

Solvency and Financial Condition **Report** 2018



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Scope of the report

This report is Aegon N.V.'s Group Solvency and Financial Condition Report (SFCR) for the year 2018. This report informs Aegon N.V.'s stakeholders about its:

- Business and performance;
- System of governance;
- Risk profile;
- Valuation for solvency purposes; and
- Capital management.

The valuation differences between the scope of Aegon Group used for the consolidated financial statements based on IFRS-EU and the scope of Aegon Group for the consolidated data determined in accordance with Article 335 of the Delegated Regulation Solvency II, are discussed in more detail in section D. Valuation for solvency purposes.

Basis of presentation

This report is prepared in accordance with the requirements of Solvency II Directive and Delegated Regulation (in particular article 256 of the Solvency II Directive, articles 359 – 371 and articles 290-298 of the Delegated Regulation, and relevant EIOPA Guidelines, in particular 'Guidelines on reporting and public disclosure' (EIOPA-BoS-15/109) as issued by the European Insurance and Occupational Pensions Authority (EIOPA).

Aegon N.V. is referred to in this document as 'Aegon', or 'the Company', and is together with its member companies referred to as 'Aegon Group' or 'the Group'. For such purposes 'member companies' means, in relation to Aegon, those companies required to be consolidated in accordance with Solvency II requirements.

The figures reflecting monetary amounts in the SFCR are presented in euro (unless stated otherwise). Aegon discloses monetary amounts in millions of units for disclosing purposes. All values are rounded to the nearest million unless otherwise stated. The rounded amounts may therefore not add up to the rounded total in all cases. All ratios and variances are calculated using the underlying amount rather than the rounded amount.

In cases in which IFRS figures are disclosed, the figures are prepared in accordance with the International Financial Reporting Standards as adopted by the European Union (IFRS-EU).

Under Solvency II, Aegon uses a combination of method 1 (Accounting Consolidation) and method 2 (Deduction & Aggregation) for the calculation of the Solvency II Group Solvency. The Solvency II consolidated data (the data included in accordance with method 1) does not include the entities that are included in the Group Solvency calculation in accordance with method 2 (US Life insurance entities, Bermuda, Japan, Mexico and Brazil). Furthermore, joint ventures are partially consolidated under Solvency II, whereas joint ventures are not consolidated under IFRS. As part of method 1 under Solvency II, Other Financial Sector (OFS) entities are included as related undertakings based on local sectoral rules, whereas, when OFS are controlled entities, such are consolidated under IFRS.

The consolidation under Solvency II is set out in more detail in section D. Valuation for solvency purposes and E. Capital management of the SFCR.

The 2018 SFCR of Aegon Group has been prepared and disclosed under the responsibility of Aegon's Executive Board. This document was approved on May 13, 2019 by the Executive Board.

Summary

The 2018 Solvency Financial Condition Report provides Aegon's stakeholders insight in:

A. Business and performance

Aegon is an international financial services group. We provide life insurance, pensions and asset management. Its listed holding company, Aegon N.V., is a public limited liability company with its corporate seat and head office in the Netherlands.

Through its subsidiaries and joint ventures, Aegon employs over 26,000 people worldwide. Aegon's common shares are listed on stock exchanges in Amsterdam (Euronext) and New York (NYSE). Aegon's main operating units are separate legal entities that operate under the laws of their respective countries and are directly or indirectly held by three intermediate holding companies incorporated under Dutch law. These legal entities are directly or indirectly held by Aegon Europe Holding B.V., the holding company for all European activities; Aegon International B.V., which serves as a holding company for the Aegon Group companies of all non-European countries; and Aegon Asset Management Holding B.V., the holding company for a number of its asset management entities. Aegon has the following operating segments: the Americas, which includes the United States, Mexico and Brazil; the Netherlands; the United Kingdom; Central & Eastern Europe; Spain & Portugal; Asia; Aegon Asset Management and Holdings.

Aegon exists to help people achieve a lifetime of financial security. It uses a multi-brand, multichannel distribution approach to meet its customers' needs, and fosters an entrepreneurial spirit within its businesses, encouraging the development of innovative products and services.

Aegon's business model focuses on the following items:

- **Product development and pricing:** Aegon begins with customers – Aegon assesses the customer's needs and develop products and services that meet those needs. Next Aegon estimates and prices the risk involved for Aegon as a financial services provider.
- **Distribution:** Aegon's products and services are then branded, marketed and sold. Aegon offers products and services via intermediaries, like brokers and banks or financial advisors. Aegon also sells directly to customers.
- **Investments:** In exchange for products and services, customers pay fees or regular premiums. On certain pension products, savings and investments, customers make deposits. Aegon invests the money received to make an attractive return on the money invested.
- **Claims & Benefits:** From the premiums, deposits and investment returns Aegon receives, Aegon pays customer claims and benefits, covers its expenses and makes profits for Aegon's shareholders. Customers also make regular withdrawals from pensions and saving products.

For more information on Aegon's strategy, please see the [Integrated Annual Report 2018 of Aegon Group](#).

Key events in 2018:

- In the first quarter, Aegon Americas transferred administration of its US insurance and annuity businesses to Tata Consultancy Services (TCS). The agreement will help modernize the business, and is expected to lead to significant cost savings. Furthermore, Aegon launched a new USD 100 million US affordable housing fund. The fund is the first of its kind and will finance home loans across 13 US states.
- In the second quarter, Aegon completed the sale of Aegon Ireland for EUR 195 million to Athora Holding. The sale was first announced in 2017. Furthermore, Aegon Asset Management set up a new EUR 120 million innovation fund in the Netherlands. The fund is backed by the European Investment Fund, and will benefit around 85 small and medium-sized Dutch companies. Aegon also invested in a new Dementia Discovery Fund, dedicated to finding effective treatments for the disease. Aegon is among investors pledging USD 350 million to support the fund's work.
- In the third quarter, plans were announced to expand Aegon's partnership with Spain's Banco Santander. The plan gives Aegon access to another four million potential customers in Spain. Aegon also bought Robidus, a leading income protection services provider in the Netherlands. The acquisition will strengthen Aegon's existing income protection service for Dutch employers. Furthermore, Aegon agreed to divest the last substantial block of US life reinsurance business to SCOR Global Life. Most of the business had already been sold to SCOR in 2011 and 2017. Aegon also agreed to sell its businesses in Czech Republic and Slovakia to NN Group. The sale was completed on January 8, 2019.

- In the fourth quarter, Aegon Americas announced that it settled a US lawsuit challenging rate adjustments on universal life insurance policies. Furthermore, Aegon UK signed a new 15-year contract with Atos. The digital services provider will take over administration of policies belonging to around 1.4 million customers. Aegon also realized an additional USD 1 billion in one-off capital generation following a merger of two US legal entities. The merger simplified Aegon's corporate structure in the US and further strengthen the company's capital position.

	2018	2017
Results of operations and performance		
Amounts in EUR millions		
	Group	Group
Net income	744	2,361
Underlying earnings before tax	2,074	2,140
Investment income	7,035	7,338
Premium income	19,316	22,826
Commissions and expenses	6,224	5,925
Policyholder claims and benefits	10,557	45,599
Results from financial transactions	(11,670)	20,108

Net income amounted to EUR 744 million in 2018, as underlying earnings before tax of EUR 2,074 million were partly offset by fair value losses and other charges.

From an underlying earnings perspective, Aegon's underlying earnings before tax decreased to EUR 2,074 million in 2018 (EUR 2,140 million in 2017). This was mainly driven by lower fee revenue due to declining equity markets and net outflows of revenue generating investments, and unfavorable mortality experience in the Americas, which more than offset higher earnings in Europe, Asia and Asset Management.

Investment income amounted to EUR 7.0 billion in 2018 compared to EUR 7.3 billion in 2017. Aegon Americas is the largest contributor to the investment income with EUR 3.1 billion, followed by Aegon the Netherlands, EUR 2.3 billion, and Aegon UK with EUR 1.3 billion.

Premium income amounted to EUR 19.3 billion, down by 15% from 2017 (EUR 22.8 billion). This decrease was mostly driven by lower premium income in Aegon UK affected by a reduction of upgraded Life insurance policies to the platform in the UK, and a decrease in Non-life premiums mainly from product exits and currency translation adjustments in the Americas.

Commissions and expenses increased by 5% compared with 2017 to EUR 6,224 billion in 2018 mainly driven by increased amortization of intangible assets in Americas.

Total policyholder claims and benefits amounted to EUR 10.6 billion in 2018 compared to EUR 45.6 billion in 2017. The decrease of EUR 35.0 billion is mainly attributable to changes in the valuation of liabilities of insurance contracts and investment contracts. The changes in valuation of liabilities for insurance contracts and investment contracts reflect changes in technical provisions resulting from net fair value changes on financial assets for account of policyholder included in results from financial transactions.

Results from financial transactions amounted to EUR (11.7) billion in 2018 compared to EUR 20.1 billion in 2017. The main contributor is the net fair value change on for account of policyholder financial assets of EUR (11.3) billion in 2018 and is mainly driven by unfavorable credit markets and equity markets.

Full details on the Aegon's business and performance are described in section A. Business and performance.

B. System of governance

General governance

Aegon is incorporated and established in the Netherlands and therefore must comply with Dutch law, such as the provisions of Book 2 of the Dutch Civil Code. In addition, Aegon is subject to the Dutch Corporate Governance Code.

Aegon is governed by three main corporate bodies: the Executive Board, the Supervisory Board, and the General Meeting of Shareholders. The Executive Board is assisted in its work by the Management Board which provides vital support and expertise in safeguarding Aegon's strategic goals. There were no material changes in the system of governance during the reporting period.

Aegon's Executive Board is charged with the overall management of the Company and is therefore responsible for achieving Aegon's aims and developing the strategy and its associated risk profile. In addition, it oversees any relevant sustainability issues and the development of Aegon's earnings. Aegon's Articles of Association determine that for certain decisions the Executive Board must seek prior approval from the Supervisory Board and/or the approval of the General Meeting of Shareholders. In addition, the Supervisory Board may also subject other Executive Board decisions to its prior approval.

Aegon's Management Board is comprised of the members of the Executive Board, the Chief Executive Officers (CEOs) of the Americas, United Kingdom, Continental Europe, Asset Management and the following global functions: Group Chief Risk Officer, Group General Counsel, Global Head of HR and the Global Chief Technology Officer.

Aegon's Supervisory Board oversees the management of the Executive Board, in addition to the Company's business and corporate strategy. The Supervisory Board members, comprising seven members as per December 31, 2018, are appointed by the shareholders at the General Meeting of Shareholders. Aegon aims for the Supervisory Board to be well-balanced in terms of professional background, geography and gender. The Supervisory Board has the following committees:

- Audit Committee;
- Risk Committee;
- Remuneration Committee; and
- Nomination and Governance Committee.

These committees are exclusively comprised of Supervisory Board members and deal with specific issues related to Aegon's financial accounts, risk management, executive remuneration and appointments.

In addition to the corporate bodies, described above, Aegon has in place a number of key functions, as required under Solvency II. These key functions are described below, in the section 'control environment'.

Risk management

Aegon's risk management framework is designed and applied to identify and manage potential events and risks that may affect Aegon. This is established in the Enterprise Risk Management (ERM) framework which aims to identify and manage individual and aggregate risks within Aegon's risk tolerance in order to provide reasonable assurance regarding the achievement of Aegon's objectives. The ERM framework applies to all material businesses of Aegon for which it has operational control. Aegon's businesses are required to either adopt the Group level ERM framework directly, or tailor it to local needs, while meeting the requirements of the Group level ERM framework. Aegon's ERM framework is based on a well-defined risk governance structure. In addition to the Supervisory, Management and Executive Boards, the risk governance structure includes the following committees:

- Group Risk & Capital Committee and its sub-committees; and
- Regional Risk & Capital Committees.

Control environment

In addition to risk management, Aegon's Solvency II control environment consists of an internal control system, which includes a compliance function, an actuarial function and an internal audit function. The internal control system serves to facilitate compliance with applicable laws, regulation and administrative processes and it provides for an adequate control environment including appropriate control activities for key processes. The actuarial function has end-to-end accountability for the adequacy and reliability of reported technical provisions, including policy setting and monitoring of compliance regarding actuarial risk tolerances. Aegon's internal audit function is independent and objective from operational functions, including in performing its duties in evaluating the effectiveness of Aegon's internal control system.

Full details on the Aegon's system of governance are described in section B. System of governance.

C. Risk profile

As an insurance group, Aegon accepts and manages risk for the benefit of its customers and other stakeholders. Aegon's risk management and control systems are designed to ensure that these risks are managed effectively and efficiently in a way that is aligned with the Company's strategy. The targeted risk profile is determined by customer needs, Aegon's competence to manage the risk, Aegon's preference for risk, and whether there is sufficient capacity to take the risk. Aegon currently targets an equal balance between financial market and credit risks and underwriting risks. The targeted risk profile is set at Aegon Group level and developed in more detail within the subsidiaries where insurance business is written. Aegon's risk strategy provides direction for the targeted Aegon risk profile while supporting Aegon's business strategy. Aegon is exposed to a range of underwriting, market, credit, liquidity and operational risks.

Material movements in risk profile during 2018 mainly include the following:

- The implementation of approved major model changes to Aegon's Partial Internal Model (PIM), related to Aegon the Netherlands' dynamic VA model, and Longevity risk model, which increased the contribution of underwriting risk to Aegon's risk profile;
- US tax reform (corporate income tax rate from 35% to 21%), which increased required capital of Aegon Americas;
- Changes to the interest rate hedge of Aegon the Netherlands, which impacted market risks;
- Additional investments in illiquid assets and real estate by Aegon the Netherlands, which increased market risk;
- Completion of the sale of Ireland, which released the related capital requirement (mainly SF market risk and underwriting risks);
- Acquisition of BlackRock business in the UK, impacting both market and underwriting risk;
- Market movements, mainly influencing market risks, but also underwriting risks.

The following table provides a quantitative representation of the key risks of the AC (Accounting Consolidation) part of Aegon Group on the basis of the Solvency II framework, split between risks determined using the SF (Standard Formula) and IM (Internal Model) and the D&A (Deduction & Aggregation) and OFS (Other Financial Sector) SCR as one amount:

Composition of Group SCR			
Amounts in EUR millions		QRT S.25.02.22	
			2018
			2017
SFCR section			
C.2 Market risk	Market Risk (SF)		898
	Market Risk (IM)		2,714
C.3 Credit risk ¹⁾	Counterparty default risk (SF)		368
	Counterparty default risk (IM)		22
C.1 Underwriting risk	Life underwriting risk (SF)		1,009
	Life underwriting risk (IM)		2,341
	Health underwriting risk (SF)		332
	Health underwriting risk (IM)		-
	Non-life underwriting risk (SF)		138
	Non-life underwriting risk (IM)		-
C.5 Operational risk	Operational risk (SF)		288
	Operational risk (IM)		299
E.2.1 Solvency Capital Requirement	LAC-DT		(756)
	Total undiversified components		7,653
	Diversification		(3,000)
	PIM SCR after diversification (AC only) ²⁾		4,654
	Capital requirements for D&A and OFS ³⁾		3,695
	Group PIM SCR		8,349
			7,774

¹⁾ To align with the SCR in QRT s.25.02.22 and section E, Aegon will only discuss Counterparty Default Risk (as defined in the Delegated Regulation) in section C3.3. More generally, Aegon considers the term 'credit risk' to also include spread risk, migration risk and default (market risk concentration) risk relating to financial investments. To keep this alignment with QRT s.25.02.22 consistent throughout the SFCR, these other components of credit risk are discussed instead in section C.2 Market risk.

²⁾ AC stands for Accounting Consolidation method for the calculation of the Solvency II group solvency.

³⁾ Excluding Aegon Bank in line with Group supervisor requirement.

Aegon Group's net Partial Internal Model (PIM) SCR amounted to EUR 8,349 million on December 31, 2018, which was an increase of EUR 575 million compared to the SCR on December 31, 2017 of EUR 7,774 million. This net SCR increase was mainly driven by the following movements in gross SCR risks:

- IM Market Risk increased by EUR 456 million due to increased fixed income risk, caused by the impact of spread movements on the dynamic VA of Aegon the Netherlands, despite a partial offset due to the introduction of the new dynamic VA of Aegon the Netherlands in 2018, and due to increased alternative investment risk caused by increased investments by Aegon the Netherlands. These increases were partially offset by lower interest rate risk due to changes of the Aegon the Netherlands interest rate hedge and by a decrease in equity volatility risk due to increased hedge efficiency of Aegon the Netherlands;
- IM Life Underwriting risk increased by EUR 185 million, mainly due to the increase of longevity risk caused by the updated Longevity model of Aegon the Netherlands;
- The diversification amount increased by EUR 149 million (which decreased net SCR with EUR 149 million). This was mainly driven by the increase in gross SCR;
- The loss absorbing capacity of deferred taxes (LAC DT) increased by EUR 42 million, driven by the increase of the other SCR components, with a partial offset by the impact from the corporate tax decrease in the Netherlands;
- The SCR for D&A and OFS increased by EUR 391 million, mainly due to the impact of the US tax reform on required capital in Aegon Americas.

Full details on Aegon's risk profile are described in section C. Risk profile.

D. Valuation for solvency purposes

Aegon values its Solvency II balance sheet items on a basis that reflects their economic value. Where the IFRS-EU fair value is consistent with Solvency II requirements, Aegon follows IFRS-EU for valuing assets and liabilities.

The reconciliation of Excess of Assets over Liabilities (Solvency II basis) and Shareholder's Equity (IFRS-EU basis) can be summarized as follows:

- Revaluation differences mainly on assets and liabilities using a method other than fair value in the IFRS-EU balance sheet;
- Differences in scope, where Aegon's Non-EEA (re)insurance entities are aggregated based on the Deduction & Aggregation method and the net asset values is represented in the line Participation on Aegon's Solvency II economic balance sheet; and
- De-recognition of items presented on the Solvency II economic balance sheet which are admissible on the IFRS-EU statement of financial position but not under Solvency II, for instance deferred policy acquisition costs, goodwill and intangible assets.

Full details on the reconciliation between Aegon's economic balance sheet based on Solvency II and consolidated financial statements based on IFRS-EU are described in section D. Valuation for solvency purposes.

E. Capital management

Aegon's target Solvency II capital ratio is between 150% - 200%. At December 31, 2018, the Solvency II ratio of 211% was in excess of this target range.

In the following table the Solvency II key figures for Aegon are presented as at December 31, 2018:

Aegon Group capital position

Amounts in EUR millions

	December 31, 2018	December 31, 2017
Group own funds	17,602	15,628
Group PIM SCR	8,349	7,774
Group Solvency II ratio	211%	201%
Group Solvency II ratio (Matching Adjustment set to zero)	209%	199%
Group Solvency II ratio (Volatility Adjustment set to zero)	176%	169%
Group Solvency II ratio (excluding transitional measures)	210%	200%
Group Solvency II ratio (excluding Long term guarantees and transitional measures)	174%	168%
Group eligible own funds to meet minimum consolidated group SCR	7,335	6,152
Minimum consolidated Group SCR	1,953	1,930
Group MCR ratio ¹⁾	376%	319%

¹⁾ Ratio of Group eligible own funds over minimum consolidated Group SCR.

Solvency II Group own funds Amounts in EUR millions	December 31, 2018			December 31, 2017		
	Available own funds	Eligible own funds	Eligible own funds to meet minimum consolidated Group SCR	Available own funds	Eligible own funds	Eligible own funds to meet minimum consolidated Group SCR
Unrestricted Tier 1	12,205	12,205	5,555	10,428	10,428	4,613
Restricted Tier 1	3,406	2,889	1,389	3,540	2,451	1,153
Tier 2 own funds	1,487	2,004	391	1,213	2,302	386
Tier 3 own funds	504	504	-	448	448	-
Total Tiers	17,602	17,602	7,335	15,628	15,628	6,152

Aegon uses a combination of Accounting Consolidation (method 1) and Deduction & Aggregation (method 2) for the calculation of the Solvency II Group Solvency. In addition, Aegon uses a Partial Internal Model (PIM) to calculate the solvency position of Aegon Levensverzekering N.V., Scottish Equitable Plc, Aegon Spaarkas N.V., Optas Pensioenen N.V., and Aegon N.V. (which is a mixed financial holding company). Other entities included via the Accounting Consolidation method, excluding Other Financial Sector entities, use the Solvency II determined Standard Formula approach. The capital requirements of Other Financial Sector entities are based on relevant sectoral capital requirements. Aegon Bank is excluded from the Group Solvency II ratio, as required by the Group Solvency II supervisor, DNB.

In Aegon's Non-EEA regions, (re)insurance entities domiciled in third countries deemed (provisional) equivalent (US life insurance entities, Bermuda, Japan, Mexico and Brazil), the capital requirement is based on local capital requirements.

Aegon's internal model was approved by the College of Supervisors as part of the Internal Model Application Process. Aegon is of the opinion a (partial) internal model is a better representation of the actual risk, since this contains Company specific modelling and sensitivities as opposed to industry-wide approximations included in the standard formula methodology.

Aegon has applied a method to allocate centrally issued subordinated debt between the AC and D&A parts of the group on an available Own Funds basis. The Solvency II contribution of the Aegon Americas insurance and reinsurance entities (US regulated entities) under Deduction & Aggregation (D&A) involves converting 150% Risk-Based Capital Company Action Level into Solvency Required Capital (SCR) and reducing own funds by a 100% RBC Company Action Level requirement to reflect transferability restrictions. The methodology is subject to annual review.

The LAC-DT is calculated after diversification and lowered the net PIM SCR by EUR 756 million (2017: EUR 714 million). The LAC-DT benefit mainly stemmed from Aegon the Netherlands. Aegon has applied a LAC-DT factor in the Netherlands of 75% as of December 31, 2018 (2017: 75%), while taking into account the impact of the reduction of announced Corporate Income Tax (CIT) (decrease from 25.00% in 2019 to 22.55% in 2020 and to 20.5% from 2021 onwards). The LAC-DT factor is recalibrated on a quarterly basis.

The Solvency II capital ratios of the Group and Aegon the Netherlands do not include any contingent liability potentially arising from unit-linked products sold, issued or advised on by Aegon in the Netherlands in the past, as any potential liability cannot be reliably quantified at this point.

Aegon applies the matching adjustment, in Aegon UK and Aegon Spain, which has a positive impact to the Group own funds of EUR 32 million as of December 31, 2018 (2017: EUR 55 million) and an impact of EUR (46) million (2017: EUR (65) million) on the Group solvency capital requirement. The matching adjustment methodology has been approved by local regulators. In addition, Aegon applies a volatility adjustment in Aegon the Netherlands, Aegon UK and Aegon Spain, which has a positive impact to the Group own funds of EUR 1,284 million (2017: EUR 205 million) and an impact of EUR (930) million (2017: EUR (1,273) million) on the Group solvency capital requirement.

The combined positive impact of the matching adjustment, volatility adjustment and transitional measures on the Group Solvency II ratio is 37% (2017: 33%).

Aegon Group and all of the EEA (re)insurance entities subject to the Solvency II regulation did not face any form of non-compliance with the Minimum Capital Requirement or significant non-compliance with the Group solvency capital requirement during the reporting period.

Full details on Aegon's available and eligible own funds are described in section E.1 Own funds, and Aegon's PIM SCR is described in section E.2.1 Solvency capital requirement.

A. Business and performance

A.1 Business

A.1.1 Overview

Aegon is an international financial services group. We provide life insurance, pensions and asset management. Our main operations are in the US, the Netherlands and the UK. We also have significant businesses in Southern & Eastern Europe, Asia and Latin America. Aegon can trace its roots back to the first half of the 19th century. Nearly 175 years later, we have businesses in more than 20 countries, serving 28.5 million customers and managing more than EUR 800 billion in assets.

Aegon is headquartered in the Netherlands, and through its subsidiaries and joint ventures it employs over 26,000 people worldwide. Aegon's common shares are listed on stock exchanges in Amsterdam (Euronext) and New York (NYSE). Aegon's main operating units are separate legal entities that operate under the laws of their respective countries. These legal entities are directly or indirectly held by three intermediate holding companies incorporated under Dutch law: Aegon Europe Holding B.V., the holding company for all European activities; Aegon International B.V., which serves as a holding company for the Aegon Group companies of all non-European countries; and Aegon Asset Management Holding B.V., the holding company for a number of its asset management entities. As a company, our purpose is to help people achieve a lifetime of financial security. This purpose is particularly relevant in today's world, as people live longer, healthier lives, new technologies are transforming the way we work, and it is clear that in many countries state and company pensions are no longer enough to maintain living standards.

Aegon's financial results are impacted by a number of external factors, including demographic trends, market conditions, and regulation. Furthermore, the business is affected by corporate actions taken by the Group, including acquisitions, disposals and other action in order to achieve Aegon's strategy. The key significant business events or other events that have occurred over the reporting period that have had a material impact on Aegon are mentioned in the summary of section A on page 5.

A.1.2 Regulators and auditor

The supervisory authority responsible for Solvency II group supervision on the Aegon Group and for supplementary group supervision in accordance with the EU Financial Conglomerates Directive (FCD) is:

De Nederlandsche Bank (DNB), the Dutch Central Bank
Address: Westeinde 1, 1017 ZN, Amsterdam
Telephone: +31(0)20 524 91 11

Aegon's external auditor is PricewaterhouseCoopers Accountants N.V. The external auditor's mandate does not cover an audit on the information disclosed in this SFCR. Their contact details are:

PricewaterhouseCoopers Accountants N.V.
Address: Thomas R. Malthusstraat 5, 1066 JR, Amsterdam
Telephone: +31 (0)88 792 00 20

A.1.3 Holders of qualifying holdings

A qualifying holding means a direct or indirect holding in Aegon N.V. which represents 10% or more of the capital or of the voting rights or which makes it possible to exercise a significant influence over the management of Aegon N.V.. Only Vereniging Aegon qualifies based on this definition.

Vereniging Aegon, is a Dutch association located in The Hague, the Netherlands, with a special purpose to protect the broader interests of Aegon N.V. and its stakeholders. On December 31, 2018 Vereniging Aegon, Aegon's largest shareholder, held a total of 279,236,609 common shares and 571,165,680 common shares B.

Under the terms of the 1983 Merger Agreement as amended in May 2013, Vereniging Aegon has the option to acquire additional common shares B. Vereniging Aegon may exercise its call option to keep or restore its total stake to 32.6% of the voting rights, irrespective of the circumstances that caused the total shareholding to be or become lower than 32.6%. In the absence of a 'Special Cause' Vereniging Aegon may cast one vote for every common share it holds and one vote only for every 40 common shares B it holds. As 'Special Cause' qualifies the acquisition of a 15% interest in Aegon N.V., a tender offer for Aegon N.V. shares or a proposed business combination by any person or group of persons, whether individually or as a group, other than in a transaction approved by the Executive Board and the Supervisory Board. If, in its sole discretion, Vereniging Aegon determines that a Special Cause has occurred, Vereniging Aegon will notify the General Meeting of Shareholders and retain its right to exercise the full voting power of one vote per common share B for a limited period of six months. Accordingly, at December 31, 2018, the voting power of Vereniging Aegon under normal circumstances amounted to approximately 14.33%, based on the number of outstanding and voting shares (excluding issued common shares held in treasury by Aegon N.V.). In the event of a Special Cause, Vereniging Aegon's voting rights will increase, currently to 32.6%, for up to six months.

A.1.4 Aegon's Group structure

We have four main reporting segments: Americas, Europe, Asia and Asset Management. Of these, the Americas is by far the largest, accounting for nearly 60% of our annual earnings. Our holding company, Aegon N.V., is headquartered in The Hague, the Netherlands. Aegon Asset Management manages assets on behalf of third parties and Aegon's own businesses, covering all major asset classes, including fixed income, equity and real estate. Our reporting segments include businesses, associates and joint ventures in:

- Americas (US, Canada, Brazil and Mexico);
- Europe (the Netherlands, UK, Hungary, Poland, Turkey, Romania, Spain and Portugal);
- Asia (Singapore, Hong Kong, Japan, China, Indonesia, Malaysia, Thailand, Vietnam, Philippines, Australia and Bermuda¹);
- Asset management (AAM businesses and joint ventures in US, UK, the Netherlands, Hungary, Spain, Germany, France, China, Hong Kong and Japan).

Our businesses operate locally through two main brands: Aegon (mainly in Europe and Asia) and Transamerica (mainly in the US).

For more information on Aegon's governance structure, please see section B.1.1. Corporate Governance.

A.1.5 List of material related undertakings

The principal undertakings of the parent company Aegon N.V. are listed by geographical segment. All are wholly owned, directly or indirectly, unless stated otherwise, and are involved in insurance or reinsurance business, pensions, asset management or services related to these activities. The voting power in these undertakings held by Aegon is equal to the shareholdings unless otherwise specified.

For information on the material differences between the scope of the group used for the consolidated financial statements and the scope for the consolidated data used for the Group Solvency calculation, see section D "Valuation of Solvency Purposes" and section E.1.4 "Difference between Solvency II own funds and IFRS-EU shareholders' equity".

¹ Bermuda relates to Transamerica Life Bermuda.

Americas

- Transamerica Advisors Life Insurance Company, Little Rock, Arkansas (United States);
- Transamerica Casualty Insurance Company, Columbus, Ohio (United States);
- Transamerica Corporation, Wilmington, Delaware (United States);
- Transamerica Financial Life Insurance Company, Harrison, New York (United States);
- Transamerica Life Insurance Company, Cedar Rapids, Iowa (United States);
- Transamerica Premier Life Insurance Company, Cedar Rapids, Iowa (United States);
- Akaan-Aegon, S.A.P.I. de C.V., Mexico City (Mexico), (50% voting rights); and
- Mongeral Aegon, Seguros e Previdencia S.A., Rio de Janeiro (Brazil), (50%).

Europe**The Netherlands**

- Aegon Bank N.V., The Hague;
- Aegon Hypotheken B.V., The Hague;
- Aegon Levensverzekering N.V., The Hague;
- Aegon Schadeverzekering N.V., The Hague;
- Aegon Spaarkas N.V., The Hague;
- Optas Pensioenen N.V., Rotterdam (as per April 1, 2019, merged with Aegon Levensverzekering N.V.);
- TKP Pensioen B.V., Groningen;
- Nedasco B.V., Amersfoort;
- Robijn Participaties B.V. (Robidus Groep B.V.), Zaandam (until January 2, 2019);
- Aegon PPI B.V., The Hague (until January 1, 2019);
- CAPPITAL Premiepensioeninstelling B.V., Groningen (Aegon Cappital B.V. as of January 1, 2019); and
- AMVEST Vastgoed B.V., Utrecht (50%).

Central & Eastern Europe

- Aegon Magyarország Általános Biztosító Zártkörűen Működő Részvénytársaság, Budapest (Aegon Hungary Composite Insurance Co.);
- Aegon Towarzystwo Ubezpieczeń na Życie Spółka Akcyjna, Warsaw (Aegon Poland Life);
- Aegon Powszechnie Towarzystwo Emerytalne Spółka Akcyjna, Warsaw (Aegon Poland Pension Fund Management Co.);
- Aegon Emeklilik ve Hayat A.Ş., Istanbul (Aegon Turkey);
- Aegon Pensii Societate de Administrare a Fondurilor de Pensii Private S.A., Cluj (Aegon Romania Pension Administrator Co.);
- Aegon Pojišťovna, a.s., Prague (Aegon Czech Life) (until January 8, 2019);
- Aegon Životná poisťovňa, a.s., Bratislava (Aegon Slovakia Life) (until January 8, 2019); and
- Aegon, d.s.s., a.s., Bratislava (Aegon Slovakia Pension Management Co.) (until January 8, 2019).

Spain & Portugal

- Aegon España S.A.U. de Seguros y Reaseguros, Madrid (Spain);
- Aegon Administracion y Servicios A.I.E., Madrid (Spain);
- Aegon Activos A.V., S.A., Madrid (Spain);
- Aegon Mediacion, S.L.U, Madrid (Spain);
- Santander Generales Seguros y Reaseguros, S.A., Madrid (Spain), (51%);
- Aegon Santander Portugal Vida – Companhia de Seguros de Vida S.A., Lisbon (Portugal), (51%);
- Aegon Santander Portugal Não Vida – Companhia de Seguros S.A., Lisbon (Portugal), (51%);
- Santander Vida Seguros y Reaseguros, S.A., Madrid (Spain), (51%); and
- Liberbank Vida y Pensiones, Seguros y Reaseguros, S.A., Oviedo (Spain), (50%).

United Kingdom

- Aegon Investment Solutions Ltd., Edinburgh;
- Scottish Equitable plc, Edinburgh; and
- Cofunds Limited, London.

Asia

- Transamerica Life (Bermuda) Ltd., Hamilton (Bermuda);
- Aegon Sony Life Insurance Co., Tokyo (Japan), (50%);
- Aegon Life Insurance Co. Ltd (India) (49%)
- Aegon THTF Life Insurance Co., Ltd., Shanghai (China), (50%); and
- SA Reinsurance Ltd, Hamilton (Bermuda), (50%).

Asset Management

- Aegon Asset Management Holding B.V., The Hague (The Netherlands);
- Aegon Custody B.V., The Hague (The Netherlands);
- Aegon Asset Management Pan-Europe B.V., The Hague (The Netherlands);
- Kames Capital plc, Edinburgh (United Kingdom);
- TKP Investments B.V., Groningen (The Netherlands), (Merged with Aegon Investment Management B.V. as per January 1, 2019);
- Aegon USA Investment Management, LLC, Cedar Rapids (United States);
- Aegon USA Realty Advisors, LLC, Des Moines (United States);
- Aegon Magyarország Befektetési Alapkezelő Zártkörűen Működő Részvénytársaság (Aegon Hungary Asset Management Company ZrtA), Budapest (Hungary);
- Aegon Investment Management B.V, The Hague (The Netherlands);
- Aegon Industrial Fund Management Co., Ltd, Shanghai (China), (49%); and
- La Banque Postale Asset Management, Paris (France), (25%).

For a complete list of related undertakings, please refer to QRT S.32.01.22 - Undertakings in scope of the group. A list of Aegon's branches is provided below:

Aegon's branches	Ownership	Trading at town/city	Country
Company name			
Aegon Asia B.V. - Hong Kong Branch	100%	Hong Kong	Hong Kong
Aegon Asset Management Pan-Europe B.V. - Germany Branch	100%	Frankfurt	Germany
Aegon Asset Management Pan-Europe B.V. - Japan Branch	100%	Tokyo	Japan
Aegon Asset Management Pan-Europe B.V. - Spain Branch	100%	Madrid	Spain
AEGON Asset Management Value Hub B. V., Hungarian Branch	100%	Budapest	Hungary
Aegon CEE B.V., Hungarian Branch Office	100%	Budapest	Hungary
Aegon Industrial Fund Management Co., LTD, Beijing Branch	49%	Beijing	China
Aegon Industrial Fund Management Co., LTD, ShenZhen Branch	49%	ShenZhen	China
Aegon Industrial Fund Management Co., LTD, Xiamen Branch	49%	Xiamen	China
Aegon Magyarország Általános Biztosító Zártkörűen Csehországi Fióktelepe - Czech Branch	100%	Prague	Czech Republic
Aegon Magyarország Általános Biztosító Zártkörűen Szlovákiai Fióktelepe - Slovakian Branch	100%	Bratislava	Slovakia
Aegon Ubezpieczenia Majątkowe Oddział w Polsce Zakładu Aegon Magyarország Általános Biztosító Spółka Akcyjna w Budapeszcie - Polish Branch	100%	Chorzów	Poland
Aegon UK Corporate Services Limited - Irish Branch	100%	Dublin	Ireland
S.C. Aegon Towarzystwo Ubezpieczeń na Życie S.A. Varsovia-Sucursala Floresti - Romanian Branch	100%	Floresti	Romania
Transamerica Life (Bermuda) Ltd. - Hong Kong Branch	100%	Hong Kong	Hong Kong
Transamerica Life (Bermuda) Ltd. - Singapore Branch	100%	Singapore	Singapore

A.1.6 Material lines of business and material geographical areas

Below is an overview, region by region, of Aegon's different business units and the material lines of business that they provide.

Americas

Life

Aegon Americas offers a comprehensive portfolio of protection solutions to customers in a broad range of market segments. Products offered include term life, universal life, variable universal life, index universal life and whole life insurance.

Accident & health

Aegon Americas offers supplemental health insurance and long-term care insurance.

Mutual funds

Mutual funds are professionally managed investment vehicles comprised of pooled money invested by numerous and different individuals or institutions. Such funds are invested in various underlying security types such as stocks, bonds, money market instruments and other securities.

Variable annuities

Variable annuities allow the policyholder to accumulate assets for retirement on a tax-deferred basis and to participate in equity or bond market performance. Additional insurance guarantees, also referred to as riders, can be added to variable annuities, including guaranteed minimum death benefits (GMDBs) and guaranteed living benefits (GLBs).

Fixed annuities

Fixed annuities allow the policyholder to accumulate assets for retirement on a tax-deferred basis through periodic interest crediting and principal protection.

Retirement plans and IRAs

Comprehensive and customized retirement plan services are offered to employers across the entire spectrum of defined benefit, defined contribution and non-qualified deferred compensation, and multiple employer plans (MEPs). Services are also offered to individuals rolling over funds from other qualified retirement funds or Individual Retirement Accounts (IRAs).

Stable value solutions

Synthetic Guaranteed Investment Contracts (GICs) are offered primarily to tax-qualified institutional entities such as 401(k) plans and other retirement plans. A synthetic GIC 'wrapper' is offered around fixed-income invested assets, which are owned by the plan and managed by the plan or a third-party money manager hired by the plan.

Latin America

Aegon's businesses in Latin America are comprised of a 50% interest in Mongeral Aegon Seguros e Previdência S.A., a Brazilian independent life insurer, and a joint venture with Administradora Akaan S.A. de C.V., which created and operates Akaan Transamerica in Mexico.

Europe

The Netherlands

Life

Products with mortality, morbidity, and longevity risks, including traditional and universal life, in addition to employer, endowment, term, whole life insurance products; mortgages; annuity products; and banking products, including saving deposits.

Non-life

General insurance, consisting mainly of automotive, liability, disability, household insurance, and fire protection.

Banking

Aegon Bank N.V. aims to achieve its vision and ambition through two business units: Aegon Bank and Knab.

Services Business

Services business consist of offering mortgage loans, PPI, Knab Advies & Bemiddeling, TKP, Robidus and Nedasco.

Central & Eastern Europe

Activities in the Czech Republic (till 8 January 2019), Hungary, Poland, Romania, Slovakia (till 8 January 2019) and Turkey includes life insurance, individual and group pension products, savings and investments, in addition to general insurance.

Spain & Portugal

Aegon Spain focuses primarily on retail customers. It offers individual life, pensions, general insurance, accident and health products through different distribution channels, including its own channels (agents, brokers and direct), together with bancassurance products through its joint venture partnerships with Liberbank S.A. and Banco Santander Group, the latter of which in both Spain & Portugal.

United Kingdom

Aegon UK is organized into Digital Solutions and Existing Business:

- The Digital Solutions business is responsible for Aegon UK's new digital platform propositions sold through Retail Advisor and Workplace channels, together with the protection lines. The majority of new assets going forward will be accumulated in this business. In addition, where appropriate, Aegon UK is upgrading customers from its Existing Business to Digital Solutions to ensure an enhanced customer experience, a more engaged relationship, and lower cost to serve.
- The Existing Business is responsible for older products that are no longer actively marketed to new customers. However, new assets are accumulated as customers pay into existing policies, or as new employees join older workplace schemes. These propositions include older style group pensions, individual pensions and with-profits policies. Individual protection products, such as term insurance, critical illness, income protection and international/offshore bonds.

Asia

High-net-worth businesses

TLB's main products consist of USD denominated Universal Life and USD denominated Term Life Insurance plans for the high-net-worth market segment. Universal Life products are TLB's key products to meet the needs of high-net-worth individuals, supporting estate planning by providing life protection, while also helping to preserve and accumulate wealth. In addition to the Universal Life products, Term Life products are also offered with financial protection at a guaranteed level rate for up to 30 years.

Aegon Insights

Aegon Insights primarily worked with local insurers to develop marketing, distribution and administration solutions tailored to the needs of specific markets and customers. With changes in consumer preferences, the ongoing focus is on exploring opportunities in the emerging digital distribution landscape, in addition to continuing to provide services to existing customers. Revenue is primarily generated through reinsurance arrangements and fee income from marketing services, product distribution and administration. During 2017, Aegon made the strategic decision to discontinue Aegon Insights' outbound telemarketing businesses.

Strategic partnerships

In China and India, Aegon provides a broad range of life insurance products including unit-linked, universal life, and traditional life products. Aegon also offers variable annuities in Japan through Aegon Sony Life.

Aegon Asset Management

Aegon Asset Management has three distinct business lines.

- General account business consists of funds held on the balance sheet of Aegon insurance companies to meet policyholder liabilities typically when the insurer has given the policyholder a guarantee. These assets are managed to match the insurers' liabilities. As a rule, general account assets are managed in a closed architecture structure, and the main asset classes are fixed income and mortgage loans. Furthermore, Aegon Asset Management manages Aegon's general account derivatives book of Aegon the Netherlands;
- The majority of third-party business sourced through affiliates consists of funds sold by Aegon insurers through which the policyholder's return is determined by the investment return of the fund. These funds have various legal structures, and are usually managed against a benchmark or peer group target. The main asset classes include fixed income, equities, real estate, mortgage loans and alternatives. In the United States and the United Kingdom, a significant element of Affiliate Sales is conducted on an open architecture basis, where Aegon Asset Management competes with external fund managers;

- For third-party business sourced externally, Aegon Asset Management distributes its investment strategies directly to its clients. The wholesale businesses typically sell collective investment vehicles (mutual funds) to customers through wholesale distributors and independent intermediaries. The main asset classes are fixed income and equities, and the funds are usually managed against a benchmark or peer group target. The institutional businesses typically sell tailored services to large corporations or pension funds. Aegon Asset Management employs a full range of asset classes, and manages the funds against objectives, targets and risk profiles agreed with clients. Aegon Asset Management offers both absolute and relative return products. Via its brand TKPI, Aegon Asset Management offers fiduciary services and manager selection propositions targeted at institutional investors.

A.1.7 Results of operations

Results 2018 (IFRS-EU)

Underlying earnings geographically

Amounts in EUR millions

	2018	2017	%
Net underlying earnings	1,754	1,571	12
Tax on underlying earnings	320	568	(44)
Underlying earnings before tax geographically			
Americas	1,216	1,381	(12)
The Netherlands	615	557	10
United Kingdom	128	116	10
Central & Eastern Europe	72	67	8
Spain & Portugal	24	4	n.m.
<i>Europe</i>	839	744	13
Asia	55	49	12
Asset Management	151	136	12
Holding and other activities	(188)	(170)	(10)
Underlying earnings before tax	2,074	2,140	(3)
Fair value items	(260)	(61)	n.m.
Gains / (losses) on investments	(77)	413	n.m.
Net impairments	(19)	(15)	(24)
Other income / (charges)	(875)	(68)	n.m.
Run-off businesses	(14)	30	n.m.
Income before tax (excluding income tax from certain proportionately consolidated joint ventures and associates)	829	2,437	(66)
<i>Income tax from certain proportionately consolidated joint ventures and associates included in income before tax</i>	47	44	6
Income tax	(84)	(76)	(11)
<i>Of which Income tax from certain proportionately consolidated joint ventures and associates included in income before tax</i>	(47)	(44)	(6)
Net income	744	2,361	(68)
Commissions and expenses	6,673	6,309	6
of which operating expenses	3,786	3,878	(2)

New life sales

Amounts in EUR millions

	2018	2017	%
Americas	420	472	(11)
The Netherlands	101	99	2
United Kingdom	40	37	8
Central & Eastern Europe	83	88	(6)
Spain & Portugal	54	48	11
<i>Europe</i>	278	273	2
Asia	122	151	(19)
Total recurring plus 1/10 single	820	896	(9)

Gross deposits (on and off balance)

Amounts in EUR millions	2018	2017	%
Americas	38,279	38,543	(1)
The Netherlands	10,169	8,061	26
United Kingdom	13,223	17,259	(23)
Central & Eastern Europe	374	323	16
Spain & Portugal	32	36	(11)
<i>Europe</i>	23,798	25,679	(7)
Asia	128	222	(42)
Asset Management	59,495	61,332	(3)
Total gross deposits	121,700	125,776	(3)

Net deposits (on and off balance)

Amounts in EUR millions	2018	2017	%
Americas	(14,734)	(29,713)	50
The Netherlands	1,411	1,067	32
United Kingdom	1,225	4,665	(74)
Central & Eastern Europe	156	176	(11)
Spain & Portugal	(14)	13	n.m.
<i>Europe</i>	2,779	5,921	(53)
Asia	7	129	(95)
Asset Management	7,526	6,913	9
Total net deposits excluding run-off businesses	(4,421)	(16,750)	74
Run-off businesses	(234)	(338)	31
Total net deposits / (outflows)	(4,656)	(17,088)	73

Worldwide revenues geographically 2018

Amounts in EUR millions	Americas	The Netherlands	United Kingdom	Central & Eastern Europe	Spain & Portugal	Europe	Asia	Asset Management	Holding, other activities and eliminations	Segment total	Associates and Joint Ventures eliminations	Consolidated
Total life insurance gross premiums	7,004	1,632	7,509	405	217	9,763	779	-	2	17,548	(579)	16,969
Accident and health insurance premiums	1,571	219	29	2	100	351	94	-	-	2,015	(36)	1,979
General insurance premiums	-	136	-	231	112	479	-	-	-	479	(112)	367
Total gross premiums	8,575	1,987	7,539	638	429	10,592	873	-	2	20,042	(727)	19,316
Investment income	3,125	2,265	1,346	48	36	3,695	268	5	2	7,095	(59)	7,035
Fees and commission income	1,826	211	198	47	16	473	58	632	(206)	2,782	(224)	2,558
Other revenue	5	-	-	-	-	-	2	1	4	12	(6)	5
Total revenues	13,530	4,463	9,083	733	480	14,760	1,201	638	(199)	29,930	(1,016)	28,914
Number of employees, including agent employees	8,824	3,548	3,135	2,318	519	9,520	6,344	1,464	390	26,543		

Net income

Net income amounted to EUR 744 million in 2018, as underlying earnings before tax of EUR 2,074 million were partly offset by fair value losses and other charges.

Underlying earnings before tax

Aegon's underlying earnings before tax decreased compared with 2017 to EUR 2,074 million in 2018. This was mainly driven by lower fee revenue due to declining equity markets and net outflows, and unfavorable mortality experience in the Americas, which more than offset higher earnings in Europe, Asia and Asset Management.

- In Americas, underlying earnings before tax in 2018 decreased by 12% compared with 2017 to EUR 1,216 million caused by adverse currency movements, lower fee revenue due to declining equity markets and net outflows of revenue generating investments, and unfavorable mortality experience. This was partly offset by expense reductions.
- In Europe, underlying earnings before tax in 2018 increased by 13% compared with 2017 to EUR 839 million as a result of growth in all regions.
- In Asia, underlying earnings before tax improved by 12% compared with 2017 to EUR 55 million in 2018, mainly as a result of higher earnings in the High-Net-Worth business.
- Underlying earnings before tax from Asset Management increased by 12% in 2018 compared with 2017 to EUR 151 million. This increase was mainly driven by higher underlying earnings before tax in 2018 compared with 2017 from Strategic partnerships and the Netherlands.
- Total Holdings costs amounted to EUR 188 million in 2018 compared with EUR 170 million in 2017, as a result of interest expenses on USD 800 million Tier 2 securities issued in April 2018 to replace perpetual securities. Interest expenses for these Tier 2 securities are taken through the profit & loss statement, while the interest expenses for the perpetuals were recognized directly through equity.

Fair value items

The loss from fair value items amounted to EUR 260 million in 2018. Fair value losses in the Americas amounted to EUR 613 million in 2018, which was primarily related to hedge losses, reflecting the equity market decline at the end of the year, and losses on fair value investments. Fair value gains in Europe amounted to EUR 346 million, as a result of real estate investments in the Netherlands and gains on equity hedges in the United Kingdom. Gains on fair value items in Asia and at the Holding totalled EUR 8 million.

Realized gains on investments

Realized losses on investments amounted to EUR 77 million in 2018, as losses on the sale of US treasuries as part of normal trading activity were more than offset by realized gains on investments in the Netherlands and the United Kingdom

Impairment charges

Net impairments of EUR 19 million in 2018 primarily related to an impairment of corporate bonds caused by a bankruptcy filing in the US.

