven by the missed renewal of a local bank-assurance agreement and by the negative financial market during the last quarter of the year.

The New Business **profitability** shows a good improvement of 0.58 pts, with the margin on PVNBP moving from 4.72% in 2017 to 5.30% in 2018. This progress is driven by the increased weight of "hybrid products" with high marginality, by the further reduction of the guarantees (from 0.12% at year-end 2017 to 0.07% at year-end 2018) and also by the improved financial environment.

Despite the lower volumes, the higher margins lead to the increase of NBV (+8.3%), amounting to € 978 million. The increase is mainly driven by the reduction of the Time Value of FG&O, that reflects the decrease of the average guarantees, and by the reduction of the cost of capital, which also benefits from the refinement of the methodology adopted to better project the future risk capital run-off.

The same methodological improvement, together with the lowering of the New Business strain (from -2.31% to -2.24% in percentage of PVNBP) and the higher profitability, explains the increase of IRR from 20.5% to 28.4%.

3.7.2. France

New Business - France

New Business Production

€ mln	2018	2017	Change
Annual premiums	126	154	-18.1%
Single premiums	8,475	7,938	6.8%
PVNBP	**9,568**	**9,306**	**2.9%**
Cap Factor	8.7	8.6	0.2
APE	**974**	**948**	**2.8%**

changes are on a comparable basis

Breakdown of New Business Value

€ mln	2018	2017
PVFP before Time Value of FG&O	286	287
Time Value of FG&O	-22	-24
PVFP after Time Value of FG&O	**265**	**263**
Cost of Capital	-3	-8
Cost of NHR	-42	-44
New Business Value	**219**	**211**

New Business Value and Profitability

€ mln	2018	2017	Change
New Business Value	**219**	**211**	**4.1%**
Profitability			
-on PVNBP	2.29%	2.26%	0.03 pts
-on APE	22.5%	22.2%	0.3 pts
IRR	12.8%	10.5%	2.3 pts

changes are on a comparable basis

Movement of New Business Value and Profitability

€ mln	NBV	Profitability on PVNBP
New business value 2017	**211**	**2.26%**
Change in perimeter/Exchange rate fluct.	0	0.00 pts
Products mix/volume	3	-0.03 pts
Economic Variance	18	0.19 pts
Products features and others	-12	-0.13 pts
New business value 2018	**219**	**2.29%**

NB Production (measured in terms of PVNBP) increases by 2.9%, thanks to the progression of Single premiums (+6.8%) offsetting the contraction of Annual premiums (-18.1%).

In terms of lines of business, the increase of PVNBP is aligned to the Group’s strategy, with good progress especially in the Protection (+4.6%, with a weight of 28.9% on total PVNBP) and in the Unit-linked business (+3.7%, with a weight of 31.6%). Traditional Saving business registers a lower increase (+1.1%), which causes the further reduction of its weight on total PVNBP (now below 40%).

The New Business **profitability** on PVNBP slightly increases, from 2.26% in 2017 to 2.29% in 2018, mainly driven by the further improvement of Protection business, consequence of the more favourable loss ratios assumptions reflecting the observed experience.

The 2018 NBV increases by 4.1% and amounts to € 219 million, with a stable development of its MCEV components.

The IRR shows a good increase from 10.5% in 2017 to 12.8% in 2018, also driven by the reduction of New Business strain (in terms of ratio on the PVNBP, from -2.94% to -2.67%).

3.7.3. Germany

New Business - Germany

New Business Production

€ mln	2018	2017	Change
Annual premiums	464	456	1.8%
Single premiums	1,470	1,730	-15.0%
PVNBP	**8,048**	**8,529**	**-5.6%**
Cap Factor	14.2	14.9	-0.7
APE	**611**	**629**	**-2.8%**

changes are on a comparable basis

Breakdown of New Business Value

€ mln	2018	2017
PVFP before Time Value of FG&O	261	280
Time Value of FG&O	-3	-5
PVFP after Time Value of FG&O	**258**	**274**
Cost of Capital	0	0
Cost of NHR	-30	-31
New Business Value	**228**	**243**

New Business Value and Profitability

€ mln	2018	2017	Change
New Business Value	**228**	**243**	**-6.2%**
Profitability			
-on PVNBP	2.83%	2.85%	-0.02 pts
-on APE	37.3%	38.6%	-1.3 pts
IRR	32.6%	34.8%	-2.2 pts

changes are on a comparable basis

Movement of New Business Value and Profitability

€ mln	NBV	Profitability on PVNBP
New business value 2017	**243**	**2.85%**
Change in perimeter/Exchange rate fluct.	0	0.00 pts
Products mix/volume	-19	-0.10 pts
Economic Variance	-2	0.01 pts
Products features and others	6	0.08 pts
New business value 2018	**228**	**2.83%**

In Germany, 2018 reported figures are significantly impacted by the massive drop of the production of Generali Leben (-55.1% in terms of PVNBP compared to 2017), not yet offset by the actions taken to restructure the salesforce organization, and by a stricter methodological definition of NB premiums, which from 2018 do not include “Riester allowances” (voluntary premiums paid, at original terms and conditions, on pre-existing pension contracts – see also §5.2.1).

NB Production (measured in terms of PVNBP) falls by 5.6%, driven by the drop of Single Premiums (-15.0%, mostly caused by the exclusion of “Riester allowances”), only partially compensated by the increase in Annual premiums (+1.8%).

In terms of lines of business, the PVNBP decrease mainly affects the traditional Saving business (-10.6%), which reduces its weight on total PVNBP from 18.5% to 17.6%. Despite the good progress of the Health business (+14.9%), the Protection business reports a slowdown (-6.3%) because of the drop of Generali Leben production and the competitive market in term life. The weight of Protection business on total PVNBP, however, remains high and stable at 37.8%. Unit-linked business reports a milder contraction (-3.0%), with its weight increasing from 43.4% to 44.7%.

The New Business **profitability** on PVNBP only slightly decreases to 2.83% in 2018 (2.85% in 2017), with the contractions observed on Saving and Unit-linked business (again impacted by the lower contribution of Generali Leben) being almost entirely offset by the improved profitability on Protection business.

Mainly due to lower volumes, the NBV decreases compared to 2017 (-6.2%) and amounts to € 228 million.

The IRR reduces, from 34.8% to 32.6%, driven by the lower contribution of Generali Leben and also by the slight increase of the New Business strain (from -0.27% to -0.32%) in terms of ratio on the PVNBP.