Other income/charges

Other charges amounted to EUR 875 million in 2018. Other charges in the Americas of EUR 397 million in 2018 mainly related to EUR 127 million transition and conversion charges for the TCS partnership, a EUR 140 million charge for a class action litigation settlement with universal life policyholders, a EUR 93 million book loss on the divestment of the last remaining substantial block of life reinsurance business, EUR 33 million impact from assumption updates, and a EUR 27 million addition to the provision for unclaimed property. Other charges in Europe of EUR 409 million in 2018 reflect EUR 111 million model & assumption changes in the Netherlands, EUR 93 million loss on the sale of Aegon Ireland, EUR 75 million integration expenses for Cofunds and Blackrock's DC business, and a EUR 49 million reserve strengthening related to the residual annuity book. Other charges at the Holdings amounted to EUR 57 million in 2018 and were driven by IFRS 9 / 17 implementation expenses for the Group.

Run-off businesses

The results of run-off businesses declined compared with 2017 to a loss of EUR 14 million in 2018, which is in line with expectations following the divestment of the majority of the remainder of these businesses in 2017.

Income tax

The effective tax rate amounted to 10% as a result of one-time tax benefits of declining US and Dutch corporate income tax rates next to the regular tax exempt income items and tax credits. The effective tax rate on underlying earnings before tax amounted to 15%, reflecting the lowering of the US tax rate.

Commissions and expenses

Commissions and expenses increased by 6% compared with 2017 to EUR 6.7 billion in 2018. Operating expenses decreased by 2% compared with 2017 to EUR 3.8 billion in 2018. Expense savings and the divestment of UMG were more than offset by restructuring expenses associated with the acquisitions of Cofunds and BlackRock's defined contribution business in the United Kingdom as well as the partnership with TCS in the United States.

Production

Compared with 2017, gross deposits were down by 3% to EUR 121.7 billion in 2018, driven by lower platform deposits in the United Kingdom and lower Asset Management deposits. Net outflows amounted to EUR 4.7 billion as inflows in Asset Management, the United Kingdom platform and the Dutch banking business were more than offset by outflows in the United States mainly caused by Retirement Plans due to a small number of large contract discontinuances and higher participant withdrawals. New life sales declined by 9% compared with 2017 to EUR 820 million in 2018, mostly driven by lower indexed universal life and term life production in the United States. New premium production for accident & health and property & casual insurance decreased by 52% compared with 2017 to EUR 429 million in 2018, caused by the strategic decision to exit the travel insurance, affinity and stop loss insurance segments.

A.1.8 Related party transactions

This section provides information about the material transactions during the reporting period with Aegon's shareholders, with persons who exercise a significant influence on Aegon, i.e. members of the executive, management or supervisory board. The second part of this section provides information on relevant operations and transactions within the Group.

Referring to section A.1.3 Holders of qualifying holdings, Aegon's largest and only material holder of qualifying holdings is Vereniging Aegon. All other qualifying holdings in Aegon are less than 10% and are considered not to have significant influence over the management of the company. The transactions with Vereniging Aegon during the financial year 2018 were:

- On May 18, 2018, Vereniging Aegon exercised its options rights to purchase in aggregate 1,489,200 common shares B at fair value of a common share B (being 1/40th of the market value of a common share in the capital of the Company at the time of issuance) to mitigate dilution caused the issuance of shares on May 18, 2018, in connection with the Long Term Incentive Plans for senior management.
- On December 19, 2017, Aegon N.V. repurchased 13,042,592 common shares B from Vereniging Aegon for the amount of EUR 1,725,169.73 based on 1/40th of the Value Weight Average Price of the common shares of the five trading days preceding this transaction. The repurchase of common shares B was executed to align the aggregate shareholding of Vereniging Aegon in Aegon N.V. with its special cause voting rights of 32.6% following the completion of the Share Buy Back Program, initiated by Aegon N.V. in October 2017 to neutralize the dilutive effect of the distribution of final dividend 2016 in stock and interim dividend 2017 in stock.
- On June 23, 2017, Vereniging Aegon exercised its options rights to purchase in aggregate 13,042,612 common shares B at fair value of a common share B (being 1/40th of the market value of a common share in the capital of the Company at the time of issuance) to mitigate dilution caused by Aegon's issuance of shares on June 23, 2017, being the final dividend 2016 in the form of stock dividend; and
- On May 19, 2017, Vereniging Aegon exercised its options rights to purchase in aggregate 1,979,260 common shares B at fair value of a common share B (being 1/40th of the market value of a common share in the capital of the Company at the time of issuance) to mitigate dilution caused the issuance of shares on May 19, 2017, in connection with the Long Term Incentive Plans for senior management.

Material transactions with persons who exercise a significant influence on the undertaking

The transactions during 2018 that classify as being transactions with members of the Executive, Management and Supervisory Board consist of transactions related to the remuneration (fixed compensation / conditional variable compensation) of the members of the Executive and Management Board and the remuneration of active and retired members of the Supervisory Board.

Executive Board

Through 2018, the Executive Board consisted of Mr. Wynaendts and Mr. Rider. The total amount of remuneration, consisting of the fixed compensation, conditional variable compensation awards, other benefits and pension contributions, for Mr. Wynaendts related to 2018 was EUR 5,015 thousand and for Mr. Rider EUR 2,091 thousand. At the reporting date, Mr. Wynaendts and Mr. Rider had no loans with Aegon. No other outstanding balances such as guarantees or advanced payments exist.

Management Board

The total remuneration for the members of the Management Board over 2018 was EUR 22.6 million, consisting of EUR 8.4 million fixed compensation, EUR 8.7 million variable compensation awards, EUR 0.9 million other benefits and EUR 4.5 million pension benefits.

Supervisory Board

The total remuneration in 2018 of active and retired members of the Supervisory Board amounted to EUR 809 thousand excluding VAT. Members of the Supervisory Board are entitled to the following:

- A base fee for membership of the Supervisory Board. No separate attendance fees are paid to members for attendance at the regular Supervisory Board meetings;
- An attendance fee for each extra Board meeting attended, be it in person or by video and/or telephone conference;
- A committee fee for members on each of the Supervisory Board's Committees;
- An attendance fee for each Committee meeting attended, be it in person or through video and/or telephone conference; and
- An additional fee for attending meetings that require intercontinental travel between the Supervisory Board member's home location and the meeting location.

Each of these fees is a fixed amount. Members of Aegon's Supervisory Board do not receive any performance or equity-related compensation, and do not accrue pension rights with the Company. These measures are designed to ensure the independence of Supervisory Board members and to strengthen the overall effectiveness of Aegon's corporate governance. There are no outstanding balances such as loans, guarantees or advanced payments.

Relevant operations and transactions within the Group

Aegon facilitates intra-group transactions (IGTs) to support intra group efficiencies, including optimizing economies of scale, processes, liquidity and capital management. Due to the nature of these activities, there is interaction with business units and affiliates within the Group, resulting in a diverse set of IGTs. These include intercompany loans, derivatives, guarantees, internal reinsurance and capital injections. Aegon's IGT Policy establishes definitions, governance, reporting and monitoring of IGTs ensuring a consistent standard of IGT usage across the Aegon Group for new and existing IGTs. All IGTs are further covered by the Aegon Global Transfer Pricing policy in order to ensure compliance with the internationally accepted at arm's length principle, which dictates that related entities transact with each other as if they are third parties.

Loans

Aegon utilizes intercompany loans for operational liquidity and capital purposes. Within the Group, the following material uncollateralized intra-group loans are granted:

- A loan granted by Aegon Global Investment Fund B.V. to Aegon Nederland N.V. for an amount of EUR 2,520 million (2017: EUR 2,500 million);
- A loan granted by Aegon N.V. to Transamerica Corporation, for an amount of EUR 2,122 million (2017: EUR 2,172 million), to finance activities in the US;
- A loan granted by Optas Pensioenen N.V. to Aegon Nederland N.V. for an amount of EUR 851 million (2017: EUR 850 million);
- A subordinated loan granted by Aegon Nederland N.V. to Aegon Levensverzekering N.V. for an amount of EUR 766 million (2017: EUR 600 million) to provide Aegon Levensverzekering N.V. with capital;
- A loan granted by Aegon Levensverzekering N.V. to Aegon Hypotheken B.V. for an amount of EUR 510 million (2017: EUR 510 million), to finance the issuing of mortgage loans; and
- A loan granted by Aegon Funding Company LLC to Transamerica Corporation, for an amount of EUR 437 million (2017: EUR 416 million), to finance activities in the US.

Derivatives

Aegon Derivatives N.V., a 100% pass-through vehicle, centralizes and mitigates counterparty risk related to the use of OTC derivatives across the Aegon Group in one entity. Primarily European entities (except UK domiciled entities), make use of Aegon Derivatives N.V. In addition, foreign exchange derivatives are centrally managed within Aegon N.V. ensuring netting advantages. As of December 31, 2018, the net (credit) exposure on the abovementioned internal arrangements was limited as most of these are supported by collateral arrangements.

Guarantees

Aegon N.V. and its subsidiaries provide guarantees for performance under contracts for certain aspects of the business transacted within the group. The agreements include, but are not limited to, letters of credit, (re)insurance contracts, maintenance of liquidity, capital and net worth maintenance agreements. The performance of the various entities under the terms of the agreements are regularly assessed to ensure that the entity has sufficient resources on a best estimate basis to meet the obligations guaranteed under the agreement. As a result, there is minimum exposure for these guarantees to the group.

Internal reinsurance

Subsidiaries of Aegon N.V. enter into reinsurance agreements in the normal course of business to (among other reasons), pool risks, improve group diversification, facilitate higher group risk retention for smaller units and efficiently manage capital. All transactions are executed with the arm's length principle and in accordance with the Aegon Global Transfer Pricing Framework. In many cases, the reinsurance is supported by trusts, funds withheld and / or letters of credit. Any exposure above these amounts are assessed based on Aegon N.V.'s IGT policy to ensure the exposure is within policy limits. As of December 31, 2018, there are no exposures greater than the policy levels set for affiliated reinsurance.

Capital injections

Capital injections are done to strengthen the capital position of the legal entities making the request, if deemed necessary, and are typically provided by the centrally-managed Dutch holding companies.

A.2 Underwriting performance

Underwriting performance by geographical area	2018					2017				
	Group	Americas	The Netherlands	United Kingdom	Other ¹⁾	Group	Americas	The Netherlands	United Kingdom	Other ¹⁾
Amounts in EUR millions										
Premium income	19,316	8,403	1,987	7,539	1,387	22,826	9,383	2,208	9,635	1,600
Premiums paid to reinsurers	2,663	2,335	27	240	62	3,431	2,996	16	369	50
Policyholder claims and benefits	10,557	4,604	2,328	2,491	1,134	45,599	25,407	3,096	15,616	1,480
Commissions and expenses										
Commissions	2,445	2,219	107	130	(11)	2,661	2,392	110	139	19
Operating expenses	3,538	1,513	703	521	801	3,658	1,537	818	546	757
Deferred expenses	(831)	(645)	(10)	(66)	(110)	(980)	(760)	(11)	(62)	(146)
Amortization of intangibles	1,072	852	25	119	76	586	336	27	134	89
Total Commissions and expenses	6,224	3,939	826	704	755	5,925	3,505	944	757	719

¹⁾ Includes all other businesses other than Americas, NL and UK.

Premium income

Aegon Americas' total premium income for the year 2018 amounted to EUR 8.4 billion (2017: EUR 9.4 billion) and is comprised of recurring premiums for an amount of EUR 8.1 billion (2017: EUR 8.8 billion) and single premiums for an amount of EUR 0.3 billion (2017: EUR 0.6 billion). The main lines of businesses contributing to Aegon Americas' total premium income are Life for EUR 6.8 billion (2017: EUR 7.3 billion) and Non-life (Accident & Health) for EUR 1.6 billion (2017: EUR 2.1 billion). The decrease in Non-life premiums is mainly from product exits in the US and currency translation adjustments.

Total premium income of Aegon the Netherlands amounted to EUR 2.0 billion (2017: EUR 2.2 billion) of which EUR 1.3 billion relates to recurring premiums and EUR 0.7 billion to single premiums. Most of Aegon the Netherlands' premium income relates to the Life EUR 1.6 billion (2017: EUR 1.9 billion), and the Non-life segment with EUR 0.4 billion (2017: EUR 0.4 billion). The decrease in premium income compared to 2017 is mainly due to shrinking individual life portfolio and shifts in traditional pension portfolio from defined benefit towards defined contribution solutions.

Total premium income of Aegon UK amounted to EUR 7.5 billion (2017: EUR 9.6 billion) of which EUR 2.2 billion (2017: EUR 2.5 billion) related to recurring premiums and EUR 5.3 billion (2017: EUR 7.1 billion) to single premiums (including premiums related to insurance policies upgraded to the retirement platform in the UK). The decrease in single premium income compared to 2017 is driven by a reduction of upgraded Life insurance policies to the platform in Aegon UK. Most of Aegon UK's premium income relates to the Life and Pensions business (2018: EUR 7.5 billion, 2017: EUR 9.6 billion).

Commissions and expenses

In 2018, commissions and expenses in Aegon Americas increased by 12% compared with 2017 to EUR 3.9 billion (2017: EUR 3.5 billion) mainly driven by increased amortization of intangible assets. Operating expenses in Aegon Americas decreased by 2% compared with 2017 to EUR 1.5 billion in 2018 (2017: EUR 1.5 billion) as a result of expense savings, which were largely offset by investments in business transformation and project expenses.

Commissions and expenses in Aegon the Netherlands decreased by 13% compared with 2017 to EUR 826 million (2017: EUR 944 million) in 2018. Operating expenses in Aegon the Netherlands were down by 14% compared with 2017 to EUR 703 million (2017: EUR 818 million) in 2018, reflecting the sale of UMG in the fourth quarter of 2017 and expense savings in the insurance businesses. This was partly offset by investments in new digital propositions.

Commissions and expenses in Aegon UK decreased by 7% compared with 2017 to EUR 704 million (2017: EUR 757 million) in 2018. Operating expenses in Aegon UK decreased by 5% compared with 2017 to EUR 521 million (2017: EUR 546 million) in 2018, as higher restructuring expenses were more than offset by the realization of cost synergies and the sale of Aegon Ireland.

Policyholder claims and benefits

Total policyholder claims and benefits amounted to EUR 10.6 billion in 2018 compared to EUR 45.6 billion in 2017. The decrease of EUR 35.0 billion is mainly attributable to changes in the valuation of liabilities of insurance contracts (2018: EUR (2.6) billion and 2017: EUR 22.7 billion) and investment contracts (2018: EUR (8.1) billion) and (2017: EUR (2.6) billion).

The changes in valuation of liabilities for insurance contracts and investment contracts reflect changes in technical provisions resulting from net fair value changes on financial assets for account of policyholders included in results from financial transactions of EUR 11.3 billion negative (2017: EUR 20.5 billion positive) (please see section A.3.2 Investment related results and impairments). In addition, the change in valuation of liabilities for insurance contracts includes an increase in technical provisions for life insurance contracts of EUR 1.4 billion (2017: increase of EUR 0.6 billion).

Total claims and benefits paid amounted to EUR 21.3 billion (2017: EUR 25.5 billion) and is comprised of claims and benefits paid for Aegon's life business amounting to EUR 19.7 billion (2017: EUR 23.6 billion) and claims and benefits paid for Aegon's non-life business amounting to EUR 1.7 billion (2017: EUR 1.9 billion).

Of the total policyholder claims and benefits of EUR 10.6 billion (2017: EUR 45.6 billion), EUR 4.6 billion (2017: EUR 25.4 billion) relates to Aegon Americas, EUR 2.3 billion (2017: EUR 3.1 billion) to Aegon the Netherlands and EUR 2.5 billion (2017: EUR 15.6 billion) to Aegon UK.

A.3 Investment performance

Investment performance recognized in income statement

Amounts in EUR millions	Note	2018	2017
Investment income	A.3.1	7,035	7,338
Gains/(losses) on investments ¹⁾	A.3.2	(77)	413
Results from financial transactions	A.3.2	(11,670)	20,108
Net impairments	A.3.2	(19)	(15)

¹⁾ This relates to realized gains/(losses) on investments which are included in the line Results from financial transactions.

The following sections will provide more detail about Aegon's investment income in general and by asset class (section A.3.1) and its investment related results and impairments (section A.3.2). Section A.3.3 provides information about Aegon's gains and losses of investments recognized directly in equity. Finally, the last section A.3.4 provides information about Aegon's investments in securitizations.

A.3.1 Investment income

Aegon Americas is the largest contributor to the investment income with EUR 3,125 million (2017: EUR 3,368 million) followed by Aegon the Netherlands with EUR 2,265 million (2017: EUR 2,172 million), and Aegon UK with EUR 1,346 million (2017: EUR 1,517 million).

Most of Aegon's investment income relates to investment income related to general account investments for an amount of EUR 5,268 million (2017: EUR 5,394 million), while the investment income for account of policyholders amounted to EUR 1,767 million (2017: EUR 1,944 million), mainly due to the fact that the investments for account of policyholders are on a fair value through profit or loss (FVtPL) basis.

Investment income by asset class

For interest-bearing assets, interest is recognized as it accrues and is calculated using the effective interest rate method. Fees and commissions that are an integral part of the effective yield of the financial assets or liabilities are recognized as an adjustment to the effective interest rate of the instrument. Investment income includes the interest income and dividend income on financial assets carried at fair value through profit or loss. Investment income also includes rental income due.

Investment Income by asset class Amounts in EUR millions	2018				2017			
	Interest income	Dividend income	Rental income	Total	Interest income	Dividend income	Rental income	Total
Shares	-	1,124	-	1,124	-	1,164	-	1,164
Debt securities and money market instruments	3,899	-	-	3,899	4,248	-	-	4,248
Loans	1,704	-	-	1,704	1,686	-	-	1,686
Real estate	-	-	129	129	-	-	121	121
Other	181	-	-	181	119	-	-	119
Total	5,783	1,124	129	7,035	6,052	1,164	121	7,338

Included in interest income is EUR 160 million (2017: EUR 190 million) in respect of interest income accrued on impaired financial assets. The interest income on financial assets that are not carried at fair value through profit or loss amounted to EUR 4,811 million (2017: EUR 5,056 million).

Most of Aegon's investment income relates to debt securities and money market instruments, namely EUR 3,899 million (2017: EUR 4,248 million), which represent 55% (2017: 58%) of total investment income. The expenses related to debt securities and money market instruments mainly consisted of transaction costs. As the transaction costs are included in the fair value at the date of recognition, these are not separately disclosed.

A.3.2 Investment related results and impairments

First, this section will provide more information about Aegon's gains/(losses) on investments amounting to EUR (77) million (2017: EUR 413 million), followed by its results from financial transactions amounting to EUR (11,670) million (2017: EUR 20,108 million). Finally, information about Aegon's net impairments is provided, which amounted to EUR (19) million (2017: EUR (15) million).

Realized gains/(losses) on investments

Realized losses on investments amounted to EUR 77 million in 2018 (2017: EUR 413 million gains) as losses on the sale of US treasuries as part of normal trading activity were partly offset by realized gains on investments in the Netherlands and the United Kingdom.

Results from financial transactions

The income arising from financial transactions during the years 2018 and 2017 comprises of:

Results from financial transactions

Amounts in EUR millions	2018	2017
Net fair value change of General Account investments at FVtPL other than derivatives	(79)	232
Realized gains and losses on financial investments	(92)	431
Gains and (losses) on investments in real estate	261	193
Net fair value change of derivatives	(514)	(1,301)
Net fair value change of policyholder' assets at FVtPL	(11,326)	20,524
Net fair value change of investments in real estate for policyholder	5	38
Net foreign currency gains and (losses)	44	(20)
Net fair value change on borrowing and other financial liabilities	29	10
Realized gains and (losses) on repurchased debt	1	1
Total results from financial transactions	(11,670)	20,108

The net fair value change of policyholder' assets at FVtPL amounted to EUR (11,326) million in 2018 (2017: EUR 20,524 million) and is mainly driven by unfavorable credit and equity markets. Net fair value changes on for account of policyholder financial assets at fair value through profit or loss are offset by changes in technical provisions reported as part of the lines Change in valuation of liabilities for insurance contracts and Change in valuation of liabilities for investment contracts.

Net impairments

Net impairments amounted to EUR (19) million in 2018 (2017: EUR (15) million), and were primarily related to an impairment of corporate bonds caused by a bankruptcy filing.

A.3.3 Gains and losses recognized directly in equity

This section provides information about the gains and losses of investments recognized directly in equity. The gains and losses of investments recognized directly in equity consist of the unrealized gains or losses of available-for-sale investments.

Items that may be reclassified subsequently to profit and loss

Amounts in EUR millions	2018	2017
Gains/(losses) on revaluation of available-for-sale investments	(2,138)	1,283
(Gains)/losses transferred to income statement on disposal and impairment of available-for-sale investments	66	(1,330)

Losses on revaluation of available-for-sale investments amounted to EUR 2,138 million (2017: EUR 1,283 million gains) reflecting unfavorable markets resulting in increased interest rates and credit spreads widening.

A.3.4 Investments in securitization

This section provides information about any of Aegon's investments in securitizations.

Residential mortgage-backed securities

Aegon Americas and Aegon the Netherlands hold EUR 2,497 million (December 31, 2017: EUR 3,541 million) of available-for-sale Residential mortgage backed securities (RMBS), of which EUR 2,102 million (December 31, 2017: EUR 2,985 million) is held by Aegon Americas and EUR 395 million (December 31, 2017: EUR 556 million) by Aegon the Netherlands. Residential mortgage backed securities are securitizations of underlying pools of non-commercial mortgages on real estate. The underlying residential mortgages have varying credit characteristics and are pooled together and sold in tranches. The following table shows the breakdown of Aegon America's RMBS available-for-sale (AFS) portfolio.

AFS RMBS by quality Amounts in EUR millions	2018					Total amortized cost	Total fair value
	AAA	AA	A	BBB	<BBB		
GSE guaranteed	450	149	-	-	-	599	599
Prime jumbo	-	16	1	5	98	120	124
Alt-A	-	59	17	5	221	301	397
Negative amortization floaters	-	1	-	11	438	450	533
Other housing	-	13	4	16	333	366	450
At December 31, 2018	450	238	22	36	1,089	1,836	2,102
Of which insured	-	-	20	5	99	124	113

AFS RMBS by quality Amounts in EUR millions	2017					Total amortized cost	Total fair value
	AAA	AA	A	BBB	<BBB		
GSE guaranteed	1,025	270	-	-	-	1,295	1,298
Prime jumbo	-	-	-	5	124	130	136
Alt-A	-	33	20	8	277	337	437
Negative amortization floaters	-	-	-	-	502	502	584
Other housing	-	9	17	30	397	453	530
At December 31, 2017	1,025	312	37	43	1,300	2,717	2,985
Of which insured	-	-	24	5	146	175	166

A significant part of Aegon America's RMBS holdings are rated < BBB, as the issuances took place before the United States housing downturn that started in 2007. Additionally, Aegon Americas has investments in RMBS of EUR 35 million (December 31, 2017: EUR 40 million), which are classified as fair value through profit or loss.

For more information about Aegon's residential mortgage-backed securities, reference is made to pages 190 - 191 of the [Integrated Annual Report 2018 of Aegon Group](#).

Commercial mortgage-backed securities

As of December 31, 2018, Aegon Americas and Aegon the Netherlands hold EUR 3,349 million (December 31, 2017: EUR 3,403 million) of AFS commercial mortgage-backed securities (CMBS), of which EUR 3,314 million (December 31, 2017: EUR 3,375 million) is held by Aegon Americas and EUR 35 million (December 31, 2017: EUR 28 million) by Aegon the Netherlands. CMBS are securitizations of underlying pools of mortgages on commercial real estate. The underlying mortgages have varying risk characteristics and are pooled together and sold in different rated tranches. The company's CMBS include conduit, large loan, single borrower, commercial real estate collateralized debt obligations (CRE CDOs), collateralized debt obligations (CDOs), government agency, and franchise loan receivable trusts.

The total gross unrealized loss on available-for-sale CMBS of Aegon Americas amounted to EUR 44 million as of December 31, 2018 (December 31, 2017: EUR 22 million). The total net unrealized gain on the available-for-sale CMBS as of December 31, 2018, is EUR 17 million (December 31, 2017: EUR 36 million), of which EUR 17 million (December 31, 2017: EUR 36 million) relates to positions of Aegon Americas. CMBS fundamentals remain stable. Commercial real estate valuation increases have slowed. The delinquency rate continues to fall as distressed legacy loan resolutions outpace new defaults and positive net supply increases the total outstanding balance. Liquidity remains reasonable for the CMBS market. Lower prices in the US CMBS sector since the start of the year are mostly driven by broader market moves from higher interest rates.

The tables below summarize the credit quality of Aegon Americas' available-for-sale (AFS) CMBS portfolio. Additionally, as of December 31, 2018, Aegon Americas has no investments in CMBS (December 31, 2017: EUR nil), which are classified as fair value through profit or loss.

CMBS by quality Amounts in EUR millions	2018					Total amortized cost	Total fair value
	AAA	AA	A	BBB	<BBB		
CMBS	2,635	567	65	3	57	3,326	3,310
CMBS and CRE CDOs	-	-	-	-	5	5	4
At December 31, 2018	2,635	567	65	3	62	3,331	3,314

CMBS by quality Amounts in EUR millions	2017					Total amortized cost	Total fair value
	AAA	AA	A	BBB	<BBB		
CMBS	2,626	559	63	3	84	3,335	3,372
CMBS and CRE CDOs	-	-	-	-	4	4	3
At December 31, 2017	2,626	559	63	3	88	3,339	3,375

For more information about Aegon's commercial mortgage-backed securities, reference is made to pages 191 - 192 of the [Integrated Annual Report 2018 of Aegon Group](#).

Asset-backed securities

Aegon Americas and Aegon the Netherlands hold EUR 4,503 million (December 31, 2017: EUR 4,225 million) of AFS ABS instruments of which EUR 2,626 million (December 31, 2017: EUR 2,429 million) is held by Aegon Americas and EUR 1,877 million (December 31, 2017: EUR 1,796 million) by Aegon the Netherlands. Additionally, as of December 31, 2018, Aegon Americas has investments in ABS of EUR 6 million (December 31, 2017: EUR 10 million), which are classified as fair value through profit or loss. ABS are securitizations of underlying pools of credit card receivables, auto financing loans, small business loans, bank loans, and other receivables. The underlying assets of the asset backed securities have been pooled together and sold in tranches with varying credit ratings.

The total gross unrealized loss on available-for-sale ABS of Aegon Americas and Aegon the Netherlands amounted to EUR 52 million as of December 31, 2018 (December 31, 2017: EUR 14 million). Aegon Americas has EUR 18 million (December 31, 2017: EUR 12 million) of this gross unrealized loss and Aegon the Netherlands EUR 34 million (December 31, 2017: EUR 2 million). In the United States, increasing investor demand has been met with new issuance in the asset-backed sector. Spreads in the asset-backed sector widened in the latter part of 2018 in conjunction with the widening of corporate bond spreads. European ABS markets fared well through otherwise volatile financial markets in the first half of 2018. Against a benign macroeconomic backdrop and increasing demand for European ABS, spreads continued to tighten and resulted in positive performance. In the second half of 2018, European ABS markets joined in on the general risk-off sentiment on financial markets. Spreads across all sectors were affected but overall the movements have been less severe when looking at credit markets over the last three months. Investors have shifted their attention to short-maturity assets and sectors further down the curve were affected the most. Due to the recent spread widening, valuations of European ABS have become more appealing. However, it seems that investors are still reluctant to add risk despite the attractive spreads.

The breakdown by quality of the available-for-sale (AFS) ABS portfolio of Aegon Americas and Aegon the Netherlands is as follows:

ABS US, NL and UK Amounts in EUR millions	2018					Total amortized cost	Total fair value
	AAA	AA	A	BBB	<BBB		
Credit cards	174	19	-	-	-	193	201
Autos	230	-	58	2	-	290	289
Small business loans	-	-	2	12	46	60	63
CDOs backed by ABS, Corp. bonds, Bank loans	1,535	479	216	146	46	2,423	2,386
Other ABS	525	151	774	88	8	1,547	1,563
At December 31, 2018	2,464	649	1,051	248	100	4,512	4,503

ABS US, NL and UK Amounts in EUR millions	2017					Total amortized cost	Total air value
	AAA	AA	A	BBB	<BBB		
Credit cards	170	19	-	30	-	219	229
Autos	226	-	64	2	-	292	292
Small business loans	-	-	3	6	62	70	74
CDOs backed by ABS, Corp. bonds, Bank loans	1,467	407	224	120	46	2,265	2,281
Other ABS	494	76	683	81	1	1,336	1,350
At December 31, 2017	2,357	503	975	238	109	4,182	4,226

For more information about Aegon's asset-backed securities, reference is made to pages 192 - 193 of the [Integrated Annual Report 2018 of Aegon Group](#).

A.4 Performance of other activities

A.4.1 Other activities income and expenses

Aegon did not recognize other material income or expenses related to other activities during 2018 (2017: nil).

A.4.2 Material leasing arrangements

Aegon is the lessee

Leases that do not transfer substantially all the risks and rewards of ownership are classified as operating leases. Payments made under operating leases, where the Group is the lessee, are charged to the income statement on a straight line basis over the period of the lease.

As per January 1, 2019, IFRS 16 Leases will be mandatorily effective. IFRS 16 Leases, which replaces IAS 17 Leases has been issued by the IASB in January 2016 and endorsed by the European Union in October 2017. It will be mandatorily effective for annual reporting periods beginning on or after January 1, 2019. IFRS 16 introduces a single lessee accounting model and requires a lessee to recognize assets and liabilities for all leases with a term of more than 12 months, unless the underlying asset is of low value. A lessee is required to recognize a right-of-use asset representing its right to use the underlying leased asset and a lease liability representing its obligation to make lease payments, which will replace the current 'Operating lease obligations. Aegon has assessed the impacts of IFRS 16 during 2018, and has completed the implementation of the standard.

In the United States, Aegon owns many of the buildings that the Company uses in the normal course of its business, primarily as offices. Aegon owns 14 offices located throughout the United States with a total square footage of 2 million. Aegon also leases space for various offices located throughout the United States under long-term leases with a total square footage of 1 million.

Other principal offices owned by Aegon are located in The Hague, the Netherlands and Budapest, Hungary. Aegon owns its headquarters and leases other offices in the Netherlands (Amsterdam, Leeuwarden and Groningen), in the United Kingdom and in Spain under long-term leases. Aegon believes that its properties are adequate to meet its current needs.

Future lease payments

The operating lease obligations relate mainly to office space leased from third parties. The operating lease rights relate to non-cancellable commercial property leases.

Aegon is the lessor

Where the Group is the lessor under an operating lease, the assets subject to the operating lease arrangement are presented in the statement of financial position according to the nature of the asset. Income from these leases are recognized in the income statement on a straight line basis over the lease term, unless another systematic basis is more representative of the time pattern in which use benefit derived from the leased asset is diminished.

Aegon Americas has invested in a commercial property portfolio, consisting of office, retail and industrial buildings. These non-cancellable leases have remaining lease terms up to 20 years. Most leases include a clause to enable upward revision of the rental charge on an annual basis according to either a fixed schedule or prevailing market conditions.

Aegon the Netherlands has invested in long-term residential property leases that can be terminated subject to a short-term notice. Under Dutch law, the maximum annual rent increase on residential property rented in the affordable housing segment is specified by the Dutch national government and equals the annual inflation rate plus a small margin.

Investment in real estate for account of policyholders

As of December 31, 2018 the investment property amounted to EUR 612 million (2017: EUR 655 million) and is leased out under operating leases.

A.5 Any other information

Aegon does not have any other material information regarding its business and performance.

B. System of governance

B.1 General information on the system of governance

B.1.1 Corporate governance

Aegon is governed by three main corporate bodies: the Executive Board, the Supervisory Board, and the General Meeting of Shareholders. The Executive Board is assisted in its work by the Management Board who provides vital support and expertise in safeguarding Aegon's strategic goals. The Supervisory Board has established an Audit Committee, Risk Committee, Remuneration Committee and Nomination and Governance Committee from amongst its members.

B.1.1.1 The Supervisory Board and its committees

Aegon's Supervisory Board oversees the management of the Executive Board, in addition to the Company's business and corporate strategy. The Supervisory Board must take into account the interests of all Aegon stakeholders. The Supervisory Board operates according to the principles of collective responsibility and accountability. At the May 2018 Annual General Meeting of Shareholders, William Connelly was appointed as the new Supervisory Board Chairman.

Composition of the Supervisory Board

Members of the Supervisory Board are appointed by the General Meeting of Shareholders, following nomination by the Supervisory Board itself. Aegon aims to ensure that the composition of the Company's Supervisory Board is in line with Aegon's diversity policy for the Supervisory Board, Executive Board and Management Board and as such is well-balanced in terms of professional background, geography, gender and other relevant aspects of the diversity policy. A profile, which is published on aegon.com, has been established that outlines the required qualifications of its members. Supervisory Board members are appointed for a four-year term, and may then be reappointed for another four-year period. Subsequently, the Supervisory Board member can be reappointed again for a period of two years, and then extended by two years at the most. Supervisory Board members are no longer eligible for (re)appointment after reaching the age of 70, unless the Supervisory Board decides to make an exception. Remuneration of the Supervisory Board members is determined by the General Meeting of Shareholders. In 2018, no transactions were concluded between the Company and any of the Supervisory Board members. Furthermore, the Company did not provide loans or issue guarantees to any members of the Supervisory Board. At present, Aegon's Supervisory Board consists of seven members, all of whom qualify as independent in accordance with the Dutch Corporate Governance Code.

Committees

The Supervisory Board also oversees the activities of its committees. These committees are composed exclusively of Supervisory Board members and deal with specific issues related to Aegon's financial accounts, risk management, executive remuneration and appointments. These committees are the:

- Audit Committee;
- Risk Committee;
- Remuneration Committee; and
- Nomination and Governance Committee.

Audit Committee

As Aegon has both an Audit Committee and a Risk Committee, the risk management responsibilities stated in the Dutch Corporate Governance Code are assigned to the Risk Committee. With regard to the oversight of the operation of the risk management framework and risk control systems, including supervising the enforcement of relevant legislation and regulations, the Audit Committee operates in close coordination with the Risk Committee as established by the Board. Certain Board members participate in both committees and a combined meeting of the Audit and Risk Committees is scheduled on an annual basis.

The main role and responsibilities of the Audit Committee are to assist and advise the Supervisory Board in fulfilling its oversight responsibilities regarding:

- The integrity of the consolidated interim and full-year financial statements and financial reporting processes;
- Internal control systems and the effectiveness of the internal audit process; and
- The performance of the external auditors and the effectiveness of the external audit process, including monitoring the independence and objectivity of PwC.

The Audit Committee reports to the Supervisory Board on its activities, identifying any matters about which it considers action or improvements are needed, and making recommendations as to the steps to be taken. For more information about the functioning of the Audit Committee, please see the Audit Committee Charter on aegon.com.

Risk Committee

The main role and responsibilities of the Risk Committee are to assist and advise the Supervisory Board in fulfilling its oversight responsibilities regarding the effectiveness of the design, operation and appropriateness of both the Enterprise Risk Management (ERM) framework and the internal control systems of the Company and the subsidiaries and affiliates that comprise the Aegon Group. This includes:

- Risk strategy, risk tolerance and risk governance;
- Product development and pricing;
- Risk assessment;
- Risk response and internal control effectiveness;
- Risk monitoring; and
- Risk reporting

Furthermore, the Risk Committee regularly reviews risk exposures as they relate to capital, earnings and compliance with risk policies. The Company's risk management is an important topic for the Supervisory Board.

For more information about the functioning of the Risk Committee, please see the Risk Committee Charter on aegon.com.

Remuneration Committee

The main role and responsibilities of the Remuneration Committee are to advise the Supervisory Board and prepare decisions to be taken by the Board. The Committee is designated to safeguard sound remuneration policies and practices within the Company by overseeing the development and execution of these policies and practices. In order to ensure that the remuneration policies and practices take all types of risks properly into account, in addition to liquidity and capital levels, the Remuneration Committee assesses in particular the remuneration governance processes, procedures and methodologies adopted. Furthermore, the Committee ensures that the overall remuneration policy is consistent with the longer-term strategy of the Company and the longer-term interest of its shareholders, investors and other stakeholders. This includes:

- Reviewing the Aegon Group Global Remuneration Framework and making recommendations on the remuneration policies;
- Preparing recommendations regarding variable compensation both at the beginning and at the end of the performance year;
- Overseeing the remuneration of the Executive Board, Identified Staff and Heads of Group Control functions; and
- Preparing the information provided to shareholders on remuneration policies and practices, including the Remuneration Report.

Nomination and Governance Committee

The main role and responsibilities of the Nomination and Governance Committee are to assist and advise the Supervisory Board in fulfilling its responsibilities in the areas of Human Resources Management and Corporate Governance. This include:

- Board member and senior management succession planning;
- Drawing up selection criteria and procedures for Board members, together with supervising the selection criteria and procedures for senior management;
- Advising on and proposing nominations, appointments and reappointments;
- Reviewing and updating the Supervisory Board profile and charters for the Supervisory Board and its committees;
- Periodically assessing the functioning of individual members of the Supervisory Board and the Executive Board;
- Overseeing the corporate governance structure of the Company, compliance with the Dutch Corporate Governance Code and any other applicable corporate governance legislation and regulations; and
- Assessing and advising on the responsible business strategy as part of the corporate strategy, and overseeing the execution of the responsible business strategy.

B.1.1.2 The Executive Board

Aegon's Executive Board is charged with the overall management of the Company and is therefore responsible for achieving Aegon's aims and developing the strategy and its associated risk profile, in addition to overseeing any relevant sustainability issues and the development of the Company's earnings. Each member has duties related to his or her specific area of expertise.

Aegon's Articles of Association require that for certain decisions the Executive Board must seek prior approval from the Supervisory Board and/or the approval of the General Meeting of Shareholders. In addition, the Supervisory Board may also subject other Executive Board decisions to its prior approval.

Composition of the Executive Board

Aegon's Executive Board consists of Alexander R. Wynaendts, who is Chief Executive Officer (CEO) and Chairman of the Executive Board, and Matthew J. Rider, who is Chief Financial Officer (CFO), and member of the Executive Board.

The number of Executive Board members and their terms of employment are determined by the Company's Supervisory Board. Executive Board members are appointed by the General Meeting of Shareholders for a four-year term, following nomination by the Supervisory Board.

The members of the Executive Board have an engagement agreement with the Company rather than an employment contract. The Company's Remuneration Policy for the Executive Board limits exit arrangements to a maximum of one year of the fixed component of the salary.

B.1.1.3 The Management Board

Aegon's Executive Board is assisted in its work by the Company's Management Board, which has ten members, including the members of the Executive Board.

Composition of the Management Board

Aegon's Management Board is composed of Alex Wynaendts, Matthew J. Rider, Mark Bloom, Adrian Grace, Allegra van Hövell-Patrizi, Marco Keim, Onno van Klinken, Carla Mahieu, Mark Mullin and Sarah Russell.

Role of the Management Board

Aegon's Management Board works in unison with the Executive Board, and helps oversee operational issues and the implementation of Aegon's strategy. Members are drawn from Aegon's business units and from Aegon's global functions. The members have both regional and global responsibilities. This ensures that Aegon is managed as an integrated international business. While the Executive Board is Aegon's sole statutory executive body, the Management Board provides vital support and expertise in pursuit of the Company's strategic objectives.

In the relation between the Management Board and the Supervisory Board, the CEO shall be the first contact for the Supervisory Board and its Chairman. In addition, and in connection with how the interaction between the Supervisory Board and the Management Board committee have been organized, the members of the Management Board will act in accordance with the Management Board Charter, the Executive Board Charter and the Supervisory Board Charter.

B.1.1.4 General Meeting of Shareholders

A General Meeting of Shareholders is held at least once a year and, if deemed necessary, the Supervisory or Executive Board of the Company is able to convene an Extraordinary General Meeting of Shareholders. The main function of the General Meeting of Shareholders is to decide on matters such as the adoption of annual accounts, the approval of dividend payments and (re)appointments to the Supervisory Board and Executive Board of Aegon.

B.1.1.5 Key Functions Review

A description of the main roles and responsibilities of key functions, as well as their necessary and operational independence is disclosed in section B.2 Fit and proper requirements. Reference is made to sections B.3, B.4, B.5 and B.6 for more details on Aegon's key functions.

B.1.1.6 Material changes in the system of governance

During 2018, there were no material changes to the system of governance. For the changes in the composition of the Supervisory Board and Executive Board during 2018, please refer to page 51 of the [Integrated Annual Report 2018 of Aegon Group](#).

Risk management, internal control systems and reporting procedures

For a description of how the risk management and internal control systems and reporting procedures are implemented consistently, please see section B.4 Internal control system. There were no material changes during 2018 on how the risk management and internal control systems and reporting procedures are implemented.

B.1.2 Remuneration policy

The Aegon Group Global Remuneration Principles, as set out in the Aegon Global Remuneration Framework, is applicable in the Aegon Group and consistently applied to regional and local remuneration policies and practices. The below provides a summary of Aegon's Remuneration policy and its governance. During the reporting period no material changes took place in this policy and

its governance. For further details, reference is made to the Remuneration Report on pages 59-65 of the [Integrated Annual Report 2018 of Aegon Group](#).

Global Remuneration Principles

Aegon's Global Remuneration Framework (AGRF) contains the guiding principles to support sound and effective remuneration policies and practices by ensuring consistency throughout Aegon.

Aegon's remuneration policies are derived from the AGRF. These policies define specific terms and conditions for the employment of various groups of staff.

Role of risk management and compliance

The risk management and compliance functions, together with the Human Resources and Finance functions, are responsible for the execution of the various measures that ensure the AGRF and associated practices are aligned with the defined risk tolerances and behaviors.

Supervisory Board Remuneration Policy

The Supervisory Board Remuneration Policy was adopted at the General Meeting of Shareholders on May 15, 2013. The Policy will remain in force until such time as the Supervisory Board proposes changes or amendments. Any material changes in the Supervisory Board Remuneration Policy will be referred to the General Meeting of Shareholders for adoption.

Aegon's Remuneration Policy for members of its Supervisory Board is aimed at ensuring fair compensation, and protecting the independence of the Supervisory Board's members. Terms and conditions for members of the Supervisory Board are part of Aegon's broader Remuneration Policy, and are the responsibility of the Company's Remuneration Committee.

Members of Aegon's Supervisory Board receive a fee for their services. They do not receive any performance or equity-related compensation, and do not accrue pension rights with the Company. These measures are designed to ensure the independence of Supervisory Board members and to strengthen the overall effectiveness of Aegon's corporate governance.

The total remuneration in 2018 of active and retired members of the Supervisory Board amounted to EUR 809,375 excluding VAT (2017: EUR 932,375). Not included in the total remuneration is a premium for state health insurance paid on behalf of Dutch Supervisory Board members. There are no outstanding balances such as loans, guarantees or advanced payments.

Executive Board remuneration

The Executive Board Remuneration Policy was adopted at the General Meeting of Shareholders on May 12, 2011. The Policy will remain in force until such time as the Supervisory Board proposes changes or amendments. Any material changes in the Executive Board Remuneration Policy will be referred to the General Meeting of Shareholders for adoption. During the reporting period no material changes have taken place in the system of governance.

The total amount of remuneration, consisting of the fixed compensation, conditional variable compensation awards, other benefits and pension contributions, for Mr. Wynaendts related to 2018 was EUR 5,015 thousand (2017: EUR 4,683 thousand) and for Mr. Rider EUR 2,091 thousand (2017: EUR 1,342 thousand). The total remuneration for the members of the Executive Board over 2018 was EUR 7.1 million (2017: EUR 6.0 million).

At the reporting date no loans with Aegon or outstanding balances such as guarantees or advanced payments exist for either Mr. Wynaendts or Mr. Rider.

Role of the Remuneration Committee

The Supervisory Board has overall responsibility for the Company's Remuneration Policies, including the Executive Board Remuneration Policy. Members of the Remuneration Committee are drawn from the Supervisory Board.

Each year, Aegon's Remuneration Committee reviews Aegon's remuneration policies to ensure they remain in line with prevailing international standards. This review is based partly on information provided by Aegon's external advisor, Towers Watson. The advisor does not, however, advise individual members of the Executive and Supervisory Boards.

The Remuneration Committee may recommend changes to the policies to the Supervisory Board.

Review of the Remuneration Policy

Aegon's Executive Board Remuneration Policy is reviewed every year by the Remuneration Committee. The policy applies to all members of Aegon's Executive Board.

Ensuring pay remains competitive

The Company regularly compares its levels of executive remuneration with those of other comparable companies.

The Supervisory Board reviews compensation on the basis of an international peer group and a reference group based on companies listed on Euronext Amsterdam. The composition of the two groups is regularly reviewed in order to ensure that they continue to provide a reliable and suitable basis for comparison.

Total compensation

For each member of the Executive Board, Aegon's Supervisory Board determines a maximum total compensation, reflecting the specific roles and responsibilities of the individual.

The Supervisory Board conducts regular scenario analysis to determine the long-term effect of company performance on the level and structure of compensation granted to members of the Executive Board. The Supervisory Board (Remuneration Committee) discussed and endorsed the 2018 total compensation for the Executive Board.

Fixed compensation

It is the responsibility of the Supervisory Board to determine fixed compensation for members of the Executive Board based on their qualifications, experience and expertise.

Variable compensation

The variable compensation award is based on annual performance against a number of individual and Group performance indicators.

- These performance indicators are a mix of financial and non-financial indicators with a one-year performance horizon.
- The result of an individual performance indicator must exceed a predefined threshold level, before this indicator contributes to the overall performance result. When an indicator result is below this threshold, the contribution of this indicator to the overall performance result is zero (i.e. a circuit breaker).
- In case the performance of an indicator exceeds the target, the contribution of this indicators is capped once it reaches a predefined maximum level. This means that strongly exceeding performance on one specific indicator can only contribute up to a certain level to the overall performance result (i.e. a contribution cap).
- These indicators are regularly evaluated by experts in the company's Finance, Risk Management, Business Control, Audit, Human Resources and Compliance departments to ensure alignment with the company's objectives, business strategy, risk tolerance and long-term performance remains strong.

At the start of the performance year, the Remuneration Committee drafts a recommendation on which performance indicators apply to each Executive Board member, as well as what the threshold, target and maximum levels are per indicator. This recommendation is subsequently reviewed by the Company's Risk Management team (i.e. the ex-ante risk assessment) before it is send to the Supervisory Board. The Supervisory Board can approve, revise or reject the recommendation, taking the results of the risk assessment into account.

Once the Supervisory Board has approved the performance indicators for each Executive Board member, the Executive Board members are also granted their conditionally variable compensation award for that performance year. This conditional award is equal to their at target variable compensation level, which consists of 50% cash and 50% Aegon shares.

After the completion of the performance year, the Remuneration Committee prepares a recommendation for the allocation of a variable compensation award to each Executive Board member. This recommendation is based on the results on each of the applicable performance indicators, related threshold, target and maximum levels and another ex-ante risk assessment by the Company's Risk Management team.

Based on this risk assessment, the Remuneration Committee can include a proposal to adjust an intended variable compensation in their recommendation. This adjustment can only be downwards. The Remuneration Committee sends its recommendation and the ex-ante risk assessment to the Superiorly Board, which - based on its informed judgement - can approve, revise or reject the recommendation. This Supervisory Board decision includes validating that, when taken together, the results of the performance indicators represent a fair reflection of the overall performance of the Executive Board member over the performance year.

In line with the applicable rules and regulations, the allocated variable compensation award is split into equal parts of cash and Aegon shares, of which 40% is paid out (or vests) in the year following the performance year, and 60% is deferred to later years. This deferred portion remains conditional until it vests.

The deferred parts vest in equal tranches over a three-year period. After an ex-post risk assessment, which may lower the vesting parts, these individual parts are paid 50% in cash and 50% in shares. The shares are restricted for a further period of three years (with the exception of shares withheld to cover for the payment of any applicable taxes, social security premiums and possible other deductions by the government due for which the company holds a withholding obligation in connection with the vesting of the shares).

Ex-post assessment and claw back provisions

After the completion of the performance year, the Remuneration Committee also prepares a recommendation on whether there are reasons for a downward adjustment of deferred variable compensation, before it is paid or vests. This recommendation is based on the ex-post risk assessment by the Company's Risk Management team, which takes into account significant and exceptional circumstances which were not (sufficiently) reflected in the initial performance assessment and/or the ex-ante risk assessment related the deferred variable compensation award in scope.

The Remuneration Committee sends its recommendation and the ex-post risk assessment to the Supervisory Board. The Supervisory Board can approve, revise or reject the recommendation. When this recommendation includes a proposal to adjust unvested deferred variable compensation, this adjustment can only be downwards.

Aegon's Supervisory Board is obliged to claim back variable compensation that has already been paid out or vested where required based on the regulations that apply from time to time, if variable compensation is based on incorrect data (including non-achievement of performance indicators in hindsight), or in the event of material financial restatements or individual gross misconduct.

Pension arrangements

Members of Aegon's Executive Board are offered pension arrangements and retirement benefits. Benefits offered are consistent with Executive Board members' agreements. Pension arrangements do not include discretionary elements.

The arrangements with Mr. Wynaendts include retirement provisions that allow benefits to be taken at the end of the term. This retirement arrangement stem from pre-Executive Board membership. The arrangement with Mr. Rider is similar to the arrangements for other staff in the Netherlands and consists of a so-called career average defined benefits plan up to EUR 105,075 (2018 threshold) base salary and a defined contribution plan for the amount above EUR 105,075. Details are not disclosed due to the individual nature of such arrangement.

Loans

Aegon does not grant Executive Board members personal loans, guarantees or other such arrangements, unless in the normal course of business and on terms applicable to all employees, and only with the approval of the Company's Supervisory Board.

Terms of Engagement Agreement

Members of the Executive Board are appointed for four years, and may then be re-appointed for successive mandates also for a period of four years.

Both Executive Board members have an engagement agreement with Aegon N.V., rather than a contract of employment. Members of the Executive Board may terminate their engagement agreement with a notice period of three months. The Company may terminate the board agreement by giving six months' notice if it wishes to terminate the agreement of Mr. Wynaendts, and three months' notice if it wishes to terminate the agreement of Mr. Rider.

The arrangements with current members of the Executive Board contain provisions for severance payments in the event that their agreement is terminated as a result of a merger or takeover. These arrangements do not exceed one year's fixed remuneration. The Supervisory Board has taken appropriate steps to ensure the arrangements of Executive Board members are in line with the Executive Board Remuneration Policy.

Management Board remuneration

Members of the Management Board, who are not on the Executive Board, are rewarded on the basis of local remuneration policies and in line with local market practice for roles with a similar scope and complexity. These policies are derived from the Aegon Global Remuneration Framework and are updated regularly.

Their remuneration includes fixed compensation, variable compensation and benefits.

The variable compensation is determined by a similar approach as for the members of the Executive Board. It's also based on a mix of individual and company performance indicators that are linked to the Company's objectives, business strategy, risk tolerance and long-term performance. However their targets, levels and performance assessment are agreed and determined by their local Remuneration Committee.

The Executive Board and/or their local Remuneration Committee decide on a potential downward modification of the variable compensation (based on either an ex-ante or ex-post risk assessment) or claw back.

The allocated variable compensation is paid in cash and shares. Depending on location, this mix ranges from 50% cash and 50% shares (in the Netherlands) up to 33% cash and 67% shares (outside the Netherlands). At least 50% of the variable compensation is deferred. Additional holding periods may apply to the allocated shares.

Depending on local practices the pension arrangements may include provisions allow for early retirement.

The total remuneration for the members of the Management Board over 2018 was EUR 22.6 million (2017: EUR 19.8 million), consisting of EUR 8.4 million (2017: EUR 7.4 million) fixed compensation, EUR 8.7 million variable compensation awards (2017: EUR 7.8 million), EUR 0.9 million (2017: EUR 0.9 million) other benefits and EUR 4.5 million (2017: EUR 3.7 million) pension premiums. Amounts are reflective of time spent on the Management Board.

Material transactions with Aegon's boards

There were no material transactions with members of the Supervisory, Executive, or Management Board.

B.2 Fit and proper requirements

B.2.1 Requirements

The Executive Board

The Executive Board is charged with the management of the Company, which means, among other things, that it is responsible for setting and achieving the Company's objectives, strategy and the associated risk strategy and risk tolerance, and ensuring delivery of results and corporate social responsibility issues that are relevant to the Company. The Executive Board is accountable for these matters to the Supervisory Board and the General Meeting of Shareholders. Responsibility for the management of the Company is vested collectively in the Executive Board. The Executive Board is responsible for compliance with all relevant laws and regulations, for managing the risks attached to the Company's activities and for the financing of the Company. The Executive Board reports on these issues to and discusses the internal risk management and control systems with the Supervisory Board, the Audit Committee of the Supervisory Board, and the Risk Committee of the Supervisory Board.

Individual members of the Executive Board may be charged with specific parts of the managerial tasks, without prejudice to the collective responsibility of the Executive Board as a whole. The Executive Board is collectively responsible for decisions, even if they are prepared by individual members of the Executive Board. An individual member of the Executive Board may only exercise such powers if these are explicitly attributed or delegated to the individual member and the individual member may never exercise powers beyond those exercisable by the Executive Board as a whole. The division of tasks within the Executive Board is determined (and amended, if necessary) by the Executive Board, subject to the approval of the Supervisory Board. Executive Board members especially charged with particular managerial tasks are primarily responsible for the risk control and monitoring of the managerial tasks concerned.

To fulfil these tasks, the specific skills that members of the Executive Board should have at their disposal include:

- Leadership (i.e. ideas, people and change);
- Strategic thinking and sound judgment, financial and commercial acumen, particularly around complex and inorganic change activities;
- Influencing and relationship building;
- Communication;
- Delivery with clear focus on outcomes; and
- Innovation and problem solving and customer-centric.

Moreover, the members of the Executive Board should possess knowledge and experience in the areas of having a strategic understanding of - and insight into - the financial services industry, with particular emphasis on the challenges and opportunities associated with achieving success for a market leading life and pensions and digitized platform company specifically, a good understanding of the different regimes associated with insurance and investments, including capital management and regulatory frameworks. The Executive Board should possess extensive industry and executive management experience in a number of financial, operational and strategic roles – in addition to being - an industry leader recognized by regulators, trade associations and government bodies. In addition, the Executive Board should have a proven ability to lead complex transactions across an organization, including inorganic activity.

The Management Board

As stated in section B.1.1.1, the Executive Board is assisted in its work by the Company's Management Board. The Management Board is entrusted with the overall strategic direction of Aegon Group, particularly with respect to Aegon Group's business objectives and strategy as well as ensuring delivery of results, Aegon Group's policies, Enterprise Risk Management, corporate responsibility issues that are relevant to Aegon Group.

Management Board members are collectively responsible for managing Aegon's senior leadership talent. Management Board members have a responsibility to manage talent consistently at all Aegon's business units around the world. The Management Board has full information rights vis-à-vis all countries and business lines within the Aegon Group.

The Management Board has, in performing its duties, access to the expertise of and support and services from all Corporate Center departments. In undertaking its responsibilities the Management Board acts in accordance with the interests of Aegon Group and the business units connected with it, taking into consideration the interests of Aegon Group's stakeholders. Members of the Management Board express views with respect to important affairs, matters of principle and matters of general interest in accordance with final decision-making, and with due observance of each member's individual responsibilities.

All members of the Executive and Management Boards (as day-to-day policymakers of Aegon) have been approved by the Dutch supervisory authorities on fitness and propriety prior to their respective appointments and fulfil these requirements on an ongoing basis.

The Supervisory Board

Aegon's Supervisory Board oversees the management of the Executive Board, in addition to the Company's business and corporate strategy. The Supervisory Board must take the interests of all Aegon stakeholders into account. The Supervisory Board operates according to the principles of collective responsibility and accountability.

The Supervisory Board, as a collective, should have the following qualifications:

- An international composition;
- Experience with, and understanding of the administrative procedures and internal control systems; an affinity with and knowledge of the industry, its clients, its products and services, the financial services market and Aegon's businesses and strategy;
- Knowledge and experience in (digital) marketing and distribution and the applications of information technology;
- Expertise and experience in digital transformation;
- Experience in the business world, both nationally and internationally; and
- Expertise in financial, accounting and business economics, and the ability to judge issues in the areas of risk management, solvency, actuarial, currencies and investment and acquisition projects.

Individual members of the Supervisory Board will be assessed on the basis of personal qualifications including: managerial experience and skills at the highest levels; experience with large listed companies; understanding of a global business; entrepreneurial attitude; sound business judgment, common sense and decisiveness; independence and a critical attitude with regard to the other Supervisory Board members and the Executive Board; an international orientation; and outside experience.

Aegon aims to ensure that the composition of the Company's Supervisory Board is in line with Aegon's diversity policy for the Supervisory Board, Executive Board and Management Board and is as such well-balanced in terms of professional background, geography, gender and other relevant aspects of the diversity policy.

All members of Aegon's Supervisory Board have been approved by the Dutch supervisory authorities, the Dutch Central Bank (DNB) and the Netherlands Authority of Financial Markets (AFM), with regard to fitness and propriety prior to their appointment and fulfil these requirements on an ongoing basis.

Other key functions

Furthermore, with regard to the Solvency II Delegated Regulation, Aegon has implemented the following four key control functions: risk management, compliance, internal audit and the actuarial function. These functions have been in place within Aegon for many years.

Risk management

- The Aegon Group Chief Risk Officer (CRO) is the function holder for risk management. The Aegon Group CRO is also member of the Management Board and of high level Risk Committees. For more information about the risk management system and its functions, please refer to section B.3 Risk management system.

Compliance

- During 2018, the responsibility for the Solvency II compliance function was transferred from the Head of Operational & Conduct Risk Management to the Head of Regulatory Compliance (reporting to the Group's General Counsel). For more details about the compliance function reference is made to section B.4 Internal control system.

Internal Audit

- The Global Head of Internal Audit is the function holder for Internal Audit. In line with the requirements, Internal Audit is fully objective and independent from all other functions, reporting directly to the CEO and Supervisory Board Audit Committee. For more details about the Internal Audit function refer to section B.5 Internal audit function.

Actuarial function

- The actuarial function holder is the Global Chief Actuary/Head of Underwriting Risk Management and is part of the second line of defense at Aegon Group level with a functional line to the CFO for financial control related aspects. For more details about the Actuarial function please refer to section B.6 Actuarial function.

The key functions stated above have the necessary resources to carry out their tasks. Resourcing of staff and other means required to execute control is documented as part of the charters agreed with the Supervisory Board of Aegon N.V.. Changes to the resources require approval from the key function. Issues can be brought forward to the Supervisory Board of Aegon N.V. for resolution.

The necessary operational independence of the key functions is documented as part of the charters agreed with the Supervisory Board of Aegon N.V. Issues can be brought forward to the Supervisory Board of Aegon N.V. for resolution.

B.2.2 Process for assessment

In accordance with the Dutch Financial Supervision Act, Aegon has identified, in addition to the members of the Management Board and Supervisory Board, those persons that fulfil "key functions" as referred to in Articles 3:271 and 3:272, in connection with Articles 3:8 and 3:9 of the Dutch Financial Supervision Act. This group of persons is broader than but includes all persons that fulfil key functions as referred to in Art. 294 (2) of the Solvency II Delegated Regulation. These persons are subject to a pre-employment screening prior to their employment within Aegon, as well as a propriety assessment by the Dutch supervisory authorities prior to their appointment in a key function.

Ongoing compliance with propriety requirements of the persons that effectively run the undertaking or have other key functions is a joint responsibility of the respective person as well as Aegon.

Fitness of the persons that effectively run the undertaking or have other key functions is determined at the point of selection as well as thereafter. As regards the point of selection, Aegon has drawn up a specific job profile for each function. These profiles detail the requirements in terms of the level of skills, knowledge and experience required to successfully fulfil the specific position within the Company. The selection of the jobholder takes place by assessing the candidate for a position against these specific job requirements. The score on the three elements (expertise, knowledge and experience) is balanced and leads to potential recruitment in the position. Once selected, fitness of a specific person for a function is continuously assessed against this job profile. The ongoing compliance with fitness requirements is monitored as part of the regular human resource cycle within Aegon. Regular formal assessments of performance against the requirements are part of this cycle and are documented for record keeping purposes. In the human resources cycle, performance management is an important element in which targets are set and the results are monitored to assess if the jobholder continues to meet both the specific job requirements and the fitness requirements.

B.3 Risk management system including the Own Risk and Solvency Assessment

B.3.1 Risk management system

B.3.1.1 Aegon's Enterprise Risk Management framework

Aegon's ERM framework is designed and applied to identify and manage potential risks that may affect Aegon. This means identifying and managing individual and aggregate risks within Aegon's risk tolerance in order to provide reasonable assurance regarding the achievement of Aegon's objectives. The ERM framework covers the ERM components as identified by the Organizations of the Treadway Commission (COSO). The ERM framework applies to all of Aegon's businesses for which it has operational control. Aegon's businesses are required to either adopt the Group level ERM framework directly, or tailor it to local needs while meeting the requirements of the Group level ERM framework.

General

As an insurance group, Aegon manages risk for the benefit of its customers and other stakeholders. As a result, the Company is exposed to a range of underwriting, operational and financial risks. Aegon's risk management and internal control systems are designed to ensure that these risks are managed effectively and efficiently in a way that is aligned with the Company's strategy.

Definition and tolerances

For Aegon, enterprise risk management involves:

- Understanding the risks that Aegon faces;
- Maintaining a company-wide framework through which the risk-return trade-off associated with these risks can be assessed;
- Maintaining risk tolerances and supporting policies to limit exposure to a particular risk or combination of risks; and
- Monitoring risk exposures and actively maintaining oversight of the Company's overall risk and solvency positions.

By setting certain predefined tolerances and adhering to policies that limit the overall risk to which the Company is exposed, Aegon is able to accept risk with the knowledge of potential returns and losses.

The ERM framework consists of various components, as shown below:

Risk strategy and risk tolerance

The formulation of the risk strategy starts with the principle that taking a risk should be based on serving a customer's need. In terms of Aegon's purpose statement, risk taking should be instrumental to helping people achieve a lifetime of financial security. The competence with which Aegon is able to manage the risk is assessed and Aegon's risk preferences are formulated, taking into account Aegon's risk capacity. The risk preferences eventually lead to a targeted risk profile that reflects the risks Aegon wants to keep on the balance sheet, and the risks Aegon would like to avoid.

Aegon's risk appetite statement and risk tolerances are established in order to assist management in carrying out Aegon's strategy using the resources available to Aegon. Aegon's risk appetite statement is linked to Aegon's strategy and purpose as expressed in the mission statement: helping people achieve a lifetime of financial security. Aegon's risk appetite statement is to:

"Fulfil our promises towards our customers and other stakeholders by delivering sustainable growing long-term free capital generation, with strong resilience in solvency and liquidity, healthy balance in exposures, and by running a responsible business with effective controls."

Following from the risk appetite statement, risk tolerances are defined on:

- Capital generation, to ensure free capital generation remains sufficiently in line with projections;
- Solvency and liquidity, to ensure that Aegon remains solvent and liquid even under adverse scenarios;
- Risk balance, to ensure a healthy balance of risk exposures that supports delivering on targets for capital generation and return on capital;
- Responsible business with effective controls, which acknowledges an acceptable level of operational risk and stresses a low tolerance for (lack of) actions which could lead to material adverse risk events that result in breaking promises or not meeting reasonable expectations of customers, legal breaches or reputational damage.

The tolerances are further developed into measures, limits and thresholds that have to be complied with to remain within the tolerances.

Risk identification and risk assessment

Aegon has identified a risk universe that captures all known material risks to which the Company is exposed. An Emerging Risk process is in place to ensure on-going appropriateness of both the risk universe and the risk management framework. In order to assess all risks, a consistent methodology for measuring risks is required. Aegon's methodology for this is documented in a manual and maintained up-to-date. The risk metrics are embedded in Aegon's key reports and are used for decision making.

Risk response

Aegon distinguishes the following risk responses:

- When the risk exposure is within the set risk tolerance, management can accept the risk; and
- When exposure exceeds the risk tolerance of management or cost-benefit analysis supports further actions, management can decide to control, transfer or avoid the risk.

Risk monitoring and reporting

Risks are monitored regularly and reported on at least a quarterly basis. The impact of key financial, underwriting and operational risk drivers on earnings and capital is shown in the quarterly risk dashboard for the various risk types both separately as well as on an aggregate basis.

Risk exposures are compared with the limits as defined by Aegon's risk tolerance statements. Reporting also includes risk policy compliance and incident and compliance reporting. Finally, the main risks derived from Aegon's strategy and the day-to-day business are discussed, as well as forward looking points for attention. If necessary, mitigating actions are taken and documented.

Risk control

A system of effective controls is required to mitigate the risks identified. In Aegon's ERM framework risk control includes risk governance, risk policies, internal control framework, model validation, risk embedding, risk culture and compliance.

B.3.1.2 Aegon's risk governance framework

Aegon's risk management is based on clear, well-defined risk governance. The goals of risk governance are to:

- Define roles and responsibilities, and risk reporting procedures for decision makers;
- Institute a proper system of checks and balances;
- Provide a consistent framework for managing risk in line with the targeted risk profile; and
- Facilitate risk diversification.

Governance structure

Aegon's risk management framework is represented across all levels of the organization. This ensures a coherent and integrated approach to risk management throughout the Company. Similarly, Aegon has a comprehensive range of company-wide risk policies that detail specific guidelines and limits. These policies include legal, regulatory and internally set requirements, and are designed to keep overall risk-specific exposures to a manageable level. Any breach of policy limits or warning levels triggers immediate remedial action or heightened monitoring. Further risk policies may be developed at a local level to cover situations specific to particular regions or business units. Aegon's risk management governance structure has four basic layers:

- The Supervisory Board and the Supervisory Board Risk Committee (SBRC);
- The Executive Board and the Management Board;
- The Group Risk & Capital Committee (GRCC) and its sub-committees; and
- The Regional Risk & Capital Committees (RCC).

1. Supervisory Board

The SBRC reports to the Supervisory Board on topics related to the ERM framework and the internal control system.

The formal responsibility regarding the effectiveness and design, operation and appropriateness of the ERM and internal control system rests, however, with the Audit Committee of the Supervisory Board. The Audit Committee works closely together with the SBRC with regard to the oversight of and reports on the effectiveness of the ERM framework and the risk control systems of the Company.

The Audit Committee relies on the findings of the SBRC. The SBRC is responsible for overseeing Aegon's ERM framework, including risk governance and measures taken to ensure risk management is properly integrated into the Company's broader strategy. The main roles and responsibilities of the SBRC are to assist and advise the Supervisory Board and the Audit Committee of the Supervisory Board in fulfilling their oversight responsibilities regarding the effective operation and appropriateness of the ERM framework and internal controls system of Aegon N.V., and its subsidiaries and affiliates that comprise the Aegon Group.

These include:

- Risk strategy, risk tolerance and risk governance;
- Product development and pricing;
- Risk assessment;
- Risk responses and internal control effectiveness;
- Risk monitoring;
- Risk reporting;
- Operational Risk; and
- Transformation Risks.

Furthermore, the SBRC regularly reviews risk exposures relating to capital, earnings and compliance with Group Risk policies. It is the responsibility of the Executive Board and the Group's Chief Risk Officer (CRO) to inform the Supervisory Board of any risk that directly threatens the solvency, liquidity or operations of the Company.

2. Executive Board and Management Board

Aegon's Executive Board has overall responsibility for risk management. The Executive Board adopts the risk strategy, risk governance, risk tolerance and material changes in risk methodology and risk policies. The Group's CRO has a standing invitation to attend Executive Board meetings and a direct reporting line to the Supervisory Board to discuss ERM and related matters, and is a member of the Management Board.

The Management Board oversees a broad range of strategic and operational issues. While the Executive Board remains Aegon's statutory executive body, the Management Board provides vital support and expertise in safeguarding Aegon's strategic goals. The Management Board discusses and sponsors ERM, in particular the risk strategy, risk governance, risk tolerance and the introduction of new risk policies.

The Executive Board and Management Board are supported by the Group Risk & Capital Committee.

3. Group Risk & Capital Committee (GRCC)

The GRCC is Aegon's most senior risk committee. It is responsible for managing Aegon's balance sheet at the global level, and is in charge of risk oversight, risk monitoring and risk management related decisions on behalf of the Executive Board in line with its charter. The GRCC ensures risk-taking is within Aegon's risk tolerances; that the capital position is adequate to support financial strength, credit rating objectives and regulatory requirements, and that capital is properly allocated. The GRCC informs the Executive Board about any identified (near) breaches of overall tolerance levels, as well as any potential threats to the Company's solvency, liquidity or operations.

The GRCC has three sub-committees: the ERM framework, Accounting and Actuarial Committee (ERMAAC), the Non-Financial Risk Committee (NFRC) and the Model Validation Committee (MVC).

The ERM framework, Accounting and Actuarial Committee (ERMAAC)

The purpose of the ERMAAC is to assist the GRCC, Executive Board and Management Board with framework setting and maintenance across all group-level balance sheet bases, including policies, standards, guidelines, methodologies and assumptions. The ERMAAC can seek advice on significant framework development from temporary working groups comprised of subject-matter experts from across the Company's businesses. These working groups are established by the ERMAAC, including their membership, scope of work and deliverables.

The Non-Financial Risk Committee (NFRC)

The purpose of the NFRC is to assist the GRCC, Executive Board and Management Board with non-financial risk framework setting and maintenance, including policies, standards, guidelines and methodologies and to act as formal discussion and exchange of information platform on matters of concern regarding nonfinancial risk management.

The Model Validation Committee (MVC)

The MVC is responsible for approving all model validation reports across Aegon. This is an independent committee that reports into the GRCC and Executive Board to provide information on model integrity and recommendations for further strengthening of models.

4. Regional Risk & Capital Committee (RCC)

Each of Aegon's regions has a Risk & Capital Committee (RCC). The responsibilities and prerogatives of the RCCs are aligned with the GRCC and further set out in their respective charters, which are tailored to local circumstances.

Group-wide risk function

In addition to the four basic layers described above, Aegon has an established group-wide risk function. It is the mission of the Risk Management function to ensure the continuity of the Company through safeguarding the value of existing business, protecting Aegon's balance sheet and reputation, and through supporting the creation of sustainable value for all stakeholders.

In general, the objective of the Risk Management function is to support the Executive Board, Management Board, Supervisory Board, and regional and business unit boards in ensuring that the Company reviews, assesses, understands and manages its risk profile. Through oversight, the Risk Management function ensures the group-wide risk profile is managed in line with Aegon's risk tolerances, and stakeholder expectations are managed under both normal business conditions and adverse conditions caused by unforeseen negative events.

The following roles are important in order to realize the objective of the Risk Management function:

- Advising on risk-related matters including risk tolerance, risk governance, risk methodology and risk policies;
- Supporting and facilitating the development, incorporation, maintenance and embedding of the ERM framework and sound practices; and
- Monitoring and challenging the implementation and effectiveness of ERM practices.

In the context of these roles, the following responsibilities can be distinguished:

Advising on risk-related matters:

- Bringing businesses together to facilitate information exchange, sharing best practices and working together on relevant case studies and external standards in order to develop, adopt and maintain relevant standards of practice throughout Aegon; and
- Optimizing the use of capital and growth within risk/return and consumer conduct criteria.

Supporting and facilitating:

- Developing and maintaining the global ERM framework for identifying, measuring and managing all material risks the Company is exposed to as defined in Aegon's risk universe and protecting Aegon's reputation;
- Developing and maintaining Aegon's risk methodology as described in the Aegon Market Consistent Reporting Manual (AMCRM);
- Supporting the businesses with implementing the ERM framework, risk methodology and standards of practice where needed;
- Supporting the Management Board in ensuring the effective operation of the ERM framework and related processes, providing subject matter expertise to businesses as appropriate and facilitating information exchange on good risk practices;
- Identifying and analyzing emerging risks, being input for ongoing risk strategy development and to ensure that Aegon's risk universe remains up to date;
- Designing the Solvency II PIM, including the validation thereof. Model validation ensures independent review of methodology, assumptions, data, testing, production, reporting and use of the Solvency II PIM;
- Analyzing Solvency II PIM outputs and performance and reporting results to the Boards and relevant (Supervisory) Committees;
- Providing subject matter expertise from the Centers of Excellence of the global Risk Management function to business areas through review of key initiatives, transactions, programs, projects, assumptions, methodologies and results across all important paradigms;
- Providing assurance on the integrity of models and cash flows through model validations and maintenance of model validation policies and standards; and
- Promoting a strong risk management culture across Aegon, including review of performance targets and remuneration in line with the Aegon Group Global Remuneration Framework.

Challenging and monitoring:

- Monitoring the ERM framework and overseeing compliance with group-wide risk governance requirements, risk strategy and risk tolerances, risk policies and risk methodology, which are applicable to all businesses for which Aegon has operational control;
- Ensuring appropriate risk management information is prepared for use by the GRCC, the Management Board, the Executive Board and Supervisory Board;
- Overseeing material risk, balance sheet and business decisions taken throughout Aegon in line with established risk governance arrangements;

- Monitoring and reporting on risk exposures and advising the Boards and (Supervisory) Committees on risk management related matters, including in relation to strategic affairs such as corporate strategy, mergers and acquisitions and major projects and investment;
- Monitoring that the internal model is and remains appropriate to the Company's risk profile and informing the Management Board and the Supervisory Board about the on-going performance, suggesting improvements;
- Monitoring risk exposures and risk policy compliance, including review of the Own Risk and Solvency Assessment (ORSA) and Recovery Plan defined triggers and early warning indicators;
- Acting as independent business partner with focus on talent development, control excellence, customer conduct, capital allocation and by providing management focused risk tools or fostering debates and proactively challenging on key business developments that may create significant exposure for example through hedging and investment remits;
- Providing subject matter expertise and overseeing critical business initiatives to strengthen risk management activities, to improve the risk profile and to resolve risk events and control issues noted;
- Embedding robust oversight and risk management culture and processes; and
- Protecting group capital for all stakeholders.

Aegon's Group and business unit's risk management staff structure is fully integrated. Business unit CROs have either a direct reporting line to the Group CRO or one of the regional CROs that reports directly to the Group CRO.

Lines of defense

Aegon's risk management structure is organized along three 'lines of defense' to ensure conscious risk-return decisions, and to limit the magnitude of potential losses within defined levels of certainty. The objective of this structure is to avoid surprises due to the materialization of unidentified risks, or from losses that exceed predefined risk tolerance levels and related limit structures.

The Company's first line of defense, the business and support functions, has direct responsibility for managing and taking risk in accordance with defined risk strategy, risk tolerances and risk policies. The second line of defense includes the risk management function. The risk management function facilitates and oversees the effectiveness and integrity of ERM across the Company. The third line of defense – the audit function – provide independent assurance on the effectiveness and integrity of the internal control, risk management and governance functions.

Model validation process

Aegon has group-wide requirements in place on model validation. The requirements are covered in the Model Validation Framework, including the Model Validation and Model Change policies. The Model Validation function is part of the Risk Management function, and is independent from model owners and business users. The model validation reports are approved in the independent Model Validation Committee (MVC).

The purpose of the model validation process is to assess the model's integrity, including the performance of the model and the ongoing appropriateness of its specifications. Before model validation by Aegon's second line of defense can take place, responsible management – the first line of defense – should have ensured that the model in scope of the validation meets the requirements as set out in the Model Validation Framework. Among other things, the Model Validation function assesses the appropriate use of test tools under the responsibility of local management and also performs its own independent testing. The findings of the model review are documented and result in a model opinion. Identified gaps need to be closed by the model owners according to a gap closure plan.

Solvency II PIM governance

The governance of Aegon's Solvency II Partial Internal Model (PIM) is fully integrated in Aegon's risk management system and governance structure. Aegon's methodology for assessing risks includes the Solvency II PIM and is used to measure and aggregate risks and to calculate the Solvency Capital Ratio.

All Solvency II PIM models have been independently validated. After passing the initial validation, models are part of the regular validation program, in which models are subject to validation on a rolling basis to secure ongoing appropriateness.

In addition to the validation of individual models, the Solvency II PIM is also subject to a top-down analysis as part of the overarching validation performed by the Model Validation function. The overall purpose of the overarching validation is to provide an independent assessment of the overall appropriateness of the Solvency II PIM as adopted and used within Aegon. The overarching validation of the Solvency II PIM is updated annually. The last overarching validation was completed in August 2018, with a positive conclusion.

There were no material changes to the internal model governance during the reporting period.

B.3.2 Own Risk and Solvency Assessment

B.3.2.1 ORSA process overview

The Own Risk and Solvency Assessment ('ORSA') Process has a primary purpose of providing a holistic, inter-connected view of a) Aegon's business strategy, b) the risks to which the business is exposed and c) Aegon's capital levels. It assesses the financial security of the business given the risks Aegon is exposed to. The ORSA captures the key elements of the risk management and capital management processes which support the Company in pursuit of fulfilling its business strategy.

Own Risk and Solvency Assessment



The ORSA is integrated within the Company through Aegon's annual Budget/Medium Term Plan (MTP) process and the ongoing Risk and Capital assessments.

The Budget/MTP contains the business plan over a three-year period. This includes business projections on a variety of bases to indicate different economic assumptions. The business plan combines the business and financial strategy. Also included within the Budget/MTP are stress testing techniques and scenario analysis to provide details of how the Company would be impacted by particular changes in macro and micro economic factors, in addition to non-financial factors impeding the fulfilment of Aegon's strategic objectives. The outcomes of the process inform management, enabling them to determine appropriate mitigating actions and define capital and solvency needs.

A Risk and Capital assessment takes into account the proposed strategy and the acceptable level of the associated risks in pursuit of that strategy. Aegon's risk management process and ORSA cover Aegon's risk universe and also give explicit attention to strategic risks, emerging risks and top risk themes.

The ORSA process is iterative and subject to on-going monitoring. The Budget/MTP and ORSA Steering Committee is responsible for the direction, integration of the business strategy and key decision making in respect of the Budget/MTP and ORSA process. The committee oversees the delivery of the Budget/MTP and ORSA and acts as an escalation point for decisions, risks or issues up to the Management Board. It approves all key deliverables throughout the process. The ORSA process is also used for decision making and responding to changes impacting the business. "Use" of the ORSA process relates to actions recommended to the Board arising from the ORSA process.

All of the above is evidenced and documented in Aegon's annual ORSA report. More frequent, quarterly reports are produced internally that document the ongoing Risk and Capital assessments of the ORSA process throughout the year. The outcomes of these reports contribute to the annual ORSA report.

The ORSA report is targeted primarily at the Management Board, Executive Board and Group Risk & Capital Committee as key approval bodies. However, the concepts of ORSA are business wide and all senior management engage with the ORSA process in developing business plans that are aligned with Aegon's overall risk and capital strategy. The Executive Board approves and signs off the annual (and any non-regular) ORSA reports.

B.3.2.2 ORSA frequency

The ORSA is performed annually or more often if deemed necessary, like in situations where the business, solvency or risk profile significantly changes. A non-regular ORSA does not necessarily require all sections to be re-produced. Management is responsible for the monitoring of the triggers that may initiate the execution of a non-regular ORSA. The Executive Board is responsible for the execution of a non-regular Aegon Group ORSA.

B.3.2.3 Aegon's own solvency needs

An important element of Aegon's ERM framework is establishing the organization's tolerance for risk in order to assist management in carrying out Aegon's strategy within the limits of available resources. To achieve this, Aegon has defined the following key areas in which risk tolerance plays an important role:

- Capital generation;
- Solvency;
- Liquidity;
- Risk balance; and
- Responsible business with effective controls

The tolerances on capital generation and solvency both directly relate to capitalization. Capital generation relates to the change in the capital position over time. The tolerance is forward looking and focuses on the long term. A sustainable growth in long-term capital generation protects capital and helps to ensure policyholder protection while allowing Aegon to pay-out a sustainable dividend to investors. The solvency tolerance is integrated within the Capital Management Policy. The primary measure of group capital adequacy that Aegon manages is Aegon Group's Solvency ratio. Aegon's Capital Management Policy sets the targeted capitalization level for Aegon Group. Capital management zones are set to provide adequate protection against a breach of the set risk tolerance. The use of the capital management zones is instrumental to trigger appropriate and timely adjustments to capital plans and appropriate and timely management actions with increasing intensity if necessary. For more details about the Capital Management Policy and the capital management zones, please refer to section E. Capital management.

Aegon tests its capitalization against adverse plausible scenarios, given its current business and risk profile. The ability to meet the obligations to policyholders under the identified adverse plausible scenarios is measured by testing whether capitalization remains above the recovery plan level.

Capitalization is also a relevant factor in the risk balance tolerances. The targeted risk balance or risk profile is the outcome of Aegon's risk strategy setting process. This process assesses by risk type whether the risk serves a customer need, whether Aegon has the competence to manage the risk, if Aegon has a preference for the risk and if the risk fits within Aegon's risk taking capacity. The risk taking capacity is determined by the available capital. Ultimately, the risk taking capacity is allocated to specific risks through risk tolerances in line with the Company's risk preferences.

A breach of any of the risk tolerances needs to be followed by a review of business plans and identification of management actions to remediate the breach.

Capitalization is not an explicit factor in the liquidity risk tolerance which requires having sufficient liquidity to meet cash demands, even after an extreme event. However, both sound capital and liquidity management are required to ensure that Aegon is able to meet its obligations in the short and the long run.

Capitalization is also not an explicit factor in the tolerance on responsible business with effective controls, which links risk management to the organization culture and sets tolerances for operational risk events, ensuring business integrity and operational resilience.

B.4 Internal control system

Aegon has developed an internal control system that serves to facilitate its compliance with applicable laws, regulations and administrative processes, and the effectiveness and efficiency of operations with regard to its objectives, in addition to the availability and reliability of financial and non-financial information. The overall internal control system ensures appropriate control activities for key processes and the documentation and reporting of administrative and accounting information. The internal control system is embedded through policies and frameworks such as the ERM framework, the Model Validation Framework and the Operational Risk Management (ORM) Framework, and is considered wider than the 'Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission' (COSO, 2013), on which criteria for the internal control system are based.

The internal control system was developed in accordance with regulations that Aegon must comply with (i.e. Sarbanes-Oxley Act and Solvency II). Aegon's control activities should assure an adequate level of internal control over Aegon's objectives and in particular compliance, operational and financial reporting objectives including the production of Solvency II and IFRS-EU numbers. The objective is to provide assurance regarding the reliability, accuracy, completeness, timeliness and quality of internal and external (regulatory) reporting, the safeguarding of assets, and compliance with internal and external requirements. A key element of Aegon's internal control system is to facilitate action planning and embed continuous improvement regarding the internal control environment throughout the organization.

As part of the internal control system, a financial reporting internal control framework has been established supported by Aegon's Group Sarbanes Oxley methodology. For more information about Aegon's internal control framework, reference is made to section B.4.2 ORM Risk Framework. Furthermore, as required by Solvency II, Aegon's internal control framework includes a compliance function, which is described in section B.4.3.

The internal audit function and actuarial function are described in section B.5 and B.6 respectively.

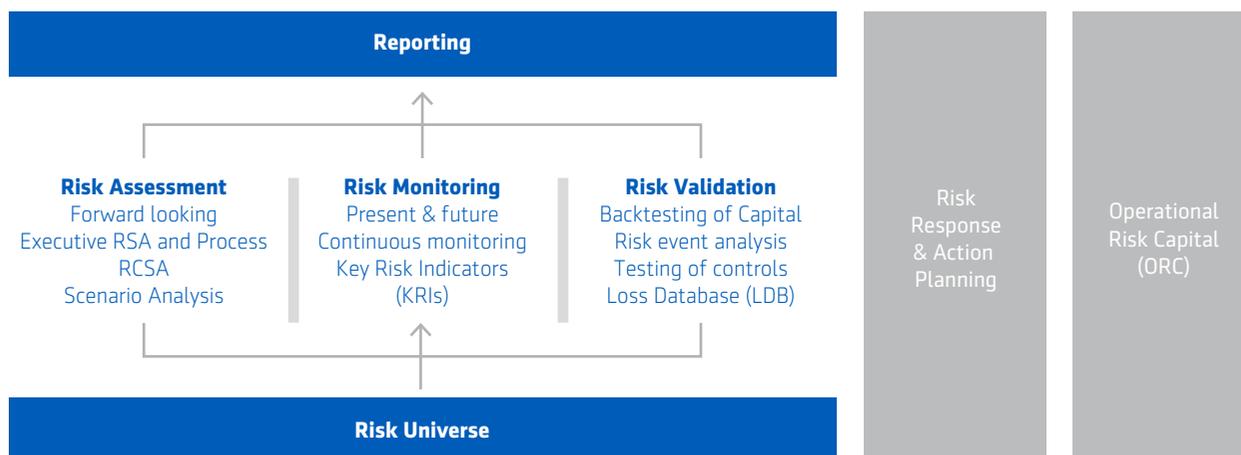
B.4.1 General principles of Aegon's internal control system

The general principles of Aegon's internal control system apply to all undertakings, functional areas or departments. These principles are as follows:

- All employees must comply with the Code of Conduct. The Code of Conduct states that all employees will conduct their work in an ethical manner;
- If employees become aware of, or observe fraud, questionable accounting practices, or other unethical behavior, they should report it to a member of management, human resources or to their local ethics hotline;
- Employees are instructed regarding the sensitivity and confidentiality of the Group and policyholder information or client information;
- All departments should develop a system of internal control to ensure that the assets and records of the Group are adequately protected from loss, theft, alteration or unauthorized access;
- All departments embed and maintain adequate segregation of duties. Where adequate segregation cannot be achieved, other risk mitigating controls are designed, implemented, effectively performed and results documented;
- All departments have business continuity plans in place that are periodically updated;
- The interest of the customer is considered when designing, approving and reviewing products and distribution channels (in line with Aegon's market conduct principles); and
- Records of the Group are maintained in compliance with record retention policies and local regulatory requirements.

B.4.2 ORM risk framework

A key element of Aegon's internal control system is to facilitate action planning and embed continuous improvement regarding the internal control environment throughout the organization. From an ORM perspective and given the different nature of operational risks vis-à-vis financial and underwriting risks, the ORM risk framework is considered an integral part of the internal control system to facilitate its compliance with applicable laws, regulation and administrative processes and the effectiveness and efficiency of operations in view of its objectives. The ORM framework is part of the more comprehensive ERM Framework, which is not limited to operational risk. From that perspective the Operational Risk Management (ORM) function applies building blocks of the ERM framework. The figure below provides a graphical illustration of this ORM risk framework.

Aegon's ORM Risk Framework

Process Mapping encompasses the identification of significant processes and their owners. Process owners are responsible for the effective execution of risk management activities within their processes.

A Risk (Self) Assessment (RSA) is achieved through periodic risk control self-assessments (RCSAs). These are performed to understand business objectives, identify operational risks for realizing these objectives, assess the adequacy of the risk mitigating factors or controls in place given the identified risks, and assess the impact and likelihood of losses (including financial reporting errors). These assessments contribute to the understanding of all known risks for which key control activities can be determined to (partly) mitigate those risks. This risk identification is supported by a value chain contributing to the completeness of the risk assessment and the identification of handover points.

Scenario Analysis (SA) is the process of developing scenarios along structured dimensions, using opinions from subject matter experts and business leaders, and deriving reasoned risk assessment of the severity and frequency, thereby enabling business improvements and enhanced risk management.

Risk Monitoring is accomplished through the effective design and implementation of Key Risk Indicators (KRIs) or other monitoring mechanisms that inform about current risk and control profiles. Relative to financial reporting, management actively monitors processes and key controls to ensure that they are designed and operating effectively. Management's active monitoring of key controls, KRIs, or other measurements along with identifying and implementing related action plans reflects the proactive nature of risk management efforts. Appropriate metrics or measurements should be identified to the extent that they are indicators of potential risk or control deficiencies.

Risk Validation is obtained through the identification, collection and analysis of operational loss events, or through validating the effectiveness of controls that mitigate risks. The operational loss events are collected and analyzed in a centralized loss database (LDB). To stimulate learning within and as an organization, root causes of operational loss events or control deficiencies are analyzed and shared. By sharing the root causes, Aegon facilitates more effective risk management and continuous process improvement. The number of loss events or control deficiencies confirm that the risk assessments are effective, and that the KRIs are effective to monitor or predict risk.

Risk Response & Action Plans follow the risk identification, monitoring and validation process. Risk Response is the decision-making process to accept, control, transfer or avoid risks. Action plans are developed and activities performed to achieve the desired risk mitigation. Action plans arise from losses incurred, risk assessments performed, monitoring activities (including key risk indicators identified) and control testing results.

Risk Reporting covers all aspects of operational risk management, validating and demonstrating the importance of risk management to Aegon's operations. Reporting of (key) risks, loss events, control weaknesses and trends in KRIs provides a mechanism for taking appropriate and adequate actions on a timely basis, enhancing the decision making process and providing feedback that gauges the success for the ORM program as a whole.

B.4.3 Compliance function

B.4.3.1 Introduction

For Aegon, compliance is based on integrity risk which is defined as the threat to the reputation of, or the current or future threat to the capital or the results of Aegon due to insufficient compliance with the law and regulations, internal company rules and policies governing.

The business is supported by the Aegon Group Regulatory Compliance (RC) function and business unit-level compliance teams by:

- Identifying new and revised regulations and managing the regulatory compliance universe;
- Identifying and assessing risks stemming from these regulations;
- Advising how to comply with new changes and existing regulations;
- Policy setting and implementation;
- Investigating compliance breaches; and
- Periodic and *ad hoc* reporting on regulatory developments, and compliance and integrity incidents.

B.4.3.2 Aegon Group Compliance function

In 2018, at Aegon Group level, the key function holder for Compliance assurance with Solvency II requirements is the Global Head of Regulatory Compliance. At the business unit level, there are also regulatory compliance personnel who support local management in the development of the local programs. They also report to the Global Head of Regulatory Compliance about the effectiveness of the local program.

B.4.3.3 Objective of the Regulatory Compliance function

The objective of the Regulatory Compliance function is to support the Executive Board, Management Board and business units' Management Boards in ensuring that Aegon acts in line with relevant legal, regulatory requirements and Aegon Group risk tolerance. In this role, the function will promote and foster compliance with laws and regulations. Conducted effectively, strong regulatory compliance enables the organization to act with integrity, and provide optimal service delivery to Aegon's clients.

B.4.3.4 Activities

The Regulatory Compliance function is responsible for the identification and assessment of regulatory developments and associated risks, the management and implementation of programs to respond to regulatory developments (risk mitigation) and first line monitoring, and reporting of compliance with existing regulations and internal policies to ensure that Aegon operates within its integrity risk tolerance.

The following thematic regulatory areas fall within the scope of the regulatory compliance function:

- Market Conduct Regulation (Treating Customers Fairly);
- Prudential Financial Regulation (Solvency II, et al.);
- Organizational Conduct Regulation (Market Abuse, Anti-Trust and Competition);
- Privacy and data;
- Personal Conduct Regulation (Conflict of Interest, Fitness & Propriety; Personal Conduct Regulation)
- Customer Conduct Regulation (Sanctions); and
- Financial Crime Regulation (Anti-Money Laundering, Counter Terrorist Financing, Fraud, Anti-Bribery and Corruption).

B.4.3.5 Role of Management

Regulatory Compliance is a global function within Aegon. The Executive Board, together with the Management Board, is responsible for the effectiveness of the Aegon organization as a whole at all times; they are responsible for the establishment of an effective compliance function that meets the requirements set out in the Regulatory Compliance Charter.

B.4.3.6 Responsibilities & roles of the Regulatory Compliance function

Regulatory Compliance acts as a gatekeeper within the organization to identify regulatory requirements, and, working with business unit management, to ensure compliance. The function is supported by the relevant external professionals and good market practice standards, as applicable. The function maintains a charter, a framework and a suite of global policies designed to manage the risk of non-compliance.

In realizing the objective of the function, the following aspects are important:

- ▀ **Advise** the Executive Board, Management Board, and Supervisory Board Audit Committee on:
 - ▀ the (potential) impact of regulatory developments on Aegon;
 - ▀ the development of a regulatory compliance framework that encompasses the relevant regulatory requirements and risks pertaining to Aegon and serves as a standard for all entities of Aegon; and
 - ▀ the status of Aegon's compliance with laws, regulations and appropriate Aegon Group's policies.
- ▀ **Support and facilitate** the Executive Board, Management Board, business unit Management Boards and the business in the implementation, maintenance and embedding of the regulatory compliance framework.
- ▀ **Monitor** on behalf of the Executive Board, Management Board and business unit Management Boards in cooperation with local teams the implementation and effectiveness of the regulatory compliance framework.

B.4.3.7 Responsibilities & role of the ORM function

The ORM function supports the effective establishment of the Regulatory Compliance function. The following roles and compliance-related objectives are set out in the ORM function charter:

Advise

- ▀ Keep well informed of good practices, regulatory and industry standards and trends in the fields of conduct risk management, and determine relevancy and the impact on Aegon; and
- ▀ Advise on the development of the Operational Risk framework, and the development of improvements and new initiatives that encompasses the relevant, material compliance risks pertaining to the Aegon organization

Support, Challenge, Report:

- ▀ Provide challenge and oversight of the regulatory compliance framework, monitoring the effectiveness of implementation on all elements (including methodology, policies, programs) in managing regulatory risks;
- ▀ Support identification and assessment of material risks by facilitating Risk Control Self-Assessment sessions in relation to operational, conduct and regulatory risks;
- ▀ Report to the Management Board and senior management on the actual compliance and conduct risk profile compared with the risk tolerance levels. This includes monitoring of the effectiveness of the risk management and internal control framework related to compliance risks, and of the effectiveness of the performance management and remuneration processes; and
- ▀ Provide oversight and reporting to the Management Board and senior management on the effectiveness of remediation measures including action plan monitoring.

B.5 Internal Audit function

B.5.1 Internal Audit function

Aegon's Internal Audit function (Internal Audit) assists the Executive Board, the Supervisory Board and Senior Management in protecting Aegon's assets, reputation, and sustainability by independently and objectively evaluating the effectiveness of internal controls, risk management and governance processes. The Internal Audit function is the third line of defense.

The Aegon Group Chief Audit Executive reports functionally and administratively to Aegon's Group Chief Executive Officer and the Audit Committee of the Supervisory Board. Internal Audit's main tasks and responsibilities are to:

- ▀ Prepare and execute a risk-based audit plan that is approved (semi-)annually by the Risk and Audit Committees of the business units, the Audit Committee of the Supervisory Board and the Executive Board;
- ▀ Identify, and agree with management, opportunities to improve the internal control framework, risk management and governance processes, and verify that such improvements are implemented effectively within a predetermined period of time;
- ▀ Occasionally assist with the following activities: investigating significant suspected fraudulent activities, performing special reviews and providing consulting services;
- ▀ Periodically issue reports to management and the Audit Committee, summarizing the progress and results with respect to the annual audit plan; and
- ▀ Perform audits on the functioning of the first and second line of defense.

B.5.2 Independence and objectivity of the Internal Audit function

Internal Audit executes its duties freely and objectively in accordance with the Institute of Internal Auditors' International Standards for the Professional Practices of Internal Audit, in addition to Aegon policies and procedures. Internal Audit's policies also align with the local professional auditing standards.

Internal Audit avoids any conflict of interest and accesses the knowledge necessary to perform audit activities in specific areas of expertise. If required, temporary resourcing constraints can be alleviated by outsourcing of Internal Audit activities.

The business units' Chief Audit Executives verify as to whether any resource not employed by Internal Audit departments (for example contractors or other externally hired resources) possesses the necessary knowledge, skills and other competencies to execute the duties of Internal Audit. These resources are appropriately assigned to audit teams or otherwise assist the internal auditors, and comply with the principles of the Aegon Internal Audit Charter.

Resources employed within the Internal Audit function do not execute any operational duties for Aegon and will not review a business area or function in which they have had recent management or operational responsibility or are otherwise conflicted.

To ensure the independence of the auditors and effective governance, the business units' Chief Audit Executives have a reporting line to the Aegon Group Chief Audit Executive, as well as to their respective business units' Risk and Audit Committee and business units' Chief Executive Officer.

B.6 Actuarial function

B.6.1 Global functions

The Executive Board has defined the Global Chief Actuary function (first line of defense in Finance) and the Underwriting Risk Management (URM) function (second line of defense in Risk). Both functions are present at Aegon Group level and at business unit level. Aegon has decided to allocate both Global functions to one person at Group level.

- ▀ **Chief Actuary function** is to advise, to support, to facilitate, to monitor and to challenge on matters relating to insurance liabilities, pricing and product development, reinsurance use, underwriting practices, required capital assessment and maintenance of a strong risk culture.
- ▀ **URM function** is to monitor and to challenge on matters relating to actuarial risk analysis, risk policy and limit framework setting, risk management and compliance, assessment of required capital methodology and modelling, in addition to related risk controls. Furthermore, the role of the Head of URM is to set frameworks in which the Chief Actuary operates, and to perform independent peer reviews of the Actuarial Function reports.

The Chief Actuary function is a sub-function of the Finance function falling under the responsibility of the CFO. The URM function is a sub-function of the Risk Management function falling under the responsibility of the CRO.

B.6.2 Objectives of the functions

The objectives of the actuarial functions consist of end-to-end accountability for the adequacy and reliability of reported technical provisions, including risk margins by ensuring a proper control framework, accurate reporting and appropriate data, modelling, methodology and assumptions. A further objective that it has is to provide senior management with actuarial analysis on: quarterly changes in technical provisions, product pricing, actual and expected assumption experience including expert judgments, and in general the impact of strategic or management decisions on liabilities and actuarial risks.