3.7.4. Austria and Central Eastern Europe (ACEER)

New Business - ACEER

New Business Production

€ mln	2018	2017	Change
Annual premiums	134	139	-3.4%
Single premiums	621	597	4.2%
PVNBP	**2,028**	**1,994**	**1.8%**
Cap Factor	10.5	10.1	0.4
APE	**196**	**199**	**-1.1%**

changes are on a comparable basis

Breakdown of New Business Value

€ mln	2018	2017
PVFP before Time Value of FG&O	172	176
Time Value of FG&O	-1	-1
PVFP after Time Value of FG&O	**171**	**175**
Cost of Capital	-2	-2
Cost of NHR	-27	-27
New Business Value	**143**	**147**

New Business Value and Profitability

€ mln	2018	2017	Change
New Business Value	**143**	**147**	**-3.2%**
Profitability			
-on PVNBP	7.03%	7.36%	-0.36 pts
-on APE	72.6%	73.8%	-1.6 pts
IRR	20.3%	22.7%	-2.6 pts

changes are on a comparable basis

Movement of New Business Value and Profitability

€ mln	NBV	Profitability on PVNBP
New business value 2017	**147**	**7.36%**
Change in perimeter/Exchange rate fluct.	1	0.04 pts
Products mix/volume	-1	-0.29 pts
Economic Variance	-9	-0.31 pts
Products features and others	5	0.23 pts
New business value 2018	**143**	**7.03%**

The ACEER region includes Group companies operating in Austria and Central Eastern Europe. 2017 figures have been recalculated to reflect the new geographical representation.

NB production (measured in terms of PVNBP) increases (+1.8%) on account of the increase in Single premiums (+4.2%, with a significant contribution from Austria) more than offsetting the decline in Annual premiums (-3.4%, with a negative development in Czech Republic).

In terms of lines of business, the PVNBP development reflects the Group’s strategy, with good progress on Protection (+3.2%, with a weight on total PVNBP up to 47.4%) and Unit-linked business (+2.5%, with a stable weight of 30.1%). PVNBP of traditional Saving business, instead, decreases by 2.0%, with a weight on total PVNBP down to 22.5%.

The New Business **profitability** on PVNBP**,** despite a slight decrease due to a contraction of the margins in Austria and in Poland and to the negative impact of higher interest rates (see §4.3) on the valuation of Protection business, remains very high moving from 7.36% in 2017 to 7.03% in 2018.

The 2018 NBV amounts to € 143 million, down by 3.2% compared to 2017.

The IRR slightly decrease from 22.7% to 20.3%, mainly driven by the CEE countries as a consequence of the reduced profitability.

3.7.5. International

New Business - International

New Business Production

€ mln	2018	2017	Change
Annual premiums	450	466	5.5%
Single premiums	3,019	3,996	5.9%
PVNBP	**5,116**	**6,484**	**1.3%**
Cap Factor	4.7	5.3	-0.4
APE	**752**	**865**	**5.7%**

changes are on a comparable basis

Breakdown of New Business Value

€ mln	2018	2017
PVFP before Time Value of FG&O	376	383
Time Value of FG&O	-8	-9
PVFP after Time Value of FG&O	**367**	**374**
Cost of Capital	-13	-13
Cost of NHR	-44	-43
New Business Value	**310**	**317**

New Business Value and Profitability

€ mln	2018	2017	Change
New Business Value	**310**	**317**	**4.5%**
Profitability			
-on PVNBP	6.05%	4.89%	0.20 pts
-on APE	41.2%	36.6%	-0.5 pts
IRR	22.3%	23.2%	-1.5 pts

changes are on a comparable basis

Movement of New Business Value and Profitability

€ mln	NBV	Profitability on PVNBP
New business value 2017	**317**	**4.89%**
Change in perimeter/Exchange rate fluct.	-21	0.96 pts
Products mix/volume	14	0.32 pts
Economic Variance	-13	-0.26 pts
Products features and others	11	0.14 pts
New business value 2018	**310**	**6.05%**

The International region includes Group companies operating in Spain, Switzerland, Asia and South America. It also includes the operations (i.e. Belgium and Guernsey) whose disposal has been already announced in 2018, and the business written by Assicurazioni Generali through its international branches. 2017 figures have been recalculated to reflect the new geographical representation.

NB Production increases both in terms of Annual Premiums (+5.5%) and Single Premiums (+5.9%), with a good contribution of Asia (+5.3% in terms of PVNBP).

In terms of lines of business, the PVNBP increase mainly stems from the Protection business (+10.3%, mainly from Spain and Asia), which increases its weight on total PVNBP from 29.0% to 35.3%. Unit-linked business registers a slowdown (-7.4%) mainly coming from Indonesia and Switzerland, while traditional Saving business is stable (-0.1%).

The New Business **profitability** on PVNBP increases from 4.89% in 2017 to 6.05% in 2018, mainly thanks to the higher weight of the more profitable Protection business.

The higher margins lead to an increase of NBV (+4.5%), amounting to € 310 million.

The IRR shows a slight decrease from 23.2% in 2017 to 22.3%, also due to an increase in the New Business strain (from -4.59% to -6.44%) in terms of ratio on the PVNBP.

In the following tables, some further analyses are reported for the main areas of the International region: Spain, Switzerland and Asia.

New Business - International - o/w Spain

New Business Production				*New Business Value and Profitability*			
€ mln	2018	2017	Change	€ mln	2017	2016	Change
Annual premiums	34	41	-15.8%	**New Business Value**	**118**	**98**	**21.2%**
Single premiums	603	687	-12.2%	**Profitability**			
PVNBP	**904**	**993**	**-9.0%**	-on PVNBP	13.07%	9.82%	3.25 pts
APE	**95**	**109**	**-13.6%**	-on APE	124.9%	89.1%	35.8 pts

changes are on a comparable basis

In line with the Group's strategy, the slowdown of **PVNBP** (-9.0%) is entirely due to the drop of the traditional Saving business (-21.1%), whilst both Protection (+8.0%) and Unit-linked business (+5.8%) show a good progress. The weight of Protection business on total PVNBP, in particular, increases from 36.4% to 43.2%.

The New Business **profitability** on PVNBP improves from 9.82% in 2017 to 13.07% in 2018, thanks to the higher weight of the very profitable Protection products. As a consequence, the NBV increases (+21.2%) and amounts to € 118 million.

New Business - International - o/w Switzerland

New Business Production				*New Business Value and Profitability*			
€ mln	2018	2017	Change	€ mln	2018	2017	Change
Annual premiums	28	29	-0.3%	**New Business Value**	**17**	**15**	**18.0%**
Single premiums	23	15	56.4%	**Profitability**			
PVNBP	**385**	**402**	**-1.7%**	-on PVNBP	4.35%	3.63%	0.72 pts
APE	**31**	**31**	**2.6%**	-on APE	54.7%	47.7%	7.1 pts

changes are on a comparable basis

In Switzerland, the slowdown of **PVNBP** (-1.7%) mainly reflects the development of the Unit-linked business (-2.1%), which still represents the main part of the production (with a weight of 80.1% on total PVNBP).

The New Business **profitability** on PVNBP improves from 3.63% in 2017 to 4.35% in 2018, also thanks to the improved financial conditions. The NBV amounts to € 17 million (+18.0% compared to 2017).

New Business - International - o/w ASIA

New Business Production				*New Business Value and Profitability*			
€ mln	2018	2017	Change	€ mln	2018	2017	Change
Annual premiums	288	287	3.6%	**New Business Value**	**123**	**140**	**-9.8%**
Single premiums	857	691	27.2%	**Profitability**			
PVNBP	**2,047**	**2,001**	**5.3%**	-on PVNBP	6.02%	7.00%	-1 pts
APE	**374**	**356**	**8.2%**	-on APE	33.0%	39.3%	-6.5 pts

changes are on a comparable basis

In Asia, the good development of **PVNBP** (+5.3%) is driven by the increase in the Protection business (+10.1%, with significant contributions from Thailand and Hong Kong), which increases its weight on total PVNBP of the region from 45.7% to 47.8%.

The New Business **profitability** on PVNBP decreases from 7.00% in 2017 to 6.02% in 2018, mainly on account of the worsened financial assumptions affecting the traditional business. In aggregate, the 2018 NBV amounts to € 123 million (-9.8%).

4 Assumptions

The calculation of GOF and NBV makes use of various assumptions with respect to economic conditions, operating factors and other variables, many of which are beyond Generali's control. Although all the assumptions represent estimates that Generali regards as reasonable best estimates, future developments may vary from those assumed in the calculations and such variations could have a significant impact on results.

Economic assumptions have been set consistently with observable market data. Taxation assumptions are based on current tax legislation. Operating assumptions (including profit sharing mechanisms) are based on each company's current experience and practice, where available and otherwise credible.

Differently from GOF calculations (where operating and economic assumptions are related to the end of year), for NB calculations, whose yearly results are calculated as the sum of the four quarters NB valuations, the financial assumptions are related to the beginning of each quarterly valuation and the operating assumptions are updated generally on an annual basis. Therefore, in this paragraph also a yearly weighted average of financial assumptions is reported to facilitate the yearly NB comparison.

4.1. Financial assumptions

Generali has adopted a market consistent methodology based on a risk-neutral approach for the vast majority of its business.

The Time Value of FG&O is modelled by means of a set of 1,000 stochastic simulations, calibrated reflecting observable market data as at the valuation date and generated centrally by an Economic Scenario Generator provided by Moody's Analytics UK Limited.

At year-end 2018 valuation, consistently with year-end 2017, the following models have been considered:

– Libor Market Model plus (LMM+) for nominal yield curves, which allows for negative interest rates;
– Two-Factor Vasicek model for real yield curves;
– G2 model (an extension of JLT model) for Corporate bonds' credit spreads;
– Time Varying Deterministic Volatility model for equity indexes;
– Constant Volatility model for real estate indexes;
– Mean reverting process for equity dividend yields and real estate income return.

To reduce Monte-Carlo error, antithetic variables are used.

The key economic assumptions for the risk-neutral 2018 valuation, for each economy, are:

– the reference rates (as defined by EIOPA);
– the implied volatilities for equity, real estate and fixed income;
– transition matrix, recovery rate and spreads over reference rates for corporate bonds;
– correlations between different asset classes.

Such assumptions are described in more detail the following paragraphs.

4.1.1. Reference rates

The reference rates used by Generali for the calculation of both GOF and NBV are based on EIOPA assumptions concerning the base curve (swap or government bonds), the Credit Risk Adjustment (CRA), the Volatility Adjustment (VA) and the curve extrapolation, with the definition of the Last Liquid Point (LLP) from which the extrapolation begins, the Ultimate Forward Rate (UFR) to which the extrapolation converges, and the convergence period required to reach the UFR.

The following table summarises the reference rates assumptions, concerning yield curve definition and extrapolation, defined by EIOPA and used by Generali (both within 2018 NB and GOF valuations) for its main currencies.

Reference Rates – Technical specifications

	Base	LLP	UFR	Convergence period
EUR	Swap	20 yrs	4.05%	40 yrs
CHF	Swap	25 yrs	3.05%	40 yrs
CNY	Swap	10 yrs	4.35%	50 yrs
CZK	Swap	15 yrs	4.05%	45 yrs
HUF	Govt	15 yrs	4.35%	45 yrs
PLN	Govt	10 yrs	4.05%	50 yrs

The table below reports the values of VA and CRA prescribed by EIOPA at year-end 2018 and 2017 for the same currencies[3].

Volatility & Credit Risk adjustment

Currency	@ dd.mm.yyyy	VA	CRA	Currency	@ dd.mm.yyyy	VA	CRA
EUR	31.12.2018	24 bps	-10 bps	CZK	31.12.2018	17 bps	-10 bps
(swap)	31.12.2017	4 bps	-10 bps	(swap)	31.12.2017	4 bps	-10 bps
CHF	31.12.2018	4 bps	-10 bps	HUF	31.12.2018	5 bps	-10 bps
(swap)	31.12.2017	-3 bps	-10 bps	(govt)	31.12.2017	2 bps	-10 bps
CNY	31.12.2018	n/a	-19 bps	PLN	31.12.2018	9 bps	-10 bps
(swap)	31.12.2017	n/a	-17 bps	(govt)	31.12.2017	11 bps	-10 bps

Finally, the following table summarises the par reference rates defined by EIOPA and applied by Generali for its main currencies.

[3] For materiality reasons, VA has not been adopted in the valuation of entities operating in Hungary and Poland. In China, where EIOPA does not publish a VA, only for NBV purposes Generali has estimated and adopted an adjustment to be applied on the basic risk-free rates (45 bps at YE17, 39 bps at YE18)

Reference Rates (including all adjustments)

Currency	@ dd.mm.yyyy	1 Year	2 Year	5 Year	10 Year	20 Year	30 Year
EUR	31.12.2018	-0.09%	-0.04%	0.34%	0.95%	1.46%	1.89%
(swap)	31.12.2017	-0.32%	-0.21%	0.25%	0.83%	1.34%	1.82%
CHF	31.12.2018	-0.71%	-0.63%	-0.31%	0.25%	0.71%	0.88%
(swap)	31.12.2017	-0.75%	-0.61%	-0.27%	0.15%	0.52%	0.75%
CNY	31.12.2018	2.88%	2.91%	3.16%	3.44%	3.66%	3.77%
(swap)	31.12.2017	4.08%	4.12%	4.37%	4.46%	4.46%	4.43%
CZK	31.12.2018	2.13%	2.08%	1.88%	1.83%	2.13%	2.47%
(swap)	31.12.2017	1.02%	1.25%	1.56%	1.78%	2.18%	2.54%
HUF	31.12.2018	0.44%	1.03%	2.20%	3.03%	3.63%	3.79%
(govt)	31.12.2017	0.00%	0.32%	1.06%	2.00%	3.18%	3.48%
PLN	31.12.2018	0.94%	1.32%	2.11%	2.71%	3.00%	3.18%
(govt)	31.12.2017	1.40%	1.65%	2.54%	3.14%	3.30%	3.44%

4.1.2. Implied volatilities

To model equity and real estate, a range of indices are considered, and a log excess return above nominal short rate model is used in order to generate returns from fixed income dynamics. A time-varying volatility model is adopted for modelling the equity index and it is calibrated on Lognormal implied volatilities of ATM (“At The Money”) forward equity index quoted options. Concerning real estate, a constant volatility model is used, with Lognormal implied volatilities calibrated on Real-World assumptions.