In addition, the actuarial functions' objectives contain framework/policy setting, monitoring compliance with respect to actuarial risks and supporting management in the execution of an effective underwriting policy, also covering the pricing and product development, by providing expert opinions.

Finally, the actuarial function aims to ensure compliance with regulatory actuarial (reporting) requirements, including local actuarial sign-off on the adequacy and reliability of technical provisions (also referred to as reserves).

The Chief Actuary function reports periodically about the adequacy and reliability of the technical provisions (Actuarial Function Report), actuarial assumption Assumed/Expected results and analysis, analysis of annual actuarial financials (source of earnings), pricing developments, reinsurance use, underwriting practices, actuarial content in regulatory reports (e.g. SFCR and ORSA), and required capital methodology for actuarial risks. The Chief Actuary function is responsible for the Solvency II Actuarial Function report except in the case of operating insurance entities in the Netherlands, where the regulatory framework requires a second line Actuarial Function Holder to provide and sign off the Solvency II Actuarial Function report.

B.6.3 Reporting

The URM function reports periodically about peer reviews of actuarial assumptions and Actuarial Function reports (except for insurance companies operating in the Netherlands), actuarial/underwriting risks versus risk limits, compliance with pricing & product development policies, reinsurance counterparty risk exposure and policy compliance, actuarial risk framework developments, and relevant risk controls.

B.7 Outsourcing**B.7.1 External outsourcing arrangements**

Outsourcing arrangements are arrangements of any form between an Aegon entity and a third party, in which the third party performs a function or an activity, whether directly or by sub-outsourcing, which would otherwise be performed by the Aegon entity itself.

External outsourcing arrangements are those where the third party is not a member of the Aegon Group of companies. During 2018, Aegon announced that its subsidiary, Aegon Americas, entered into an agreement with Tata Consultancy Services (TCS) to administer the company's US insurance and annuity business lines. The partnership enables Aegon Americas to accelerate the enhancement of its digital capabilities and the modernization of its platforms to service customers in all lines of business. Oversight is performed by Aegon Americas.

An external outsourcing arrangement is considered to be a material risk under Solvency II and by Aegon when it covers a critical or important function or activity that is essential to the operation of the undertaking as it would be unable to deliver its services to policyholders without the function or activity.' Aegon defines material external outsourcing arrangements based on a vendor classification matrix, which is included in Aegon's 'Outsourcing & Supplier Risk Policy'.

Material suppliers are performing critical or important functions or activities that Aegon is unable to perform itself and which are essential to the operation of the undertaking and in the absence of which Aegon would be unable to deliver its services to policy holders.

Material outsourcing arrangements and material suppliers have an impact on operational risk as a result of potential material changes to and reduced control over the related people, processes and systems. To manage material outsourcing arrangements and material suppliers, Aegon has an Outsourcing & Supplier Risk Policy. The aim of this policy and other procurement related documentation is to ensure that all arrangements entered into by Aegon are subject to appropriate assessment and approval. In case arrangements are identified as material outsourcing arrangements (i.e. risk classification severe and significant) due diligence, approval and on-going monitoring is performed in line with the policy. All material risks arising from external material outsourcing arrangements and material suppliers are appropriately managed to ensure that Aegon is able to meet both its financial and service obligations.

B.7.2 Intra-group outsourcing arrangements

Aegon has material intra-group outsourcing agreements. At business unit level, Aegon makes use of several ancillary service companies. These companies perform a range of services for Aegon entities. These ancillary service companies are fully owned by Aegon and in most cases (hierarchical) managed by the local business units. Aegon's insurance entities have outsourced their asset management to Aegon Asset Management. Aegon Asset Management manages investments for Aegon's insurance companies based on investment mandates.

The Outsourcing & Supplier Risk Policy' also covers the intra-group outsourcing. For intra-group outsourcing (i.e. the supplier is a legal entity fully owned by Aegon) the examination of the vendor may be less detailed, provided that the business unit has greater familiarity with the vendor, and if the business unit has sufficient control over, or can influence the actions of, the vendor. However, for intra-group outsourcing agreements, Aegon requires a written agreement, including a service level agreement (SLA) (if applicable), stipulating duties and responsibilities of both parties.

B.7.3 Material intra-group outsourcing arrangements

The material intra-group outsourcing arrangements at Aegon Group level are:

- An intra-group agreement between Transamerica Life Insurance Company and Aegon N.V., signed on September 1, 2010. The different services provided by Transamerica Life Insurance Company relate to information and technology services mutually agreed upon, which may be modified from time to time;

- The business unit Aegon Asset Management manages a large part of the assets of Aegon's insurance companies, including Aegon Americas. The contracting entities Aegon Investment Management B.V. (AIM), Aegon USA Investment Management, LLC (AUIM) and Aegon USA Realty Advisors, LLC (AURA) are part of this Unit; and
- Aegon Derivatives
 - The purpose of Aegon Derivatives is to facilitate the use of derivatives by Aegon Group companies by among other things: mitigating counterparty risk related to the use of derivatives through netting and collateral management, and monitoring regulatory and legal developments. Pursuant to mandate agreements with certain Aegon Group entities, Aegon Derivatives enters into derivatives transactions with third parties. Aegon Derivatives does so in its own name, but for the account and risk of internal clients.

B.8 Any other information

B.8.1 Assessment of adequacy

Corporate governance at Aegon is determined by the Executive Board and Supervisory Board of Aegon N.V. Regulations and (inter) national guidelines are taken into account and the roles and responsibilities of the Executive Board and Supervisory Board are reflected in the respective board charters. Those board charters are reviewed on a regular basis and revisions will follow required approval processes.

In addition, all Aegon employees are committed to the Code of Conduct, which consists of Aegon's purpose, core values and rules of conduct. The Code of Conduct also addresses governance aspects and reflects compliancy with laws and regulations, information sharing and the identification and management of risks in a prudent way (for instance internal guidelines and policies).

Aegon's risk management system is an important part of Aegon's system of governance. Both its risk governance framework, as described in section B.3.1.2, and its ERM framework, as described in section B.3.1.1, are designed to adequately manage risks according to the nature, scale and complexity. Where appropriate, the risk governance structure is updated to meet changing demands.

Escalation thresholds for decision making are linked to the scale and impact of the risks to the organization. Risk tolerances, policies, methodologies and models are regularly reviewed to ensure they remain appropriate and up-to-date. Aegon's Solvency II PIM is fully integrated into Aegon's risk management system and governance structure, and the model validation function regularly assesses the Solvency II PIM and underlying components. The model integrity is assessed, including performance of the model and ongoing appropriateness of its specifications.

The conclusion of the latest assessment was that the Solvency II PIM, including underlying internal models, standard formula shocks, and aggregation methodology, is considered fit for purpose for use within SCR calculations. Aegon's risk management is continuously being improved to ensure capabilities remain at a high level in changing conditions. In this context, ERM maturity assessments are conducted throughout the group to inform the business unit as to where they are on the ERM maturity ladder, and more specifically as to whether the actual maturity levels are consistent with target maturity levels as defined by management based on the size and complexity of the business unit and the related nature, scale and complexity of risks. The assessment results are also used as input for identifying and prioritizing ERM areas for further development in the business units.

In 2018, risk management and internal control topics were discussed by the relevant management committees and bodies, including the Management Board, the Executive Board, the Risk Committee and the Audit Committee of the Supervisory Board, and the Supervisory Board, according to their roles and responsibilities as outlined in the respective frameworks and charters. No material weaknesses were observed, and no significant changes or major improvements were made or planned to the risk management and internal control systems.

C. Risk profile

General

This section provides general information regarding Aegon's risk profile.

Introduction to Aegon's risk profile

As an insurance group, Aegon accepts and manages risk for the benefit of its customers and other stakeholders.

As a result of its activities, the Company is exposed to a range of underwriting, market, credit, liquidity and operational risks. See table below for more information on the Solvency II capital requirement for these risks. The other capital requirements category mainly includes capital requirements for entities under Deduction & Aggregation on a (provisional) equivalence basis, being US Life insurance entities, Bermuda and Japan. In addition, the capital requirements of Other Financial Sector entities (excluding Aegon Bank) are also part of this category.

Composition of Group SCR

Amounts in EUR millions

	QRT 5.25.02.22	2018	2017
SFCR section			
C.2 Market risk	Market Risk (SF)	898	1,056
	Market Risk (IM)	2,714	2,258
C.3 Credit risk ¹⁾	Counterparty default risk (SF)	368	371
	Counterparty default risk (IM)	22	18
C.1 Underwriting risk	Life underwriting risk (SF)	1,009	1,137
	Life underwriting risk (IM)	2,341	2,156
	Health underwriting risk (SF)	332	306
	Health underwriting risk (IM)	-	-
	Non-life underwriting risk (SF)	138	130
	Non-life underwriting risk (IM)	-	-
C.5 Operational risk	Operational risk (SF)	288	304
	Operational risk (IM)	299	301
E.2.1 Solvency Capital Requirement	LAC-DT	(756)	(714)
	Total undiversified components	7,653	7,321
	Diversification	(3,000)	(2,851)
	PIM SCR after diversification (AC only) ²⁾	4,654	4,470
	Capital requirements for D&A and OFS ³⁾	3,695	3,304
	Group PIM SCR	8,349	7,774

¹⁾ To align with the SCR in QRT s.25.02.22 and section E, Aegon will only discuss Counterparty Default Risk (as defined in the Delegated Regulation) in section C3.3. More generally, Aegon considers the term 'credit risk' to also include spread risk, migration risk and default (market risk concentration) risk relating to financial investments. To keep this alignment with QRT s.25.02.22 consistent throughout the SFCR, these other components of credit risk are discussed instead in section C.2 Market risk.

²⁾ AC stands for Accounting Consolidation method for the calculation of the Solvency II group solvency.

³⁾ Excluding Aegon Bank in line with Group supervisor requirement.

Aegon Group's net Partial Internal Model (PIM) SCR amounted to EUR 8,349 million on December 31, 2018, which was an increase of EUR 575 million compared to the SCR on December 31, 2017 of EUR 7,774 million. This net SCR increase was mainly driven by the following movements in gross SCR risks:

- IM Market Risk increased by EUR 456 million due to increased fixed income risk, caused by the impact of spread movements on the dynamic VA of Aegon the Netherlands, despite a partial offset due to the introduction of the new dynamic VA of Aegon the Netherlands in 2018, and due to increased alternative investment risk caused by increased investments by Aegon the Netherlands. These increases were partially offset by lower interest rate risk due to changes of the Aegon the Netherlands' interest rate hedge and by a decrease in equity volatility risk due to increased hedge efficiency of Aegon the Netherlands.
- IM Life Underwriting risk increased by EUR 185 million, mainly due to the increase of longevity risk caused by the updated Longevity model of Aegon the Netherlands.
- The diversification amount increased by EUR 149 million (which decreased net SCR with EUR 149 million). This was mainly driven by the increase in gross SCR.
- The loss absorbing capacity of deferred taxes (LAC DT) increased by EUR 42 million, driven by the increase of the other SCR components, with a partial offset by the impact from the corporate tax decrease in the Netherlands.
- The SCR for D&A and OFS increased by EUR 391 million, mainly due to the impact of the US tax reform on required capital in Aegon Americas.

When managing its day-to-day risk exposures, Aegon includes the D&A businesses in its analyses and managing of underwriting risk, market risk, credit risk, liquidity risk and operational risk. Aegon's risk management and control systems are designed to ensure that these risks are managed effectively and efficiently in a way that is aligned with the Company's strategy. Risk management and control system are designed to be applied consistently across the Group.

Aegon's risk strategy provides direction for the targeted risk profile while supporting Aegon's business strategy. The targeted risk profile is determined by customer needs, Aegon's competence to manage the risk, the preference of Aegon for the risk, the return that can be achieved and whether there is sufficient capacity to take the risk. Aegon currently targets an equal balance between financial market and credit risks and underwriting risks. The targeted risk profile is set at Aegon Group level, and developed in more detail within the subsidiaries where insurance business is written.

To manage its risk exposure, Aegon has risk policies in place. Many of these policies are group-wide while others are adapted to the situation of local businesses. As mentioned in B.3.1.2 Risk governance framework, Group level policies limit the Group's exposure to major risks such as equity, interest rates, credit, and currency. The limits in these policies in aggregate remain within the Group's overall tolerance for risk and the Group's financial resources.

Factors influencing Aegon's risk preferences include expected returns, the alignment between Aegon, counterparty and customer interests, the existing risk exposures and other risk characteristics such as diversification, the severity of the risk in an extreme market event and, the speed at which risk can materialize in Aegon's capital position, liquidity position and net income.

To monitor Aegon's position against its risk appetite the framework sets out Risk Tolerances and Risk Limits. Adherence to these tolerances and limits is tested on a frequent basis using actual results in addition to sensitivity and scenario analyses. For limits related to statutory capital purposes EEA legal entities use methods and assumptions that are defined by Solvency II, in some cases this is Partial Internal Model based while in others it is Standard Formula based. For non-EEA legal entities the methods and assumptions are based on local regulatory requirements. When relevant local rules will be applied, for example when allowing for the impact of tax upon results.

The sections C.1 Underwriting risk; C.2 Market risk; C.3 Credit risk; C.4 Liquidity risk; C.5 Operational risk and C.6 Other material risk include qualitative and quantitative information with respect to specific risks.

Applicable risk mitigation techniques are described in each section. Furthermore, the aforementioned sections include a description of the methods used, the assumptions made and the outcome of sensitivity analysis. Management actions that are 'business as usual' are factored into the sensitivity analysis. Reactive management actions are not factored into the sensitivity analysis. The impact of established hedge programs are taken into account where applicable. The sensitivities do not, in general, reflect what the Solvency ratio for the period would have been if risk variables had been different. This is because the analysis is based on the existing exposures on the reporting date, rather than on those that actually occurred during the year. The results of the sensitivities are also not intended to be an accurate prediction of Aegon's Solvency ratio.

In addition, these sections do not consider all methods available to management to respond to changes in the financial environment, such as changing investment portfolio allocations or adjusting premiums and crediting rates. Furthermore, the results of the analyses cannot be extrapolated for wider variations because effects do not tend to be linear. No risk management process can clearly predict future results.

Prudent person principle

The prudent person principle has been embedded into Aegon's system of governance, and is applicable for Underwriting risk, Market risk and Credit risk.

In accordance with the Investment and Counterparty Risk policy, the business unit is required to explain how the Solvency II prudent person principle requirements are met.

The investment mandates section of the Standard of Practice paper ensures that the prudent person principles are satisfied when relevant. The risks on the investment side are presented in Risk Reporting with more detailed reporting performed by Aegon Asset Management. Aegon's Risk Appetite Framework is in place to ensure that the assets held are appropriate to the nature of the liabilities without taking on excessive risks:

- Risk limits for market and financial risks are set and form part of the Aegon Risk Appetite Framework;
- The Investment and Counterparty Risk Policy establishes the prudent person principle requirements;
- Concentration in exposures is avoided by testing adverse plausible scenarios in the Budget/MTP process and by setting single counterparty limits in the Group Credit Name Limit Policy;
- The requirements related to use of derivatives can be found in the Derivative Use Policy. This policy ensures that a consistent standard of responsible derivative usage is in place across the Aegon Group. In addition, the consolidated reporting of derivative positions provides transparency to derivative usage as well as a demonstration of controls;
- The Securities Lending and Repo Policy ensures a consistent standard for Securities Lending and Repurchase (Repo) programs within the Aegon Group. This Policy sets out the minimum required processes and documentation standards that must be in place for any unit to operate in these instruments; and
- The Reinsurance Use Policy establishes the process with which reinsurance use is conducted at Aegon in order to ensure a consistent high standard of reinsurance use across the Group, to ensure proper internal controls are in place around risks arising from reinsurance wherever material (e.g. counterparty risk and basis risk), and to ensure globally consistent information on Aegon's reinsurance treaties is available.

Off-balance positions and special purpose vehicles

This section provides information regarding Aegon's risk exposure arising from off-balance sheet positions and the transfer of risk to special purpose vehicles. The off-balance sheet positions at the end of 2018, which consist of other commitments and contingencies and contractual obligations, are disclosed including a description of the risk exposure arising from them. Aegon has no exposure to special purpose vehicles as defined by Article 13(26) of the Solvency II Directive (2009/138/EC).

Other commitments and contingencies

As of December 31, 2018, guarantees amounted to EUR 437 million (2017: EUR 483 million) and include those guarantees associated with the sale of investments in low-income housing tax credit partnerships in the United States. Standby letters of credit amounts reflected in the table below are liquidity commitment notional amounts. In addition to the guarantees shown in the table, guarantees have been given for fulfillment of contractual obligations such as investment mandates related to investment funds.

Other commitments and contingencies

Amounts in EUR millions	2018	2017
Guarantees	437	483
Standby letters of credit	12	12
Share of contingent liabilities incurred in relation to interests in joint ventures	49	39
Other guarantees	14	16
Other commitments and contingent liabilities	7	32

Contractual obligations

An Aegon N.V. indirect US life subsidiary has a net worth maintenance agreement with its subsidiary Transamerica Life (Bermuda) Ltd, pursuant to which Transamerica Life Insurance Company, a US life insurance subsidiary, will provide capital sufficient to maintain a S&P 'AA' financial strength rating and capital sufficient to comply with the requirements of the countries in which its branches are located.

In April 2018, Transamerica Corporation, a wholly owned subsidiary of Aegon N.V., entered into an agreement with Tata Consultancy Services ('TCS') to administer the Company's US insurance and annuity business lines. The partnership enables Aegon Americas to accelerate the enhancement of its digital capabilities and the modernization of its platforms to service its customers in all lines of business. The agreement is a multi-year partnership with more than USD 2 billion of revenues to TCS over the course of the contract. These revenues are compensation for administering Aegon Americas' over 10 million policies and are driven by both new business and the volume of policies in force.

In addition, this commitment includes remaining transition and conversion charges of approximately USD 100 million (period 2019 – 2022) as well as administrative, IT and financial service fees which are contingent on TCS meeting specified milestones in the underlying agreement with Transamerica. The agreement also contains a termination clause in which case Transamerica - subject to certain limitations - agrees to compensate TCS, on a specified schedule, for early termination.

Transamerica Corporation, a wholly-owned subsidiary of Aegon N.V., has provided a parental guarantee to TLIC Riverwood Reinsurance, Inc. (TRRI), an affiliated captive reinsurer, for the cash payments required fulfilling reinsurance payments to Transamerica Life Insurance Company, to the extent that the assets in the captive (TRRI) are not sufficient to cover reinsurance obligations. As of December 31, 2018, this amounted to EUR 1,892 million (2017 EUR: 1,793 million).

In November 2018, Aegon UK entered into an agreement with Atos BPS Ltd (Atos) to service and administer its Existing Business (non-Platform customers). This collaboration builds on the relationship we already have with Atos for the Protection business and is expected to be effective as of mid-2019. The agreement is a 15-year contract under which Aegon UK will pay Atos to administer around 1.4 million customers, with payments driven by the volume of policies being administered.

At end 2018, outstanding transition and conversion charges are estimated to amount to approximately GBP 108 million, which are expected to be recorded over the next three years, with fixed payments to Atos defined in the agreement and subject to completion of milestones which have been agreed with Aegon UK.

An Aegon N.V. indirect US life subsidiary has a net worth maintenance agreement with its subsidiary Transamerica Life (Bermuda) Ltd, pursuant to which Transamerica Life Insurance Company, a US life insurance subsidiary, will provide capital sufficient to maintain a S&P 'AA' financial strength rating and capital sufficient to comply with the requirements of the countries in which its branches are located.

Aegon N.V. has guaranteed and is severally liable for the following:

- Due and punctual payment of payables due under letter of credit agreements applied for by Aegon N.V. as co-applicant with its captive insurance companies that are subsidiaries of Transamerica Corporation and Commonwealth General Corporation. At December 31, 2017, the letter of credit arrangements utilized by captives to provide collateral to affiliates amounted to EUR 3,469 million (2017: EUR 3,025 million); as of that date no amounts had been drawn, or were due under these facilities. Other letter of credit arrangements for subsidiaries amounted to EUR 60 million (2017: EUR 55 million); as of that date no amounts had been drawn, or were due under these facilities;
- Due and punctual payment of payables due under letter of credit agreements or guarantees provided for subsidiaries of Transamerica Corporation at December 31, 2018 amounted to EUR 3,164 million (2017: EUR 3,079 million). As of that date no amounts had been drawn, or were due under letter of credit facilities. The guarantees partly related to debt amounted to EUR 1,388 million (2017: EUR 1,322 million) and is included in the Operational funding table in note 39 Borrowings of the consolidated financial statements of the Group in the line 'USD 1.54 billion Variable Funding Surplus Note';
- Due and punctual payment of payables by the consolidated group companies Transamerica Corporation, Aegon Funding Company LLC and Commonwealth General Corporation with respect to bonds, capital trust pass-through securities and notes issued under commercial paper programs amounted to EUR 614 million (2017: EUR 585 million); and
- Due and punctual payment of any amounts owed to third parties by the consolidated group company Aegon Derivatives N.V. in connection with derivative transactions. Aegon Derivatives N.V. only enters into derivative transactions with counterparties with which ISDA master netting agreements, including collateral support annex agreements, have been agreed. Net (credit) exposure on derivative transactions with these counterparties was therefore limited as of December 31, 2018.

C.1 Underwriting risk

C.1.1 Underwriting risk description

Underwriting risk, sometimes referred to as “insurance risk”, arises from deviations in product pricing assumptions. These are typically actuarial assumptions that cover policyholder behavior and claims. Underwriting risk is the result of both the inaccuracies in projecting liability cash flows over several future time periods, as well as fluctuations in the incidence of claims.

Underwriting risk can be broken down into five distinct risk types: mortality risk, morbidity risk, policyholder behavior risk, property & casualty risk and expense risk. These five risk types are relevant across many of Aegon’s businesses and are detailed hereafter.

Mortality/longevity risk

Mortality risk arises from economic losses due to mortality levels deviating from expectation (when mortality is lower than expected, this is referred to as longevity). Policyholders are typically grouped into different classes in which each class is expected to have the same mortality. Best estimate assumptions are then developed for each policyholder class. Aegon is exposed to the risk that the best estimate assumptions are inaccurate.

From Aegon’s perspective, mortality risk translates into increased policyholder benefits.

- In Aegon’s life insurance business (i.e. term assurance and other death protection products), mortality risk is the risk that mortality is higher than expected; and
- In Aegon’s immediate annuity business (i.e. annuity portfolios, survivorship pensions) and Long Term Care (providing living accommodation for people with a chronic illness or disability), mortality risk is the risk that mortality is lower than expected. This is referred to as longevity risk, as Aegon is exposed to an increase in life expectancy.

Material changes over the reporting period

Aegon has agreed to divest the last substantial block of its US life reinsurance business to SCOR Global Life. Under the terms of the agreement, Aegon Americas’ life subsidiaries will reinsure approximately USD 700 million of liabilities through SCOR Global Life. The transaction covers the last substantial block of life reinsurance business that Aegon Americas retained after it divested the vast majority of its reinsurance business to SCOR Global Life in 2011 and 2017. This deal resulted in a decrease of Aegon’s exposure to mortality risk.

Effective October 1, 2018, Aegon merged its Arizona-based variable annuity captive (Firebird) with Transamerica Life Insurance Company (TLIC). The merger of this company into TLIC is in response to the National Association of Insurance Commissioners (NAIC) recently proposed improvements to the existing variable annuity capital framework. As a result of the merger of two legal entities, Aegon realized a one-time benefit to capital generation of approximately USD 1 billion in the second half of 2018. This benefit was offset by the impact of tax reform on the RBC ratio in the second half of 2018.

Morbidity risk

Morbidity risk arises from economic losses due to morbidity levels deviating from expectation. These variations can be driven by changes in policyholder illness, disability and disease rates. Similar to mortality risk, policyholders are typically grouped into different classes that are expected to have the same morbidity. Assumptions are then developed for each class.

Morbidity risk is inherent to income protection plans (disability insurance), health insurance, and critical illness protection products. For these products, increased incidence of illness increases the likelihood of policyholder claims. For many products, such as disability insurance, both the increased frequency and severity of claims are significant sources of exposure.

Policyholder behavior risk

Policyholder behavior risk arises from economic losses due to policyholder behavior deviating from expectation. Insurance contracts typically provide policyholders with a variety of options that they may or may not exercise. Policyholder behavior risk is the risk that actual policyholder behavior varies from the assumptions built into the reserve calculations. This includes assumptions about lapses, withdrawals, premium payment levels, allocation of funds, and the utilization of possible options in the products.

Property & Casualty risk

Property & Casualty risk (P&C) covers the risk that the parameters used in setting reserves or premiums for property and casualty business are inaccurate. Due to the different nature of setting reserves for property & casualty business it has its own risk type.

In practice, Aegon's overall exposure to P&C-related risk is relatively small. Examples of Property & Casualty risks within Aegon are:

- Motor, which includes automobile property damage and third-party liability coverage;
- Commercial property: commercial structures and contents;
- Marine, aviation and transport;
- Liability: public/third-party liability; and
- Homeowners: buildings and contents coverage.

Expense risk

Expense risk is the risk that the expenses arising from servicing (re)insurance contracts may develop differently than expected.

There are various types of expense risk:

- Expense inflation risk: this is the risk that expenses inflate at a higher rate than that assumed in the calculation of the technical provisions. This does not cover the risk of general price inflation increases, which would be covered by mismatch risk; and
- Expense level risk: this is the risk that there will be unexpected changes in maintenance expenses for in-force business (assuming that the volumes of business are unchanged from best estimate assumptions). This risk therefore corresponds to an increase in the total expenses spread among the same number of policies – meaning the per policy expenses increase. It is effectively the change in the best estimate expense assumption given a 1-in-200 year expense event.

Most expenses Aegon has within their businesses will be subject to expense risk if not contractually defined. These types of expenses include for example: salaries, office space, software licenses and fees to intermediaries.

C.1.2 Underwriting risk assessment

Aegon monitors and manages its underwriting risk by underwriting risk type. Attribution analysis is performed on earnings and reserve movements in order to understand the source of any material variation in actual results in comparison to expectations. Aegon's units also perform experience studies for underwriting risk assumptions, comparing Aegon's experience with industry experience as well as combining Aegon's experience and industry experience based on the depth of the history of each source for use in Aegon's underwriting assumptions. Where policy charges are flexible in products, Aegon uses these analyses as the basis for modifying these charges, with a view to maintain a balance between policyholder and shareholder interests. Aegon also has the ability to reduce expense levels over time, thus mitigating unfavorable expense variation.

Aegon reviews its actuarial and economic assumptions periodically. In addition, as part of an ongoing commitment to deliver operational excellence, the company reviews and refines its models where necessary.

As part of Aegon's continuous effort to strengthen risk management, the following adjustments were made to the assessment and management of longevity risk, which is one of the most significant underwriting risks:

- Achieving a consistent internal best practice for measuring the risk which is built on a One-Year-Value at Risk framework. Consistent measurement of the risk helps Aegon to achieve a level playing field when allocating capital;
- Aegon the Netherlands has adjusted the Internal Model used to measure Longevity risk. This model was newly developed in 2017 and for 2018 it was further refined to add further substantiation for the choices made.
- In 2018, the dynamic VA model was updated for Aegon the Netherlands to align with the guidance from the European Insurance and Occupational Pensions Authority (EIOPA). The updated dynamic VA model uses an asset only model approach to quantify required capital for spread risk.

For other underwriting risks, Aegon manages the risks by regularly reviewing the experience, holding capital to cover the extreme events, monitoring the risk exposures against risk limits (which are set in accordance to the Risk Strategy) and continuing to look for risk mitigation opportunities.

There were no material changes to the measures used over the reporting period.

C.1.3 Risk concentration

Besides the risk tolerance limits as measured by gross ERC at group and business unit level, it's a common practice to address 'concentration' of risk on insured lives or, for property and casualty business, on insured objects, using a risk limit per single life (or joint lives) and per insured object. The exposures on a few lives (or objects) with a much higher risk than the average in the portfolio can create a too high volatility in the results. Limiting such exposures reduces the impact of process risk and also increases the stability of the underwriting results. These risk limits per single life (or joint lives) and per insured object will be further referred to as 'retention limits'.

The retention limits are typically chosen in such a way that the remaining exposure is acceptable, relative to the size of the earnings and the size of the balance sheet of the company. Risk mitigation and managing compliance with the retention limits can be achieved by reinsurance (external or internal), by the underwriting process or by the product design.

Aegon also monitors on a regular basis underwriting geo-concentration risk. This is the risk that an event causes losses on more than one underwriting exposure. An example of such an event is a terrorist attack on a single building leading to property damage, multiple deaths and severe injuries in the building and surrounding areas.

C.1.4 Risk mitigation

Aegon's risk management and control systems are designed to ensure that risks are managed effectively and efficiently in a way that is aligned with the Company's strategy. Risk management involves, among others, the monitoring of risk exposures and actively maintaining oversight of the Company's overall risk and solvency positions. Underwriting risk is mitigated through various processes:

Underwriting process

Underwriting serves as a key risk management tool to manage the underwriting risk by selecting or controlling the individual applications. The underwriting process determines whether a cover should be provided to a prospective policyholder, whether exclusions or amendments to the cover are required, and whether additional rates or standard terms are appropriate. Underwriting process also collects data to be used in the risk management cycle. The underwriting process is conducted by following an Underwriting Manual which includes: the underwriting classes; procedures to ensure the appropriateness, completeness and accuracy of data for use in underwriting process and controls to prevent anti-selection.

Claim process

Claims are the outcome of the risks on an individual case-by-case basis. When a claim is made on a policy, an assessment needs to be made as to whether the terms of the insurance policy have been met such that a claim payment is due. Where this is the case, claims are paid out. Where evidence shows potential non-disclosure of relevant information or fraudulent claims, further investigation is undertaken. Aegon's business units must have a Claims Manual in place that includes among others: how claims are assessed and paid; how relevant regulation is being adhered to; and procedures to follow to identify fraudulent claims and the handling of claim disputes.

Best estimate assumption review process

Aegon's business units must set up and maintain an underwriting assumption catalogue that contains all the underwriting risks that may impact financials of the company. Each risk must be reviewed periodically in which frequency is based on materiality. Material assumptions must be reviewed at least annually.

Underwriting risk limits

Aegon Risk Strategy sets out risk tolerance limits for each risk type including underwriting risks. These limits define the maximum risk that Aegon is willing to be exposed to. Business units actively monitor the actual risk exposure (measured by gross required capital) and management takes actions when these limits are breached. In addition to risk tolerance limits, it is common practice to address concentration of risk on one insured life or, for property and casualty business, insured object, using retention limit per life or per insured object. Exposure on a few lives with a much higher net amount at risk than the average in the portfolio can create additional volatility in results. A retention limit reduces the impact of process risk and also increases the stability of the underwriting results.

Using derivatives and reinsurance to hedge existing risk

Furthermore, Aegon also mitigates existing underwriting risk by entering into reinsurance arrangements and longevity derivatives with external parties. Reinsurance arrangements allow Aegon to fix part of the uncertainty in the mortality/longevity dependent payments and serve to mitigate the mortality/longevity risk. Derivative contracts will pay out when mortality rates have decreased more than initially expected, and therefore serve to hedge Aegon's longevity risk.

Aegon ensures the effectiveness of these mitigation measures through the policies in place, the yearly policy attestations where our business units attest to complying with the policies and the periodic measuring of the underwriting risks and setting these against the risk limits.

C.1.5 Risk sensitivity

Longevity sensitivity

An important underwriting sensitivity Aegon applies internally is a longevity shock of 5%, which implies an additional 1-time reduction in annual mortality rates by 5%. This shock decreases the Solvency II ratio of Aegon Group by 6% points. Lower mortality rates increase the longevity exposed liabilities, especially for Aegon the Netherlands because of pension liabilities and annuities and Aegon UK because of the own pension scheme. The higher liability values decrease own funds, as longevity is only partially hedged, and increase the SCR. For Deduction and Aggregation entities, the US Own Funds also reduce with improved longevity due to the set-up of reserves for the Variable Annuity product line. There are no tiering haircuts triggered by this sensitivity.

Sensitivities	Scenario	Estimated Group Solvency II ratio impact
Longevity shock	+5%	(6%)

C.2 Market risk

C.2.1 Market risk description

As an insurance group, Aegon is exposed to a variety of risks. Aegon's largest exposures are to changes in financial markets (e.g. bond market, equity market, interest rate, currency exchange rate risks and credit risks). When market prices fall, the value of Aegon's investments is reduced. For certain products, Aegon's insurance liabilities may also increase, as investments held for the benefit of policyholders reduce in value. In addition, the value of future fee income potential reduces. The cost of insurance liabilities are also determined with reference to interest rates and the liabilities associated with long term benefits (such as annuities) increase and decrease as interest rates fall and rise.

To align with the SCR in QRT s.25.02.22 and section E, only Counterparty Default Risk (as defined in the Delegated Regulation) is discussed in section C.3. More generally, Aegon considers the term 'credit risk' to also include spread risk, migration risk and default (market risk concentration) risk relating to financial investments. To align with QRT s.25.02.22 throughout the SFCR, these other components of credit risk are discussed in this section.

Credit Risk

Internally Aegon considers credit risk to be included within market risk. Credit risk has three components, namely:

- Spread risk; the risk that the value of the bond reduces due to a general widening of credit spreads;
- Migration risk; the risk that the rating of the bond falls due to an increased risk of default and as a consequence its value falls; and
- Default risk; the risk that the counterparty fails to meet the agreed obligations.

For general account products, Aegon typically bears the risk for investment performance and is exposed to credit risk in the fixed-income portfolio, over-the counter (OTC) derivatives and reinsurance contracts.

Aegon is also indirectly exposed to credit risk on separate account investments held for the benefit of policyholders. Credit losses reduce account values, leading to lower fee income to Aegon. For certain products, Aegon has also provided guarantees to protect customers against the risk of losses in the separate account. For these benefits Aegon is exposed to separate account credit losses.

Aegon's investment portfolios contain, among other investments, US treasury, agency and state bonds, government bonds and other government issued securities. The portfolios also include a significant proportion of corporate bonds investments, together with real estate and mortgage lending to US commercial and Dutch retail borrowers.

Equity market risk and other investments risk

A decline in equity markets may adversely affect Aegon's profitability and shareholders' equity, sales of savings and investment products, and the amount of assets under management. There is a risk for both Aegon and its customers that the market value of its equity investments declines. Exposure to equity markets exists in both assets and liabilities. Asset exposure exists through direct equity investments in which Aegon bears all or most of the investment performance risk. The existence of direct equity risk is very limited, as defined by Aegon's Risk policies.

Equity market exposure is also present in policyholders' accounts for insurance and investment contracts (such as variable annuities, unit-linked products and mutual funds) in which funds are invested in equities. Although most of the risk remains with the policyholder, guarantees within certain products may transfer some or all of this risk to Aegon. Lower investment returns also reduce the asset management fee that Aegon earns on the asset balance in these products, and prolonged investment under-performance may cause existing customers to withdraw funds and potential customers not to grant investment mandates.

Some of Aegon's insurance and investment contract businesses have minimum return or accumulation guarantees that require Aegon to establish reserves to fund these future guaranteed benefits when equity market returns do not meet these guarantee levels. Volatile or poor market conditions may also significantly reduce the demand for some of Aegon's savings and investment products, which may lead to lower sales and net income. Deteriorating general economic conditions may again result in significant decreases in the value of Aegon's equity investments.

Interest rate risk

Interest rate volatility or sustained low interest rate levels may adversely affect Aegon's profitability and shareholders' equity.

Aegon is exposed to interest rate risk, as both its assets and liabilities are sensitive to movements in long- and short-term interest rates. The majority of Aegon's products are long term in nature and as a consequence low interest rates or high interest rate volatility may adversely affect Aegon's profitability and shareholders' equity. It is also the case that a very rapid rise in interest rates could have negative consequences for Aegon. For example, in such a scenario policy loans, surrenders and withdrawals may increase. This may result in cash payments by Aegon requiring the sale of invested assets at a time when the prices of those assets have fallen due to the increase in market interest rates.

Currency risk

Fluctuations in currency exchange rates may affect Aegon's profitability and shareholder equity. As an international group, Aegon is subject to foreign currency translation risk. For more information, please refer to Note 2.3 on page 158 of the [Integrated Annual Report 2018 of Aegon Group](#). Foreign currency exposure also exists when policies are denominated in currencies other than Aegon's functional currency of the Euro. Currency risk in the investment portfolios backing insurance and investment liabilities is managed using asset liability matching principles. Assets allocated to equity are kept in local currencies to the extent shareholders' equity is required to satisfy regulatory and Aegon's self-imposed capital requirements. Currency exchange rate fluctuations may therefore affect the level of Aegon's consolidated shareholders' equity as a result of translation of the equity of Aegon's subsidiaries into euro, Aegon's reporting currency. Aegon holds the remainder of its capital base (capital securities, subordinated and senior debt) in various currencies in amounts that are targeted to correspond to the book value of Aegon's business units. This balancing is intended to mitigate currency translation impacts on equity and leverage ratios. Aegon may also hedge the expected dividends from its principal business units that maintain their equity in currencies other than the Euro.

C.2.2 Market risk assessment

Under Solvency II, Aegon uses its approved partial internal model for Solvency II required capital calculations. This internal model is an appropriate representation of Aegon's risk profile and focuses on the measurement of market risks. The partial internal model used by Aegon is used to assess market risk exposure and to determine an appropriate level of capital buffer to target. This assessment includes a full attribution analysis that explains any variance to expectations for these risks. A quarterly assessment of the risk against stated risk tolerances is performed through the Risk & Capital Committee.

In line with the Solvency II volatility adjustment (VA) policy, a scenario was included in the assessment to explicitly cover Aegon the Netherlands' exposure to corporate bond spread tightening. This exposure results from the specifics of the Solvency II volatility adjustment and Aegon the Netherlands' investment portfolio. The impact of such a scenario at Group level is relatively small due to diversification between the units.

The Capital Management Policy was updated following a review, reference is made to section E. Capital management of this report for more information.

Investment strategies are established based on asset and liability studies. Business units set an objective function and clearly state the constraints that apply. The investment strategy seeks to achieve the objective function while satisfying the constraints.

For third-party business sourced externally, Aegon Asset Management distributes its investment strategies directly to its clients. The wholesale businesses typically sell collective investment vehicles (mutual funds) to customers through wholesale distributors and independent intermediaries. The main asset classes are fixed income and equities, and the funds are usually managed against a benchmark or peer group target.

Aegon performed the annual review of risk limits and risk strategy. The risk limits were updated and implemented in 2018. The revised risk limits reflect the significant change made to the Economic Framework methodology and the US tax reform that was implemented at the start of 2018.

Exposure to Credit Risk is monitored in two main ways:

- At portfolio level; and
- At the level of individual names

At the portfolio level, credit risk is measured under Aegon's Economic Framework (EF) that is designed using market consistent principles. In accordance with the relevant risk policies, absolute and early warning limits are set by each Country Unit, and for the Group as a whole, for the following credit risks:

- Credit spread risk; and
- Migration risk

These limits are updated once a year and every quarter actual exposure is compared to the limits. Compliance with the limits is a key aspect of Aegon's ERM framework.

It is important to ensure that there is no concentration to a particular name. The Credit Name Limit Policy (CNLP) covers this important aspect. All forms of exposure are covered by this policy, which is therefore not limited to credit. For example exposure through reinsurance contracts, derivative positions as well as asset holdings are included. In addition to the CNLP limits a process known as the Focus List is in place to enhance the monitoring and assessment of credit risk.

Even when individual counterparties are within the CNLP limit it may be deemed necessary to restrict further investment if news regarding the credit quality of a particular company come to light.

The exposure to individual names is measured and reported on a quarterly basis. Limits are defined for each Country Unit and at a Group level based upon the rating of the name, with higher ratings receiving more capacity. Compliance with these limits is expected and breaches must be reported to the relevant risk committee. Any breaches to the Group Limits are reported to the Group Risk and Compliance Committee (GRCC) and only the GRCC can grant an exemption.

C.2.3 Risk concentration

Aegon minimizes concentration risks by maintaining a well-diversified portfolio across and within investment categories such as asset class, geographical region and industry sector. Investing in a larger number of separate market risks can also introduce concentration risks; separate exposures could all generate losses at the same time, perhaps due to a shared exposure to another risk factor. Aegon manages this exposure through the Credit Name Limit Policy (CNLP). The CNLP covers all asset classes such as equity, cash, credit, and derivatives. For information regarding quantitative details related to Aegon's market and credit risk concentrations, see Note 4, "Equity market risk and other investments risk" on page 201-203, and "Credit Risk Concentration" on page 184 - 187 of the [Integrated Annual Report 2018 of Aegon Group](#).

Credit risk

The general account portfolios of Aegon business units are well-diversified with high credit quality exposures spread across a range of industry sectors.

In order to avoid concentrations of exposure to particular entities, Aegon operates a global Credit Name Limit Policy (CNLP), under which limits are placed on the aggregate exposure to any one counterparty. Limits are placed on the exposure at both group level and individual country units. The limits also vary by a rating system, which is informed by the ratings of the main rating agencies, S&P, Moody's and Fitch. Any exposure in excess of the stated limit will be identified and must be addressed as soon as possible.

Aegon Group also maintains a central list of any significant exposures and credit names that are subject to close monitoring. This process, known as the Focus List, is used to coordinate risk management and de-risking activity, and to reduce Aegon's exposure to a potential deterioration in credit quality.

At December 31, 2018 Aegon's largest non-government credit exposures were due to reinsurance arrangements with Wilton Re Holdings Ltd, American United Mutual Insurance and SCOR. After reinsurance companies the largest non – government exposures are with banks such as Wells Fargo, JP Morgan and Citigroup. Aegon has large government exposures, the largest being to the USA, the Netherlands and Germany. Highly rated government bonds and government exposure domestically issued and owned in local currency are excluded from the Credit Name Limit Policy. There were no violations of the Group CNLP limits during 2018.

For Aegon Group, the long-term counterparty exposure limits as at December 31, 2018, are as follows:

Group limits per credit rating		
Amounts in EUR million	2018	2017
AAA	900	900
AA	900	900
A	675	675
BBB	450	450
BB	250	250
B	125	125
CCC-C	50	50
D	50	50
Not rated	50	50

Equity market risk

Equity risk is generally well-diversified, with exposure coming through indirect exposure to policyholder account values and exposure to major market indices through derivatives instruments used for hedging. Any aggregate exposure to specific corporations is managed through the Credit Name Limit Policy.

Currency risk

As an international group, Aegon is subject to foreign currency translation risk. Aegon's reporting currency is Euro. Aegon Group has a large exposure to the US Dollar to Euro exchange rate through its ownership of equity in Aegon Americas.

Managing risk concentration

A key part of Aegon's ERM framework is setting risk limits for each risk. Each quarter individual Country Units and the Group calculate actual exposures and compare these to the risk limits. Compliance with the limits is expected and any breaches must be dealt with as described in the ERM manual. The use of risk limits and the quarterly monitoring process are intended to ensure that Aegon limits its exposure to a single risk type.

The risk of concentration to an individual counterparty is covered by the Credit Name Limit Policy (CNLP). The CNLP Policy covers all asset classes such as equity, credit, cash and derivatives. The Prudent Person principle applies in this context as well. This principle is built into the Investment & Counterparty Risk Policy, and all Country Units are expected to comply with this principle or explain the reason for being non-compliant.

C.2.4 Risk mitigation

Aegon has generally positive impacts from equity market increases and negative impacts from equity market declines as it earns fees on policyholder account balances and in certain cases provides minimum guarantees for account values. Hedging of exposures may change those effects significantly and equity hedges are used extensively to manage the equity market risk related to products with guarantees that have underlying equity funds.

Aegon sets a limit on equity risk at Group and regional levels. Hedging programs are in place that are designed to manage the risks within these defined limits. Equity hedge programs use equity options and dynamic option-replicating strategies to provide protection against the impact of equity market declines.

Aegon employs sophisticated interest rate measurement techniques. Fixed interest assets along with interest rate swap and swaption derivatives are used extensively to manage the interest rate risk exposure. Aegon sets a limit on interest rate risk at Group and regional levels. All derivative use is governed by Aegon's Derivative Use Policy.

Aegon sets a limit on currency risk at Group and regional levels. Subsidiaries do not engage in direct currency speculation or program trading. Any assets or liabilities not in the functional currency of the business are hedged back to that currency. In any case where this is not possible or practical, the remaining currency exposure is controlled by limits on total exposure at both group and local level.

Aegon has issued debt instruments in Euro, US Dollar and British Pound denominations. The Group also uses currency derivatives such as swaps, forwards and futures to manage currency exposures.

Hedging programs are operated by many of the Country Units within Aegon. The performance of these hedge programs is monitored closely by both the Country Units and Aegon Group and is reported at least quarterly.

Aegon manages credit risk exposure by individual counterparty, sector and asset class, including cash positions through its ERM framework as described in section B.3 Risk management system. Different exposures are mitigated in a variety of ways as described below.

Derivatives

Aegon generally mitigates credit risk in derivative contracts by entering into a credit support agreement, where practical, and in ISDA master netting agreements for most of Aegon's legal entities. The counterparties to these transactions are investment banks that are typically rated 'A' or higher. The credit support agreement generally dictates the threshold over which collateral needs to be pledged by Aegon or its counterparty.

Transactions requiring Aegon or its counterparty to post collateral are typically the result of derivative trades, comprised mostly of interest rate swaps, equity swaps, currency swaps, credit swaps and other bilateral exposure derivatives. Collateral received is mainly cash (USD and EUR). The credit support agreements that outline the acceptable collateral require high quality instruments to be posted.

New interest rate swap transactions in the US are traded via Central Clearing Houses, as required by the Dodd-Frank act. Similar requirements were introduced in Europe by the EMIR regulations. Credit risk in these transactions is mitigated through posting of initial and variation margins.

Reinsurance

Aegon may mitigate credit risk in reinsurance contracts by including downgrade clauses that allow the recapture of business, retaining ownership of assets required to support liabilities ceded or by requiring the reinsurer to hold assets in trust. For the resulting net credit risk exposure, Aegon employs deterministic and stochastic credit risk modelling in order to assess the Group's credit risk profile, associated earnings and capital implications due to various credit loss scenarios. To maintain compliance with the CNLP limits, Aegon may use Credit Default Swaps to manage credit risk.

C.2.5 Risk sensitivity

Results of Aegon's sensitivity analyses are presented throughout this section to show the estimated sensitivity of various scenarios. For each sensitivity test, the impact on the Solvency II ratio of a reasonably possible change in a single factor is shown. Management action is taken into account to the extent that it is part of Aegon's regular policies and procedures, such as established hedging programs. However, incidental management actions that would require a change in policies and procedures are not considered.

Aegon calculates sensitivities of its Solvency II ratio as part of its risk management framework for both A&C and D&A entities. For the A&C entities, Aegon the Netherlands and Aegon UK drive the sensitivity to market risk whereas the Aegon Americas exposures drive the sensitivity of the D&A entities. The tables on sensitivities describe the shocks to parameters used to assess the sensitivities, and their estimated impact on the Solvency II ratio on December 31, 2018. There are no tiering haircuts triggered by these sensitivities.

Equity market risk and other investments risk

Sensitivities	Scenario	Estimated Group Solvency II ratio impact
Equity markets	+25%	15%
Equity markets	(25%)	(11%)

The Group is exposed to losses in the downward equity scenario. Aegon has a limited exposure to direct equity, the main exposure derives from fee business with and without guarantees such as the variable annuity products in Aegon Americas and separate account business in Aegon UK and Aegon the Netherlands. A fall in equity markets will reduce the value of future fee income and it will increase the cost of guarantees. A number of established hedge programs exist, most notably in Aegon Americas and Aegon the Netherlands that mitigate the risk of falling equity markets. During 2018 Aegon UK implemented unit shorting, a technique that allows the UK to manage its equity risk. As a consequence Aegon UK was able to reduce its reliance upon derivative instruments. In the upward equity sensitivity the main driver of the large gain is due to the release of Aegon Americas variable annuity reserves. There are some aggregation benefits at Group level where, in an equity up sensitivity, the increase in solvency ratio for Aegon Americas and Aegon the Netherlands is partly offset by a reduction in Aegon UK.

Interest rate risk

The sensitivities to interest rates at December 31, 2018 show that the Group's Solvency ratio will fall when interest rates fall and will increase when interest rates rise.