Fixed income volatilities are based on Normal implied volatilities of ATM swaptions. Swaption implied volatility and equity option implied volatility used for year-end 2018 valuation have been based on observable market data as at 31 December 2018. All available market data have been used, without any smoothing or anchoring techniques.

The following table compares 2017 and 2018 Equity option implied volatilities (EIV) based on Lognormal volatilities.

Equity option implied volatilities

Currency	@ dd.mm.yyyy	1 Year	2 Year	5 Year	7 Year	10 Year
EUR	31.12.2018	17.38%	16.55%	16.27%	16.42%	17.17%
(swap)	31.12.2017	15.11%	16.17%	18.31%	19.22%	19.98%
CHF	31.12.2018	17.25%	16.42%	15.17%	15.10%	15.04%
(swap)	31.12.2017	13.48%	14.02%	14.28%	14.35%	14.41%
CZK	31.12.2018	15.00%	13.16%	12.09%	11.71%	11.41%
(swap)	31.12.2017	12.25%	12.32%	13.84%	14.48%	14.94%
HUF	31.12.2018	20.17%	19.59%	19.53%	19.72%	19.86%
(govt)	31.12.2017	17.70%	17.99%	18.39%	18.55%	18.67%

The equity indices are calibrated on ATM option of the Euro Stoxx 50 for the EUR economy, SMI for the CHF economy, PX for the CZK economy and BUX for the HUF economy.

The following table[4] compares 2017 and 2018 Swaption implied volatilities (SIV, referring to 10-year swap at the money options) based on Normal volatilities.

Swaption implied volatilities

Currency	@ dd.mm.yyyy	1 Year	2 Year	5 Year	10 Year	20 Year
EUR	31.12.2018	0.43%	0.49%	0.60%	0.62%	0.54%
(swap)	31.12.2017	0.46%	0.53%	0.62%	0.65%	0.57%
CHF	31.12.2018	0.47%	0.55%	0.66%	0.66%	0.47%
(swap)	31.12.2017	0.49%	0.58%	0.72%	0.73%	0.52%
CZK	31.12.2018	0.57%	0.61%	0.61%	0.43%	0.31%
(swap)	31.12.2017	0.59%	0.63%	0.63%	0.70%	0.50%
HUF	31.12.2018	1.53%	1.45%	1.34%	0.95%	0.67%
(govt)	31.12.2017	1.56%	1.48%	1.40%	1.30%	0.80%

4.1.3. Transition matrix, recovery rate and spreads over reference rates for corporate bonds

Credit Transition matrix and recovery rate are based on historical average evidences provided by Moody's within the most representative Corporate bond markets (USD), in particular:

- Transition matrix covers the rating change, including default, in the period 1920-2015;
- Recovery rate is based on post-default trading prices of the senior subordinated seniority in the period 1983-2015;

Corporate spreads over reference rate are referred to currency market spreads and, in case no market data is considered adequate, are based on historical average market spreads registered in the most liquid markets (USD, EUR, GBP).

4.1.4. Correlations

Correlations between asset returns, which are not directly observable metrics, are inferred using an analysis of historical data and expert opinions.

4.2. Other economic assumptions

4.2.1. Assumptions on taxation

In defining GOF, the appropriate nominal tax rate is applied by country and by balance sheet item on the difference between value recognised for Solvency II purposes and fiscal recognised amount. When a pattern for the realization of the values is needed, the tax rate referred to a specific future fiscal year is applied.

For the NB calculation, the assumptions for future taxation are based on the prevailing local tax rates as at the respective valuation dates. Where applicable, account has been taken of the specific tax treatment of income on certain asset classes backing both technical reserves and required capital, including tax credits or exemptions on dividend income, tax credits on investment returns and tax exemptions on certain qualifying participations.

[4] The CNY and PLN currencies are not included in these tables (SIV and EIV) because they are valuated with a deterministic approach.

4.2.2. Exchange rates

GOF and NB values have been calculated using local currencies: GOF figures have been converted to EUR using year-end exchange rates, while quarterly NB values have been converted to EUR using the exchange rates valid at the end of each quarter.

The following table shows the assumed year-end exchange rates (foreign currency against 1 EUR) for selected currencies.

Exchange rates

	31.12.2018	31.12.2017
CHF	1.13	1.17
CNY	7.85	7.82
CZK	25.74	25.53
HUF	320.80	310.21
PLN	4.29	4.17

4.2.3. Inflation rates

Inflation rates are stochastically modelled using two-factor Vasicek model and are calibrated based on market inflation swap or consensus economic forecast depending on data availability. To inflate expenses, country specific allowance has also been made for the additional inflation related to salaries and medical costs.

4.3. Average New Business yearly economic assumptions

The year-end 2018 and 2017 NB figures are obtained as the sum of four quarters, each quarter being calculated with beginning of period financial assumptions. To facilitate a comparison between the economic assumptions adopted along the two years, weighted averages of the main economic assumptions, based on quarterly NB premiums, are reported below.

The following table reports the average 10 years par reference rates, inclusive of CRA and VA.

Average Reference Rates (including all adjustments)

	2018	2017
EUR	0.91%	0.81%
CHF	0.30%	0.12%
CNY	4.09%	4.17%
CZK	1.98%	1.12%
HUF	2.82%	2.82%
PLN	3.10%	3.26%

The following table reports the average of both SIV (5/5) and EIV (5/5), with reference to the currencies where stochastic scenarios are used.

Average Volatility - (5/5 Normal)

	Swaption		Equity	
	2018	2017	2018	2017
EUR	0.62%	0.67%	17.17%	19.91%
CHF	0.68%	0.75%	14.62%	15.20%
CZK	0.61%	0.63%	12.74%	15.81%
HUF	1.31%	1.30%	19.17%	16.24%

Here below, the table with the average currency exchange rates.

Average exchange rates

	2018	2017
CHF	1.15	1.10
CNY	7.83	7.55
CZK	25.72	26.53
HUF	321.63	309.41
PLN	4.29	4.29

4.4. Real-World financial assumptions

Real-World best estimate financial assumptions are used by companies, performing market consistent valuations, to calculate the distributable profits used to derive the NB Internal Rate of Return (IRR) at each quarter. They are also used to determine the financial returns expected by the shareholder, basis for the calculation of the Group Own Funds normalised generation (see §5.1.3).

The structure of the economic assumptions used in Real-World projections is based on the following methodology:

– Government bonds return are based on market return, at the valuation date, according to their average duration;
– Corporate bonds returns are based on market average spread, at the valuation date, according to their average duration and rating.

In addition, country-specific benchmark rates are set equal to the 10-year par yield of local government bonds in order to define equity and real estate returns as follows:

– Equity total returns are set by adding an equity risk premium of 2.90% over the country-specific benchmark rates, with the exception of companies belonging to the Euro-Zone, for which the 2.90% spread is over the benchmark rates of a country with rating AAA (i.e. 10-year German bund);
– Real estate total returns are set by adding a risk premium of 1.15% over the country-specific benchmark rates, with the exception of companies belonging to the Euro-Zone, for which the 1.15% is over the benchmark rates of a country with rating AAA (i.e. 10-year German bund).