Sensitivities	Scenario	Estimated Group Solvency II ratio impact
Interest rates	+50 bps	3%
Interest rates	-50 bps	(6%)

Aegon Americas is exposed to downward interest rate movements primarily in the Variable Annuity business, but also in Universal life business and the Employee pension plan. In downward sensitivities, for the VA product line, reserves are set up, hedges create payoffs and there is a small set up of required capital. The funded status of the Employee Pension Plan deteriorates and more reserves (AG38 8c) are required for the Universal Life business. The opposite occurs in upward interest rate movements.

For Aegon the Netherlands and Aegon UK best estimate liabilities are well matched. The sensitivity to interest rates is mainly driven by changes in the Risk Margin and the SCR itself. When rates go down the risk margin and SCR will increase and vice versa when rates increase.

There are aggregation benefits at Group level due to opposite movements in Own Funds between Aegon Americas which reduces and Aegon the Netherlands/Aegon UK which increases in a downward interest rate sensitivity. Aegon Americas reduces due to the VA reserve set up but Aegon the Netherlands and Aegon UK Own Funds increase primarily due to hedging gains.

In general, increases in interest rates are beneficial to Aegon, while lower interest rates have a negative impact in terms of reduced economic value and increased solvency capital requirements. However, rapidly rising interest rates have a negative impact upon available liquidity due to collateral and margin calls for the interest rate hedges. This fact is not captured in the sensitivities above, it is captured in the liquidity testing that the Group performs.

Credit risk

Sensitivities	Scenario	Estimated Group Solvency II ratio impact
Credit spreads ¹⁾	+50 bps	5%
Credit spreads ¹⁾	-50 bps	(5%)
NL Mortgage spread	+50 bps	(5%)
NL Mortgage spread	-50 bps	5%
US credit defaults ²⁾	~+200 bps	(19%)

¹⁾ Non-government bonds credit spreads in 2018.

²⁾ Additional 130bps defaults for 1 year plus assumed rating migration.

Aegon's sensitivity to credit spread movements and credit default, as well as migration risk is shown in the table above. The table shows the shocks to parameters used to assess the sensitivities, and their estimated impact on the Solvency II ratio at December 31, 2018.

In the credit spread scenarios, the credit spread on mortgage loans, other loans and bonds (other than government bonds) are being shocked by 50 bps. The Group's exposure is primarily due to Aegon the Netherlands, as it is exposed to a reduction in spreads leading to gains on the fixed income assets which in turn are more than offset by an increase to the liabilities (via the lower EIOPA VA), resulting in a net loss of own funds. In the presented credit spread scenario, both corporate bond spreads as well as mortgage spreads narrow by 50 bps. The resulting sensitivity is primarily driven by a spread duration mismatch.

In addition to the spread duration mismatch sensitivity, Aegon the Netherlands is also sensitive to basis risk in credit spread movements. Given that mortgage loans are not included in the basket of assets that form the basis of the EIOPA VA, any credit spread movement of mortgage loans that differs from the EIOPA VA movement will lead to additional credit spread sensitivity. The sensitivities on Group level to Aegon the Netherlands mortgage loans spread movements only are shown separately.

Under the new dynamic VA model, the solvency ratio is more sensitive as the SCR sensitivity to corporate bond spread movements no longer offsets the impact of the change in Own Funds.

Credit spread sensitivity in the US and UK is mainly driven by the impact on the discount rate used to value pension schemes, as the discount rate is dependent on credit spreads.

C.3 Credit risk

C.3.1 Credit risk description

To align with the SCR in QRT s.25.02.22 and section E, Counterparty Default Risk (as defined in the Delegated Regulation) is discussed in section C.3. Spread risk, migration risk and default (market risk concentration) risk relating to financial investments are discussed in section C.2 Market risk.

Counterparty default risk mainly covers exposure to risk mitigating contracts, cash at bank and receivables for which capital is calculated under the Standard Formula. This is not a material component of Aegon's credit risk. For a description of Aegon's material credit risk, refer to section C.2.1.

C.3.2 Credit risk assessment

Counterparty default risk is assessed similarly to other credit risk types. Reference is made to section C.2.2. under Market Risk section.

C.3.3 Risk concentration

Counterparty default risk concentrations are assessed similarly to other credit risk types. Reference is made to section C.2.3. under Market Risk section.

C.3.4 Risk mitigation

Counterparty default risk is mitigated similarly to other credit risk types. Reference is made to section C.2.4. under Market Risk section.

C.3.5 Risk sensitivity

Reference is made to section C.2.5 under Market Risk section where Aegon's most material sensitivity to credit risk is assessed, Aegon Group does not have significant sensitivity to Counterparty Default Risk as defined in the Delegated Regulation.

C.4 Liquidity risk

C.4.1 Liquidity risk description

Liquidity risk is inherent in much of Aegon's business. Each asset purchased and liability incurred has its own liquidity characteristics. For example, some policyholders have the option to cash in their policy in return for a surrender benefit, while some assets, such as privately placed loans, mortgage loans, real estate and limited partnership interests, have low liquidity. If Aegon were to require significant amounts of cash at short notice in excess of normal cash requirements and existing credit facilities, it would have difficulty in selling these investments at attractive prices or in a timely manner.

Aegon uses derivatives extensively within significant liability hedging programs in the US and Europe. These programs significantly reduce market risk, but collateral requirements can increase liquidity risk in the event of stock markets or interest rates moving significantly.

Aegon's liquidity risk does not give rise to a capital requirement.

C.4.2 Liquidity risk assessment

Illiquidity of certain investment assets may prevent Aegon from selling investments at fair prices in a timely manner. Aegon needs to maintain sufficient liquidity to meet short-term cash demand under normal circumstances, as well as in crisis situations. The availability of sufficient liquidity ensures that Aegon can fulfill its obligations towards policyholders and other stakeholders for an extended period of time without becoming a forced seller. This prevents compounding losses and a loss of confidence.

Liquidity management is a fundamental building block of Aegon's overall financial planning and capital allocation processes. The Company's liquidity risk policy sets guidelines for its operating companies and the holding in order to achieve a prudent liquidity profile and to meet cash demands even under extreme conditions.

Aegon's liquidity management is based on expected claims and benefit payments rather than on the contractual maturities. The projected cash benefit payments are based on management's best estimates of the expected gross benefits and expenses, partially offset by the expected gross premiums, fees and charges relating to the existing business in force. Estimated cash benefit payments are based on mortality, morbidity and lapse assumptions based on Aegon's historical experience, modified for recently observed trends. Actual payment obligations may differ if experience varies from these assumptions.

On a regular basis, Aegon reviews medium-term cash-flow projections for each business unit and legal entity in order to identify and manage liquidity requirements over the planning horizon. Stress testing is carried out in order to assess the ability of Aegon companies to continue to manage liquidity risk in the event of a financial market stress. The most onerous stress scenario for Aegon is a rapid increase in interest rates in key markets that leads to a significant payment of collateral to Aegon's hedge counterparties.

Aegon's liquidity risk profile remained strong throughout 2018. A number of improvements were made to the assessment of liquidity risk at the Group level and within local units. Business units took actions during 2018 to increase available liquidity further, such as unit shorting in the UK and more external liquidity facilities in the US and NL.

Many of Aegon's derivative transactions require Aegon to pledge collateral against declines in the value of these contracts. Volatile financial markets may significantly increase requirements to pledge collateral and adversely affect Aegon's liquidity position. Furthermore, a downgrade of Aegon's credit ratings may also result in additional collateral requirements and affect Aegon's liquidity.

Any security Aegon issues in significant volume may be issued at higher financing costs if funding conditions are impaired, as they have been from time to time in recent years. The requirement to issue securities can be driven by a variety of factors, for instance Aegon may need liquidity for operating expenses, debt servicing and the maintenance of capital levels of insurance subsidiaries. Although Aegon manages its liquidity position for extreme events, including greatly reduced liquidity in capital markets, if these conditions were to persist for an extended period of time, it is possible that it would be necessary for Aegon to sell assets substantially below prices at which they are currently recorded to meet its insurance obligations.

Aegon makes use of (syndicated) credit facilities to support repayment of amounts outstanding under Aegon's commercial paper programs and to serve as additional sources of liquidity.

C.4.3 Risk concentration

Liquidity risk originating directly from insurance business is well-diversified with no material concentrations of risk.

Liquidity required to fund collateral calls depends on a number of factors and some of these could be considered material risk concentrations. The first factor is the extensive use of interest rate swaps to hedge against falling interest rates. If interest rates were to rise rapidly in US and European economies then Aegon's main business units would have to increase liquidity requirements. The second factor is the risk of Aegon being downgraded. In this event counterparties will require greater collateral and available liquidity may be reduced. These scenarios are considered within the liquidity stress tests described in section C.4.5 Liquidity risk - risk sensitivity.

C.4.4 Risk mitigation

Aegon operates a Liquidity Risk policy under which country units are obliged to maintain sufficient levels of highly liquid assets to meet cash demands by policyholders and account holders over the next two years. The purpose of this Liquidity Risk Policy is to demonstrate effective liquidity management; liquidity is monitored and reported to Group at a minimum quarterly frequency. Potential cash demands are assessed under a stress scenario that includes spikes in disintermediation risk due to rising interest rates and concerns over Aegon's financial strength due to multiple downgrades of Aegon Group's credit rating. At the same time, the liquidity of assets other than cash and government issues is assumed to be severely impaired for an extended period of time. All legal entities and Aegon Group must maintain enough liquidity in order to meet all cash needs under this extreme scenario.

Aegon Group expects to meet its obligations, even in a stressed liquidity event, from operating cash flows and the proceeds of maturing assets as well as these highly liquid assets.

Aegon Group also has access to back-up credit facilities, which were unused at the end of the reporting period.

Internal and external contingent liquidity support facilities can be used to ensure liquidity needs are met. An internal agreement may be used to provide liquidity support from Group to a subsidiary.

Aegon may also use repurchase agreements to avoid asset sales by exchanging ineligible assets such as corporate bonds for eligible assets such as cash to support liquidity.

C.4.5 Risk sensitivity

On a regular basis, Aegon reviews medium-term cash-flow projections for business units and legal entities in order to identify and manage liquidity requirements over the planning horizon. Stress testing is conducted in order to assess the ability of Aegon companies to manage liquidity needs in the event of financial market stress. The most adverse stress scenario for Aegon is a rapid increase in interest rates in key markets, which would require significant pledging of collateral.

The Aegon Group Liquidity Policy sets out a very prudent stress test that all business units must perform at least quarterly and as at 4Q 2018 Aegon was compliant with the requirements set out in this policy. In addition to the Group test, business units are required to create a local test that is specific to their own liquidity risks. Results of the Group and local tests are reported to Aegon's Management Board, Supervisory Board and DNB.

C.4.6 Expected profit included in future premiums

The reported solvency position of Aegon includes the value attributable to profits that are expected to be made on future premiums - i.e. that are expected, but have not yet been earned. The value of these future profits cannot easily be realized to generate cash as required to meet obligations that may arise today.

The value placed on these future profits on December 31, 2018 was EUR 1,356 million (2017: EUR 1,322 million).

C.5 Operational risk**C.5.1 Operational risk description**

Aegon Group faces operational risk resulting from operational failures or external events. Aegon defines operational risk as a potential event that may result in (complete or partial) non-achievement of the Company's business objectives. Operational risk is further defined as risk of losses resulting from inadequate or failed internal processes and controls, people and systems or from external events.

These definitions highlight the four causes of operational risk events: (1) external events; (2) inadequate or failing processes and controls; (3) people; and (4) systems.

Aegon's systems and processes are designed to support complex products and transactions and to avoid such issues as system failures, business disruption, financial crime and breaches of information security. Aegon conducts analyses on a continuous basis by studying such operational risks and regularly develops contingency plans accordingly.

C.5.2 Operational risk assessment

Aegon's approach to evaluating operational risks is based on the quantitative and qualitative rating of those risks with regard to their potential impact and likelihood after consideration of the effectiveness of controls. Risk impact is assessed along the following three

impact dimensions: financial loss, customer & reputation, and financial misstatement. The resulting ratings reflect the (residual) risk the business area is running. The senior management of each strategic business unit reports their forward looking risk profile on a quarterly basis, together with details of action plans that address key risks and, where appropriate, the CRO's opinion on the effectiveness of those plans. Please see section B.4.2 ORM risk framework for a detailed description.

Aegon has identified eight risk event categories that serve as a common language for the group and support the preparation of operational risk reporting and analysis. The eight categories are detailed below:

Business risk

The risk of losses due to failed or inadequate strategy execution, marketing and sales practices, distribution channels, pricing, investment returns, handling of customer complaints or late reaction to changes in the business environment.

Legal, regulatory, conduct & compliance risk

The risk that losses occur resulting from non-compliance with laws and regulation, inadequate legal documentation; or products, services, people and actions failing to deliver the reasonable expectations of its customers and other stakeholders; or failure to comply with laws, regulations and internal company rules and policies, as well as late identification of significant and potential legal and regulatory developments.

Tax risk

Tax risk is the risk associated with changes in tax laws, or the interpretation of tax laws, later jurisprudence or case law, or the introduction of new taxes or tax laws. This tax risk includes for example the risk of changes in tax rates, changes in loss carry-over rules and new rules restricting the tax deductibility of interest expenses.

Tax risk also includes the risk of consequences arising from failure to comply with procedures required by tax authorities. Failure to manage tax risks may lead to increased tax charges, including financial or operating penalties. This tax risk may have a direct materially adverse effect on Aegon's profits, capital and financial condition. Any changes in tax laws, interpretation of tax laws, later jurisprudence or case law, or the introduction of new taxes or tax laws in all countries in which Aegon operates or invests, which affects Aegon's products, may have a materially adverse effect on Aegon's businesses, results of operations, capital and financial condition.

Financial crime risk

A wrongful act (including money laundering), omission, breach of duty or trust, intentionally performed by an Aegon employee, intermediary or external party, which potentially could or results in disadvantage to Aegon or another.

Processing risk

The risk of losses due to inadequate or failing administrative processes and related internal controls, inadequate capturing of source data, reporting errors, modeling errors and failing outsourcing and supplier arrangements.

Systems & business disruption risk

The risk of losses due to inadequate or failed business continuity planning, back-up and recovery, fall back arrangements, information security, IT maintenance and change management, identification of relevant technological developments and other technical causes for systems related failures and errors.

People risk

The risk of losses due to acts inconsistent with employment, health or safety laws or agreements, from payment of personal injury claims or from diversity/discrimination incidents or losses resulting from an insufficient number of, or appropriately trained, personnel.

Facility risk

The risk of losses due to inadequate or failing physical asset management (including physical security incidents and inefficient procurement) and events causing damage to physical assets (e.g. vandalism, water damage, fire, explosions).

Processing risks are generally considered to be most material for Aegon, although this has reduced over the reporting period due to ongoing improvements across the general control environment resulting from various control enhancement initiatives. While systems and processes are designed to support complex transactions and avoid systems failure, fraud, information security failures, processing errors and breaches of regulation, any failure may lead to a materially adverse effect on Aegon's results of operations and corporate reputation. In addition, Aegon must commit significant resources to maintain and enhance its existing systems in order to keep pace with industry standards and customer preferences. If Aegon were to fail to keep up-to-date its information systems, it is possible that

the Company would not be able to rely on information for product pricing, risk management and underwriting decisions. In addition, although back-up and recovery systems and contingency plans are in place, Aegon cannot assure investors that interruptions, failures or breaches in security of these processes and systems will not occur, or if they do occur, that they can be adequately addressed. The occurrence of any of these events may have a materially adverse effect on Aegon's businesses, results of operations and financial condition.

Aegon retains confidential information on its computer systems, including customer information and proprietary business information. Any compromise to the security of Aegon's computer systems that results in the disclosure of personally identifiable customer information may damage the Company's reputation, expose Aegon to litigation, increase regulatory scrutiny, and require Aegon to incur significant technical, legal and other expenses.

Inaccuracies in (financial) models could have a significant adverse effect on Aegon's business, results of operations and financial condition. Reliance on various (financial) models to measure risk, price products and establish key results, is critical to Aegon's operations. If these models or the underlying assumptions prove to be inaccurate, this could have a significant adverse effect on Aegon's business or performance. This risk is controlled by having robust internal controls and governance over the models, including adhering to the Group Model Change Policy which is part of the Model Validation Framework.

Changes towards more sophisticated information technologies, the introduction of new products and services, changing customer needs and evolving applicable standards increase the dependency on the internet, secure systems and related technology. Material strategic business units are currently implementing major transformation programs to reposition the organization for a more customer-centric and digitally-based business environment. The level of change in these programs will introduce new challenges, in addition to increasing existing operational risks and, as a result, the group has invested significantly in the control and oversight processes and resources supporting these programs to ensure that operational risk exposures are monitored and managed effectively. There were no changes to Aegon's operational risk profile during the year.

C.5.3 Risk concentration

Operational risk concentration can occur where specific risk exposures are in excess of operational risk appetite. Aegon's management maintains a well-controlled environment and sound (conduct) policies and practices to control these risks and keep operational risk at appropriate levels. Aegon's operational risk capital that is included in the Aegon PIM SCR is calculated using Standard Formula, except for Aegon UK that is based on the Operational Risk Capital Model.

Operational risk for Aegon is dominated by the following material risk concentrations:

- ▀ Legal, regulatory, conduct & compliance for Americas and the Netherlands; and
- ▀ Processing risk for Americas, the Netherlands and the UK.

Legal, regulatory, conduct & compliance risk

ORC is held on the basis of potential but unlikely extreme loss events such as punitive damages issued by a court resulting from accusations of corporate misconduct, substantial non-compliance with legislation, or inability to enforce policy terms.

Processing risk

ORC is held on the basis of potential but unlikely extreme loss events such as a material financial misstatement, non-payment of claims by reinsurer, modelling errors, or failure of an outsourcing partner.

Consistent with Aegon's strategic aims, the Company will be increasing the nature and volume of outsourced activities in its business operations over the course of the next years. To ensure that the risks inherent with this developing concentration exposure are managed effectively, revised Third Party Risk Management Framework is being developed and implemented across the Group.

C.5.4 Risk mitigation

Operational risks at Aegon are mitigated by maintaining a strong risk control framework and culture. Please refer to section B.4.2 ORM risk framework for a detailed description of the compliance ORM risk framework. All operational risks that are assessed as exceeding the set risk tolerance levels require management to determine a risk response. Risk response is the decision-making process to accept, control, transfer or avoid risks. Allowances for risk mitigation (e.g. insurance, third party indemnification) are made where appropriate. As an example, operational risk scenarios are developed annually and mapped to insurance programs to provide transparency where risk mitigation is effective or not under risk transfer solutions.

C.5.5 Risk sensitivity

Aegon's operational risk capital that is included in the Aegon PIM SCR is calculated using Standard Formula, except for Aegon UK. Internally Aegon manages operational risk based on its economic framework, which is evaluated quantitatively and qualitatively on an annual basis, or more frequently if necessary due to unusual circumstances or newly identified material operational risk exposures. The additional review can be triggered by a business unit or by Group Risk, and is subject to the professional judgment of the relevant subject matter experts.

As the output of Operational Risk reporting is largely qualitative, sensitivity testing is not applied.

C.6 Other material risks

Other material risks are the changes in the Ultimate Forward Rate (UFR) and in the loss-absorbing capacity of deferred taxes (LAC-DT). Aegon is exposed to a downward change in the UFR, mainly via Aegon the Netherlands. A lower UFR increases the technical provisions and thereby lowers the own funds. Furthermore, the higher technical provisions also cause an increase in the SCR.

A UFR sensitivity is applied to EEA entities only. It is an immediate decrease of 15 basis points of the EIOPA UFR, from 4.05% to 3.9%. The shift is assumed to be immediate and instantaneous. The shock includes recalculating the SCR based on the shocked balance sheet.

As mentioned in the general part of section C. Risk profile, the LAC-DT level within Aegon the Netherlands is currently set at 75%. The sensitivity in the table below shows the impact of lowering that factor to 50%. It is an immediate change in the amount of LACDT relief included in the calculation of the SCR.

Sensitivities	Scenario	Estimated Group Solvency II ratio impact
Ultimate Forward rate	-15 bps	(1%)
Aegon the Netherlands loss absorbing capacity of taxes	-25%pts	(4%)

C.7 Any other information

Brexit

The dynamics of Brexit are complex given its multifaceted nature, and its position within the wider geopolitical context. Hence, any description of the current and forward-looking status of Brexit will to a certain extent be outdated as soon as it has been documented. To date the UK Government has not succeeded in passing the negotiated Brexit deal with the European Union through parliament and it is still not clear if a deal will be approved within the six-month extension until October 31, 2019. Aegon is prepared for all scenarios, including a so-called 'hard Brexit'. In this scenario the UK becomes a third country and leaves the internal market of the EU on October 31, 2019. The main consequences of a 'hard Brexit' have been identified and contingency plans are in place. These plans are updated on a continuous basis. Focus areas for Aegon have been derivatives, data transfer and cross border policies.

IBOR transition

The future of IBORs (Interbank Offered Rates) such as Euribor, Eonia and LIBOR has been a major topic on the global agenda since the G20 asked the Financial Stability Board (FSB) to undertake a fundamental review of leading interest rate benchmarks in 2013. The FSB proposed new standards to reform interest rate benchmarks and the use of transaction-based input data instead of non-transactional/panel input data. In the EU this is adopted in the new Benchmark Regulations (BMR) which stipulates that from January 2020 only BMR compliant benchmarks may be used within the EU.

Aegon recognizes that IBOR transitions potentially have implications for all reporting units, including our insurance, asset management and banking activities. Despite current uncertainties on how the transition from IBORs to alternative benchmarks will be managed, it is widely acknowledged that IBOR benchmarks impact financial products and contracts, including derivatives, corporate bonds, structured debt products, deposits and mortgages and other financial instruments like (re-)insurance, guarantees and funding.

Aegon is evaluating the impact of IBOR transitions on the business model and operating model of our reporting units. Furthermore, Aegon is in the process of designing an IBOR transition plan including project solutions and actions, timelines and ownership to ensure timely preparation and implementation.

Aegon does not have any other material information regarding its risk profile.

D. Valuation for solvency purposes

This section provides Solvency II valuation principles and the reconciliation between Aegon N.V.'s consolidated statement of financial position prepared under International Financial Reporting Standards as adopted by the European Union (IFRS-EU balance sheet) and Aegon N.V.'s consolidated economic balance sheet. The approach taken is described in the section 'Approach balance sheet reconciliation', subsequently followed by the quantitative assessment of the reconciliation of both balance sheets. The bases, methods and assumptions used under Solvency II for each balance sheet item separately and any material differences between the bases, methods and main assumptions used for valuation for solvency purposes and its valuation in Aegon's IFRS-EU financial statements is described in sections D.1 Assets, D.2 Technical provisions and D.3 Other liabilities.

Solvency II valuation principles

This section of the SFCR provides the bases, methods and assumptions used under Solvency II for each balance sheet item separately, together with any material differences between the bases, methods and main assumptions used for valuation for solvency purposes and its valuation in Aegon's IFRS-EU financial statements for the year 2018.

During the reporting period, there were no significant changes made to the recognition and valuation bases used under Solvency II or to any estimation technique.

Furthermore, the bases, methods and main assumptions used at Group level for the valuation for solvency purposes of the Group's assets do not differ materially from those used by any of Aegon's subsidiaries for the valuation for solvency purposes.

General recognition principle

Assets and liabilities are recognized, unless otherwise stated, in conformity with IFRS-EU.

General valuation principle

Aegon values its balance sheet items on a market consistent basis. Where the IFRS-EU fair value is consistent with Solvency II requirements, Aegon follows IFRS-EU for the valuation of assets and liabilities. The following is a description of Aegon's methods of determining fair value.

Fair value is defined as the amount that would be received from the sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date under current market conditions (i.e. an exit price at the measurement date from the perspective of a market participant that holds the asset or owes the liability). A fair value measurement assumes that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability; or
- In the absence of a principal market, in the most advantageous market for the asset or liability.

Aegon uses the following hierarchy for measuring and disclosing of the fair value of assets and liabilities:

- Level I: quoted prices (unadjusted) in active markets for identical assets or liabilities that Aegon can access at the measurement date;
- Level II: inputs other than quoted prices included within Level I that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices of identical or similar assets and liabilities) using valuation techniques for which all significant inputs are based on observable market data; and
- Level III: inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs) using valuation techniques for which any significant input is not based on observable market data.

The best evidence of fair value is a quoted price in an actively traded market. In the event that the market for a financial instrument is not active or quoted market prices are not available, a valuation technique is used. The degree of judgment used in measuring the fair value of assets and liabilities generally inversely correlates with the level of observable valuation inputs. Aegon maximizes the use of observable inputs and minimizes the use of unobservable valuation inputs when measuring fair value. Financial instruments, for example, with quoted prices in active markets generally have more pricing observability and therefore less judgment is used in measuring fair value. Conversely, financial instruments for which no quoted prices are available have less observability and are measured at fair value using valuation models or other pricing techniques that require more judgment.

The assets and liabilities categorization within the fair value hierarchy is based on the lowest input that is significant to the fair value measurement.

Active Market

An active market is one in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis. The judgment as to whether a market is active may include, although not necessarily determinative, lower transaction volumes, reduced transaction sizes and, in some cases, no observable trading activity for short periods. In inactive markets, assurance is obtained that the transaction price provides evidence of fair value or it is determined that adjustments to transaction prices are necessary to measure the fair value of the instrument.

The majority of valuation techniques employ only observable market data, and so the reliability of the fair value measurement is high. However, certain assets and liabilities are valued on the basis of valuation techniques that feature one or more significant market inputs that are unobservable and, for such assets and liabilities, the derivation of fair value is more judgmental. An instrument is classified in its entirety as valued using significant unobservable inputs (Level III) if, in the opinion of management, a significant proportion of the instrument's carrying amount is driven by unobservable inputs. 'Unobservable' in this context means that there is little or no current market data available from which to determine the price at which an at arm's length transaction would be likely to occur. It generally does not mean that there is no market data available at all upon which to base a determination of fair value. Additional information is provided in the table headed 'Effect of changes in significant unobservable assumptions to reasonably possible alternatives' in note 47 Fair Value. While Aegon believes its valuation techniques are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain instruments (both financial and non-financial) could result in a different estimate of fair value at the reporting date.

To operationalize Aegon's fair value hierarchy, individual instruments (both financial and non-financial) are assigned a fair value level based primarily on the type of instrument and the source of the prices (e.g. index, third-party pricing service, broker, internally modeled). Periodically, this logic for assigning fair value levels is reviewed to determine if any modifications are necessary in the context of the current market environment.

Technical provisions

Technical provisions are valued at the current amount Aegon would have to pay if the insurance and reinsurance obligations were to be transferred immediately to another insurance or reinsurance undertaking. The value of technical provisions is equal to the sum of a best estimate and a risk margin. The best estimate corresponds to the probability-weighted average of future cash-flows, taking into account the time value of money, using the relevant risk-free interest rate term structure, including volatility adjustment where applicable (please refer to section D.2.4 Long term guarantees and transitional measures). The risk margin is set at a level such that the value of the technical provisions is equivalent to the amount that insurance and reinsurance undertakings would be expected to require in order to take over and meet the insurance and reinsurance obligations.

Valuation principles for other financial sector and entities consolidated under method 2

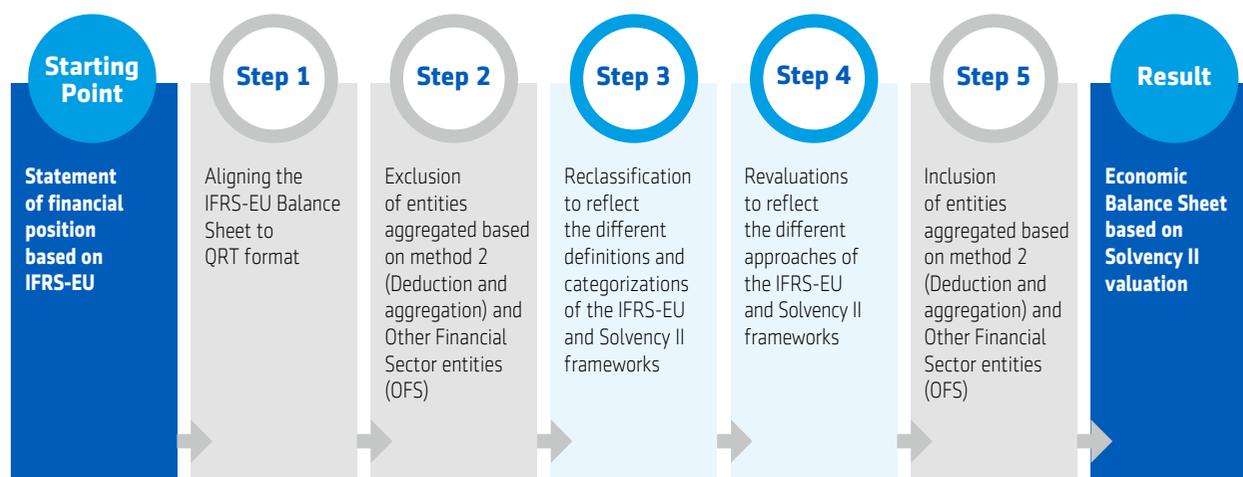
For undertakings other than European Economic Area (EEA) insurance, Aegon follows the principles set by the Solvency II Directive and specifically:

- Other financial sector entities are included based on the local sectoral rules; and
- For method 2 (Deduction & Aggregation) entities Aegon applies primarily the local regulatory regime for countries where (provisionally) equivalence has been granted (US Life insurance entities, Bermuda, Japan, Mexico and Brazil).

Approach balance sheet reconciliation

The approach taken to reconcile the balance sheet under IFRS-EU and Solvency II is illustrated below:

As a starting point, the IFRS-EU balance sheets of all business units are collected and aggregated. These are then aligned to the Quantitative Reporting Template ('QRT') format as prescribed by the Solvency II regulations (step 1). After performing the reconciliation steps (step 2 - 5), the IFRS-EU balance sheet in QRT format is reconciled to the Solvency II balance sheet. The detailed steps in the reconciliation process are described below:



Step 1: To ensure accuracy of the reconciliation and correctness of the adjustments performed, the audited IFRS-EU balance sheets of all business units are converted into their QRT equivalent and aggregated to a Group view.

Step 2: Entities aggregated based on method 2 (Deduction and Aggregation) and other financial sector entities (OFS) are excluded for their IFRS-EU value. These entities are added back at their Solvency II value in step 5 below. This step is also used for the IFRS-Solvency II presentational differences of joint ventures (that are consolidated using the equity method under IFRS-EU as opposed to the 'look-through' – proportionally consolidated – approach under Solvency II) and Other entities that are subsidiaries (that are consolidated on a line by line basis under IFRS-EU as opposed to be included on the Participations line in the Solvency II balance sheet).

Step 3: Certain balance sheet items might differ in classification between the IFRS-EU and Solvency II balance sheet. To align with the definitions and categorizations under Solvency II, some IFRS-EU balance sheet items or classes within the balance sheet item are reclassified.

Step 4: Adjustments for balance sheet items that differ in method of valuation between IFRS-EU and Solvency II are included through this step. This step is also used to de-recognize balance sheet items that are valued at nil on the Solvency II balance sheet such as goodwill, deferred Policy Acquisition Costs (DPAC) and other intangible assets.

Step 5: The entities aggregated based on method 2 and excluded in step 2 above are included in the Group's Solvency II own funds for their proportional share of own funds according to local regulatory rules.

Aegon Group balance sheet as of December 31, 2018		Starting Point and Step 1					Result
		IFRS-EU Total	Step 2	Step 3	Step 4	Step 5	
Amounts in EUR millions	Section		IFRS D&A entities	Reclas-sification adjust-ments	Revalua-tion adjust-ments	Solvency II D&A entities	Solvency II Total
Assets							
Goodwill		384	212	-	(596)	-	-
Deferred policy acquisition costs		10,910	(9,758)	-	(1,152)	-	-
Intangible assets		1,342	(1,066)	-	(276)	-	-
Deferred tax assets	D.3.2	125	(7)	431	(45)	-	504
Pension benefit surplus		-	-	-	-	-	-
Property, plant & equipment held for own use		498	(422)	250	(1)	-	325
Investments (other than held for index- and unit-linked contracts)	D.1.1	105,800	(70,542)	4,588	(6)	9,898	49,738
Assets held for index- and unit-linked contracts	D.1.2	194,353	(98,301)	(9,323)	(616)	-	86,113
Loans & mortgages	D.1.3	42,911	(23,358)	(723)	2,564	-	21,393
Reinsurance recoverables	D.1.4	20,507	(19,893)	5,323	(341)	-	5,596
Deposits to cedants		-	-	115	-	-	115
Insurance & intermediaries receivables	D.1.5	1,364	(1,107)	504	(34)	-	727
Reinsurance receivables		1,129	(1,084)	9	-	-	54
Receivables (trade, not insurance)	D.1.6	3,526	(1,813)	(222)	(21)	-	1,471
Own shares		-	-	333	-	-	333
Cash and cash equivalents	D.1.7	8,744	(2,341)	(53)	(3)	-	6,347
Any other assets	D.1.8	1,436	179	(1,274)	(94)	-	248
Total assets		393,031	(229,301)	(43)	(622)	9,898	172,963
Liabilities							
Technical provisions: non-life	D.2.1	8,499	(7,282)	(721)	(181)	-	314
Technical provisions: life (excluding index- and unit-linked contracts)	D.2.2	124,843	(87,870)	3,299	1,340	-	41,612
Technical provisions: index- and unit-linked contracts	D.2.3	197,210	(98,319)	(487)	(2,182)	-	96,222
Provisions other than technical provisions		320	(201)	-	-	-	119
Pension benefit obligations	D.3.1	3,989	(11)	-	(6)	-	3,972
Deposits from reinsurers		-	13	1	-	-	14
Deferred tax liabilities	D.3.2	618	(848)	420	22	-	213
Derivatives	D.3.3	7,230	(1,855)	(2,475)	(1)	-	2,899
Debts owed to credit institutions	D.3.4	-	(1)	1,777	309	-	2,086
Financial liabilities other than debts to credit institutions	D.3.5	12,143	(9,130)	(2,263)	(280)	-	470
Insurance & intermediaries payables	D.3.6	1,545	(992)	675	(5)	-	1,223
Reinsurance payables		1,327	(1,257)	7	23	-	100
Payables (trade, not insurance)	D.3.7	10,500	(6,887)	338	(23)	-	3,928
Subordinated liabilities	D.3.8	1,522	(133)	3,396	273	-	5,058
Any other liabilities	D.3.9	400	1,350	(1,080)	(1)	-	668
Total liabilities		370,146	(213,424)	2,886	(710)	-	158,898
Excess of Assets over Liabilities		22,885	(15,877)	(2,929)	89	9,898	14,066

Aegon Group balance sheet as of December 31, 2017		Starting Point and Step 1	Step 2	Step 3	Step 4	Step 5	Result
Amounts in EUR millions	Section	IFRS-EU Total	IFRS D&A entities ¹⁾	Reclas-sification adjust-ments	Revalua-tion adjust-ments	Solvency II D&A entities ¹⁾	Solvency II Total
Assets							
Goodwill		293	242	-	(535)	-	-
Deferred policy acquisition costs		10,135	(8,933)	22	(1,224)	-	-
Intangible assets		1,340	(1,077)	-	(260)	(3)	-
Deferred tax assets	D.3.2	79	(9)	384	14	(7)	461
Pension benefit surplus		55	(55)	-	-	-	-
Property, plant & equipment held for own use		530	(203)	(4)	-	12	335
Investments (other than held for index- and unit-linked contracts)	D.1.1	108,052	(72,867)	3,164	58	9,359	47,766
Assets held for index- and unit-linked contracts	D.1.2	194,063	(106,192)	(6,686)	(604)	(6)	80,575
Loans & mortgages	D.1.3	39,597	(22,958)	937	3,211	541	21,328
Reinsurance recoverables	D.1.4	19,202	(18,624)	6,001	(327)	(5)	6,246
Deposits to cedants		-	-	28	-	-	28
Insurance & intermediaries receivables	D.1.5	999	(725)	342	(28)	-	589
Reinsurance receivables		2,708	(2,673)	-	4	-	39
Receivables (trade, not insurance)	D.1.6	4,222	(2,504)	240	(21)	167	2,105
Own shares		-	-	-	319	6	325
Cash and cash equivalents	D.1.7	8,223	(1,960)	2,109	(9)	63	8,425
Any other assets	D.1.8	6,792	(286)	(6,236)	(16)	36	289
Total assets		396,291	(238,825)	302	582	10,162	168,510
Liabilities							
Technical provisions: non-life	D.2.1	8,484	(7,283)	(729)	(169)	-	303
Technical provisions: life (excluding index- and unit-linked contracts)	D.2.2	119,277	(82,752)	3,839	2,839	17	43,219
Technical provisions: index- and unit-linked contracts	D.2.3	196,601	(106,197)	2,857	(2,432)	(1)	90,829
Provisions other than technical provisions		210	(74)	(3)	1	14	148
Pension benefit obligations	D.3.1	4,005	(26)	-	(6)	14	3,988
Deposits from reinsurers		-	11	-	1	-	12
Deferred tax liabilities	D.3.2	1,112	(1,163)	423	(211)	(13)	147
Derivatives	D.3.3	7,130	(1,296)	(2,250)	(33)	-	3,552
Debts owed to credit institutions	D.3.4	-	2,177	725	333	(8)	3,227
Financial liabilities other than debts to credit institutions	D.3.5	13,709	(14,627)	637	(5)	810	524
Insurance & intermediaries payables	D.3.6	1,569	(1,016)	411	(3)	(6)	955
Reinsurance payables		3,010	(2,920)	(2)	16	-	103
Payables (trade, not insurance)	D.3.7	10,555	(7,227)	154	(28)	164	3,618
Subordinated liabilities ²⁾	D.3.8	896	(889)	4,888	21	(1)	4,916
Any other liabilities	D.3.9	5,345	1,148	(5,894)	109	88	796
Total liabilities		371,904	(222,131)	5,055	432	1,077	156,336
Excess of Assets over Liabilities		24,386	(16,694)	(4,753)	150	9,085	12,174

¹ This column also includes Other Financial Sector entities (OFS) and any other legal entities that are presented differently for an IFRS-EU view than for a Solvency II legal entity based view.

² Change of presentation for the subordinated liabilities. For details please refer to section D.3.8 Subordinated liabilities.

D.1 Assets

Goodwill, DPAC and other intangibles are valued at nil on the Solvency II balance sheet. The IFRS-EU treatment of these items is not in scope of this publication. Please refer to the [Integrated Annual Report 2018 of Aegon Group](#) for additional information on the treatment of these items.

D.1.1 Investments (other than assets held for index- and unit-linked contracts)

This paragraph describes the treatment of Aegon's investments (other than assets held for index- and unit-linked contracts). The majority of Aegon's portfolio is comprised of Bonds (47%; 2017: 50%), Related undertakings, including participations (26%; 2017: 22%), Derivatives (10%; 2017: 9%), Property other than for own use (7%; 2017: 6%), Collective Investment Undertakings (7%; 2017: 7%) and Equities (3%; 2017: 3%). A particular focus is given to Related undertakings, including participations as this element is the key material item for the comprehension of step 5 in the 'Approach to the balance sheet reconciliation' described above.

No separate specification of the different financial instruments is given as the valuation treatment is consistent among them and described below.

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (70,542) million.

Method of valuation under Solvency II

Irrespective of whether investments are classified as fair value through profit or loss (FVtPL), held-to-maturity (HTM) or available-for-sale (AFS), Solvency II requires Fair Value to be applied while under IFRS-EU, held-to-maturity investments are measured at amortized cost while investments at fair value through profit or loss and available for sale assets are measured at fair value. To bridge between IFRS-EU and Solvency II investment accounting principles, financial assets valued at amortized cost under IFRS-EU, need to be accounted for at fair value under Solvency II. This will - in particular - be required for financial instruments classified as Held-to-maturity. All the financial instruments measured at Fair Value for IFRS-EU are not revalued under Solvency II. However, there are presentational differences between IFRS-EU and Solvency II, and reclassifications are required to conform to the Solvency II requirements.

Material difference in valuation between Solvency II and IFRS-EU

The differences between the bases, methods and main assumptions used for valuation for solvency purposes do not generate material differences, though reclassification adjustments are required for presentational differences between the bases.

Reclassification adjustments

The total reclassification adjustments of EUR 4,588 million comprises mainly of the reclassification of policyholder accounts related assets from 'Investments (other than assets held for index- and unit-linked funds)' to 'Assets held for index-linked and unit linked funds' in respect of the with-profits sub fund in the UK (EUR 4,994 million). A further reclassification of EUR 84 million is performed within Aegon Spain for presentational differences between IFRS-EU and Solvency II. These amounts are partly offset by a EUR (543) million for Aegon the Netherlands, which mainly relate to the reclassification between "Derivatives" and "Assets held for index- and unit-linked fund investments" for presentational differences between Solvency II and IFRS-EU.

Revaluation adjustments

The amount of revaluation adjustments is not material, as the majority of Aegon's investments (other than assets held for index- and unit-linked contracts) are measured at Fair Value on the IFRS-EU balance sheet.

Related undertakings, including participations

Method of valuation under Solvency II

Under Solvency II, holdings in related undertakings, including participations at group level will include:

- Holdings in related insurance or reinsurance undertakings, insurance holding companies and mixed financial holding companies that do not meet the definition of subsidiaries;
- Holdings in related undertakings in other financial sectors (i.e. Aegon Bank);
- Other related undertakings (not mentioned above and not part of consolidated data); and
- Insurance or reinsurance undertakings, insurance holding companies or mixed financial holding companies included through the D&A method.

Aegon's holdings in related EEA insurance or reinsurance undertakings, insurance holding companies and mixed financial holding companies that are not subsidiaries, are included based on the Solvency II adjusted equity method. Holdings in related undertakings in other financial sectors (e.g. Aegon Asset Management) are included based on the local sectoral rules. In addition, other related undertakings include non-insurance undertakings which are included under the AC method (method 1) but are not consolidated. These are measured at quoted prices in active markets (where available) or using the Solvency II adjusted equity method where quoted prices in active markets are not available.

Related undertakings also include insurance undertakings in Non-EEA countries that have been granted (provisional) equivalence, which have been included under the D&A method (method 2). These undertakings (most notably US life insurance entities) are measured in accordance with the local supervisory requirements and reflected as Participations within the Aegon Group economic balance sheet. As of December 31, 2018, this amounted to EUR 9,898 million. This amount includes the 100% RBC CAL reduction (EUR 1,884 million) in the Excess of Assets over Liabilities of the US Life Insurance companies.

Aggregation differences between Solvency II and IFRS-EU

It is to be noted that there are material differences in aggregation stemming from insurance undertakings included under the D&A method, primarily driven by the US Life insurance entities. For the latter, the main differences between its statutory regime and IFRS-EU relate to technical provisions (EUR 7,317 million), valuation of other assets (EUR 759 million), investments (EUR (2,666) million) and taxes (EUR 179 million). In addition, there is no Deferred Policy Acquisition Cost (DPAC) under US statutory accounting (EUR (9,004) million) and the 100% RBC CAL reduction (EUR (1,884) million) for the US Life Insurance companies as described in paragraph E.1.2 Tiering of own funds. The main differences are described in further detail below:

- *Technical provisions:* There are a number of valuation differences between US statutory accounting and IFRS with respect to reserves (i.e. use of deposit accounting, expense allowances and/or surrender charges, differences in assumptions and methodology). Generally, the statutory reserves assumptions and methodology are intended to be more conservative to ensure the company's ability to meet unmatured obligations, such as expected future claims. However, the impact of other methodology differences in bridging from IFRS-EU to statutory values can offset the intended conservatism in statutory accounting;
- *Other assets:* On a statutory basis, certain assets are designated as "non-admitted", and are excluded from the balance sheet. Under IFRS-EU, such assets are included in the balance sheet to the extent that they are not impaired. Other items causing differences from statutory basis to IFRS-EU are hedge reserve offset, payables for derivative cash collateral, and letters of credit;
- Under IFRS-EU basis *investments* are generally reported at market value. On a statutory basis, investments are generally reported at amortized cost; and
- Differences in *taxes* are driven by the carrying amount of statutory and IFRS-EU assets and liabilities (as described above) as compared to the tax base of those assets and liabilities. The conservative nature of the US statutory regime typically results in net deferred tax assets, whereas the comparison of IFRS-EU and tax base typically results in a net DTL position. Furthermore, while both accounting regimes are subject to DTA recognition realization criteria, the statutory regime applies further limitations which leads to a reduced amount of admitted deferred tax assets recognized on the statutory balance sheet.
- *DPAC:* Acquisition costs are deferred under IFRS-EU, while they are expensed as incurred under US statutory accounting. Under IFRS-EU, value of business acquired (VOBA) is an intangible asset resulting from a business combination. VOBA is not recognized for US statutory accounting basis.

The main part of the gap in the excess of assets over liabilities between Step 2 and Step 5 above relates to the differences between the US statutory regime and IFRS-EU.

Fair value hierarchy

To operationalize Aegon's fair value hierarchy, individual instruments (both financial and non-financial) are assigned a fair value level based primarily on the type of instrument and the source of the prices (e.g. index, third-party pricing service, broker, internally modeled). Periodically, the logic for assigning fair value levels is reviewed to determine if any modifications are necessary in the context of the current market environment.

The table below provides an analysis of the individual instruments by level of the fair value hierarchy.

Fair value hierarchy of financial assets Amounts in EUR millions	Level 1	Level 2	Level 3²⁾	Total
Investments (other than assets held for index-linked and unit-linked contracts)¹⁾	19,544	2,742	11,808	34,094
Property (other than for own use)	-	-	3,484	3,484
Equities	1,225	66	57	1,348
Equities - listed	1,225	66	-	1,291
Equities - unlisted	-	-	57	57
Bonds	18,059	1,902	3,374	23,335
Government bonds	17,476	437	171	18,084
Corporate bonds	543	1,174	1,377	3,094
Structured notes	40	-	7	47
Collateralized securities	-	291	1,819	2,110
Collective Investments Undertakings	304	247	3,023	3,574
Derivatives¹⁾	(63)	285	1,870	2,092
Deposits other than cash equivalents	19	242	-	261
Other investments	-	-	-	-
Assets held for index-linked and unit-linked contracts (section D.1.2)	12,982	50,220	22,911	86,113
Loans and mortgages (section D.1.3)	-	-	21,393	21,393
Loans on policies	-	-	4	4
Loans and mortgages to individuals	-	-	21,390	21,390

¹⁾ Note that Investments as shown in the table (EUR 34,094 million) do not include the net asset value of participations as reported in the Solvency II balance sheet (EUR 12,744 million). In addition, there is an amount of EUR 2,899 million relating to the netting of derivatives.

²⁾ For details on the valuation of level 3 assets, please refer to section D.4 Alternative methods for valuation.

D.1.2 Assets held for index- and unit-linked contracts

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (98,301) million.

Method of valuation under Solvency II

Assets held for index- and unit linked contracts, for which the actual return on investments is passed on to the policyholder, are measured at fair value of the assets of the contracts.

Material difference in valuation between Solvency II and IFRS-EU

The differences between the bases, methods and main assumptions used for valuation for solvency purposes do not generate material differences, though reclassification and gross-up adjustments are required for presentational differences between the bases.

Reclassification adjustments

The reclassification of EUR (9,323) million is driven by the With-Profits Sub-Funds (WPSF) reclassification of policyholder accounts related assets from 'Investments (other than assets held for index- and unit-linked funds)' to 'Assets held for index-linked and unit linked funds' for an amount of EUR (5,234) million and by the reclassification of reinsured External Fund Linked (EFL) assets for an amount of EUR (5,322) million.

Revaluation adjustments

The revaluation adjustment of EUR (616) million stems from Aegon UK from the reversal of the gross up following the IFRS 10 standard requiring entities to consolidate entities it controls. Control requires exposure or rights to variable returns and the ability to affect those returns through power over an investee. This does not apply for Solvency II reporting.

D.1.3 Loans and mortgages

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (23,358) million.

Method of valuation under Solvency II

Loans and mortgages are valued at Fair Value. For private loans, fixed interest mortgage loans and other loans originated by the Group, the fair value is calculated by discounting expected future cash flows using a current market rate applicable to financial instruments with similar yield and maturity characteristics. For fixed interest mortgage loans, the market rate is adjusted for expenses, prepayment rates, lapse assumptions, liquidity and credit risk (market observable inputs). The fair value of floating interest rate mortgage loans, policy loans and private placements used for disclosure purposes is approximated by their carrying amount, adjusted for credit risk. Credit risk adjustments are based on market observable credit spreads, if available, or best estimate, if not market observable. Please refer to section D.4.7 for alternative valuation methods of Loans and mortgages.

Material difference in valuation between Solvency II and IFRS-EU

Under IFRS-EU these assets are valued at amortized cost on the balance sheet, while under Solvency II, fair value is applied. The different valuation approach between IFRS-EU and Solvency II therefore requires revaluation of loans and mortgages. By their nature, none of the loans and mortgages included in this category are listed on active markets. Solvency II requires that the fair value should be based on the discounted cash flow valuation method which is based on the contractual future cash flows discounted with a discount rate representing the time value of money and risk charges.

Reclassification adjustments

The total reclassifications of EUR (723) million is mainly related to the reclassification of “Financial liabilities other than debts owed to credit institutions” under the QRT IFRS-EU equivalent but require to be presented as Loans and mortgages for Solvency II.

Revaluation adjustments

The revaluation adjustments reflect the impact of conversion from amortized cost valuation under IFRS-EU to fair value under Solvency II. Under the amortized cost method, loans and mortgages are valued using the effective interest rate at the inception of the loan, while fair value determination should incorporate current market factors including a risk free rate.

D.1.4 Reinsurance recoverables

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (19,893) million.

Method of valuation under Solvency II

Reinsurance contracts are contracts entered into by the Group in order to receive compensation for claims/benefits incurred on contracts written by the Group (outgoing reinsurance). Reinsurance assets are also held as part of exiting the business. For contracts transferring sufficient insurance risk, a reinsurance asset is recognized for the expected future benefits, less expected future reinsurance premiums. Reinsurance contracts with insufficient insurance risk transfer are accounted for as investment or service contracts, depending on the nature of the agreement.

For Solvency II, a fair value approach is used for the reinsurance recoverables that is similar to the valuation of insurance liabilities. It does not, however, include a risk margin and the measurement includes an adjustment for counterparty default risk.

Material difference in valuation between Solvency II and IFRS-EU

Under IFRS-EU, reinsurance assets are measured consistently with the assumptions associated with the underlying insurance contracts and in accordance with the terms of each reinsurance contract. They are subject to impairment testing and are derecognized when the contractual rights are extinguished or expire or when the contract is transferred to another party. Under Solvency II, the best estimate valuation principles described above are applied. This generates valuation differences between the two paradigms.

Reclassification adjustments

The main driver of the EUR 5,323 million adjustment is the reclassification for External Fund Linked (EFL) assets within Aegon UK, deemed to be reinsurance assets for Solvency II purposes.

Revaluation adjustments

The majority of the total revaluation for an amount of EUR (341) million was related to Aegon UK. The difference in valuation is linked to the underlying reinsured liabilities. There are considerable differences in the valuation of insurance liabilities under IFRS compared to Solvency II and the value of the reinsurance assets covering these liabilities changed as a result. These adjustments included, among others, different valuation of risk margin and different discount rates (IFRS-EU historical rates versus Solvency II current market rates).

D.1.5 Insurance and intermediaries receivables**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (1,107) million.

Method of valuation under Solvency II

The insurance and intermediaries receivables reflect amounts past due for payment by policyholders, (re)insurers, and other linked to insurance business, that are not included in technical provisions. It also includes receivables from reinsurance accepted. Insurance and intermediaries receivables on Aegon's balance sheet are predominantly short-term. The difference between the amortized cost under IFRS-EU and fair value under Solvency II is therefore not material.

Material difference in valuation between Solvency II and IFRS-EU

Given the short-term nature of these receivables, there is no material measurement difference between amortized cost under IFRS-EU and fair value under Solvency II.

Reclassification adjustments

The reclassification of EUR 504 million is mainly driven by a reclassification between 'Any other assets' and 'Insurance & intermediaries receivables' for the Americas non-regulated entities.

Revaluation adjustments

Insurance and intermediaries receivables on Aegon's balance sheet are predominantly short-term. The revaluation difference between the amortized cost under IFRS-EU and fair value under Solvency II is therefore not material.

D.1.6 Receivables (trade, not insurance)**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (1,813) million.

Method of valuation under Solvency II

Receivables on Aegon's balance sheet are predominantly short-term. Solvency II value measurement requires a fair value approach to be applied.

Material difference in valuation between Solvency II and IFRS-EU

Given the short-term nature of these receivables, there is no material measurement difference between amortized cost under IFRS-EU and fair value under Solvency II.

Reclassification adjustments

The total reclassification adjustment amounted to EUR (222) million and was mainly driven by the EUR (352) million reclassification which relates to Policyholder balances which are moved into UL assets, and accrued interest in the UK. A further amount of EUR (63) million related to netting of accrued interest in Aegon the Netherlands. This was partly offset by the brake out of "Receivables (trade, not insurance) from "Any other assets" in the US non-regulated companies for an amount of EUR 171 million.

Revaluation adjustments

No material revaluation adjustments were required.

D.1.7 Cash and cash equivalents**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (2,341) million.

Method of valuation under Solvency II

Under Solvency II, cash and cash equivalents on the balance sheet refers to notes and coins in circulation that are commonly used to make payments, and deposits exchangeable for currency on demand at par or which are directly usable for making payments without penalty or restriction. Cash equivalents on Aegon's balance sheet are predominantly short-term of nature and, as a result, the valuation difference between the amortized cost under IFRS-EU and fair value under Solvency II is not material.

Material difference in valuation between Solvency II and IFRS-EU

The differences between the bases, methods and main assumptions used for valuation for solvency purposes do not generate material differences, however reclassification adjustments are required for presentational differences between the bases.

Reclassification adjustments

The reclassification for the amount of EUR (53) million is mostly driven by Aegon Spain as presentational difference between Solvency II and IFRS-EU.

Revaluation adjustments

No material revaluation adjustments were required.

D.1.8 Any other assets**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR 179 million.

Method of valuation under Solvency II

The fair value approach is prescribed for the majority of the asset groups. All assets without specific valuation rules are valued in accordance with IFRS-EU, provided that this is consistent with an economic valuation. When applying an economic valuation of assets, insurers should refer to a three level valuation hierarchy. The use of quoted prices is the default method of valuation. Where this is not possible, insurers should use quoted prices of similar assets. Where no quoted prices can be used, the insurer can develop an alternative valuation method that makes maximum use of market inputs.

Material difference in valuation between Solvency II and IFRS-EU

Most of these assets are of a short-term character and, as a result, there are no material difference between Solvency II and IFRS values.

Reclassification adjustments

The adjustment, for an amount of EUR (1,274) million, is mainly related to presentational differences between IFRS-EU and Solvency II for the US non-regulated entities (EUR (867) million), Aegon the Netherlands (EUR (318) million) and Aegon UK (EUR (64) million).

Revaluation adjustments

No material revaluation adjustments were required.

D.2 Technical provisions

Aegon distinguishes between entities for which the valuation of (insurance related) liabilities is based on Solvency II (insurance and reinsurance entities within the European Economic Area (EEA)) or valuation is based on local regimes when (provisional) equivalence is granted (US Life insurance entities, Japan, Mexico, Brazil, and Bermuda).

This section describes the technical provisions for the EEA (re)insurance legal entities, including the amount of the Best Estimate Liability (BEL) and the Risk Margin (RM), including a description of the bases, methods and main assumptions used. The value of the Solvency II technical provisions are shown in the tables of sections: D.2.1 Technical provisions – non-life; D.2.2 Technical provisions – life; and D.2.3 Technical provisions – index linked and unit linked contracts.

Given the materiality of technical provisions, this section also provides relevant information about the technical provisions for the Non-EEA (re)insurance legal entities, in particular with respect to the US life insurance entities.

Bases (different reporting regimes)

For the EEA (re)insurance legal entities, the Solvency II technical provisions are calculated taking into account the requirements of the Solvency II directive and the Solvency II implementing measures and guidance.

EEA (re)insurance legal entities are primarily included in the Group Solvency II position through Accounting Consolidation. Non-EEA (re)insurance legal entities are primarily included in the Group Solvency II position through Deduction & Aggregation in which only these entities' own funds and solvency requirements are consolidated. The related technical provisions for these entities are not explicitly consolidated for the Group Solvency II balance sheet reporting.

EEA (re)insurance legal entities

The technical provisions consist of the Best Estimate Liability (BEL) and the Risk Margin (RM).

The BEL is calculated using projection models and is the probability-weighted average of projected future cash-flows, taking account of the time value of money, using the relevant risk-free interest rate term structure, with Matching Adjustment (MA) or Volatility Adjustment (VA) where appropriate, prescribed by EIOPA. This liability valuation includes the projection of mortality, lapses, expenses, fund values, charges and other factors that impact future cash flows, based on best-estimate assumptions. In cases where the liabilities do not include material embedded options or guarantees, they are calculated deterministically. The liability for material embedded options or guarantees is calculated using stochastically generated economic scenarios.

The Matching Adjustment (MA) is one of the long-term guarantee (LTG) measures in the Solvency II regulation to ensure an appropriate treatment of insurance products that include long-term guarantees. The Matching Adjustment can only be applied for separate portfolios of matched assets and liabilities and is designed to reflect the fact that for these portfolios there is no exposure to credit spread fluctuations that are not related to increased probability of default. The MA is applied by Aegon UK and Aegon Spain for separate portfolios of matched assets and liabilities that are covering annuity business. The calculation methodology which was adopted to implement the MA was approved by local regulators.

The Volatility Adjustment (VA) is one of the long-term guarantee (LTG) measures in the Solvency II regulation to ensure an appropriate treatment of insurance products that include long-term guarantees. It aims at stabilizing the Solvency II balance sheet during short periods of high market volatility by adding an extra spread component to the discount rate used for the calculation of technical provisions. The VA is applied by Aegon the Netherlands and Aegon Spain for all types of their business while Aegon UK applies the VA to all traditional and unitized with-profits business.

The RM is included in the technical provisions to allow for the uncertainty around the best estimate non-economic assumptions. Solvency Capital Requirements (SCR) for non-hedgeable risks (like underwriting and operational risks) form the basis of the calculation of the RM. The RM calculation is based on a cost-of-capital method applied to a projection of SCRs based on a 99.5% confidence level and aggregation is performed by applying diversification benefits factors to each risk type that is applicable to the Solvency II Partial Internal Model (Aegon the Netherlands, Aegon UK) or Standard Formula (other EEA legal entities). Diversification is only applied within the legal entities and only for the non-hedgeable risks.

Ongoing validation and review processes are in place to ensure that models being used remain appropriate and can be relied upon, including model validations, process reviews carried out by the Internal Audit function and review of results performed by external auditors.

Assumptions – Best estimate non-economic assumptions (for EEA (re)insurance legal entities)

Best estimate non-economic assumptions are used by the EEA (re)insurance legal entities for the Solvency II reporting framework (for the valuation of the BEL), as well as the IFRS-EU reporting framework (including the liability adequacy test, also known as DPAC recoverability test or loss recognition test).

Non-economic assumptions are proposed by the first line actuarial function and reviewed by the second line risk function. They are approved by the local board or local management team. This governance also requires the independent opinion and recommendation of the Actuarial Function Holder (AFH).

Unit	Business	Significant Non-Economic Assumptions
NL	Individual Life	Mortality, maintenance expenses, lapses
	Group Pension	Mortality, maintenance expenses, lapses
	Mortgages	Prepayment rates
	Non-Life	Disability
UK	All business	Lapses, maintenance expenses
	Own pension plan and reinsurance annuity block	Mortality
CEE	Life (Hungary/Poland)	Lapses, maintenance expenses
	Non-Life (Household, Casco, Motor third party liability insurance)	Lapses, maintenance expenses, loss ratio, index
Spain	All business	Lapses, maintenance expenses
BSRe	All business	Mortality, Expenses

Best estimate actuarial assumptions (i.e. mortality, longevity and lapse) and maintenance expenses assumptions are developed through periodic experience studies. The frequency of these studies is determined by the relative significance of the assumption in relation to actuarial calculations, its volatility, and the amount of new experience available.

Mortality assumptions are generally developed based on a blend of company experience and industry wide studies, taking into consideration product characteristics, own risk selection criteria, target market and past experience.

Longevity assumptions are set for annuity business where benefit payments are a function of survivorship status. An important feature of the annuitant longevity as well as the mortality basis is the inclusion of a long-term rate of improvement of mortality.

Policyholder behavior (e.g. lapse, surrender, withdrawal, annuitization, and premium persistency) assumptions are set where policyholders have options to withdraw funds, cancel their contracts, cease or adjust premium amounts, or elect embedded options. Policyholder behavior assumptions depend on product features, policy duration and external circumstances such as the interest rate environment and competitors. Reliable own experience, as well as available industry wide data, are used in establishing assumptions.

Maintenance expense assumptions reflect the cost of administering policyholder contracts and are derived from the cost analysis that forms a key part of each entity's cost management activity. Broadly speaking, cost loadings are derived by identifying the costs that are expected to be incurred in respect of administering policyholder business, and dividing this by the number of relevant contracts at a contract type level, or set as a percentage of premium. Expert judgment is mainly required in order to classify costs as acquisition or renewal, to select the drivers in order to allocate costs to products, and to classify of expenses as exceptional or recurring expenses.

For Non-Life, demographic assumptions (e.g. sick leave, and disability) and claims payment assumptions (e.g. fire, marine and third-party liability) are based on observed and annually updated statistics.

Assumptions – Economic assumptions (for EEA (re)insurance legal entities)

For the EEA (re)insurance legal entities, the key economic assumptions are the EIOPA swap curve for discounting and the UFR. Furthermore, for Aegon UK and Aegon Spain, the MA and VA are considered to be key economic assumptions. In addition, economic scenarios are generated that are applied for the stochastic valuation of the options and guarantees included in some of the liabilities (i.e. where options and guarantees are material).

The UFR is the risk free interest rate over a one year period that is expected to prevail after a long period. EIOPA has set the annual EUR-UFR (published in their March 21, 2018 report) to 3.60%. As the current (2018) UFR is 4.05% and an annual change is limited to 15 basis points, the applicable UFR in 2019 3.90%.

Level of uncertainty associated with the value of the technical provisions (for EEA (re)insurance legal entities)

The main source of uncertainty associated with the technical provisions is in the setting of assumptions where a significant level of judgment may be required about how future experience may differ from past experience. The assessment of the potential impact of this uncertainty is performed by sensitivity testing of key assumptions.

The risk margin is included in the technical provisions to allow for the uncertainty around the best estimate non-economic assumptions

Significant simplified methods used to calculate the technical provisions (for EEA (re)insurance legal entities)

For the with-profits fund risk margin derivation of Scottish Equitable plc (UK) a simplified approach (by assuming that capital run off is in line with the run-off of the cost of guarantees) is taken, appropriate to the nature of the fund while aligning to the regulatory requirements.

For Aegon Levensverzekering N.V. (NL), the expected SCR in future years is projected by using the projected best estimate liability as risk driver and the SCR at reporting date as starting point. Aegon Levensverzekering N.V. applies a cost of capital percentage of 6%, in accordance with the Delegated Acts. Note that the application of the risk driver is a simplification relative to recalculating the expected SCR in each point in time in the future. This simplification does not lead to a material misstatement of the risk margin.

The value of the Solvency II technical provisions (for EEA (re)insurance legal entities)

The value of the Solvency II technical provisions are specified below while the material difference in valuation between Solvency II and IFRS-EU is described in sections: D.2.1 Technical provisions – non-life; D.2.2 Technical provisions – life; and D.2.3 Technical provisions – index linked and unit linked. The most material Lines of Business for Aegon Group are illustrated in the table below.

Value of Solvency II technical provisions Amounts in EUR millions	Life		Non-life	Total
	Index-linked and unit-linked	TP - life (excluding health and index-linked and unit-linked)	Non-life (excluding health)	Total
Best estimate	94,785	39,130	282	134,197
Risk margin	1,437	1,829	32	3,298
Technical provision	96,222	40,959	314	137,494
Percentage of total	70.0%	29.8%	0.2%	100.0%

Non-EEA (re)insurance legal entities on (provisional) equivalence

Non-EEA (re)insurance legal entities which are domiciled in third-countries that are deemed (provisional) equivalent are located in the US, Bermuda, Mexico, Brazil and Japan and are included via the D&A method where capital requirements are based on local regulatory requirements. The section below focus on most material for Aegon Group, being the US insurance companies.

In the US, technical provisions are generally calculated based on locally prescribed formulas and also locally prescribed assumptions. However, there are several areas where the company has the ability to set assumptions for statutory valuation based on its own experience, subject in all cases to certain limitations and/or approvals (including, for example, required margin for prudence over best estimate assumptions). The most material of these areas are Variable Annuities (reserving under Actuarial Guideline 43), Universal Life (reserving under Actuarial Guideline 38) and Long Term Care.

Most insurance liabilities are also subject to an annual Asset Adequacy Analysis (usually performed via cash flow testing). This analysis assesses the adequacy (appropriateness) of the statutory reserves, using own best estimate actuarial assumptions, plus appropriate margins for prudence, and under specified interest rate scenarios. The outcome of the Asset Adequacy Analysis may lead to the requirement to hold additional reserves.

Ongoing validation and review processes are in place to ensure that models being used remain appropriate and can be relied upon, including model validations, process reviews carried out by the Internal Audit function.

Each of the US legal insurance entities has its own independent Appointed Actuary which is responsible for setting the assumptions, including margins for adverse deviation, and calculating the technical provisions and performing the cash flow testing.

The Actuarial Function Holder (AFH), appointed by the US board, provides at least once a year an independent opinion on adequacy and reliability of the technical provisions, including a summary of concerns and recommendations, if any. This is documented by the AFH in an annual Actuarial Function Report.

D.2.1 Technical provisions – non-life

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (7,282) million.

Method of valuation under Solvency II

Refer to section D.2 Technical provisions for the base, models, methodology and assumptions applied for the valuation of the Solvency II technical provisions.

Material difference in valuation between Solvency II and IFRS-EU

Solvency II requires discounting of all the expected future cash flows by EIOPA described discount rates and adding a risk margin based on the cost of capital ('CoC') for non-hedgeable risks.

The Solvency II discount rate is based on the prescribed EIOPA curve at the reporting date including the volatility adjustment where applied. The IFRS discount rate is usually a fixed rate and is set following local GAAP (Generally Accepted Accounting Principles).

Finally, presentational differences exist between IFRS-EU and Solvency II, and reclassifications are required to comply with Solvency II requirements (e.g. annuities stemming from non-life contracts).

Reclassification adjustments

The reclassification adjustments amounted to EUR (721) million and is mainly due to reclassification of health insurance stemming from Aegon the Netherlands. Under IFRS the technical provisions of the health insurance are presented as Technical Provisions - non-life, while under Solvency II the technical provisions are classified under Technical provisions - life (excluding index-linked and unit-linked).

Revaluation adjustments

The total revaluation adjustment amounted to EUR (181) million, and was mainly due to the application of different discount rates, and the application of shorter contract boundaries under Solvency II.

D.2.2 Technical provisions – life (excluding index-linked and unit-linked contracts)

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (87,870) million.

Method of valuation under Solvency II

Refer to section D.2 Technical provisions above for the base, models, methodology and assumptions applied for the valuation of the Solvency II technical provisions.

Material difference in valuation between Solvency II and IFRS-EU

Solvency II requires the inclusion of indirect overhead expenses in the expected future cash flows for calculating insurance liabilities (e.g. salaries to general managers, auditing costs, office rent, buying new IT systems, etc.).

Another difference relates to contract boundaries. Under Solvency II, the renewability assumption is required to be supported by legally binding obligations, rather than estimates of policyholder's attrition pattern.

The Solvency II discount rate is based on the EIOPA curve at the reporting date including the VA and UFR where applied. IFRS, in general, applies a fixed discount rate which is set in accordance with Local GAAP.

Finally, presentational differences exist between IFRS-EU and Solvency II, and reclassifications are required to comply with Solvency II requirements (e.g. annuities stemming from non-life contracts).

Reclassification adjustments

Reclassification adjustments amounted to EUR 3,299 million for technical provisions – life (excluding index-linked and unit-linked contracts) mainly consist of:

- EUR 5,058 million related to the reclassification of WPSF technical provisions, classified under IFRS-EU as “for account of policyholder”, from technical provisions – index- linked and unit-linked contracts to technical provisions – Life (excluding index-linked and unit-linked contracts);
- An amount of EUR (1,722) million for annuities stemming from non-life contracts. It consists mainly of a reclassification from technical provisions non-life for an amount of EUR 746 million and a reclassification from (bifurcated) derivatives for an amount of EUR (2,259) million for the guarantee provision of unit-linked contracts. An amount of EUR (209) million has been reclassified to financial liabilities other than debts owed to credit institutions (refer to section D.3.4) as these are not policyholder related.

Revaluation adjustments

The total revaluation amount of EUR 1,340 million mainly consists of:

- EUR 2,945 million in Aegon the Netherlands, mainly due to application of the following Solvency II technical provision valuation adjustments: inclusion of the present value of future premiums; inclusion of the present value of future expenses related to servicing of the insurance contracts; inclusion of allocated general overhead expenses; revision of the discount rate to the current market rate and the incorporation of Solvency II risk margin;
- EUR (1,151) million in United Kingdom – comprised of the following two items related to the impact of different discount rates and the incorporation of the Solvency II risk margin under Solvency II; and
- EUR (447) million effect results mainly from valuation differences and application of different contract boundaries and originates from Spain (EUR (283) million) and CEE (EUR (164) million).

D.2.3 Technical provisions – index-linked and unit-linked contracts**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (98,319) million.

Method of valuation under Solvency II

Refer to section D.2 Technical provisions for the base, models, methodology and assumptions applied for the valuation of the Solvency II technical provisions.

Material difference in valuation between Solvency II and IFRS-EU

For investment-linked business, the policyholder contributions are invested in units in selected funds and the Solvency II BEL is the market value of the unit funds less the discounted value of the future cash flows (assuming best-estimate mortality, lapse and expenses).

In addition, Solvency II requires the inclusion of the entity's general overhead expenses in the total expenses for the determination of the contract cash flows.

Finally, if embedded derivatives are bifurcated (i.e. valued separately) under IFRS-EU, this constitutes a difference between IFRS and Solvency II.

Reclassification adjustments

Reclassification adjustments amounted to EUR (487) million and mainly included:

- An amount of EUR (5,065) million reclassification from “Technical provisions – index-linked and unit linked” to “Technical provision – life (excluding index-linked and unit linked)” relating to the items described in section D2.2 for Aegon UK;
- An amount of EUR 4,710 million for Aegon the Netherlands. Specifically EUR 3,937 million for presentational difference of embedded derivatives, and EUR 773 million for reclassification between Unit-linked and Non-unit linked investments; and
- An amount of EUR (169) million related to the reversal for IFRS 10 from Aegon Hungary.

Revaluation adjustments

The revaluation adjustment for a total amount of EUR (2,182) million is mainly related to Aegon UK and Aegon the Netherlands and is mostly driven by the inclusion of the Present Value of Future Profits (PVFP) under Solvency II, which is partly offset by the inclusion of the Solvency II risk margin.

D.2.4 Long-term guarantees and transitional measures

The impact of the transitional measure on technical provisions, the volatility adjustment and the matching adjustment on the technical provision, own funds, SCR and minimum consolidated group SCR are shown in the table below. Aegon does not apply the Transitional risk-free interest rate-term structure – as described in Article 308c of Directive 2009/138/EC.

Impact of long term guarantees measures and transitionals Amounts in EUR millions	Amount with Long Term Guarantee measures and transitionals	Impact of transitionals on technical provisions	Impact of volatility adjustment set to zero	Impact of matching adjustment set to zero
Technical provisions	138,148	110	1,668	52
Basic own funds ¹⁾	8,518	(82)	(1,284)	(32)
Eligible own funds to meet Solvency Capital Requirement	17,602	(82)	(1,284)	(32)
Solvency Capital Requirement	8,349	3	(930)	(46)
Group Solvency II ratio	211%	(1%)	(35%)	(2%)

¹⁾ Note that Basic own funds shown in the table reflects the 'Basic own funds after deductions', which excludes own funds of OFS and D&A entities, and non-available own funds.

The amounts with long term guarantee measures and transitionals in the first column reflect the Aegon technical provisions, basic and eligible own funds and SCR as at December 31, 2018. The impacts in the other columns show the impact of removing the transitional and long term guarantee measures in that specific order. An increase in technical provisions or SCR and a decrease in own funds have a negative impact on Aegon's solvency position.

The transitional measure on technical provisions – as described in Article 308d of Directive 2009/138/EC – is applied by Aegon Spain. For Aegon Spain, the application of transitional measures for some products with high interest rate guarantees was approved in May 2016. The benefit of this transitional measure on the technical provision amounted to EUR 110 million. The own funds benefit amounted to EUR 82 million and reflects the impact of taxes. The impact on the SCR was immaterial.

The volatility adjustment is based on a risk-corrected spread using the standard EIOPA VA methodology. The volatility adjustment is applied on the liabilities by Aegon the Netherlands, Aegon UK, and Aegon Spain. Next to this, Aegon the Netherlands applies a dynamic VA model and assesses the impact of changes in spreads on assets through scenario analyses. Key rationale is that Aegon is a long term investor (given its long dated liabilities) and that initial market value losses on assets after a spread shock will be (partially) regained over time as the assets keep paying the interest and notional. This effect is quantified in Aegon's dynamic VA model and therefore lowers the capital requirement for spread risk. In line with regulatory requirements, Aegon Levensverzekering determines the VA-impact on the SCR if the regulatory concept of the VA would not exist at all and without adjusting for the spread risk on the asset side. Aegon considers the dynamic VA an integral part of the modelling of spread risk. The model for dynamic VA has been updated in 2018 and was approved by DNB.

The benefit of the volatility adjustment on the technical provision amounted to EUR 1,668 million. The own funds benefit amounted to EUR 1,284 million and reflects impact of taxes. The SCR benefit amounted to EUR 930 million and is mainly attributable to the impact of the dynamic volatility adjustment in the SCR calculation. The impacts of the volatility adjustment mainly stem from Aegon the Netherlands.

The matching adjustment is applied by Aegon UK and Aegon Spain for separate portfolios of matched assets and liabilities that are covering annuity business. For the UK, following the reinsurance and sale of the annuity books, the matching adjustment per the end of 2018 will now only impact a legacy block of inward reinsured annuities. The benefit of the matching adjustment on the technical provision amounts to EUR 52 million. The own funds benefit amounted to EUR 32 million and reflects the impact after tax. The SCR benefit amounted to EUR 46 million and is mainly attributable to the impact of removing the matching adjustment on spread risk in the SCR calculation.

D.2.5 Recoverables from reinsurance contracts and special purpose vehicles

As technical provisions are reported gross of reinsurance contracts, a reinsurance asset is separately identified. Aegon's recoverables from reinsurance contracts are net of material intra-group reinsurance transactions.

For EEA entities, Solvency II valuation of the reinsurance contracts is applied, and this is reported separately on the Solvency II balance sheet. The value of a reinsurance contract is also known as the recoverable from a reinsurance contract. Reinsurance contracts are valued using a similar methodology to the technical provisions. The reinsurance cash flows are based on the nature of the reinsurance arrangements. The value of the reinsurance is measured consistently with the assumptions associated with the underlying insurance contracts and in accordance with the terms of each reinsurance contract.

The value of the reinsurance contracts should also allow for a best estimate default provision.

For the Non-EEA entities, reinsurance is reflected in their technical provisions according local statutory requirements.

D.2.6 Material changes in assumptions made in calculations of technical provisions (for EEA entities)

Multiple changes were made to the underwriting assumptions and actuarial models in the second and fourth quarter of 2018.

The most material were:

Aegon the Netherlands:

- ▀ A new dynamic VA model was implemented.
- ▀ Updated shock methodology for longevity risk (including population mortality and experience factors).
- ▀ A model for the valuation of 'Aegon Overlijdensrisicoverzekering' (AORV) term life product was implemented in the fourth quarter replacing the previous scaling methodology of BEL based on IFRS provision.

Aegon UK:

- ▀ Expense assumption changes related to the update of the per policy expenses.
- ▀ Mortality assumption changes from updated longevity assumptions.

D.3 Other liabilities

D.3.1 Pension benefit obligations

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (11) million.

Method of valuation

Under Solvency II Aegon follows IFRS-EU (IAS 19) for valuing the employee benefits and obligations.

The pension benefit obligation is related to the defined benefit pension plans. Under IFRS, the defined benefit obligation is based on the terms and conditions of the plan applicable on the reporting date. In measuring the defined benefit obligation, the Group uses the projected unit credit method and actuarial assumptions that represent the best estimate of future experience. The benefits are discounted using an interest rate based on the market yield for high-quality corporate bonds that are denominated in the currency in which the benefits will be paid and that have terms to maturity that approximate the terms of the related pension liability. Actuarial assumptions used in the measurement of the liability include the discount rate, estimated future salary increases, mortality rates and price inflation.

Plan assets are comprised of qualifying insurance policies and assets held by long-term employee benefit funds that can only be used to pay employee benefits under the plan and are not available to the Group's creditors. They are measured at fair value and are deducted from the defined benefit obligation in determining the amount recognized on the statement of financial position.

The measurement of a net defined benefit liability or asset under IFRS-EU requires the application of an actuarial valuation method, the attribution of benefits to periods of service, and the use of actuarial assumptions. The fair value of any plan assets is deducted from the present value of the defined benefit obligation in determining the net deficit or surplus.

Refer to, note 41 Defined benefit plans to the consolidated financial statements, for more information on pension benefit obligations, especially the parts about Aegon the Netherlands and Aegon UK that are in scope of the pension benefit obligations under Solvency II.

Material difference in valuation between Solvency II and IFRS-EU

There are no material differences between the bases, methods and main assumptions used for valuation for solvency purposes and its valuation in the financial statements.

D.3.2 Deferred tax assets and liabilities**Deferred tax position**

The total Deferred tax assets and Deferred tax liabilities amounted to EUR 504 million (2017: EUR 461 million) and EUR 213 million (2017: EUR 147 million) respectively, as reported in the Solvency II balance sheet in section D. Valuation for Solvency Purposes.

Balance sheet items Amounts in EUR millions	Deferred Tax Asset at December 31, 2018	Expiration period ⁴⁾	Deferred Tax Liability at December 31, 2018	Expiration period
Investments	(17)	5 - 15 years	1582	5 - 15 years
Technical provisions ¹⁾	(19)	5 - 15 years	(1,051)	15 - 30 years
Defined benefit plans	254	> 30 years	(2)	0 - 5 years
Debts ²⁾	-	-	-	-
Losses and tax credits	285	> 30 years	(202)	5 - 15 years
Non-recognized DTA ³⁾	(76)	> 30 years	37	> 30 years
Other	76	> 30 years	(152)	> 30 years
Total	504		213	

¹⁾ Including reinsurance recoverables and deferred acquisition costs.

²⁾ Debts owed to credit institutions.

³⁾ Not recognized deferred tax assets (valuation allowance) for tax losses, tax credits and deductible temporary differences (current year and previous years).

⁴⁾ Applies on the material part of the deferred tax position.

The total non-recognized DTA amount to EUR 114 million (2017: EUR 92 million) of which EUR 106 million (2017: EUR 84 million) relates to tax losses and tax credits for which no deferred tax asset is recognized. The non-recognized DTA on timing differences amounts to EUR 8 million (2017: EUR 8 million).

The table below provides an overview, arranged by loss carry forward period, of tax losses and tax credits for which no deferred tax assets is recognized.

Loss carry forward periods of not recognized DTA Amounts in EUR millions	Gross amounts 2018⁵⁾	Not recognized deferred tax assets 2018	Gross amounts 2017⁴⁾	Not recognized deferred tax assets 2017
< 5 years	21	7	21	8
≥ 5 - 10 years	6	1	6	1
≥ 10 - 15 years	-	34	-	23
≥ 15 - 20 years	-	-	-	-
Indefinitely	279	64	176	52
At December 31	305	106	203	84

⁵⁾ The gross value of state tax loss carry forward is not summarized in the disclosure, due to the fact that the United States files in different state jurisdictions with various applicable tax rates and apportionment rules.

Not recognized DTAs for deductible timing differences Amounts in EUR millions	Gross amounts 2018	Not recognized deferred tax assets 2018	Gross amounts 2017	Not recognized deferred tax assets 2017
Balance sheet items/deferred tax category				
Investments	16	3	11	2
Others	24	5	32	6
At December 31	40	8	43	8

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (848) million.

Method of valuation under Solvency II

The Solvency II methodology for the calculation of deferred tax follows the provisions of International Accounting Standard (IAS) 12 Income Taxes. DTA and DTL are recognized for Solvency II purposes on the basis of the temporary differences between the carrying amounts of the assets and liabilities in the Solvency II balance sheet and the tax balance sheet value according to local tax regulations. A deferred tax asset or liability is calculated based on these temporary differences at the current corporate tax rate. Tax losses carried forward are recognized as deferred tax assets if their future benefit is probable. Solvency II does not require discounting of deferred tax assets and liabilities.

Material difference in valuation between Solvency II and IFRS-EU

There is no material difference in the methods and main assumptions used for valuation of deferred taxes.

Reclassification adjustments

After performing recoverability testing, Aegon reclassified the net negative DTL balances from liabilities to assets under Solvency II. This presentation is required to allow for appropriate tiering of the DTA in available own funds. A total of EUR 420 million (2017: EUR 423 million) has been reclassified and is mainly driven by the inclusion of the US non-regulated entities for an amount of EUR 435 million.

Revaluation adjustments

The difference between the deferred tax assets and liabilities according to IFRS-EU and Solvency II is mainly driven by the valuation of relevant balance sheet elements. Where tax bases do not change, taxable and deductible revaluation adjustments are equal to the revaluation adjustments for the relevant balance sheet elements multiplied by applicable tax rates.

The total revaluation adjustments processed amounted to EUR 22 million.

D.3.3 Derivatives**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (1,855) million.

Method of valuation under Solvency II

Derivatives are presented at fair value based on market prices when available. Fair values for exchange-traded derivatives, principally futures and certain options, are based on quoted market prices in active markets.

When market prices are not available, other valuation techniques, such as option pricing or stochastic modelling, are applied. The valuation techniques incorporate all factors that market participants would consider, and are based on observable market data to the extent possible. Models are validated before they are used and calibrated to ensure that outputs reflect actual experience and comparable market prices. Refer to section D.4.5. for additional detail on derivatives valued using alternative methods.

Aegon normally mitigates counterparty credit risk in derivative contracts by entering into collateral agreements where practical, and into ISDA master netting agreements for each of the Group's legal entities to facilitate Aegon's right to offset credit exposure. Changes in the fair value of derivatives attributable to changes in counterparty credit risk were not significant.

Material difference in valuation between Solvency II and IFRS-EU

Derivatives are financial instruments of which the value changes in response to an underlying variable, that require little or no net initial investment and are settled at a future date. All derivatives recognized on the statement of financial position are carried at fair value. Therefore, there are no material differences between the bases, methods, and main assumptions used for valuation for solvency purposes and its valuation in financial statements.

Reclassification adjustments

The total reclassification adjustment of EUR (2,475) million is mainly driven by:

- Reclassification of EUR (1,678) million from derivatives to technical provisions – life for the guarantee provision of unit-linked contracts; and
- Derivatives netting (movement from derivative liability to derivative asset) for an amount of EUR (783) million.

Revaluation adjustments

No material revaluation adjustments were required.

D.3.4 Debts owed to credit institutions**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (1) million.

Method of valuation under Solvency II

With regards to the senior debt issued by Aegon N.V., the Solvency II fair value is calculated using a discounted cash flow model. The curves used to discount the cash flows are zero curves in the respective currencies. These curves are adjusted to take into account the applicable own credit standing at issuance of the senior debt (Article 14 in the Delegated Regulation prescribes that there shall be no adjustment to take account of the change in own credit standing of the insurance or reinsurance undertaking after initial recognition).

Material difference in valuation between Solvency II and IFRS-EU

Under IFRS, financial liabilities – like debt owed to credit institutions – are valued at amortized cost or fair value. If valued at fair value, then the discount rates should also include Aegon's credit spread.

Liabilities measured at amortized costs under IFRS-EU need to be revaluated as part of the reconciliation. For liabilities measured at fair value under IFRS-EU, the impact of movements in Aegon's credit spread between the issuance date and reporting date (own credit gain or loss) are reversed.

Reclassification adjustments

The total reclassification adjustments amounted to EUR 1,777 million and relate to the movement from financial liabilities other than debts to credit institutions to debts owed to credit institutions. These adjustments are driven by a different classification of capital funding between Solvency II and IFRS-EU and because of a number of joint ventures which – by using the equity method – presented external debt as financial liabilities other than debts owed to credit institutions when preparing their Solvency II balance sheet.

Revaluation adjustments

The total revaluation adjustments of EUR 309 million were the result of applying the fair value approach under Solvency II as compared to the amortized cost approach under IFRS-EU.

D.3.5 Financial liabilities other than debts owed to credit institutions**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (9,130) million.

Method of valuation under Solvency II

A fair value approach is prescribed under Solvency II, excluding the effect of changes in Aegon's credit spread after initial recognition.

Material difference in valuation between Solvency II and IFRS-EU

For the differences in bases, methods and main assumptions used for valuation for solvency purposes and its valuation in Aegon's IFRS-EU financial statements of the financial liabilities other than debts owed to credit institutions, please refer to section D.3.4 Debts owed to credit institutions.

Reclassification adjustments

Reclassification adjustments amounted to EUR (2,263) million. This reclassification is mainly related to the movement from financial liabilities other than debts to credit institutions to debts owed to credit institutions as described in D.3.4

Revaluation adjustments

The revaluation adjustments reflect the impact of conversion from amortized cost valuation under IFRS-EU to fair value under Solvency II. Under the amortized cost method, financial liabilities other than debts owed to credit institutions are valued using the effective interest rate at the inception of the loan, while fair value determination should incorporate current market factors including a risk free rate.

D.3.6 Insurance & intermediaries payables**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (992) million.

Method of valuation under Solvency II

A fair value approach is prescribed under Solvency II, excluding the effect of changes in Aegon's own credit spread after initial recognition.

Material difference in valuation between Solvency II and IFRS-EU

For the differences in bases, methods and main assumptions used for valuation for solvency purposes and its valuation in Aegon's IFRS-EU financial statements of the insurance & intermediaries payables, please refer to section D.3.4 Debts owed to credit institutions.

Reclassification adjustments

The total reclassification adjustment of EUR 675 million is related to the movement from the balance sheet item "Any other liabilities" of the US non-regulated entities due to presentational differences between IFRS-EU and Solvency II.

Revaluation adjustments

The revaluation adjustments are not material.

D.3.7 Payables (trade, not insurance)**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (6,887) million.

Method of valuation under Solvency II

A fair value approach is prescribed, excluding the effect of changes in Aegon's own credit spread after initial recognition.

Material difference in valuation between Solvency II and IFRS-EU

For the differences in bases, methods and main assumptions used for valuation for solvency purposes and its valuation in Aegon's IFRS-EU financial statements of the payables (trade, not insurance), please refer to section D.3.4 Debts owed to credit institutions.

Reclassification adjustments

The total reclassification adjustment of EUR 338 million is mostly related to the reclassification of "Any other liabilities" to "Payables (trade, not insurance)" of the US non-regulated entities.

Revaluation adjustments

The revaluation adjustments are not material.

D.3.8 Subordinated liabilities**De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures**

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR (133) million

Method of valuation under Solvency II

A fair value approach is prescribed, excluding the effect of changes in Aegon's own credit spread after initial recognition. On the Solvency II Balance Sheet subordinated liabilities are reported on the liabilities side under subordinated liabilities, also when it is accounted for as equity under IFRS.

Material difference in valuation between Solvency II and IFRS-EU

Subordinated liabilities – presented in under subordinated borrowings and trust pass-through securities – are considered financial liabilities and valued at amortized cost or fair value. If valued at fair value, the discount rates also considers Aegon's own credit spread.

For the differences in bases, methods and main assumptions used for valuation for solvency purposes and its valuation in Aegon's IFRS financial statements of the subordinated liabilities, please refer to section D.3.4 Debts owed to credit institutions.

Reclassification adjustments

The reclassification adjustment of EUR 3,396 million mainly relates to the reclassification of grandfathered subordinated liabilities including: Junior Perpetual Capital Securities (JPCS) and Perpetual capital subordinated loans (PCSL), which are presented as Equity on Aegon's IFRS-EU balance sheet, to "Subordinated Liabilities" on the Solvency II balance sheet, accompanied by accrued interest reclassified from other liabilities and Trust Pass Through Securities broke out from the line "debts owed to credit institutions".

In 2018, the accounting treatment of subordinated liabilities which were grandfathered by the Dutch Central Bank have been changed on Solvency II balance sheet. These subordinated liabilities include Junior Perpetual Capital Securities (JPCS), Perpetual capital subordinated loans (PCSL), and Fixed Floating Security Notes (FFSN). Under IFRS-EU, JPCS and PCSL are presented as Shareholder's equity, FFSN is presented as liabilities. Previously, they were all reported as equity instruments under Solvency II. From 2018 these grandfathered instruments are reported as subordinated liabilities in the Solvency II balance sheet and no longer included in the excess of assets over liabilities. Availability adjustments have increased by the same amount as available own funds have not changed.

Revaluation adjustments

The total revaluation adjustments for an amount of EUR 273 million were the result from applying the current interest rate and the fair value approach under Solvency II as compared to the amortized cost approach under IFRS-EU.

D.3.9 Any other liabilities

De-recognition of the IFRS-EU value of D&A entities and change in approach for joint ventures

The de-recognition of the IFRS-EU value of Deduction and Aggregation (D&A) entities, Other Financial Sector (OFS) entities and IFRS-SII presentational differences of joint ventures under Solvency II (instead of associate under IFRS-EU) generates an aggregation difference of EUR 1,350 million. This is driven by the fact that under IFRS-EU, joint ventures are recognized using the equity method while for Solvency II they are proportionally consolidated.

Method of valuation under Solvency II

A fair value approach is prescribed, excluding the effect of changes in Aegon's credit spread since initial recognition.

Material difference in valuation between Solvency II and IFRS-EU

Financial liabilities under IFRS-EU are valued at either amortized cost or fair value. If valued at fair value, then the discount rates also include Aegon's credit spread.

Liabilities recorded under IFRS-EU at amortized cost, need to be revaluated as part of the reconciliation. For items measured under IFRS-EU at fair value, the impact of the movement in Aegon's credit spread between the issuance date and reporting date (own credit gain or loss) needs to be reversed.

In addition, for lease contracts, lessees in financial leases must include the assets leased on their balance sheet based on their fair values. This treatment is consistent with that of Property, Plant & Equipment that were acquired through legal ownership transfers. The presentation and measurement of operational leases does not differ between Solvency II and IFRS-EU. For more information on leasing arrangements, please refer to section A.4.2 Material leasing arrangements.

Reclassification adjustments

The total reclassification adjustment for an amount of EUR (1,080) million was mainly driven by the EUR (1,191) million reclassification performed for the US non-regulated entities to "insurance and intermediaries payables", "payables (trade, not insurance)" and accrued interest for both the US and the Netherlands. This reclassification is required as Solvency II prescribes presentation of investment values including accrued interest.

Revaluation adjustments

The total revaluation adjustment is not material.

D.4 Alternative methods for valuation

This section includes information regarding assets for which alternative valuation methods are used. An overview is provided below. Sections D.4.1 until D.4.7 provide more details about the valuation method applied for specific investments.

Assets - Alternative valuation methods			
Amounts in EUR millions	Section	Level 3	Total
Investments (other than assets held for index-linked and unit-linked contracts)¹⁾		11,808	34,094
Property (other than for own use)	D.4.1	3,484	3,484
Equities		57	1,348
Equities - listed		-	1,291
Equities - unlisted		57	57
Bonds		3,374	23,335
Government bonds		171	18,084
Corporate bonds	D.4.2	1,377	3,094
Structured notes		7	47
Collateralized securities	D.4.3	1,819	2,110
Collective Investments Undertakings	D.4.4	3,023	3,574
Derivatives¹⁾	D.4.5	1,870	2,092
Deposits other than cash equivalents		-	261
Other investments		-	-
Assets held for index-linked and unit-linked contracts (section D.1.2)	D.4.6	22,911	86,113
Loans and mortgages (section D.1.3)	D.4.7	21,394	21,394
loans on policies		4	4
Loans and mortgages to individuals		21,390	21,390

¹⁾ Note that Investments as shown in the table (EUR 34,094 million) does not include the net asset value of participations as reported in the Solvency II balance sheet (EUR 12,744 million). In addition, there is an amount of EUR 2,899 million of derivatives liability netted in the derivatives amount of EUR 2,092 million.

D.4.1 Property (other than for own use)

Valuations of Level III investments in real estate and real estate held for own use are conducted in full by independent external appraisers at least every three to five years and reviewed at least once a year by qualified internal appraisers to ensure the value correctly reflects the fair value at the reporting date. Appraisals are different for each specific local market, but are based on market guidelines such as International Valuation Standards, Uniform Standards of Professional Appraisal Practice or guidelines issued by the Investment Property Databank. Valuations are mostly based on active market prices, adjusted for any difference in the nature, location or condition of the specific property. If such information is not available, other valuation methods are applied, considering the value that the property's net earning power will support, the value indicated by recent sales of comparable properties and the current cost of reproducing or replacing the property. Discount rates used in the valuation of real estate reflect the risk embedded in the projected cash flows for the asset being valued. Capitalization rates represent the income rate for a real estate property that reflects the relationship between a single year's net operating income expectancy and the total property price or value. For property held for own use, appraisers consider the present value of the future rental income cash flows that could be achieved had the real estate been rented to a third party.

D.4.2 Corporate bonds

Valuations of corporate bonds are monitored and reviewed on a monthly basis. The pricing hierarchy is dependent on the possibility of corroboration of market prices when available. If no market prices are available, valuations are determined by a discounted cash flow methodology using an internally calculated yield. The yield is comprised of a credit spread over a given benchmark. In all cases the benchmark is an observable input. The credit spread contains both observable and unobservable inputs. Aegon starts by taking an observable credit spread from a similar bond of the given issuer, and then adjust this spread based on unobservable inputs. These unobservable inputs may include subordination, liquidity and maturity differences. The weighted average credit spread used in valuation of corporate bonds has increased to 3.4% (December 31, 2017: 2.6%).

D.4.3 Collateralized securities

Valuations of RMBS, CMBS and ABS are monitored and reviewed on a monthly basis. Valuations per asset type are based on a pricing hierarchy which uses a waterfall approach that starts with market prices from indices and follows with third-party pricing services or brokers. The pricing hierarchy is dependent on the possibilities of corroboration of the market prices. If no market prices are available, Aegon uses internal models to determine fair value. Significant inputs included in the internal models are generally determined based on relative value analyses, which incorporate comparisons to instruments with similar collateral and risk profiles. Market standard models may be used to model the specific collateral composition and cash flow structure of each transaction. The most significant unobservable input is liquidity premium which is embedded in the discount rate.

D.4.4 Collective investment undertakings

The fair values of investments held in non-quoted investment funds are determined by management after taking into consideration information provided by the fund managers. Aegon reviews the valuations each month and performs analytical procedures and trending analyses to ensure the fair values are appropriate. The net asset value is considered the best valuation method that approximates the fair value of the funds.

D.4.5 Derivatives

Fair values for over-the-counter (OTC) derivative financial instruments represent amounts estimated to be received from or paid to a third party in settlement of these instruments. These derivatives are valued using pricing models based on the net present value of estimated future cash flows, directly observed prices from exchange-traded derivatives, other OTC trades, or external pricing services. Most valuations are derived from swap and volatility matrices, which are constructed for applicable indices and currencies using current market data from many industry standard sources. Option pricing is based on industry standard valuation models and current market levels, where applicable. The pricing of complex or illiquid instruments is based on internal models or an independent third party. For long-dated illiquid contracts, extrapolation methods are applied to observed market data in order to estimate inputs and assumptions that are not directly observable. To value OTC derivatives, management uses observed market information, other trades in the market and dealer prices.

Some OTC derivatives are so-called longevity derivatives. The payout of longevity derivatives is linked to publicly available mortality tables. The derivatives are measured using the present value of the best estimate of expected payouts of the derivative plus a risk margin. The best estimate of expected payouts is determined using best estimate of mortality developments. Aegon determined the risk margin by stressing the best estimate mortality developments to quantify the risk and applying a cost-of-capital methodology. Depending on the duration of the longevity swaps either the projected mortality development or discount rate are the most significant unobservable inputs.

D.4.6 Assets held for indexed-linked and unit-linked contracts

Given the nature of the underlying assets, the valuation of assets held for indexed-linked and unit-linked contracts are similar to the valuation of Collective investment undertakings as described in section D.4.4. Collective investment undertakings.

D.4.7 Loans and mortgages

Mortgage loans

The valuation methodology for mortgage loans includes the following procedures:

- I Projection of future cash flows of mortgages loans;
- II Determination of the interest rate curve to use for discounting; and
- III Net present value (NPV) calculation.

In this approach, cash flows for each mortgage loan part in Aegon's portfolio are projected separately, based on product characteristics, mortgage rates and interest reset dates. Aegon's methodology recognizes four mortgage cash flow profile types, being: Interest only, Annuity, Linear and Savings mortgages. Cash flows are adjusted for expected early repayments (also known as prepayments). The rate of early repayments is based on a historical analysis and assessment of market circumstances.