The main economic assumptions, reported as weighted average (based on NB premiums), are summarised in the following table:

Average Real-World economic assumption

	10 y Government Bond		Equity Total Returns		Property Total Returns	
	2018	2017	2018	2017	2018	2017
Italy	2.38%	2.07%	3.35%	3.28%	1.60%	1.53%
France	0.72%	0.81%	3.35%	3.31%	1.60%	1.56%
Germany	0.45%	0.37%	3.35%	3.27%	1.60%	1.52%
ACEER	2.04%	1.87%	4.84%	4.66%	3.09%	2.91%
International	2.69%	2.33%	5.23%	4.72%	3.48%	2.97%

5 Annex A: Methodology

5.1. Group Own Funds

5.1.1. Group Own Funds methodology

Group Own Funds are valuated in accordance with the current Solvency II provisions of the Directive 2009/138/EC, as well as the 'Delegated Act' 2015/35/EC and related Guidelines.

Group Own Funds reported in this document are calculated in the "regulatory view" scenario, according to which the Solvency Capital Requirement (SCR) of each company, mainly affecting the calculation of the Risk Margin, is determined with either Internal Model or Standard Formula methodology, depending on whether the Partial Internal Model has been approved or not for the specific company.

The Group Own Funds are defined by the aggregation of the:

a) Basic Own Funds (after deduction), representing the sum of

- Solvency II excess of assets over liabilities;
- contribution of subordinated debt eligible in Basic Own Funds;
- deduction for foreseeable dividends and distributions;
- additional OF related to unrealised capital gains from French pension activities arising from the application of the IORP transitory regime[5];
- deductions for participations in other sectoral entities,
- deductions for regulatory filters applied to non-available items at Group level, restricted own fund items and shares of the parent company

and

b) the contribution of the available capital of sectoral entities, according to their regulatory regimes.

The items composing Group Own Funds are classified into three tiers of capital, depending on the extent to which they can absorb losses due to adverse business fluctuations on a going-concern basis or in case of winding-up. The classification by tiers of Generali Group Own Funds is the following:

- Tier 1 Unrestricted Group Own Funds includes Ordinary share capital and the related share premium account, Available Surplus funds from German and Austrian business, the Reconciliation reserve and additional Own Funds from French pension activities. The Reconciliation Reserve is net of Foreseeable Dividends, restricted own fund items and shares of the parent company;
- Tier 1 Restricted Group Own Funds is composed by undated subordinated debt eligible in Group Own Funds;
- Tier 2 Group Own Funds includes the remaining part of subordinated debt eligible in Group Own Funds, which is classified as dated;
- Tier 3 Group Own Funds is composed by net deferred tax assets, which are characterised by lower capital quality, being not immediately available to absorb losses.

Regarding the Group Own Funds coverage of the SCR, the following eligibility filters apply:

[5] These additional Own Funds are authorised by the Supervisor for the years between 2016 and 2022, a period during which the proportion of the eligible unrealised capital gains will decrease gradually.

- the eligible amount of Tier 1 restricted should not exceed 20% of total Tier 1;
- the sum of Tier 2 and Tier 3 should not exceed 50% of the SCR;
- the eligible amount of Tier 3 Own Funds cannot exceed 15% of SCR.

As set out in Article 75 of Directive 2009/138/EC, the Solvency II regulatory framework requires an economic, market-consistent approach to the valuation of assets and liabilities adopting assumptions that market participants would use in valuing the same assets and liabilities.

In order to define the Solvency II figures, all assets and liabilities in the balance sheet must be valued at fair value. Broadly, Solvency II is referring to IAS/IFRS accounting principles to evaluate assets and liabilities, with the main exceptions described below.

Assets

Intangible assets (goodwill, deferred acquisition costs and other intangible assets) in Solvency II balance sheet are valued at zero. An exception to this treatment is allowed by the regulation when it is possible to demonstrate that the intangible assets (typically software) have a market price and can be exchanged in the market on an arm's length basis.

Investment assets: according to art. 75 of the Directive, these items are recognised at fair value. Most investment assets (such as Equities, Bonds, Investment funds etc.) are subject to the same valuation also for IFRS purposes, therefore no adjustments are performed moving from IFRS to Solvency II balance sheet. For real estate, IAS loans and held to maturity assets categories, and all the other items that are not classified at fair value in IFRS, the marked-to-market approach is applied for the purposes of the Solvency II balance sheet.

For **Participations,** which are not consolidated and are not represented on a line-by-line approach in the Solvency II balance sheet, a valuation hierarchy is defined where the preferable approach is the quoted market price and, if the quoted market price is not available, a mark-to-model approach can be adopted starting from the Adjusted Equity method.

Reinsurance assets: for Solvency II purposes, recoverables from reinsurance contracts are calculated consistently with the boundaries of the contracts to which those amounts relate and taking into account the expected losses due to default of the counterparty; the remaining reinsurance assets are adjusted from their IFRS value due to the risk of default of the reinsurer.

Liabilities

Best Estimate Liabilities: the best estimate corresponds to the probability-weighted average of the present value of future cash-flows related to insurance and reinsurance obligations in force at the valuation date taking into account all options and financial guarantees. Therefore, it includes both a probabilistic assessment of their occurrence and an appropriate assessment of the time value of money, obtained for each relevant currency on the basis of the risk-free interest rate term structure, observed in the market and officially provided by EIOPA.

Risk Margin: the Risk Margin is the part of Technical Provisions that ensures that the overall value of the Technical Provisions is equivalent to the amount a third party would theoretically require in order to take over and meet the insurance liabilities, taking into account the cost of capital required to support those liabilities over their remaining future lifetime and regarding non-hedgeable risks, i.e. underwriting risks, credit risks related to reinsurance contracts and operational risks.

Financial Debt: in order to ensure compliance with Solvency II principles, financial liabilities are valued at fair value without any adjustment for change in own credit standing of the borrower.

Subordinated debt eligible in Group Own Funds: according to art. 73 of Solvency II Delegated Acts, subordinated debt which is characterised by specific features (primarily, the loss absorbing capacity) are eligible to be considered as capital and therefore contributes to the Group Own Funds at their nominal value.

Deferred tax assets and liabilities: according to the Solvency II framework, Solvency II deferred taxes are based on the temporary difference between the Solvency II value of assets and liabilities and the value for tax purposes on an item by item basis, using the expected tax rate to be applied when assets (liabilities) are realised (settled) and considering any potential impact of any announcement of amendment to tax rate. Unlike any deferred tax liability, the recognition of a deferred tax asset is subject to a recoverability test, which aims at showing that sufficient taxable income will be available in the future to absorb the tax credit.