The interest rate curve used for discounting is determined by applying a spread over the risk free yield curve, which is constant over the maturity of the term structure. The spread for each mortgage loan part is dependent on the Loan to Value and remaining time until the next interest reset date.

The spread is derived from the most recent, most competitive consumer mortgage rates observed in the market, after deduction of a 'Margin Earned' which serves to cover the expense of originating and servicing the mortgage portfolio. The consumer rate minus the Margin Earned reflects the yield that an external investor would be able to obtain when investing in mortgage loans. The method described above for obtaining the spread is also known as a top-down approach. The prevailing consumer rate is determined as the single average of the mortgage rates offered by the top three providers in the market (not including Aegon affiliated entities), for a particular Loan to Value and duration.

For the purpose of valuation, it is assumed that each mortgage will be redeemed at the next interest reset date of that mortgage, i.e. at the date at which the mortgage provider can reset the interest rate and the mortgagee can terminate the contract without a penalty. The assumption that all mortgages will be terminated at the first interest reset date will, generally speaking, lead to some degree of underestimation of the value of a portfolio. As interest rates can be set or reset to a profitable level at the interest reset date, profits occurring after this date are not included in the valuation. This assumption is made nonetheless, as mortgagees do not have a contractual obligation to continue their mortgage after the interest reset date and can exit without a penalty.

The estimated rate of prepayment is compared annually against actual prepayment rates for verification, and the prepayment rate in the valuation is updated accordingly. Prevailing consumer rates are collected by an external party on a weekly basis. The mortgage valuation spreads are updated monthly on the basis of the latest consumer rates.

The Margin Earned, which is deducted from the consumer rate to derive the discount rate, is benchmarked against Mortgage portfolio transactions conducted by Aegon Asset Management as well as other transactions. The margin is verified annually on the basis of the most recently completed transactions.

The valuation of the mortgage portfolio is based on a number of factors that are not known precisely or may change over time, creating a degree of uncertainty. Main uncertainties relate to the rate of early repayments, and the dependence of the valuation on mortgage rates offered by other providers in the market.

Loans

Fair value of private loans is based on an internal valuation model. On a monthly basis, the Dutch government curve and additional spreads are received and used as input for matrix pricing. The curves per sector are uploaded into the system. Based on private loan characteristics and classifications, the system selects the appropriate curve and yield per security. Via the net present value ("NPV") component combining yields and security cash flow the system calculates prices via interpolation where bid, mid and ask are populated with the same price.

D.5 Any other information

Aegon does not have any other material information regarding its valuation for solvency purposes.

E. Capital management

Management of capital

Aegon's overall capital management strategy is based on adequate solvency capital, capital quality and the use of leverage. Aegon uses a three-year time horizon in its budgeting and medium term planning process used for business planning.

Guiding principles

The management of capital and liquidity is of vital importance for the Aegon Group, for its customers, investors in Aegon securities and for Aegon's other stakeholders. In line with its risk tolerance, the goal of Aegon's capital and liquidity management is to promote strong and stable capital adequacy levels for its businesses, in addition to maintaining adequate liquidity to ensure that the Company is able to meet its obligations.

Aegon follows a number of guiding principles in terms of capital and liquidity management:

- Promoting strong capital adequacy in Aegon's businesses and operating units;
- Managing and allocating capital efficiently in support of the strategy and in line with its risk tolerance;
- Maintaining an efficient capital structure, with an emphasis on optimizing Aegon's cost of capital;
- Maintaining adequate liquidity in the operating units and at the holding to ensure that the Company is able to meet its obligations by enforcing stringent liquidity risk policies; and
- Maintaining continued access to international capital markets on competitive terms.

Aegon believes that the combination of these guiding principles strengthens the Company's ability to withstand adverse market conditions, enhances its financial flexibility, and serves both the short-term and the long-term interests of the Company, its customers and other stakeholders.

The management and monitoring of capital and liquidity is firmly embedded in Aegon's ERM framework, and is in line with Aegon's risk tolerance. Aegon's risk tolerance focuses on financial strength, continuity, steering the risk balance and the desired risk culture. Its core aim is to assist management in carrying out Aegon's strategy within the Group's capital and liquidity resources.

Material development throughout 2018

The capitalization of the Aegon Group and its operating units is managed in relation to the most stringent of local regulatory requirements, rating agency requirements and/or self-imposed criteria. Aegon manages its Solvency II capital in relation to the required capital. Under Aegon's capital management framework the own funds are managed such that the Group Solvency II ratio remains within the target range of 150% - 200% even in an adverse event. The Solvency contribution of Aegon Americas insurance entities under Deduction & Aggregation (D&A) involves converting 150% Risk-Based Capital Company Action Level into Solvency Required Capital (SCR) and reducing own funds by a 100% RBC Company Action Level requirement to reflect transferability restrictions. The methodology is subject to annual review.

Maintaining adequate solvency capital

The aim of Aegon's Capital Management Policy is to enhance transparency and accountability around capital management throughout Aegon Group. The policy therefore applies to the business units and to Aegon Group. There were no changes to the Capital Management Policy in 2018, though it was reviewed in 2017 and updated, including the embedding of the revised method for calculating the Solvency II contribution of the Aegon Americas Insurance entities under Deduction & Aggregation. The capitalization of Aegon Group and its business units is based on the most stringent of local regulatory requirements, rating agency requirements (if applicable) and self-imposed criteria.

The Capital Management Policy sets five capitalization zones for local regulatory capital positions of business units and for Aegon Group as shown below.

Capitalization management zones	Aegon Group	US Life entities	The Netherlands	United Kingdom	Capitalization management actions
Opportunity	>200% SCR	>450% RBC	>190% SCR	>185% SCR	Accelerate capital redeployment and/or additional dividends.
Target	150% - 200% SCR	350% - 450% RBC	150% - 190% SCR	145% - 185% SCR	Execute capital deployment and remittances according to capital plan.
Retention	120% - 150% SCR	300% - 350% RBC	130% - 150% SCR	130% - 145% SCR	Re-assess capital plan and risk positions.
Recovery	100% - 120% SCR	100% - 300% RBC	100% - 130% SCR	100% - 130% SCR	Re-assess capital plan and risk positions. Reduce or suspend remittances.
Regulatory plan	<100% SCR	<100% RBC	<100% SCR	<100% SCR	Suspension of dividends. Regulatory plan required.

The Capital Management Policy provides guidance for financial strength and continuity that, together with culture and risk balance, are the risk tolerance statements set in Aegon's ERM framework. Aegon aims to maintain the capital ratio within the target zone. On December 31, 2018, Aegon Group and US life entities were in the opportunity zone, while Aegon the Netherlands and Aegon United Kingdom were in the target zone.

The Capital Management Policy also provides actions that need to be performed as soon as the capital ratio falls, or is projected to fall within a particular capitalization zone. This is primarily monitored based on Aegon's regular internal reporting cycle and the Budget/MTP. In addition, the policy provides escalation procedures as well. The Group Risk and Capital Committee (GRCC) and the Management Board are notified as soon as the actual or projected capitalization ratio drops below the target range.

While the EU-domiciled legal entities are managed on a Solvency II basis for the regulatory capital requirements, the US life insurance companies are monitored based on the Risk-Based Capital (RBC) framework as defined by the National Association of Insurance Commissioners (NAIC).

As a holding company, Aegon N.V. plays a central role in capitalizing the business units. Aegon has attracted funding through equity and various types of debt issuances. These debt issuances are referred to as financial leverage. The proceeds have subsequently been invested in business units although some of the funds are retained by holding companies as excess cash in the holding in order to maintain financial flexibility.

The Dividend Policy is also embedded in Aegon's Capital Management Policy. Aegon aims to pay out a sustainable dividend to enable equity investors to share in its performance. After investment in new business to generate organic growth, capital generation in the business units is generally available for distribution to Aegon N.V., while maintaining a capital and liquidity position in the business units in line with Aegon's capital management and liquidity risk policies.

Aegon uses cash flows from its operating subsidiaries to pay holding expenses, including funding costs. The remaining cash flow is available to execute Aegon's strategy and to fund dividends on its shares, subject to maintaining holding company targeted capital. Depending on circumstances, future prospects and other considerations, Aegon's Executive Board may elect to deviate from this target. Aegon's Executive Board will also take capital position, financial flexibility, leverage ratios and strategic considerations into account when declaring or proposing dividends on common shares.

Under normal circumstances, Aegon would expect to declare an interim dividend when announcing Aegon's first half year results and to propose a final dividend at the Annual General Meeting of Shareholders for approval. Dividends would normally be paid in cash or stock at the election of the shareholder. The relative value of cash and stock dividends may vary. Stock dividends paid may, subject to capital management and other considerations, be repurchased in order to limit dilution.

When determining whether to declare or propose a dividend, Aegon's Executive Board has to balance prudence versus offering an attractive return to shareholders, for example in adverse economic and/or financial market conditions (see section C. Risk profile for sensitivities on Aegon's solvency position). Also, Aegon's operating subsidiaries are subject to local insurance regulations which could restrict dividends to be paid to Aegon Group. There is no requirement or assurance that Aegon will declare and pay any dividends.

The excess cash in the holding is also key in measuring Aegon's dividend capacity and capacity to execute strategic priorities. The Capital Management Policy therefore defines capitalization zones based on excess cash in the holding. Aegon targets excess cash in the holding of EUR 1 billion – EUR 1.5 billion as the level that Aegon believes provides sufficient financial flexibility.

In 1Q 2019, Aegon the Netherlands has started a process to review its capitalization zones as a result of a change in credit sensitivities and increased 1-in-10 year combined sensitivities for the Netherlands. The higher capital sensitivities arise from the adoption of a new dynamic VA model which has been adopted to align with the guidance from the European Insurance and Occupational Pensions Authority (EIOPA).

The Capital Management Policy is reviewed on a regular basis, taking into account the latest insights into the development of the solvency position of Aegon Group and the business units. Such reviews also take into consideration the comments and guidance received from regulators.

Capital quality

Total own funds are comprised of Unrestricted Tier 1, Restricted Tier 1, Tier 2 and Tier 3 capital. Under the Solvency II regime, a distinction between available and eligible own funds is made, which are both split into the tiers as shown in the table below:

Tier 1	Tier 2	Tier 3
<p>Unrestricted Tier 1</p> <ul style="list-style-type: none"> ■ Equity (Share capital and share premium). ■ Reconciliation Reserve. <p>Restricted Tier 1</p> <ul style="list-style-type: none"> ■ Perpetual subordinated capital instruments with loss absorption. 	<ul style="list-style-type: none"> ■ Dated or perpetual subordinated capital instruments. <ul style="list-style-type: none"> ■ With an original maturity of at least 10 years. ■ Limited loss absorption. ■ With suspension of payments and deferral of interest. 	<ul style="list-style-type: none"> ■ Dated or perpetual subordinated capital instruments. <ul style="list-style-type: none"> ■ With an original maturity of at least 5 years. ■ Limited loss absorption. ■ With suspension of payments and deferral of interest. ■ Net deferred tax assets.

In addition to the general features shown in the table, Solvency II has set detailed requirements on the admissibility of restricted Tier 1 and Tier 2 capital instruments. Over 2018, Aegon issued Solvency II eligible Tier 2 Capital. The remainder of Aegon's capital instruments do not meet all of the Solvency II requirements but have been grandfathered as eligible capital for 10 years, as of January 1, 2016. The components of Aegon's capital are described below:

Unrestricted Tier 1 own funds

Unrestricted Tier 1 capital consists of Aegon's share capital, share premium and the reconciliation reserve. The reconciliation reserve includes deductions to account for foreseeable dividends that have been approved by the Board but that have not yet been distributed to Aegon's shareholders, and restrictions related to Aegon's with-profits fund in the UK for which the excess of own funds over its capital requirement is ring-fenced for the policyholder, and therefore unavailable to Aegon's shareholders.

Grandfathered Restricted Tier 1 own funds

Restricted Tier 1 capital consists of Aegon's junior perpetual capital securities and perpetual cumulative subordinated bonds, which are grandfathered securities as described in the section E.1.5 Transitional arrangements.

The junior perpetual capital securities have subordination provisions, rank junior to all other liabilities and senior to shareholders only. The conditions of the securities contain certain provisions for optional and required coupon payment deferral and mandatory coupon payment events. Although the securities have no stated maturity, Aegon has the right to call the securities for redemption at par for the first time on the coupon date in the years as specified in the table below, or on any coupon payment date thereafter.

Junior perpetual capital securities	Issue date	Possible date of next call
USD 500 million	November 23, 2005	March 15, 2019 and quarterly thereafter
USD 250 million	November 23, 2005	March 15, 2019 and quarterly thereafter
USD 500 million	July 15, 2004-October 15, 2004	January 15, 2019 and quarterly thereafter
USD 1 billion	June 1, 2005	March 15, 2019 and quarterly thereafter
EUR 950 million	July 15, 2004-October 15, 2004	January 15, 2019 and quarterly thereafter

On May 24, 2018, Aegon announced that it exercises its right to redeem the EUR 200 million 6% perpetual capital securities. The redemption of these grandfathered Tier 1 securities was effective on July 23, 2018, when the aggregate principal amount of EUR 200 million was repaid together with any accrued and unpaid interest.

The perpetual cumulative subordinated bonds have the same ranking as dated subordinated debt. In addition, the conditions of the bonds contain provisions for interest deferral. The call date of the perpetual cumulative subordinated bonds are as shown in the table below:

Perpetual cumulative subordinated bonds	Issue date	Possible date of next call
EUR 136 million	October 14, 1996	October 14, 2028 and every 10 year thereafter
EUR 203 million	March 4, 1996	March 4, 2021 and every 10 year thereafter
EUR 114 million	June 8, 1995	June 8, 2025 and every 10 year thereafter

On March 28, 2019, Aegon has successfully priced its inaugural EUR 500 million Restricted Tier 1 perpetual contingent convertible securities, with a fixed coupon of 5.625% until October 15, 2029. The new Restricted Tier 1 securities are callable from April 15, 2029, up to and including October 15, 2029, and then on every 5 yearly reset date thereafter where the coupon can be reset to the 5 year mid-swap plus a margin of 5.21%. The securities are expected to be rated BBB-, Baa3 and BB+ by S&P Global, Moody's and Fitch respectively. Aegon intends to use the net proceeds from the issuance of these securities for redemption of grandfathered Restricted Tier 1 securities.

Grandfathered Tier 2 own funds

Fixed floating subordinated notes	Issue date	Possible date of next call
EUR 700 million	April 25, 2014	April 25, 2024 and hereafter quarterly on interest payment date

In 2012, Aegon issued USD 525 million in aggregate principal amount of 8% non-cumulative subordinated notes, due 2042, in an underwritten public offering in the United States registered with the US Securities and Exchange Commission. Any cancelled interest payments will not be cumulative.

The securities are subordinated and rank senior to the junior perpetual capital securities, equally with the perpetual cumulative subordinated bonds and fixed-floating subordinated notes, and junior to all other liabilities. The conditions of the securities contain certain provisions for optional and required cancellation of interest payments. The securities have a stated maturity of 30 years, although, Aegon has the right to call the securities for redemption at par on any coupon payment date.

On April 25, 2014, Aegon issued EUR 700 million of fixed-floating subordinated notes, first callable on April 25, 2024, and each quarter thereafter and maturing on April 25, 2044. The coupon is fixed at 4% until the first call date and floating thereafter. These securities are subordinated and rank senior to the junior perpetual capital securities, equally with the perpetual cumulative subordinated bonds and non-cumulative subordinated notes, and junior to all other liabilities. The conditions of the securities contain certain provisions for optional and required deferral of interest payments.

On April 12, 2018, Aegon announced that it would exercise its right to redeem the USD 525 million 8% non-cumulative subordinated notes. The redemption of these grandfathered Tier 2 securities was effective May 15, 2018, when the aggregate principal amount of USD 525 million was repaid together with any accrued and unpaid interest.

Solvency II eligible Tier 2 own funds

On April 4, 2018, Aegon has issued USD 800 million of Solvency II eligible Tier 2 subordinated debt securities, first callable on April 11, 2028, and maturing on April 11, 2048. The coupon is fixed at 5.5% until the first call date and floating thereafter with a margin including a 100 basis points step-up. The new securities are rated BBB, Baa1 and BBB- by S&P Global, Moody's and Fitch, respectively and are designed to be Tier 2 compliant under Solvency II. Approximately EUR 0.5 billion of grandfathered Restricted Tier 1 is currently reclassified as Tier 2 as a result of tiering limits.

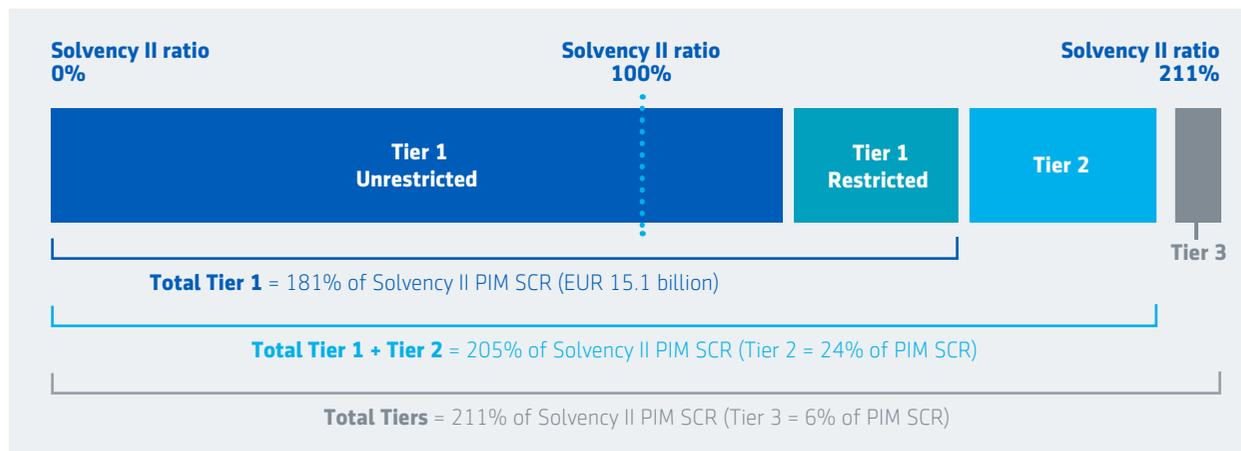
For more information on Aegon's capital securities, reference is made to the debt programs or review the [Base Prospectus 2018](#) and the [US Shelf Registration 2017](#).

Tier 3 own funds

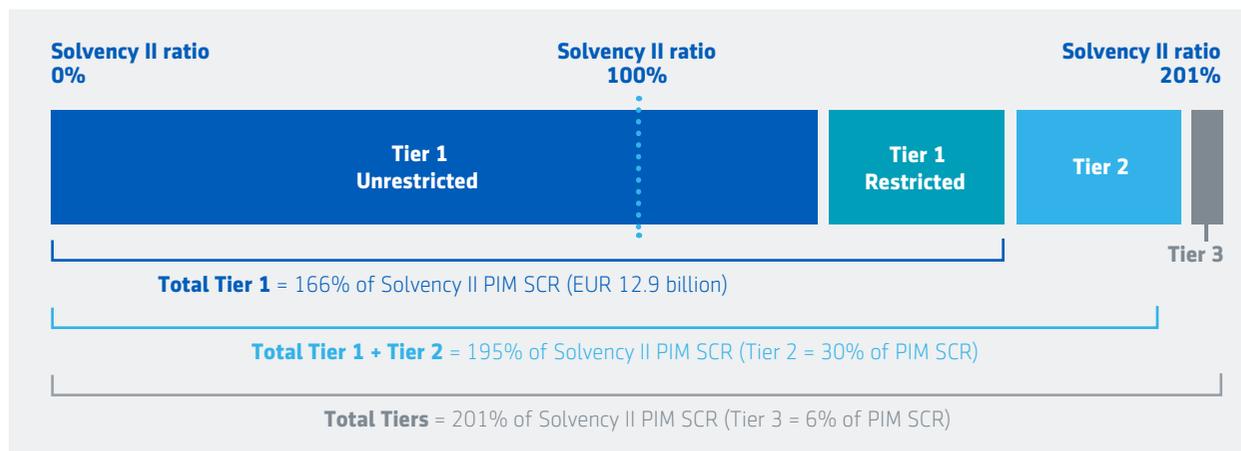
Aegon's Tier 3 capital under the Solvency II framework consists of Aegon's deferred tax asset position under Solvency II.

Overview of Aegon Group Capital Quality

The capitalization of Aegon Group per December 31, 2018, is shown below:



The capitalization of Aegon Group per December 31, 2017 is shown below:



Aegon's use of leverage

Aegon uses leverage in order to lower the cost of capital that supports businesses in the Aegon Group, thereby contributing to a more effective use of capital and realizing capital efficiencies. In managing the use of financial and non-financial leverage throughout the group, Aegon has implemented a Leverage Use Framework that is part of Aegon's broader Enterprise Risk Management framework.

Leverage metrics

In line with the guiding principles of its capital and liquidity management, Aegon N.V. monitors and manages several leverage metrics:

- Gross financial leverage ratio;
- Fixed charge coverage; and
- Various rating agency leverage metrics.

Aegon's gross financial leverage ratio is calculated by dividing total financial leverage by total capitalization. Aegon defines total financial leverage as debt or debt-like funding issued for general corporate purposes and for capitalizing Aegon's business units. Total financial leverage includes hybrid instruments, subordinated and senior debt. Aegon's total capitalization consists of the following components:

- Shareholders' equity, excluding revaluation reserves, cash flow hedge reserves, based on IFRS as adopted by the EU;
- Non-controlling interests and share options not yet exercised; and
- Total financial leverage.

Aegon's fixed charge coverage is a measure of the Company's ability to service its financial leverage. It is calculated as the sum of underlying earnings before tax and interest expenses on financial leverage divided by interest payments on financial leverage. The fixed charge coverage includes the impact of interest rate hedging.

Globally systemically important insurer (G-SII) designation

On November 3, 2015, Aegon was first designated by the Financial Stability Board (FSB) as a Global Systemically Important Insurer (G-SII), based on an assessment methodology developed by the International Association of Insurance Supervisors (IAIS). The FSB reviews the G-SII designation annually. However, the FSB, in consultation with the IAIS and national authorities, has decided not to publish a new list of G-SIIs for 2017 and for 2018 and that the measures will continue to apply to the G-SIIs that were on the 2016 list. Consequently, Aegon continues to be designated at the time of publication of this Solvency and Financial Condition Report.

As a result of the G-SII designation, Aegon is subject to an additional layer of direct supervision at group level. Aegon has put a specific G-SII governance structure in place to ensure the G-SII requirements are met. Within 12 months of a G-SII designation, G-SIIs were required to develop a liquidity risk management plan, a systemic risk management plan, and an ex ante recovery plan. In accordance with these requirements, Aegon submitted plans to DNB, and to the G-SII crisis management group (CMG) that was established for Aegon and is updating these plans on an annual basis. The CMG is required to: enter into a cross border cooperation agreement; develop a resolution plan based on a resolution strategy (within 18 months); and undertake a resolvability assessment (within 24 months).

On November 2, 2017, the IAIS has announced its members have reached an agreement on a unified path to convergence on the development of International Capital Standards (ICS) for Internationally Active Insurance Groups (IAIGs). Aegon will qualify as such. After an extended field testing period of ICS version 1.0, that ended in 2017, the IAIS proceeded with the development of ICS version 2.0 informed by field tests in 2018 and a final field test in 2019, with the aim of adopting ICS version 2.0 at the Annual General Meeting of the IAIS in November 2019. The implementation of ICS version 2.0 will be conducted in two phases – a five-year monitoring phase, where all IAIGs will submit mandatory reference ICS, followed by an implementation phase where the ICS is envisaged to become a required capital standard. Following the announcement by IAIS members from the United States of development of an aggregation-based group capital calculation, the IAIS has further agreed to collect data during the monitoring period to assess whether the aggregation approach can be considered as outcome-equivalent for implementation of ICS in the US.

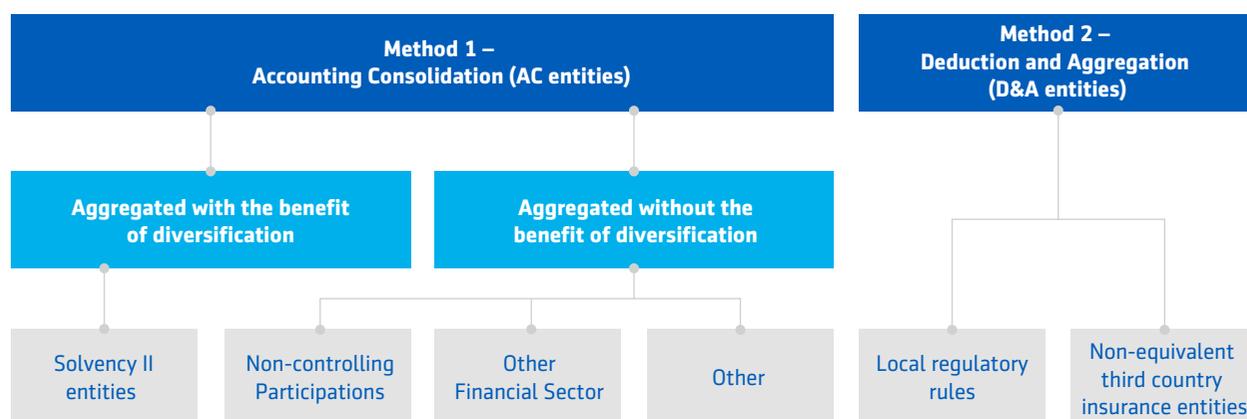
E.1 Own funds

E.1.1 Aggregation methods

For the purpose of determining Aegon's Group Solvency position, the solvency position of each related entity belonging to Aegon Group is calculated on a legal entity level. For each legal entity, the aggregation method is based on its nature and characteristics.

The illustration below provides an overview of the aggregation methods applied by Aegon to calculate Aegon's Group Solvency II ratio.

Aggregation methods



Aegon calculates its Group Solvency II ratio using the combination of two methods:

1. Accounting Consolidation (AC) or Method 1; and
2. Deduction and Aggregation (D&A) or Method 2.

Both methods are permitted under the Solvency II regime, either exclusively or in combination with each other. Method 1 is the default method for calculating Aegon Group's Solvency II ratio and method 2 is used in specific cases.

The entities aggregated by using the AC method are referred to as 'AC entities'. Aegon includes Solvency II entities, Other Financial Sector (OFS) entities and Other entities in Aegon's Group Solvency II ratio calculation by applying the AC method. 'Solvency II entities' consist of European Economic Area (EEA) (re)insurance entities as well as ancillary service undertakings, mixed financial holding entities and insurance holding entities. The EEA insurance entities of Aegon are domiciled in the Netherlands, United Kingdom, Spain, Portugal, Hungary, Poland, Czech Republic and Slovakia.

Aegon aggregates Non-EEA (re)insurance entities, also referred to as 'D&A entities' on a D&A basis. The aggregation of D&A entities is performed at the level of the top regulated entity. The value and the required capital of these entities is based on local solvency requirements where those insurance entities are domiciled in third countries deemed to be equivalent or provisionally equivalent. The US life insurance entities, as listed in section A.1.5 List of material undertakings, are the most material entities for which D&A is applied. Aegon also includes certain (re)insurance entities domiciled in non-equivalent third countries through the D&A method on a Solvency II basis. Please refer to column C0260 in QRT S.32.01 - Undertakings in scope of the group, for a full list of the aggregation methods applied for each related undertaking (reported as an appendix to the 2018 SFCR of Aegon Group).

Aegon has applied a method, consistent with the EIOPA opinion (EIOPA-BoS-16-008) published on January 27 2016, to allocate centrally issued subordinated debt between the AC and D&A parts of the group.

Aegon Group's own funds are calculated net of material intra-group transactions.

Accounting Consolidation Method

The following applies in regard to the consolidation of own funds and solvency capital requirement based on the AC method:

- Aggregation of Solvency II entities:
 - The assets and liabilities of all entities for which full consolidation applies are consolidated on a line-by-line basis into Aegon's Group balance sheet. The majority of Aegon's European legal entities are reported in this category. The most significant legal entities are domiciled in the Netherlands and the United Kingdom. Joint ventures are proportionally included based on Aegon's share of ownership. The calculation of the related capital requirement can be either on a Solvency II Partial Internal Model (PIM) basis or on a standard formula basis (please see section E.4 for more details on the difference between standard formula and Aegon's partial internal model used);
 - The benefit of diversification of capital requirements between these entities is included in this aggregation.
- Aggregation of non-controlling entities, Other Financial Sector entities, and Other entities:
 - For non-controlling entities (a holding of 20%-50% of the voting rights or capital) the proportional value of the participation is included in the consolidated data. This value is calculated in accordance with the adjusted equity method;
 - For Other Financial Sector entities (for example Asset Management), the proportional share of own funds and capital requirements according to relevant sectorial rules is included into the Group Solvency calculation; and
 - For Other entities, the value of participations is included in the consolidated data. Preferably the market value is used, but alternatively the adjusted equity method can be used;
 - The benefit of diversification of capital requirements between these entities is not included in this aggregation.

Deduction and Aggregation method

For consolidation of own funds and solvency capital requirement using the D&A method (method 2), the proportional share of own funds according to local regulatory rules is included in the Group own funds (the US life insurance entities, Bermuda, Japan, Mexico and Brazil). Diversification of capital requirements is not allowed between Accounting Consolidation and Deduction & Aggregation methods.

E.1.2 Tiering of own funds

Under the Solvency II regime, restrictions apply to the eligibility of Restricted Tier 1, Tier 2 and Tier 3 capital. Restricted Tier 1 may not exceed 20% of total Tier 1 own funds and Tier 2 cannot exceed 50% of the SCR. In addition, the total of Tier 2 and Tier 3 own funds may not exceed 50% of the SCR, while the eligibility of Tier 3 own funds is limited to 15% of the SCR.

The tiering of Aegon Group's 2018 own funds, compared with 2017 is shown below:

Solvency II Group own funds Amounts in EUR millions	December 31, 2018			December 31, 2017		
	Available own funds	Eligible own funds	Eligible own funds to meet minimum consolidated Group SCR	Available own funds	Eligible own funds	Eligible own funds to meet minimum consolidated Group SCR
Unrestricted Tier 1	12,205	12,205	5,555	10,428	10,428	4,613
Restricted Tier 1	3,406	2,889	1,389	3,540	2,451	1,153
Tier 2 own funds	1,487	2,004	391	1,213	2,302	386
Tier 3 own funds	504	504	-	448	448	-
Total Tiers	17,602	17,602	7,335	15,628	15,628	6,152

Aegon has historically applied a centralized funding structure and no own funds items have been issued by solo entities. Grandfathered Restricted Tier 1 and Restricted Tier 2 capital instruments were issued by Aegon N.V. and the proceeds were invested as Unrestricted Tier 1 capital in the insurance operations or held as excess cash in the holding.

The allocation of Aegon Group's subordinate debt is based on an available Own Funds basis within AC and D&A.

Aegon's tiering methodology is as follows:

Step 1: Calculate the total available Own Funds of the Aegon Americas regulated entities, aggregated and using US NAIC regulations (RBC) and taking into account articles 331 through 334 of the Solvency II Delegated Regulation.

Step 2: The resulting available Own Funds are reduced by an amount equal to 100% RBC CAL to reflect transferability limitations. This reduction (haircut) is first applied to the DTAs of the US regulated entities. If the remaining amount of DTAs after application of this haircut exceeds 100% RBC CAL, the remainder stays part of eligible group Own Funds as Tier 3 own funds. If the amount of DTAs of the US regulated entities is lower than 100% RBC CAL, the difference between the DTAs and the 100% RBC CAL is deducted from the unrestricted Tier 1 capital of the US regulated entities.

Step 3: The equivalent capital requirement for the US regulated entities in the Solvency II Group SCR calculation is set at 150% RBC CAL.

Step 4: Restricted Tier 1 and Tier 2 debt is allocated on the share of available Own Funds of the AC and D&A entities (excluding the OFS category). These available Own Funds are calculated after steps 1 and 2 above, applying the 100% RBC CAL haircut at the Aegon Americas regulated entities

Tiering restrictions are then calculated separately for the part of Aegon Group covered by AC and D&A methods. The total restriction for Aegon Group is the sum of both AC and D&A restrictions. For the part of Aegon Group covered by the AC method, tiering limits are based on the allocated Restricted Tier 1 and Tier 2 and the SCR of the consolidated AC entities. For the part of Aegon Group covered by the D&A method, the tiering limits are based on the allocated own funds from step 4 and the SCR of the consolidated D&A entities.

As at December 31, 2018, Tier 1 capital accounted for 89% of own funds (2017: 89%), including EUR 2,931 million of junior perpetual capital securities (2017: EUR 3,047 million) and EUR 476 million of perpetual cumulative subordinated bonds (2017: EUR 493 million) which are both classified as grandfathered restricted Tier 1 capital.

As at December 31, 2018, Tier 2 capital accounted for 8% of own funds (2017: 8%), including EUR 716 million of subordinated liabilities, which are issued during 2018 and classified as Solvency II compliant Tier 2 capital. EUR 771 million of fixed floating subordinated notes (2017: EUR 772 million) which are classified as grandfathered Tier 2 capital. Changes in Tier 2 capital compared to previous year is mainly related to the issuance of new capital instruments and the redemptions of existing grandfathered Tier 2 capital instruments (non-cumulative subordinated notes).

The grandfathered restricted Tier 1 and Tier 2 capital instruments are grandfathered such that they are considered as capital under the Solvency II framework for up to 10 years as from January 1, 2016. For the terms and conditions of these grandfathered instruments refer to note 33 and note 34 to the consolidated financial statements.

Tier 3 capital as of December 31, 2018 is comprised of deferred tax assets balances related to Solvency II entities.

E.1.3 Composition of eligible own funds

Solvency II defines several measurements of own funds. The broadest measure is called 'basic own funds'. Certain own fund items are not considered available capital under Solvency II and deducting such items from basic own funds gives what is referred to as 'available own funds'.

The tiering restrictions described in section E.1.2 Tiering of own funds can further limit the use of own funds in the Group Solvency II ratio, resulting in what is referred to as 'eligible own funds'.

The split of eligible own funds into the own funds of AC entities, D&A entities and Other Financial Sector entities is visualized in the below table.

Composition of eligible own funds by aggregation method	Eligible own funds December 31, 2018	% of total Group Eligible own funds December 31, 2018	Eligible own funds December 31, 2017	% of total Group Eligible own funds December 31, 2017
Amounts in EUR millions				
Accounting Consolidation (AC) entities, excluding OFS	8,518	48%	7,406	47%
Deduction & Aggregation (D&A) entities	8,435	48%	7,596	49%
Other Financial Sector (OFS) entities	649	4%	626	4%
Total	17,602	100%	15,628	100%

Most of Aegon's eligible own funds are held by AC entities which is mainly related to the own funds of Aegon the Netherlands and Aegon UK. The majority of the eligible own funds of D&A entities consist of the US Life insurance business.

The Other Financial Sector (OFS) entities consist mainly of Aegon Hypotheken and Aegon Asset Management. It also consists of non-regulated entities carrying out financial activities – mainly pension fund management activities in Poland, Romania and Hungary. Aegon Bank is excluded from the Group Solvency II ratio, as prescribed by the Group Solvency II supervisor in accordance with Article 228 of Directive 2009/138/EC.

The table below shows the Solvency II own funds per Tier for Aegon Group as of December 31, 2018:

Solvency II Group own funds as at 31 December 2018					
Amounts in EUR million	Tiers Total	Tier 1 unrestricted	Tier 1 restricted	Tier 2	Tier 3
Basic own funds					
Ordinary share capital	322	322	-	-	-
Share premium account	7,487	7,487	-	-	-
Reconciliation reserve	5,186	5,186	-	-	-
Amount equal to the value of net deferred tax assets	504	-	-	-	504
Subordinated liabilities	4,893	-	3,406	1,487	-
Total basic own funds before adjustments	18,392	12,994	3,406	1,487	504
-/- Non-available own funds	153	153	-	-	-
-/- Deductions deducted according to art 228 of the Directive 2009/138/EC	636	636	-	-	-
Available own funds	17,602	12,205	3,406	1,487	504
<i>"of which:"</i>					
- AC entities excluding OFS	8,518	5,555	1,712	747	504
- D&A entities	8,435	6,001	1,694	740	-
- Other Financial Sector entities	649	649	-	-	-
Eligible own funds to Group SCR	17,602	12,205	2,889	2,004	504
Eligible own funds to meet minimum consolidated Group SCR	7,335	5,555	1,389	391	-
Consolidated Group SCR	8,349				
Minimum consolidated Group SCR	1,953				
Solvency II ratio	211%				
Group MCR ratio	376%				

Solvency II Group own funds as at 31 December 2017					
Amounts in EUR million	Tiers Total	Tier 1 unrestricted	Tier 1 restricted	Tier 2	Tier 3
Basic own funds					
Ordinary share capital	322	322	-	-	-
Share premium account	7,731	7,731	-	-	-
Reconciliation reserve	3,069	3,069	-	-	-
Amount equal to the value of net deferred tax assets	448	-	-	-	448
Other basic own funds approved by supervisory authority	4,753	-	3,540	1,213	-
Total basic own funds before adjustments	16,321	11,121	3,540	1,213	448
-/- Non-available own funds	148	148	-	-	-
-/- Deductions deducted according to art 228 of the Directive 2009/138/EC	546	546	-	-	-
Available own funds	15,628	10,428	3,540	1,213	448
<i>"of which:"</i>					
- AC entities excluding OFS	7,406	4,613	1,748	599	448
- D&A entities	7,596	5,190	1,792	614	-
- Other Financial Sector entities	626	626	-	-	-
Eligible own funds to Group SCR	15,628	10,428	2,451	2,302	448
Eligible own funds to meet minimum consolidated Group SCR	6,152	4,613	1,153	386	-
Consolidated Group SCR	7,774				
Minimum consolidated Group SCR	1,930				
Solvency II ratio	201%				
Group MCR ratio	319%				

In the remainder of this section, the own funds items as of year-end 2018 are discussed in more detail.

Basic own funds**Ordinary share capital**

Ordinary share capital (gross of own shares) consists of 2,096 million common shares and 585 million common shares B. Both share classes have a par value of EUR 0.12 per share.

Share premium account

Share premium account related to ordinary share capital is comprised of common shares for an amount of EUR 5,834 million, and common shares B for an amount of EUR 1,653 million.

Reconciliation reserve

The reconciliation reserve reflects Aegon's free reserve net of adjustments. The reconciliation reserve is calculated as follows:

Amounts in EUR million	December 31, 2018	December 31, 2017
Excess of Assets over Liabilities	14,066	12,174
Own shares (held directly and indirectly)	(333)	(325)
Foreseeable dividends, distributions and charges	-	-
Other basic own fund items	(8,312)	(8,499)
Adjustment for restricted own fund items in respect of matching adjustment portfolios and ring fence funds	(233)	(281)
Other non-available own funds	(1)	(1)
Reconciliation reserve	5,186	3,068

The ring fenced restriction for an amount of EUR 233 million (2017: EUR 281 million) is related to the UK With-Profit Sub-Fund (WPSF) of Scottish Equitable plc. The surplus is restricted as these funds are not available to the Company but are a benefit for the policyholders.

The total excess of assets over liabilities within ring-fenced funds and matching adjustment portfolios are EUR 572 million (2017: EUR 523 million). The split is as follows:

- Aegon UK's With-profit sub-funds: EUR 308 million (2017: EUR 333 million);
- Aegon UK's matching adjustment portfolio: EUR 242 million (2017: EUR 159 million);
- Aegon Spain's matching adjustment portfolio: EUR 22 million (2017: EUR 30 million).

To manage its risk exposure, Aegon has risk policies in place. Many of these policies are group-wide while others are specific to the unique situation of local businesses. The Group level policies limit the Group's exposure to major risks such as equity, interest rates, credit, and currency. The limits in these policies in aggregate remain within the Group's overall tolerance for risk and the Group's financial resources. Operating within this policy framework, Aegon employs risk management programs including asset liability management (ALM) processes and models and hedging programs (which are largely conducted via the use of financial derivative instruments). These risk management programs are in place in each country unit and are not only used to manage risk in each unit, but are also part of the Group's overall risk strategy.

Aegon operates a Derivative Use Policy to govern its usage of derivatives. This policy establishes the control, authorization, execution and monitoring requirements of the usage of such instruments. In addition, the policy stipulates necessary mitigation of credit risk created through derivatives management tools. For derivatives, counterparty credit risk is normally mitigated by requirements to post collateral via credit support annex agreements or through a central clearinghouse.

As part of its risk management programs, Aegon takes inventory of its current risk position across risk categories. Aegon also measures the sensitivity of net income and shareholders' equity under both deterministic and stochastic scenarios. Management uses the insight gained through these 'what if?' scenarios to manage the Group's risk exposure and capital position. The models, scenarios and assumptions used are reviewed regularly and updated as necessary.

Amount equal to the value of net deferred tax assets

The amount of EUR 504 million (2017: EUR 448 million) is mainly related to Aegon's Accounting Consolidation entities in the United States. The increase compared to 2017 is attributable to the increased deferred tax assets in Aegon Americas non-regulated entities, partly offset by the utilization of a portion of the tax credit carryforward to offset tax expense.

Subordinated liabilities

The total amount of subordinated liabilities consist of Solvency II compliant subordinated liabilities that were issued during 2018 - included in Tier 2, junior perpetual capital securities – included in Tier 1, perpetual capital subordinated bonds – included in Tier 1, and fixed-floating subordinated notes - included in Tier 2.

The following basic own funds items do not meet the criteria to be classified as available own funds:

Ancillary Own Funds

The year-end 2018 Solvency II position of Aegon Group did not include any ancillary own funds as defined in Article 89(1) of Directive 2009/138/EC).

Available own funds

Non-available own funds - due to fungibility and transferability restrictions

Aegon annually performs an assessment of the fungibility and transferability restrictions that may apply to both (re)insurance entities and holding companies. As such, the assessment is conducted on a legal entity level, and subsequently on the level of the holding company as well. During the year, Aegon monitors certain information and/or events that could materially impact the restrictions on a group level. Following these developments, the Company has the option of updating the restrictions for relevant entities on a quarterly basis, in addition to the regular annual review.

The amount of EUR 153 million (2017: EUR 148 million) of non-available own funds is related to the restricted charitable trust assets in the US non-regulated entities and to the fungibility and transferability restriction related to the sale of Aegon Czech and Slovakia, which was closed in January 2019.

Deductions based on Article 228 of Directive 2009/138/EC

The amount of EUR 636 million (2017: EUR 546 million) relates to Aegon Bank and was deducted from Aegon Group's basic own funds in accordance with Article 228 of the Directive 2009/138/EC.

Eligible own funds

The following restrictions are applied to available own funds to determine the eligible own funds:

The eligibility of the Restricted Tier 1 capital is limited by the regulatory requirement to the extent that Tier 1 restricted capital cannot exceed 20% of total Tier 1. This resulted in a EUR 518 million reclassification from Restricted Tier 1 to Tier 2 and represents the difference between available (EUR 3,406 million) and eligible Tier 1 own funds of EUR 2,888 million.

The amount of eligible own funds to the Aegon Group SCR was EUR 17,602 million leading to Group Solvency II ratio of 211% at year-end 2018 (2017: EUR 15,628 million; 201%).

Eligible own funds to meet minimum consolidated Group SCR

The minimum consolidated Aegon Group SCR consists of the simple sum of MCR of the participating insurance or reinsurance undertaking and the proportional shares of MCR of related insurance and reinsurance undertakings. This amounted to EUR 1,965 million at year-end 2018 (2017: EUR 1,930 million).

The total eligible own funds to meet the minimum consolidated Aegon SCR amounted to EUR 7,335 million at year-end 2018. This amount relates exclusively to the undertakings accounted for using method 1 but excluding the Tier 3 capital (EUR 505 million) thereto related.

Significant developments own funds throughout 2018

As of December 31, 2018, the total eligible own funds amounted to EUR 17,602 million. During the year, total eligible own funds increased by EUR 1,974, mostly driven by normalized capital generation by Aegon's operating units and favorable one-time items. These one-items include the sale of Aegon Ireland, implementation of unit matching in Aegon UK, and the merger of Firebird into Transamerica Life Insurance Company (TLIC). The increase was partly offset by the impact of the dividend paid to shareholders and the impact from framework, model and assumption changes (including the decrease in Ultimate Forward Rate (UFR) (from 4.2% to 4.05%) in Aegon the Netherlands following revision of the UFR methodology by EIOPA.

During 2018, restricted Tier 1 and Tier 2 capital instruments were issued. The increase in Unrestricted Tier 1 was generated by the positive performance of Aegon's operating units.

E.1.4 Difference between Solvency II own funds and IFRS-EU shareholders' equity**Reconciliation shareholders' equity - own funds**

Amounts in EUR million

	December 31, 2018	December 31, 2017
Shareholders' equity	19,543	20,573
IFRS adjustments for other equity instruments and non-controlling interest	3,342	3,813
Group equity	22,885	24,386
<i>Differences in aggregation related to D&A entities</i>	(4,095)	(6,791)
<i>Differences in recognition basis for i.e. DPAC and Goodwill</i>	(2,024)	(2,019)
<i>Valuation difference between IFRS and Solvency II</i>	2,446	2,595
<i>Reclassification of subordinated debt¹⁾</i>	(3,262)	(4,237)
Solvency II revaluations	(6,935)	(10,453)
Transferability restrictions²⁾	(1,884)	(1,758)
Excess of Assets over Liabilities	14,066	12,174
<i>Adjustments for restricted own funds (Ring-fenced funds)</i>	(233)	(281)
<i>Subordinated liabilities in own funds</i>	4,893	4,753
<i>Treasury shares</i>	(333)	(325)
Availability adjustments	4,327	4,147
<i>Non-available own funds related to charitable trusts</i>	(153)	(148)
<i>Deductions according to art. 228 of the Directive 2009/138/EC related to Aegon Bank</i>	(636)	(546)
Fungibility adjustments³⁾	(789)	(693)
Available own funds	17,602	15,628

¹ The 2017 comparative numbers have been updated for a change of the presentation for the subordinated debt.

² This includes the transferability restriction related to the RBC CAL conversion method in 2017 and 2018.

³ Amongst others, this contains the exclusion of Aegon Bank in 2017 and 2018.

The Solvency II revaluations and reclassification of EUR 6,936 million negative (2017: EUR 10,453 million negative) mainly stem from the difference in valuation between IFRS-EU and Solvency II frameworks, and the redemption of non-cumulative subordinated notes. The change in Solvency II revaluations per December 31, 2018 compared to December 31, 2017 is mainly driven by rising interest rates and widening credit spreads during 2018, reducing the revaluation reserves in Aegon Americas. In addition, Aegon exercised its right to redeem the USD 525 million 8% non-cumulative subordinated notes.

The Solvency II revaluations can be grouped into three categories:

- Items that are not recognized under Solvency II. The most relevant examples of this category for Aegon include Goodwill, DPAC and other intangible assets (EUR 2,024 million negative, 2017: EUR 2,019 million negative);
- Items that have a different valuation treatment between IFRS-EU and Solvency II. Solvency II is a market consistent framework hence all assets and liabilities are to be presented at fair value while IFRS-EU also includes other valuation treatments in addition to fair value. The most relevant examples of this category for Aegon Group include Loans and Mortgages, Reinsurance Recoverables, Deferred tax assets balances and Technical provisions. The revaluation difference stemming from this category amounted to EUR 2,446 million positive (2017: EUR 2,595 million positive) compared to the IFRS-EU Statement of Financial Position;
- The Net Asset Value of subsidiaries that are included under the Deduction & Aggregation method (on provisional equivalence or Standard Formula basis) in the Group Solvency II results. The revaluation difference stemming from this category amounted to EUR 4,095 million negative (2017: EUR 6,792 million negative) compared to the IFRS-EU Statement of Financial Position;
- Reclassification of subordinated liabilities of EUR 3,262 million negative (2017: EUR 4,237 million negative). In 2018, the accounting treatment of subordinated liabilities which were grandfathered by the Dutch Central Bank have changed on Solvency II balance sheet. These subordinated liabilities include Junior Perpetual Capital Securities (JPCS), Perpetual capital subordinated loans (PCSL), and Fixed Floating Security Notes (FFSN). Under IFRS-EU, JPCS and PCSL are presented as Shareholder's equity, FFSN is presented as liabilities. Previously, they were all reported as equity instruments under Solvency II. From 2018 these grandfathered instruments are reported as subordinated liabilities in the Solvency II balance sheet and no longer included in the excess of assets over liabilities. Availability adjustments have increased by the same amount as available own funds have not changed by this change in accounting treatment. The movement of subordinated liabilities mainly stem from the redemption of non-cumulative subordinated notes.