5.1.2. Group Own Funds covered business

For the definition of the consolidation scope of Group Own Funds, the following rules apply for the entities that are consolidated line by line in the Group IFRS Consolidated Financial Statement:

a) all Group insurance and reinsurance undertakings, insurance holding companies, mixed financial holding companies and ancillary services undertakings which are subsidiaries of Assicurazioni Generali S.p.A. are fully consolidated also for Own Funds purposes;

b) Group financial sector undertakings[6] contribute with their quota share of the Own Funds calculated according to the relevant sectoral rules, as referred to in Article 2(7) of Directive 2002/87/EC;

c) Investment vehicles associated to insurance activities are consolidated in the parent company, according to their quota share of participation.

Remaining Group entities are valuated within the parent undertaking on the basis of valuation methods compliant with current regulation (quoted market price for listed entities, adjusted IFRS equity method or other alternative techniques for IFRS participations valued at cost).

In this document, further analyses are reported with reference to the following segments:

1) **Life.** The Life Group Own Funds includes the Own Funds contribution of all the Solvency II Life lines of business and consist of:
    - the Own Funds contribution of all Group Life companies;
    - the Own Funds contribution of the Solvency II Life segment of the Group Composite companies;
    - the contribution of investment vehicles owned by entities classified in the Solvency II Life segment, according to the quota share of participation;
    - the Own Funds contribution of Life business component of Assicurazioni Generali and Generali Deutschland Holding.

2) **Non-Life.** The Non-Life Group Own Funds segment includes the Own Funds contribution of all the Solvency II Non-Life lines of business and consists of:
    - the Own Funds contribution of all Group Non-Life companies;

[6] Credit institutions, investment firms and financial institutions, alternative investment fund managers, UCITS management companies, institutions for occupational retirement provision, non-regulated undertakings carrying out financial activities.

- the Own Funds contribution of the Solvency II Non-Life segment of the Group Composite companies;
- the contribution of investment vehicles owned by entities classified in the Non-life segment, according to the quota share of participation;
- the Own Funds contribution of Non-Life business component of Assicurazioni Generali and Generali Deutschland Holding.

3) **Holdings and Sectorals.** The Holdings and Sectorals Group Own Funds consist of:
    - the Own Funds contribution of all other non-insurance Group (sub-)Holdings;
    - the sectoral available capital (as recognised within Solvency II, in Group's share) of all other Group Financial companies and credit Institution, including Banca Generali Group;
    - the residual assets and liabilities of Assicurazioni Generali and Generali Deutschland Holding, not attributed to Life and Non-Life segment.

Life and Non-Life segments are then split by region, following the Group re-organization of 2018 and in accordance with the classification used for reporting purposes.

5.1.3. Group Own Funds analysis of movement

The purpose of the GOF Roll Forward is to determine the sources of movements driving the development of GOF. In order to provide an economic explanation to the movement of the GOF from the beginning to the end of the reference period, regulatory model changes and opening adjustments, normalised Own Funds generation, variances and capital movements are considered.

Normalised Own Funds generation

The normalised Own Funds generation represents the increase or decrease in Own Funds attributable to activities under managerial control or influence or expected at the beginning of the period, and are split by line of business.

1) **Life business**

    Life business normalised Own Funds generation is driven by:

    Solvency II Value of New Production

    Solvency II Value of New Production represents the contribution of New Business determined according to Solvency II rules and presented at issue date. For the reconciliation between the Solvency II Value of New Production and the NBV refer to §3.6.

    Unwinding of assets and liabilities

    Unwinding is defined as the roll-forward of the value from the beginning to the end of the reference period and it is calculated by capitalizing the value at the beginning of the year over the whole period with the appropriate expected return of each Group Own Funds item.

    Expected release of prudence

    The expected release, from the business in-force at the beginning of the year, of the prudence implicitly included in the Solvency II valuation, deriving from the expected release of the Risk Margin and from the higher profit release expected in the year, originated by the difference between the Real-World financial return expected by the shareholder (see §4.4) and the risk-neutral return adopted within the Solvency II valuation.

2) **Non-Life business**

Non-Life business normalised Own Funds generation is driven by:

Unwinding of assets and liabilities

As for Life business, the roll forward of assets and liabilities is considered in the normalised Own Funds generation and it is calculated with the appropriate expected return of each Own Funds item.

Non-Life contribution

Represented by the technical result, based on best estimate assumptions (before change in assumptions), and the expected movement of the Risk Margin.

3) **Holdings and Sectorals**

In this segment, normalised Own Funds generation is mainly driven by: the result of the period of sectoral entities according to the Group quota share of those entities, paid interest on subordinated debt, operating holding costs, and unwinding of residual assets and liabilities included in this segment.

Operating, economic and other variances

Operating variance is defined as the Own Funds movement attributed to experience or change in assumptions related to operating factors.

Economic variance is defined as the Own Funds movement attributed to the experience variance on the expected returns over the period and to the change in assumptions of all the different financial market conditions.

The residual part of the movement ("other variances") can be attributable to extraordinary and non-recurring items (such as non-recurring expenses) and to other non-operating variations in GOF (such as model refinements, tax variances and changes in regulatory filters).

5.1.4. Group Own Funds sensitivity analysis

The impacts of each sensitivity on Group Own Funds are valuated, applying separately each identified sensitivity factor to all relevant assets and liabilities of the Solvency II balance sheet.

Sensitivities on GOF are applied in isolation rather than in combination, and are performed in light of a *what-if* analysis, i.e. all changes are assumed to occur instantly after the valuation date. When running a specific sensitivity, all other assumptions remain unchanged, except when certain assumptions are directly impacted by the application of the sensitivity being run: this is the case of management actions, such as the rebalancing of asset portfolios, that are typically included in the calculation of Technical Provisions or the Volatility Adjustment which can be recalibrated under specific sensitivity scenarios.

The sensitivity analyses reported in this document are the following.

Interest rates upward shift of 50 basis points computes the effect of an instantaneous upward parallel shock of the reference rates until the Last Liquid Point with extrapolation performed in line with EIOPA methodology.

This stress affects the market value of the following instruments:

- Fixed income (change in discount factors and indexed coupon);
- Derivatives (change in discount factors and derivative underlying value);

- Investment funds fully or partially invested in the aforementioned asset classes.

This sensitivity has also an impact on senior and subordinated financial liabilities and on Technical Provisions, both Life and Non-Life, affecting their valuation curve and, where relevant, the cash flows. For Life Technical Provisions the extent of such impact depends on their capacity to absorb the corresponding changes of the stressed assets.

Interest rates downward shift of 50 basis points is the same as above but with a shift downward. No floor is applied where the shift of 50 basis points drops rates below 0%.

Equity markets higher value of 25% simulates an increase of the current market prices of equity. This stress affects the following instruments:

- Equity (change in price);
- Convertible bonds (change in underlying asset price);
- Equity derivatives (change in underlying price);
- Investment funds fully or partially invested in the aforementioned asset classes.

This sensitivity has also an impact on Life Technical Provisions; the extent of such impact depends on their capacity to absorb the corresponding changes of the stressed assets.

Equity markets lower value of 25%: same methodology as mentioned above assuming a decrease.

Credit spreads instantaneous increase of 50 basis points added to the market corporate spreads. This stress affects the market value of the following instruments:

- Fixed income (changes in discount factors);
- Derivatives (changes in the underlying asset price);
- Investment funds fully or partially invested in the aforementioned asset classes.

Moreover, this shock causes an increase to the Volatility Adjustment, thus entailing also a change to the interest rate curve adopted for the valuation of Technical Provisions, both Life and Non-Life. For Life Technical Provisions the extent of such impact depends on their capacity to absorb the corresponding changes of the stressed assets.

Italian government bonds credit spread instantaneous increase of 100 basis point: same methodology as above, adding 100 basis points and applying the shock only to fixed income instruments issued by Italian government or Italian government related entities. Also in this case the Volatility Adjustment adopted for this sensitivity is modified for the indirect impact of the increase in the Italian Government bond spread. In addition, allowance is made for the possible activation of the Italian Country-specific VA. As a consequence, the Technical Provisions are also affected according to their capacity to absorb the corresponding changes of the stressed assets.

Sensitivity on Ultimate Forward Rate (EIOPA 2019): impact of the change of UFR in accordance with EIOPA 2019 requirements (i.e. -15 bps on all countries where the Group operates, except for Hungary and China where the UFR increases by 15 bps).

5.2. New Business Value

5.2.1. New Business Value methodology

NBV arises from premiums written during the reporting period on new contracts issued in the current year and on existing contracts acquired in prior periods which, according to the Solvency II Contract Boundaries rules, are excluded from the projection of in-force liabilities (e.g. yearly renewable risk contracts, where the Company has the right to re-price the premiums).

Voluntary additional premiums stemming from existing contracts, if made at terms and conditions predefined at the inception of the contract, are not recognised as new business (their projection is included in the in-force business).

No value is attributed in respect of future New Business.

The Generali Life NBV includes inwards reinsurance written, and is net of the impact of reinsurance ceded out of the Group.

NBV is calculated, on a stand-alone basis, on a quarterly basis with beginning of quarter operating and economic assumptions and actual expenses (acquisition costs and first year commissions).

NBV is determined as the present value, at the point of sale (i.e. taking account of the first year New Business strain) of the projected stream of after tax industrial profits that are expected to be generated by the covered New Business written in the year, net of the cost of financial guarantees and options granted to policyholders, the frictional costs of setting up and holding required capital and the cost of non hedgeable risks. NBV includes the stream of profits generated in the financial undertakings which are directly associated with Life insurance business, after deduction of all related expenses on a look through basis.

The breakdown by region of the NBV is presented according to the region in which the Life insurance business is generated (i.e. the value attributed to the stream of profits that are expected to be generated in Holding undertakings, through intra-Group Life reinsurance, is reattributed to the ceding undertaking).

The full-year NBV is defined as the algebraic sum of the NBV of each quarter where each quarterly NBV is aggregated after consideration of end of quarter minorities, and converted to Euro using end of quarter exchange rates.

Generali's "bottom-up" market consistent methodology covers 97% of Life and Health business of the Group in terms of New Business Premiums. The residual business is valued using a traditional deterministic valuation based on the Real-World financial assumptions described in §4.4.

NBV can be broken down into the components illustrated below.

Present Value of Future Profits (PVFP) before Time Value of Financial Guarantees and Options

It is equal to the present value at issue of future after tax industrial profits calculated according to a certainty-equivalent approach, i.e. projecting cash flows in a scenario in which the market return of all assets is set equal to the reference rate and discounting at the same reference rate.

It represents the value of the business without taking credit for any future asset risk premium over the reference rate and it captures the intrinsic value of financial guarantees and options.

Time Value of Financial Guarantees and Options (Time Value of FG&O)

It represents the additional cost to shareholders associated with financial guarantees and options, including dynamic policyholder behaviour, over and above the intrinsic value that is already reflected in the PVFP defined above; it is calculated on a market consistent basis.

For the vast majority of business with financial guarantees and options, stochastic models are used to project future industrial profits over a range of risk-neutral economic scenarios. The mean of the PVFPs arising in the different economic scenarios represents the value of the business allowing for the market consistent value of the financial guarantees and options, determined in line with the way cash flows with similar optionality would be valued in the financial markets. The Time Value of Financial Guarantees and Options is then calculated as the difference between the PVFP before the Time Value of FG&O defined above and the mean of the stochastic PVFPs.

Stochastic models are set up appropriately allowing for the business-specific structure of financial guarantees and profit sharing, and also allowing for management actions and for the corresponding behaviour of policyholders. Management actions mainly consist of decisions regarding asset investment and disinvestment according to scenario specific cash flow positions, payments to and withdrawals from profit sharing funds, and the determination of crediting rates. The target asset allocation is consistent with the asset mix of the Existing Business at the year-end prior to the quarterly NB valuation date and the principles underlying management actions are in line with the regulatory requirements and with actual strategies as executed in recent years. The stochastic models also allow for policyholder behaviour linked to the development of the capital markets, so that the propensity for lapses increases when market yield is more competitive than the crediting rate offered by the insurer.

The most material financial guarantees and options offered by the covered business are guaranteed interest rates, minimum maturity values, guaranteed minimum surrender values and, where appropriate, inflation guarantees and guaranteed take-up rates on traditional business, and guaranteed maturity values on Unit-linked business.

Frictional costs of required capital

The required capital for each EEA company is defined as the local regulatory Solvency Capital Requirement. It is presented net of the impact of relevant eligible items (such as the PVFP) that can be used to support capital requirements with no associated cost to shareholders. For non EEA it is defined as the maximum between the 100% of the local regulatory required capital and the Solvency II capital based on Standard formula, net of the relevant free coverage.

Frictional costs of required capital reflect the economic costs incurred by shareholders through investing in the required capital in an insurance company rather than directly. They are mainly represented by taxation and any policyholder interest in the investment income of assets backing the required capital plus the investment expenses incurred for the management of these assets (where these have not been already allowed for in the PVFP).

Frictional costs of required capital are independent from the cost of non hedgeable risks.

Frictional costs are calculated by projecting the future levels of required capital over the lifetime of the business, using appropriate risk drivers.

Cost of Non Hedgeable Risks (Cost of NHR)

The Cost of Non Hedgeable Risks is an explicit, additional and separate allowance that covers non hedgeable risks not already allowed for in the PVFP and the Time Value of FG&O. As a general principle, non hedgeable risks refer to both financial and non-financial risks. Since the assumptions for non hedgeable risks used in calculating the PVFP and the Time Value of FG&O are best estimate and company specific, the Cost of NHR reflects the fact that:

– experience may vary from projection assumptions and hence a charge for uncertainty in the setting of the best estimate assumptions could be needed;
– the single best estimate assumptions may not fully capture the asymmetry in shareholder's results;
– allowance should be made for any risks that are not included in the PVFP and the Time Value of FG&O (e.g. operational risks).

The Cost of NHR is calculated using a "cost of capital" approach, based on Solvency II SCR for non hedgeable risks projected across all projection years with appropriate drivers. The annual charge applied is equal to 4%, before the application of taxes at the local ordinary taxation level.

Operating assumptions

Operating assumptions such as expenses and commissions, mortality, morbidity, lapses and annuity take-up rates, have been determined by each company on the basis of their best estimates as of the beginning of period date, referring to the current experience when available or to appropriate industry benchmarks.

The value of New Business at point of sale is shown after the deduction of all acquisition costs. Maintenance expenses, generally expressed as per-policy amounts, are assumed to increase at the inflation rate, with specific allowance for the inflation of salaries and medical costs.

Commissions and other payments to distribution channels have been projected based on the agreements in-force at the valuation date.

Life insurance and asset management contract charges, terms and conditions, including surrender value bases, management fees and other charges, have been assumed to remain unaltered at the levels prevailing at the valuation date.

Allowance for management actions (mainly consisting of decisions regarding asset investment and disinvestment, payments to and withdrawals from profit sharing funds, and the determination of crediting rates) are in line with the regulatory requirements and with actual strategies as executed in recent years and as expected in business plans.

5.2.2. New Business Value covered business

The NB results cover the business related to:

– Life insurance undertakings;
– Health undertakings in Germany and Austria which sell business that has characteristics closely related to Life insurance business (i.e. long-term health);
– Non-Life undertakings in Spain limited to the business which has characteristics closely related to Life insurance business (i.e. Decesos);
– Holding and Financial undertakings, in relation to the profits/losses arising from the management of the Life business (look through profit and reinsurance results).

5.2.3. New Business Value sensitivity analysis

The NB sensitivities are performed in isolation rather than in combination (i.e. all other assumptions remain unchanged except where they are directly impacted by the changed assumptions). These sensitivities have been derived from an additional NBV run based on operating and economic assumptions related to the end of September framework (e.g. the central value, stressed in each sensitivity, is calculated using the reference rates and the operating assumptions as at 30 September 2018).

The NBV sensitivities are assumed to occur before the sale of the contract. Therefore, the NBV sensitivities give an indication of how the profitability of future NB might be in a different market environment.

- **Interest rate upward shift of 50 basis points**: sensitivity to an upward shift of 50 basis points in the underlying reference rates, accompanied by an upward shift of 50 basis points in all other dependent economic assumptions. According to the framework of the NBV sensitivities where the sensitivities are assumed to occur before the sale of the contract, the increase of interest rates will be applied to the entire product life without generating any unrealised losses.
- **Interest rate downward shift of 50 basis points**: sensitivity to a downward parallel shift of 50 basis points in the underlying reference rates, accompanied by a downward shift of 50 basis points in all other dependent economic assumptions. According to the framework of the NBV sensitivities where the sensitivities are assumed to occur before the sale of the contract, the decrease of interest rates will be applied to the entire product life without generating any unrealised gains.
- **Equity Implied Volatilities +25%**: sensitivity to a 25% increase of the Equity Implied Volatility across all maturities, resulting in a change of the time value of financial options and guarantees.
- **Swaption Implied Volatilities +25%**: sensitivity to a 25% increase of the Swaption Implied Volatility across all option maturities and swap tenors, resulting in a change of the time value of financial options and guarantees.
- **Ultimate Forward Rate (EIOPA 2019)**: sensitivity to a change of UFR in accordance with EIOPA 2019 requirements (i.e. -15 bps for all countries where the Group operates, except for Hungary and China where the UFR increases by 15 bps)
- **Administrative & Investment Management expenses -10%**: sensitivity to a 10% decrease of administrative and investment management expenses.
- **Lapse Rate -10%**: sensitivity to a 10% decrease of lapse rates (multiplicative, i.e. 90% of best estimate lapse rates).
- **Lapse Rate +10%**: sensitivity to a 10% increase of lapse rates (multiplicative, i.e. 110% of best estimate lapse rates).
- **Mortality/morbidity for risk business -5%**: sensitivity to a 5% decrease of mortality/morbidity (multiplicative, i.e. 95% of best estimate mortality/morbidity rates), including the effect of possible related re-pricing, for all product lines subject to mortality risk, i.e. where the present value of future profits decreases when the mortality rates increase (e.g. term assurance, whole life, annuity during the accumulation period).
- **Mortality for annuity business -5%**: sensitivity to a 5% decrease of mortality (multiplicative, i.e. 95% of best estimate mortality rates) for business subject to longevity risk, i.e. where the present value of future profits decreases when the mortality rates decrease (e.g. annuities in payment).

6 Annex B: Definitions and abbreviations

New Business Value (NBV): the NBV is the present value, at the point of sale, of the projected stream of after tax industrial profits expected to be generated by the New Business written in the year, after allowance for:

- the Cost of Financial Guarantees and Options granted to policyholders;
- the frictional costs of setting up and holding required capital;
- the Cost of Non Hedgeable Risks.

Full year NBV is calculated as the algebraic sum of the NBV of each quarter, each of them calculated with beginning of period operating and economic assumptions.

Annual Premium Equivalent (APE): the APE is defined as New Business annualised regular premiums plus 10% of single premiums.

Present Value of New Business Premiums (PVNBP): the PVNBP is defined as the present value of the expected future New Business premiums, allowing for lapses and other exits, discounted to point of sale using the reference rates.

Capitalization Factor (cap factor): the cap factor is defined as the present value of regular premiums divided by the amount of regular premiums, and provides a measure of the expected duration of regular premiums future payments.

Internal Rate of Return (IRR): the IRR is defined as the rate at which the present value of New Business distributable profits (therefore allowing for New Business first year industrial strain and required capital absorption) calculated using Real-World best estimate assumptions is equal to zero.

Basic Own Funds after deduction (BOF): Group Basic Own Funds after deduction represents the contribution of insurance and reinsurance undertakings and other entities not subject to other solvency sectoral rules to the Group Own Funds.

Group Own Funds (GOF): Group Own Funds are defined as the sum of the Group BOF and the contribution of sectoral entities, according to their regulatory regimes.

Technical Provisions (TP): the Technical Provisions correspond to the sum of the best estimate liability (probability-weighted average of the present value of future cash-flows related to insurance and reinsurance obligations in force at the valuation date) and Risk Margin (the part of Technical Provisions that ensures that the overall value of the Technical Provisions is equivalent to the amount a third party would theoretically require in order to take over and meet the insurance liabilities).

Volatility Adjustment (VA): the VA allows insurance and reinsurance undertakings to adjust the relevant risk-free interest rate term structure used for the calculation of the Technical Provisions to mitigate the effect of bond spreads widening. The VA is calculated by EIOPA and amounts to 65% of the risk-corrected spread between the interest rate that could be earned from bonds included in a reference portfolio and the basic risk-free interest rates. The VA is derived for each relevant currency (based on currency specific reference portfolios) and, where relevant, for national insurance markets (based on country specific reference portfolios).

Ultimate Forward Rate (UFR): the UFR is the long-term risk-free rate defined for each currency by EIOPA as the sum of a long-term inflation and an expected real interest rate.