The transferability restrictions reflect the restrictions on US Life Companies DTA and capping of Tier 1 unrestricted own funds as a consequence of the RBC CAL conversion methodology as described above.

The availability adjustments are changes to the availability of own funds of Aegon Group in accordance with Solvency II requirements. Examples include the adjustments for subordinated liabilities, ring-fenced fund, treasury shares and foreseeable dividend (if applicable).

Finally, the fungibility restrictions limit the availability of own funds on Aegon Group level as prescribed by the Supervisory Authorities. These limitations refer to charitable trusts in the Americas for which the local Supervisory Authority could limit the upstream of capital to the Group, and Aegon Bank which is under a different regulatory regime but under the same Supervisory Authority and therefore excluded for Solvency II purposes.

E.1.5 Transitional arrangements

Restricted Tier 1 capital consists of Aegon's junior perpetual capital securities and perpetual cumulative subordinated bonds, which are both grandfathered for up to 10 years as of January 1, 2016.

Aegon will use the grandfathering period until January 1, 2026, to gradually replace grandfathered capital securities by Solvency II compliant securities. The timing of this replacement will be subject to market circumstances, including but not limited to pricing, investor demand and investor preferences. Furthermore, Aegon will take into account the projections of its Solvency II position, unrestricted Tier 1 and SCR positions, and the expected impact on eligible own funds and tiering capacity, both under normal and stressed market conditions.

In Spain, a transitional arrangement related to technical provisions is used, that compares the technical provisions on a Solvency I and a Solvency II basis, with this difference being amortized over a period of 16 years (please refer to section D.2.4 Long term guarantees and transitional measures).

Excluding the impact of the grandfathered capital instruments described in section E.1.3 Composition of eligible own funds, the transitional arrangements had an estimated positive impact of 1% on the Aegon Group 2018 Solvency II ratio.

E.2 Solvency Capital Requirement and Minimum Capital Requirement

E.2.1 Solvency Capital Requirement

Aegon applies a combination of the group consolidation methods available under Solvency II, being the Accounting Consolidation and Deduction & Aggregation methods. Solvency II capital requirements are mainly used for the EEA-based insurance and reinsurance entities, applying the Accounting Consolidation method. Local requirements are used for insurance and reinsurance entities in (provisionally) equivalent third-country jurisdictions (mainly US life insurance companies, Bermuda, Japan, Mexico, and Brazil). Aegon Bank is excluded from the Group Solvency ratio, as required by the Group Solvency II supervisor, DNB.

SCR methodology based on the Solvency II PIM

Aegon uses a Solvency II Partial Internal Model (PIM) to calculate the solvency position of the majority of its EEA insurance activities under Solvency II. Aegon's Internal model (IM) was approved by the College of Supervisors as part of the Internal Model Application Process. For Aegon, a PIM is a better representation of the actual risk since this contains Aegon specific modelling and sensitivities as opposed to industry-wide approximations included in the standard formula (SF) methodology. The purpose of the internal model is to better reflect the actual risk profile of Aegon in the SCR. The most material risk types for Aegon are therefore covered by the internal model as part of the Solvency II PIM, and less material risk types and business units are covered by the standard formula as part of the Solvency II PIM. Below a table representing the structure of the internal model.

Risk Class	QRT S.25.02.22	Risk Type	Application ^{1,2}		
			Aegon The Netherlands	Aegon UK	Aegon N.V.
Mismatch risk		Interest rate	IM	IM	IM
		Interest rate volatility	IM	IM	IM
		Currency	SF	IM	IM
Investment & Counterparty risk	Market risk	Fixed income	IM & SF	IM & SF	IM & SF
		Equity level	IM & SF	IM & SF	n/a
		Equity volatility	IM	IM	n/a
	Counterparty default risk	Alternative investment	IM & SF	SF	n/a
		Counterparty	SF	SF	SF
		Underwriting risk	Life underwriting risk	Mortality Contagion	SF
Mortality Parameter	IM			SF	n/a
Longevity Parameter	IM			IM	n/a
Health underwriting risk	Disability/morbidity		SF	SF	n/a
	Persistency		IM & SF	IM	n/a
	Expense risk		SF	IM	n/a
Non-life underwriting risk	Health underwriting risk	Health	n/a	SF	n/a
		Persistency	n/a	n/a	n/a
		Expense risk	n/a	n/a	n/a
Operational risk	Operational risk	P&C	SF	n/a	n/a
		Persistency	SF	n/a	n/a
		Expense risk	SF	n/a	n/a
Diversification	Operational risk	Operational	SF	IM	n/a
	Aggregation		IM	IM	IM
	PIM - integration		Integration technique 3	Integration technique 3	Integration technique 3

¹ The table only reflects the application of Solvency II PIM methodology for the legal entities with approved internal models within each country unit.

² In the table above, IM & SF refers to SF shocks used in combination with IM shocks to determine to total component risk.

Scope of the internal model parts of Solvency II PIM SCR

The internal model of Aegon covers the following legal entities:

- Aegon the Netherlands:
 - Aegon Levensverzekering N.V.;
 - Optas Pensioenen N.V.;
 - Spaarkas N.V.;
- Aegon UK:
 - Scottish Equitable plc; and
- Aegon N.V..

All other legal entities within Aegon that are subject to a Solvency II SCR calculation use the standard formula.

The following risk types are modelled under the internal model component of the Solvency II PIM:

Within the mismatch risk category:

- Interest rate risk and interest rate volatility risk for Aegon the Netherlands, UK and N.V.; and
- Currency risk for Aegon UK and Aegon N.V..

Within the Investment and counterparty risk category:

- Fixed income risk (both spread risk and default/migration risk);
- Equity level risk, excluding private equity which is on SF;
- Equity volatility risk; and
- Within alternative investment risk, we use IM for property risk for Aegon the Netherlands. All other alternative investment risks are based on SF.

Within the underwriting risk category - life underwriting risk:

- Mortality parameter risk for Aegon the Netherlands;
- Longevity parameter risk for Aegon the Netherlands and Aegon UK;
- Within persistency risk, mortgage prepayment risk for Aegon the Netherlands;
- Within persistency risk, policyholder behavior for Aegon UK only; and
- Expense risk for Aegon UK.

Other risks:

- Operational Risk for Aegon UK.

All risk types that are not covered by the internal model are covered under the standard formula component of the Solvency II PIM. The risk measure used in all components of the Solvency II PIM is the 99.5% value at risk applied over a one-year time horizon. The standard formula SCRs and internal model SCRs are combined to calculate the Solvency II PIM SCR using Integration Technique 3 (IT3) as listed in annex XVIII.D of Commission Delegated Regulation (EU) 2015/35 (Delegated Acts).

Diversification within the Solvency II PIM SCR

Under Solvency II PIM, Aegon calculates the diversification benefit across country units and risk types. Within the standard formula components, diversification is determined following the prescribed SF correlation matrices.

Within the internal model, a marginal probability distribution function is fitted for every risk factor by making use of historical data and expert judgement. The overall joint probability distribution function of all the risk factors combined takes into account the dependency structure between the risks. The loss from 2 million scenarios simulating the samples from this joint distribution are used to fit an overall empirical loss distribution function, from which we derive the 1 in 200 year loss by taking the 99.5% point.

The scenarios are generated using a scenario generator and a dependency structure, defining the dependency (correlation) between risk drivers based on market data and expert judgment. Each scenario contains values for risk drivers such as interest rates, equity returns and mortality levels.

The total net SCR (after diversification) is determined by the average 1 in 200 year loss in own funds. Diversification is defined as the difference between the sum of the standalone SCRs of the risk types and the total net SCR.

Diversification between the internal model and the standard formula components of the Solvency II PIM are calculated using Integration Technique 3 (IT3) in accordance with Solvency II regulation. IT3 describes how an implied linear correlation coefficient between the internal model and standard formula components is calculated. This correlation coefficient is subsequently used to calculate the total Solvency II PIM SCR using a square root formula.

Additional purposes for which Aegon uses the Solvency II PIM include:

- Quantification of risk exposures in order to set adequate capital buffers;
- Monitoring of these exposures against the stated risk appetite and risk tolerance;
- Product pricing, where the cost of capital has a significant impact on overall costs;
- Assessment of the value of new business sold, in particular the value of options and guarantees contained therein; and
- Budgeting of capital requirements, Dividend Policy & Contingency Planning.

Data quality

Aegon has implemented a group-wide Data Quality policy for the Solvency II reporting processes, including a required data directory and a description of the criteria regarding data completeness, accurateness and appropriateness respectively. Data used in the internal model originates from internal as well as external sources, for example:

- Policy data detailing characteristics and coverage of individual insurance policies;
- Data specifying the portfolio of assets, e.g. type of asset, amount, and maturity date; and
- Data from external sources such as population mortality tables and prices of traded securities.

The internal model design aims to make optimal use of all available data in the stages of model design and execution. An assessment of the appropriateness of data usage forms part of the model validation process.

Other

Aegon does not apply simplified calculations for calculating the SCR of the business units using the standard formula.

Subject to approval by the supervisory authorities, Aegon may, within the design of the standard formula, replace a subset of its parameters by parameters specific to Aegon Group when calculating the life, non-life and health underwriting risk modules (Article 104(7) of the Directive 2009/138/EC). Aegon does not apply such specific parameters as defined for calculating the standard formula SCR.

Aegon Americas

In the United States, regulation of the insurance business is principally at the state level. State insurance regulators and the National Association of Insurance Commissioners have adopted risk-based capital (RBC) requirements for insurance companies. RBC calculations measure the ratio of a company's statutory capital, which is measured on a prudent regulatory accounting basis, to a minimum capital amount determined by the risk-based capital formula. The RBC formula measures exposures to investment risk, insurance risk, market risk, and general business risk. The formula, as used for calculating the solvency ratio, applies a covariance diversification offset to determine the appropriate risk-based capital. Life reinsurance is treated as life insurance. The most pertinent RBC measure is the Company Action Level (CAL) risk-based capital requirement. This is the regulatory intervention level at which a company has to submit a plan to its state regulators. The domiciliary state regulator has the authority to require additional capital depending on the type, volume and nature of the business being conducted. The domiciliary state regulator also has the ability to require corrective actions if a company is deemed by the commissioner to pose a Hazardous Financial Condition. The CAL is 200% of the Authorized Control Level (ACL), the level at which regulators are permitted to seize control of the Company.

Solvency II PIM SCR at December 31, 2018

Aegon Group Partial Internal Model (PIM) Solvency Capital Ratio (SCR) amounted to EUR 8,349 million on December 31, 2018 (2017: EUR 7,774 million). The SCR increased by EUR 575 million mainly due to several large offsetting items. The SCR increased mainly due to negative market movements, SCR for new business and one-time items (mainly US Tax Reform and the impact of tax changes in the Netherlands). These were largely offset by SCR release following the sale of Aegon Ireland, the merger of Firebird into Transamerica Life Insurance Company (TLIC) and the change to the Dynamic VA model in Aegon the NL.

The following table below shows the breakdown of the Solvency II PIM SCR for Aegon Group at year-end 2018, as reported in QRT S.25.02.22:

Composition of Group SCR

Amounts in EUR millions

	QRT S.25.02.22	2018	2017
SFCR section			
C.2 Market risk	Market Risk (SF)	898	1,056
	Market Risk (IM)	2,714	2,258
C.3 Credit risk ¹⁾	Counterparty default risk (SF)	368	371
	Counterparty default risk (IM)	22	18
C.1 Underwriting risk	Life underwriting risk (SF)	1,009	1,137
	Life underwriting risk (IM)	2,341	2,156
	Health underwriting risk (SF)	332	306
	Health underwriting risk (IM)	-	-
	Non-life underwriting risk (SF)	138	130
	Non-life underwriting risk (IM)	-	-
C.5 Operational risk	Operational risk (SF)	288	304
	Operational risk (IM)	299	301
E.2.1 Solvency Capital Requirement	LAC-DT	(756)	(714)
	Total undiversified components	7,653	7,321
	Diversification	(3,000)	(2,851)
	PIM SCR after diversification (AC only) ²⁾	4,654	4,470
	Capital requirements for D&A and OFS ³⁾	3,695	3,304
	Group PIM SCR	8,349	7,774

¹⁾ To align with the SCR in QRT s.25.02.22 and section E, Aegon will only discuss Counterparty Default Risk (as defined in the Delegated Regulation) in section C3.3. More generally, Aegon considers the term 'credit risk' to also include spread risk, migration risk and default (market risk concentration) risk relating to financial investments. To keep this alignment with QRT s.25.02.22 consistent throughout the SFCR, these other components of credit risk are discussed instead in section C.2 Market risk.

²⁾ AC stands for Accounting Consolidation method for the calculation of the Solvency II group solvency.

³⁾ Excluding Aegon Bank in line with Group supervisor requirement.

The sum of SCR categories shown in QRT S.25.02.22 amounted to EUR 7,653 million (2017: EUR 7,321 million). The SCR after diversification of the Solvency II risk types of the AC entities is EUR 4,654 million (2017: EUR 4,470 million).

The increase in the sum of SCR categories shown in QRT S.25.02.22 was mainly driven by:

- IM Market Risk increased by EUR 456 million due to increased fixed income risk, caused by the impact of spread movements on the dynamic VA of Aegon the Netherlands, despite a partial offset due to the introduction of the new dynamic VA of Aegon the Netherlands in 2018, and due to increased alternative investment risk caused by increased investments by Aegon the Netherlands. These increases were partially offset by lower interest rate risk due to changes of the Aegon the Netherlands' interest rate hedge and by a decrease in equity volatility risk due to increased hedge efficiency of Aegon the Netherlands;
- IM Life Underwriting risk increased by EUR 185 million, mainly due to the increase of longevity risk caused by the updated Longevity model of Aegon the Netherlands;
- The diversification amount increased by EUR 149 million (which decreased net SCR with EUR 149 million). This was mainly driven by the increase in gross SCR;
- The loss absorbing capacity of deferred taxes (LAC DT) increased by EUR 42 million, driven by the increase of the other SCR components, with a partial offset by the impact from the corporate tax decrease in the Netherlands;
- The SCR for D&A and OFS increased by EUR 391 million, mainly due to the impact of the US tax reform on required capital in Aegon Americas.

Diversification of EUR 3,000 million (2017: EUR 2,851 million) shown in QRT S.25.02.22 includes the integration between the SF and IM parts of the PIM SCR and diversification between the risk categories, but does not include diversification within each risk component.

Within the QRT S.25.02.22 risk categories there is diversification within each of the risk categories, mainly:

- Market Risk (MR) diversification, driven by diversification between spread and equity risk, as well as diversification between interest rate level and non-market risk types. Diversification benefits for interest rate level risk are relatively large as Aegon is exposed to a decrease in interest rates, which has a low correlation with the spread widening scenarios. Diversification benefits for spread risks are relatively small as spread risk (exposure to spread widening) is the largest risk category for Aegon in terms of SCR and therefore drive the aggregated own funds losses in a 1 in 200 year event. Note that all these figures are after applying the dynamic volatility adjustment;
- Underwriting risks (UR) diversification, driven by longevity risk which has a relatively low correlation with other underwriting risk types, such as lapse risk. Life underwriting risk as reported in the QRT S.25.02.22, and consistently shown in the table above. The amount shown in the table above is only diversification between Underwriting risk components. Underwriting risks typically also have a low correlation with Market risk types, like spread risk, that drive the aggregated own funds losses in a 1 in 200 year event;
- The LAC-DT is calculated after diversification and lowered the net PIM SCR by EUR 756 million (2017: EUR 714 million). The LAC-DT benefit mainly stemmed from Aegon the Netherlands. Aegon has applied a LAC-DT factor in the Netherlands of 75% as of December 31, 2018 (2017: 75%), while taking into account the impact of the reduction of announced Corporate Income Tax (CIT) (decrease from 25.00% in 2019 to 22.55% in 2020 and to 20.5% from 2021 onwards). The LAC-DT factor will be recalibrated on a quarterly basis using the agreed methodology;
- Other capital requirements include capital requirements for entities under D&A (mainly Aegon Americas, being US Life insurance entities) in addition to OFS entities (excluding Aegon Bank). There is no diversification benefit between AC, OFS and D&A entities.

The Solvency II capital ratios of the Group and Aegon the Netherlands do not include any contingent liability potentially arising from unit-linked products sold, issued or advised on by Aegon in the Netherlands in the past, as any potential liability cannot be reliably quantified at this point.

The PIM SCR includes the SCR for AC entities, the D&A entities and the Other Financial Sector entities (excluding Aegon Bank). The geographical composition of Aegon Group's consolidated SCR based on Solvency II PIM as per year-end 2018 is illustrated in the figure below. The illustration shows that the D&A entities, which mainly consist of the US Life insurance entities, make up 39% (2017: 38%) of the Group SCR.

Split of Aegon Group Solvency II PIM SCR into SCR of AC entities and D&A entities

Amounts in EUR millions

	Solvency II PIM SCR December 31, 2018	% of total Group Solvency II PIM SCR December 31, 2018	Solvency II PIM SCR December 31, 2017	% of total Group Solvency II PIM SCR December 31, 2017
Accounting Consolidation (AC) entities, excluding OFS	4,654	56%	4,470	57%
Deduction & Aggregation (D&A) entities	3,263	39%	2,987	38%
Other Financial Sector (OFS) entities	432	5%	317	4%
Total	8,349		7,774	

E.2.2 Solvency II ratio

The solvency position is calculated as a ratio between own funds and the capital requirement. There are two capital requirements: a Solvency Capital Requirement (SCR) and a Minimum Capital Requirement (MCR). The MCR is an absolute minimum metric, while the SCR is the level of own funds at which regulators will formally require management to provide regulatory recovery plans.

The Group Solvency II ratio uses the SCR as the denominator.

The SCR amount (or 100% Solvency II ratio) reflects a level of eligible own funds that enables insurance and reinsurance entities to absorb significant losses (1-in-200 year events) and gives reasonable assurance to policyholders and beneficiaries that payments will be made as they fall due.

Solvency II key figures

Amounts in EUR millions

	December 31, 2018^{1) 2) 3)}	December 31, 2017^{2) 3) 4)}
Eligible own funds	17,602	15,628
Consolidated Group SCR	8,349	7,774
Solvency II ratio	211%	201%

¹⁾ The Solvency II ratio is an estimate and subject to supervisory review.

²⁾ The Solvency II ratios are based on Aegon's partial internal model.

³⁾ Aegon Bank is not included in the Group Solvency II ratio

⁴⁾ Group Solvency II ratio at December 31, 2017 does not reflect impact on NAIC tax factor changes following US tax reform.

E.2.3 Minimum consolidated Aegon Group SCR

The minimum consolidated Aegon Group SCR is calculated as the simple sum of MCR of the participating insurance or reinsurance undertaking and the proportional shares of MCR of related insurance and reinsurance undertakings. The calculation for each of the undertakings follows a factor-based approach that consists of multiple volume measures (e.g. written premiums, technical provisions). The MCR result of this 'linear formula' is subject to a cap and a floor such that it may not exceed 45% nor fall below 25% of that undertaking's calculated SCR. Lastly, an absolute floor is applied that is dependent on the type of undertaking (i.e. life, non-life or reinsurance).

At year-end 2018 the Group MCR amounted to EUR 1,965 million (2017: EUR 1,930 million) and was mainly driven by Aegon the Netherlands and Aegon UK. The MCR increase during 2018 of EUR 35 million was driven by Aegon UK, as the transfer of BlackRock defined contribution business increased unit linked insurance obligations and therefore the MCR.

E.3 Use of the duration-based equity risk sub-module

Aegon does not make use of the duration-based equity risk sub-module set out in Article 304 of Directive 2009/138/EC for the calculation of the Standard Formula SCR.

E.4 Differences between standard formula and partial internal model used

The main differences between the methodologies and assumptions of the Solvency II PIM and the standard formula are described by risk type below.

Market risk

The fixed income risk for bonds differs because Solvency II PIM shocks are calibrated on the basis of Aegon the Netherlands' fixed income portfolio. In contrast to the standard formula, government bonds are shocked with a factor larger than zero. Furthermore, the Solvency II PIM makes use of a dynamic volatility adjustment approach within Aegon the Netherlands, while the standard formula does not.

This dynamic volatility adjustment methodology follows an asset-only approach, ensuring spread widening is the biting scenario. The performance of the fixed income portfolio is assessed under a broad range of credit scenarios and the model determines which part of the (short-term) losses experienced by the assets are recouped.

For mortgages, the Solvency II PIM contains a spread shock, while the standard formula implies a counterparty default risk shock.

Equity risk shocks are calibrated based on Aegon's own portfolio. In addition, the equity exposures are also shocked for equity volatility risks.

Within Aegon the Netherlands, property risk shocks on the real estate portfolio are specifically calibrated on the portfolio as opposed to a 25% shock in the standard formula.

For currency risk, the shocks are calibrated based on Aegon's own portfolio. In addition, the Solvency II PIM allows for diversification between exposures to different currencies, as opposed to no diversification between currency exposures in the standard formula.

The Solvency II PIM results for interest rate risks differ from the standard formula results for the following reasons:

- The standard formula interest rate shock only considers a parallel shift in the interest rate curve, whereas the Solvency II PIM considers not only a parallel shift, but also a flattening and twisting of the interest rate curve;
- The Solvency II PIM interest rate curve shocks are calibrated based on historical market data relevant for Aegon's portfolio;
- The Solvency II PIM assumes that the Ultimate Forward Rate (UFR) does not change in a shock scenario, while the standard formula interest rate shock assumes that the whole curve moves, including the UFR;
- In addition, the Solvency II PIM includes a capital requirement for interest rate and equity volatility risk; and
- For Aegon UK, the interest rate risk under the Solvency II PIM also includes an inflation shock on benefit payments and expenses, while the inflation shock on expenses is included in life expense risk under standard formula.

Underwriting risk

The Solvency II PIM for longevity and mortality risk differs from the standard formula as follows:

- The Solvency II PIM distinguishes between a population mortality shock and an experience factor shock while the standard formula assumes a fixed decrease in all mortality rates; and
- The Solvency II PIM projects mortality rates by age and gender, while the standard formula assumes the same shock for all ages and both genders.

For Aegon the Netherlands, the Solvency II PIM includes pre-payment (lapse) risk on the mortgage portfolio.

Policyholder behavior (lapse) risk for Aegon UK under the Solvency II PIM is the aggregate of a parameter and a contagion shock, while under standard formula it is the greater of a parameter and a contagion stress. Furthermore, the shocks are calibrated on the Aegon UK portfolio, resulting in a larger shock size than under the standard formula, which leads to a higher SCR before diversification.

The aggregate Solvency II PIM expense risk shock for Aegon UK is higher than the standard formula stress as the Solvency II PIM stress covers expense level, trend and volatility stress. This leads to a higher SCR before diversification. Under Solvency II PIM, the inflation on expenses is shocked in the interest rate risk module, while under standard formula it is shocked in the expense risk module.

Operational Risk

For Aegon UK, the Solvency II PIM for operational risk differs from the standard formula as follows:

- ▀ The Solvency II PIM is based on the input of subject matter experts where workshops are used to generate possible scenarios supplemented by experience data. The data is then fitted into a stochastic model, while the standard formula is based on technical provisions, premiums and expenses; and
- ▀ The Solvency II PIM allows for diversification of operational risk with other risk types as opposed to the standard formula which does not allow for diversification of operational risk at all.

Diversification

Diversification between the internal model and the standard formula components of the Solvency II PIM are calculated using Integration Technique 3 (IT3). This EIOPA prescribed integration technique describes how an implied linear correlation coefficient between the internal model and standard formula components is calculated. This correlation coefficient is subsequently used to calculate the total Solvency II PIM SCR using a square root formula. The standard formula makes use of correlation matrices to calculate the diversifications by risk module and on a total level.

E.5 Non-compliance with capital requirements

During 2018 and 2017, there were no instances in which the estimated Aegon Group Solvency II ratio was below the MCR or the SCR level. To ensure that Aegon maintains adequate solvency levels, actual and expected capital positions are monitored against capitalization zones that are defined in Aegon's Capital Management Policy. Several activities are performed to monitor and assess the future development of Aegon's solvency position, such as the annual Budget/MTP process and periodic management reporting. Decisions to return capital to shareholders are based on solvency assessments that consider the impact of the decisions on the current and projected solvency position.

Any solvency position is subject to risks, and Aegon continuously monitors such risks. These are quantified to determine the impact on the current and the projected solvency position. The Capital Management Policy include actions that need to be performed as soon as the projected solvency ratio is expected to fall within a predefined capitalization zone.

E.6 Any other information

Aegon does not have any other material information regarding its capital management.

Additional information

Glossary

Accounting Consolidation is the default method for calculating the Group Solvency position. With this consolidation method, diversification benefits in the calculation of capital requirements is allowed for Solvency II entities. In addition, Accounting Consolidation method is applied to non-controlling participations, Other Financial Sector entities and Other entities. For these three types of entities diversification benefits in the calculations of capital requirements is not allowed.

Actuarial funding enables a life insurance company to reduce the size of the unit reserves it holds for unit-linked business to reflect some or all of the unit-linked charges it expects to receive in the future from the units nominally allocated. Actuarial funding is used on those contracts that have surrender penalties and the Company will hold a minimum of the surrender value at all times.

Actuarial gains and losses relate to the accounting for post-employment benefit plans. They comprise the effects of experience adjustments and changes in assumptions used to determine the cost of a plan.

Acquisition date is the date on which the acquirer effectively obtains control of the acquiree. In most cases this includes at least the transfer of risks and rewards related to the acquired business or assets/liabilities.

Alt-A mortgages relates to a type of US residential mortgage which are securitized home equity loans. Typical Alt-A borrower has a credit score high enough to obtain an 'A'-standing. Alt-A mortgages are primarily backed by loans with fixed interest rates for the entire term of the loan.

Aggregation is the methodology by which capital requirements are calculated across different risk groupings, allowing for diversification benefit between the groupings.

Amortized cost is the amount at which the financial asset or liability is measured at initial recognition minus principal repayments, plus or minus the cumulative amortization using the effective interest rate method of any difference between that initial amount and the maturity amount and minus any reduction (directly or through the use of an allowance account) for impairment or uncollectability.

Asset-Backed Securities (ABS) are securities whose value and income payments are derived from and collateralized (or 'backed') by a specified pool of underlying assets.

Assets held by long-term employee benefit funds are part of plan assets. These are assets (other than non-transferable financial instruments issued by the reporting entity) that:

- ▀ Are held by an entity that is legally separate from the reporting entity and exists solely to pay or fund employee benefits; and
- ▀ Are available to be used only to pay or fund employee benefits and are not available to the reporting entity's own creditors.

Authorised Control Level (ACL) is the level regulators are permitted to seize control of a company.

Bifurcation is the measurement and presentation of embedded derivatives separate from the host contracts, as if they were stand-alone derivative financial instruments.

Binomial option pricing model uses a binomial lattice that represents possible paths that might be followed by the underlying asset's price over the life of the option, for a given number of time steps between valuation date and option expiration. Each node in the lattice represents a possible price of the underlying asset, at a particular point in time. The valuation process is iterative; it starts at each final node and then works backwards through the lattice to the first node, which is the valuation date, where the calculated result is the value of the option.

Business combination is the bringing together of separate entities or operations of entities into one reporting entity. This can be realized through a purchase transaction or by means of a merger. A business combination involving entities (or operations of entities) under common control is a business combination in which all of the combining entities (or operations of entities) ultimately are controlled by the same party or parties both before and after the combination, and that control is not transitory.

Company Action Level (CAL) is the regulatory intervention level at which a company has to submit a plan to its state regulators for the Aegon Americas segment. It is 200% of the Authorised Control Level (ACL) - the level regulators are permitted to seize control of a company. It is a requirement and the most pertinent for measuring risk-based capital (RBC).

Capital funding includes debt securities that are issued for general corporate purposes and for capitalizing our business units. Capital funding is part of the Company's total capitalization that is used for financing our subsidiaries and the cash held at the holding company.

Capitalization is the recognition of a cost as part of the cost of an asset on the statement of financial position.

Cash-generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets.

Cedant is the policyholder under a reinsurance contract.

Claims settlement expenses are costs incurred in settling a claim. These costs include internal administration and payout costs, but also such items as attorney's fees and investigation expenses.

Collateral is an asset pledged by a borrower to secure a loan and is subject to seizure in the case of default.

Collateralized Debt Obligation (CDO) is a type of asset-backed security which provides investors exposure to the credit risk of a pool of fixed income assets.

Commercial Mortgage-Backed Securities (CMBS) is a type of mortgage-backed security that is secured by the loan on a commercial property.

Compound financial instruments are financial instruments that, from the issuer's perspective, contain both a liability and an equity element.

Constructive obligation is an obligation that derives from an entity's actions whereby an established pattern of past practice, published policies or a sufficiently specific current statement, the entity has indicated to other parties that it will accept certain responsibilities, and as a result, the entity has created a valid expectation on the part of those other parties that it will discharge those responsibilities.

Contingent liability is a possible obligation dependent on the occurrence of an uncertain future event or a present obligation for which payment is not probable or the amount cannot be measured reliably.

Credit risk is the risk that one party to a financial instrument will fail to discharge an obligation and cause the other party to incur a financial loss.

Currency exchange rate risk is a market risk, namely the risk that the value of a financial instrument will fluctuate due to changes in foreign exchange rates.

Debt securities are interest-paying bonds, debentures, notes, or money market instruments that are issued by governments or corporations. Debt securities are issued with a promise of repayment on a certain date at a specified rate of interest.

Deduction & Aggregation is the alternate method for calculating Group Solvency that aggregates an entity without allowing for diversification between the entity that is aggregated using D&A and those that are aggregated using Accounting Consolidation.

Deferred tax assets are amounts of income taxes recoverable in future periods in respect of deductible temporary differences; the carryforward of unused tax losses; and the carryforward of unused tax credits.

Deferred tax liabilities are amounts of income taxes payable in future periods in respect of taxable temporary differences.

Defined benefit obligation is the present value, without deducting any plan assets, of expected future payments required to settle the obligation resulting from employee service in the current and prior periods.

Defined benefit plans are post-employment benefit plans other than defined contribution plans.

Defined contribution plans are post-employment benefit plans under which an entity pays fixed contributions into a separate entity (a fund) and will have no legal or constructive obligation to pay further contributions if the fund does not hold sufficient assets to pay all employee benefits relating to employee service in the current and prior periods.

Deferred Policy Acquisition Cost (DPAC) - are the variable costs related to the acquisition or renewal of insurance contracts and investment contracts with discretionary participation features.

Deposit accounting method includes amounts charged and paid to customers directly into the financial liability and not through the income statement as premium income and claims.

Derecognition is the removal of a previously recognized asset or financial liability from an entity's statement of financial position.

Derivatives are financial instruments whose value changes in response to an underlying variable, that require little or no net initial investment and are settled at a future date.

Discretionary participation feature is a contractual right to receive, as a supplement to guaranteed benefits, additional benefits:

- That are likely to be a significant portion of the total contractual benefits;
- Whose amount or timing is contractually at the discretion of the issuer; and

That are contractually based on:

- The performance of a specified pool of contracts or a specified type of contract;

- Realized and/or unrealized investment returns on a specified pool of assets held by the issuer; or
- The profit or loss of the Company, fund or other entity that issues the contract.

Diversification is the general concept of reducing the total risk of a portfolio of assets and/or liabilities by spreading it across a mix of different risk exposures. Risk reduction occurs due to the less than perfect correlation among the individual risk exposures in the portfolio, meaning risks will not materialize all at the same time.

Effective interest rate method is a method of calculating the amortized cost of a financial asset or liability and of allocating the interest income or expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or liability.

Embedded derivative is a component of a hybrid instrument that also includes a non-derivative host contract, with the effect that some of the cash flows of the combined instrument vary in a way similar to a derivative.

Equity instruments are financial instruments issued by the Group that are classified as equity if they evidence a residual interest in the assets of the Group after deducting all of its liabilities.

Equity method is a method of accounting whereby the investment is initially recognized at cost and adjusted thereafter for the post-acquisition change in the investor's share of net assets of the investee. The profit or loss of the investor includes the investor's share of the profit or loss of the investee.

Equity volatility is the relative rate at which the price of equity changes.

Excess cash in the holding, which is rather a measure of Holdings liquidity, can be defined as the sum of the Holding company assets, less capital investments, less matched short term assets, less other adjustments. Aegon's internal policy for the management of excess cash in the holding is based on a similar approach as the management of the Group and Local Unit capitalization, using a range approach and a ladder of intervention to trigger timely conversations and escalating management actions.

Exchange differences are differences resulting from translating a given number of units of one currency into another currency at different exchange rates.

Fee-based earnings refers to the excess of fees earned over expenses. This is typically associated with pensions business, asset management business, distribution business, variable annuities and unit linked products.

Financial asset is any asset that is:

- Cash;
- An equity instrument of another entity;
- A contractual right to receive cash or another financial asset from another entity or to exchange financial instruments with another party under conditions that are potentially favorable; or
- A contract that will or may be settled in the entity's own equity instruments; and is
- A non-derivative for which the entity is or may be obliged to receive a variable number of the entity's own equity instruments; or
- A derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments.

Financial instrument is any contract that gives rise to both a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial liability is any liability that is:

- A contractual obligation to deliver cash or another financial asset to another entity or to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavorable to the entity; or
- A contract that will or may be settled in the entity's own equity instruments; and is
- A non-derivative for which the entity is or may be obliged to deliver a variable number of the entity's own equity instruments; or
- A derivative that will or may be settled other than by the exchange of a fixed amount of cash or another financial asset for a fixed number of the entity's own equity instruments.

Financial risks are risks of a possible future change in one or more of the following variables: a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index or prices or rates, credit rating or credit index or other variable, provided in the case of a non-financial variable, that the variable is not specific to a party to the contract.

Firm commitment is a binding agreement for the exchange of a specified quantity of resources at a specified price on a specified future date or dates.

Fixed charge coverage is a measure of the Aegon's ability to service its financial leverage. It is calculated as the sum of underlying earnings before tax and interest expenses on financial leverage divided by interest payments on financial leverage. The fixed charge coverage includes the impact of interest rate hedging.

Foreign currency is a currency other than the functional currency of an entity within the Group.

Foreign currency translation reserve (FCTR) is part of shareholders' equity, and is the reserve for the exchange differences recognized from the financial statements of the group entities. On the consolidation, the financial statements of group entities with a foreign functional currency are translated to euro, the currency in which the consolidated financial statements are presented. Assets and liabilities are translated at the closing rates on the reporting date. Income, expenses and capital transactions (such as dividends) are translated at average exchange rates or at the prevailing rates on the transaction date, if more appropriate. The resulting exchange differences are recognized in the FCTR.

Foreign operation is an entity that is a subsidiary, associate, joint venture or branch of a reporting entity within the Group, the activities of which are based or conducted in a country or currency other than those of the reporting entity.

Free Capital Generation represents the movement of own funds (after tax) and SCR (after LACDT and diversification). Impacts from dividends and capital injections that do not generate capital but that do affect OF are excluded from Free Capital Generation. Furthermore, movements in Group holdings SCR and Group diversification are excluded from Free Capital Generation as well. Group Holdings' own funds movements, excluding movements stemming from dividends and capital injections, are included in Free Capital Generation. As Free Capital Generation tracks the movement of the surplus, it combines both the movements of the available and the required capital, where the latter is measured against the midpoint of the target range (as defined in Aegon's Capital Management Policy).

Functional currency is the currency of the primary economic environment in which an entity within the Group operates.

Fungibility & Transferability is the ability to up-stream and transfer capital between jurisdictions. This ability differs between jurisdictions as it depends on the legal framework of each jurisdiction.

General account investments are investments of which the financial risks are not borne by the policyholder.

Goodwill is the amount of future economic benefits arising from assets that are not capable of being individually identified and separately recognized as an asset in a business combination.

Government exposures relates to government issued securities including Dutch Government bonds and US Treasury, agency and state bonds.

Guaranteed benefits are payments or other benefits to which a particular policyholder or investor has an unconditional right that is not subject to the contractual discretion of the issuer.

Guaranteed minimum death benefits are benefits that guarantee that the beneficiary, as named in the contract, will receive a death benefit if the annuitant dies. The benefit received differs among contracts and may be greater than the current account value.

Guaranteed minimum income benefits are a type of option that annuitants can purchase for their retirement annuities. When the annuity is annuitized, this specific option guarantees that the annuitant will receive a minimum value's worth of payments, regardless of the current level of the account value.

Guaranteed minimum withdrawal benefits are a type of option that annuitants can purchase for their retirement annuities. This specific option gives annuitants the ability to protect their retirement investments against downside market risk by allowing the annuitant the right to withdraw a percentage of their withdrawal base each year, regardless of how markets have performed.

Hedge effectiveness is the degree to which changes in the fair value or cash flows of the hedged item that are attributable to a hedged risk are offset by changes in the fair value or cash flows of the hedging instrument.

Incremental cost is one that would not have been incurred if the entity had not acquired, issued or disposed of a financial instrument.

Insurance asset is an insurer's contractual right under an insurance contract.

Insurance contract is a contract under which one party (the insurer) accepts significant insurance risk from another party (the policyholder) by agreeing to compensate the policyholder if a specified uncertain future event (the insured event) adversely affects the policyholder.

Insurance liability is an insurer's contractual obligation under an insurance contract.

Insurance risk is a risk, other than financial risk, transferred from the holder of a contract to the issuer.

Interest rate risk is a market risk, namely the risk that the value of a financial instrument will fluctuate due to changes in market interest rates.

Joint control is the contractually agreed sharing of control over an economic activity, which exists when the strategic and operating decisions relating to the activity require the unanimous consent of the parties sharing control.

Liability adequacy testing is an assessment of whether the carrying amount of an insurance liability needs to be increased (or the carrying amount of related deferred policy acquisition costs or related intangible assets decreased) based on a review of future cash flows.

Liquidity risk is the risk that an entity will encounter difficulty in raising funds to meet commitments associated with financial instruments.

Loss absorbing capacity of deferred taxes is a loss compensating effect of taxes taken into account in the solvency capital requirement.

Master netting agreement is an agreement providing for an entity that undertakes a number of financial instrument transactions with a single counterparty to make a single net settlement of all financial instruments covered by the agreement in the event of default on, or termination of, any contract.

Matching adjustment will adjust the discount rate applied in the valuation of predictable liabilities which are cashflow matched using fixed income assets. The predictability of the portfolio means that matching assets can be held to maturity and that the insurer is consequently not exposed to price movements, only to the risk of default.

Minimum capital requirement is the absolute minimum level of capital an insurance company must hold in excess of its Technical Provisions under Solvency II.

Monetary items are units of currency held and assets and liabilities to be received or paid in a fixed or determinable number of units of currency.

Monoline insurer is an insurance company which issues types of insurance for securities and bonds to cover the interest and principal when an issuer defaults.

Negative amortization mortgages are loans whereby the payment made by the borrower may be less than the accrued interest due and the difference is added to the loan balance. When the accrued balance of the loan reaches the negative amortization limit (typically 110% to 125% of the original loan amount), the loan recalibrates to a fully amortizing level and a new minimum payment amount is determined.

Non-controlling interests are that portion of the profit or loss and net assets of a subsidiary attributable to equity interests that are not owned, directly or indirectly through subsidiaries, by the parent.

Onerous contracts are contracts in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it.

Operational funding includes debt securities that are issued for the financing of dedicated pools of assets. These assets are either legally segregated or tracked as separate portfolios.

Operating expenses are all expenses associated with selling and administrative activities (excluding commissions) after reallocation of claim handling expenses to benefits paid.

Partial Internal Model is a combination of a Standard Formula and Internal Model, used to calculate the Solvency II capital requirement.

Past service cost is the increase in the present value of the defined benefit obligation for employee service in prior periods, resulting in the current period from the introduction of, or changes to, post-employment benefits.

Plan assets are assets held by a long-term employee benefit fund and qualifying insurance policies.

Policy acquisition costs are the expenses incurred in soliciting and placing new business as well as renewal of existing business. It includes agent's commissions, underwriting expenses, medical and credit report fees, marketing expenses and all other direct and indirect expenses of the departments involved in such activities.

Policyholder is a party that has a right to compensation under an insurance contract if an insured event occurs.

Presentation currency is the currency in which the financial statements are presented.

Price risk is a market risk, namely the risk that the value of a financial instrument will fluctuate as a result of changes in market prices.

Private loan is a non-derivative financial asset with a fixed interest rate and a maturity date, which is not bought in an active market but negotiated between the two parties involved. Private loans are not embodied in securities. When a private loan takes the form of a private placement of bonds or other investments directly to an institutional investor like an insurance company, it has more the character of a bond loan and such financial instruments are classified as available-for-sale investments rather than as loans and receivables.

Projected unit credit method is an actuarial valuation method that sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation.

Qualifying insurance policies are a component of plan assets. These are insurance policies issued by an insurer that is not a related party of the reporting entity, if the proceeds of the policies:

- Can be used only to pay or fund employee benefits under a defined benefit plan; and
- Are not available to the reporting entity's own creditors.

Quantitative Reporting Templates (QRT) are the reporting templates as prescribed by EIOPA for Solvency II reporting which are submitted to local regulator. The QRT's are split in the public and non-public QRT's. In this SFCR we only refer to the public QRT S.25.02.22 (Solvency Capital Requirement - for undertakings using the standard formula and partial internal model) and S.32.01.22 (Undertakings in the scope of the group).

Real estate investments foreclosed are real estate investments purchased through foreclosure on the mortgage. Such purchases are not accounted for as mortgages, but as real estate investments until they can be sold at a better price than at the foreclosure. Meanwhile they yield a rental income.

Realizable value is the amount of cash or cash equivalents that could currently be obtained by selling an asset in an orderly disposal.

Recognition is the process of incorporating in the statement of financial position or income statement an item that meets the definition of an element and satisfies the following criteria for recognition:

- It is probable that any future economic benefit associated with the item will flow to or from the entity; and
- The item has a cost or value that can be measured with reliability.

Reinsurance assets are a cedant's net contractual rights under a reinsurance contract.

Reinsurance contract is an insurance contract issued by one insurer to compensate another insurer for losses on one or more contracts issued by the cedant.

Renewal of a contract is when a policyholder takes whatever action is required, typically payment of a premium, in order to maintain benefits under the contract.

Repurchase agreement is a sale of securities with an agreement to buy back the securities at a specified time and price.

Residential Mortgage Backed Security (RMBS) is an asset-backed security that is secured by a mortgage or collection of mortgages.

Return on plan assets is the investment income derived from plan assets, together with realized and unrealized gains and losses on the plan assets less any costs of administering the plan and less any tax payable by the plan itself.

Reverse repurchase agreement is a purchase of securities with the agreement to resell them at a later specified date and price.

Risk Based Capital Company Action Level is designed primarily for US regulators to identify poorly capitalized companies whose continued operations may be hazardous to policyholders. The insurer's RBC solvency ratio is determined as its "total adjusted capital" divided by "authorized control level risk based capital. (ACL)" However, it is industry and rating agency convention to complete and communicate the RBC solvency ratio relative to the "Company Action Level Risk Based Capital", which is twice the authorized control level.

Security lending involves a loan of a security from one party to another.

Settlement date is the date that a financial asset is delivered to the entity that purchased it.

Solvency II is the fundamental reform of European insurance legislation.

Solvency capital requirement is the level of capital an insurance company must hold in excess of its Technical Provisions under Solvency II.

Spot exchange rate is the exchange rate for immediate delivery.

Spread is the difference between the current bid and the current ask or offered price of a given security.

Spread earnings is the difference between the interest earned on investments and the interest credited to policyholders. This is typically associated with traditional type business.

Standard Formula is a risk-based approach to the calculation of an insurer's solvency capital requirement, prescribed by the regulator.

Stochastic modeling is a statistical process that uses probability and random variables to predict a range of probable investment performances.

Temporary differences are differences between the carrying amount of an asset or liability in the statement of financial position and its tax base that will reverse over time.

Trade date is the date that an entity commits itself to purchase or sell an asset.

Transaction costs are incremental costs that are directly attributable to the acquisition, issue or disposal of a financial asset or liability.

Transitional measures allow EEA entities to gradually move to a full implementation of Solvency II over a period of time.

Trust Pass-Through securities (TRUPS) are securities through which the holders participate in a trust. The assets of these trusts consist of debentures issued by an Aegon Group company.

Unlocking of DPAC and VOBA refers to the process of updating the DPAC or the VOBA amortization schedule to reflect changes between the past and current expectations of key assumptions used in the projection of future gross profits.

Value of Business Acquired (VOBA) the difference between the fair value and the carrying amount of the insurance liabilities recognized when a portfolio of insurance contracts is acquired (directly from another insurance company or as part of a business combination).

Volatility adjustment is a volatility adjustment to the discount rates for calculating technical provisions aims at avoiding pro-cyclical investment behavior of insurers when bond prices deteriorate owing to low liquidity of bond markets or exceptional expansion of credit spreads. The adjustment has the effect of stabilizing the capital resources of insurers and will be calculated by EIOPA.

Cautionary notes

Intended use of the Group SFCR

This Group Solvency and Financial Condition Report is prepared and published in accordance with the requirements of the Solvency II regulations and EIOPA guidelines and follows a prescribed format. The Group SFCR is primarily prepared for prudential considerations, which includes informing policyholders and other beneficiaries of Aegon's insurance products. While the document is made available to the public in general and may be of interest to stakeholders such as investors in Aegon shares and other financial instruments, it is not specifically aimed at them.

Statement pursuant to article 297 (2) of the Solvency II Delegated Regulation

The Netherlands, as a Member State, uses the option that the capital add-on or the impact of the specific parameters, that Aegon is required to use, do not need to be separately disclosed during a transitional period ending no later than December 31, 2020 (third subparagraph of Article 51(2) of Directive 2009/138/EC).

Currency exchange rates

This document contains certain information about Aegon's results, financial condition and revenue generating investments presented in USD for the Americas and Asia, and in GBP for the United Kingdom, because those businesses operate and are managed primarily in those currencies. None of this information is a substitute for or superior to financial information about Aegon presented in EUR, which is the currency of Aegon's primary financial statements.

Forward-looking statements

The statements contained in this document that are not historical facts are forward-looking statements as defined in the US Private Securities Litigation Reform Act of 1995. The following are words that identify such forward-looking statements: aim, believe, estimate, target, intend, may, expect, anticipate, predict, project, counting on, plan, continue, want, forecast, goal, should, would, is confident, will, and similar expressions as they relate to Aegon. These statements are not guarantees of future performance and involve risks, uncertainties and assumptions that are difficult to predict. Aegon undertakes no obligation to publicly update or revise any forward-looking statements. Readers are cautioned not to place undue reliance on these forward-looking statements, which merely reflect company expectations at the time of writing. Actual results may differ materially from expectations conveyed in forward-looking statements due to changes caused by various risks and uncertainties. Such risks and uncertainties include but are not limited to the following:

- Changes in general economic conditions, particularly in the United States, the Netherlands and the United Kingdom;
- Changes in the performance of financial markets, including emerging markets, such as with regard to:
 - The frequency and severity of defaults by issuers in Aegon's fixed income investment portfolios;
 - The effects of corporate bankruptcies and/or accounting restatements on the financial markets and the resulting decline in the value of equity and debt securities Aegon holds; and
 - The effects of declining creditworthiness of certain private sector securities and the resulting decline in the value of government exposure that Aegon holds;
- Changes in the performance of Aegon's investment portfolio and decline in ratings of Aegon's counterparties;
- Consequences of a potential (partial) break-up of the euro;
- Consequences of the anticipated exit of the United Kingdom from the European Union;
- The frequency and severity of insured loss events;
- Changes affecting longevity, mortality, morbidity, persistence and other factors that may impact the profitability of Aegon's insurance products;
- Reinsurers to whom Aegon has ceded significant underwriting risks may fail to meet their obligations;
- Changes affecting interest rate levels and continuing low or rapidly changing interest rate levels;
- Changes affecting currency exchange rates, in particular the EUR/USD and EUR/GBP exchange rates;
- Changes in the availability of, and costs associated with, liquidity sources such as bank and capital markets funding, as well as conditions in the credit markets in general such as changes in borrower and counterparty creditworthiness;
- Increasing levels of competition in the United States, the Netherlands, the United Kingdom and emerging markets;
- Changes in laws and regulations, particularly those affecting Aegon's operations' ability to hire and retain key personnel, taxation of Aegon companies, the products Aegon sells, and the attractiveness of certain products to its consumers;
- Regulatory changes relating to the pensions, investment, and insurance industries in the jurisdictions in which Aegon operates;
- Standard setting initiatives of supranational standard setting bodies such as the Financial Stability Board and the International Association of Insurance Supervisors or changes to such standards that may have an impact on regional (such as EU), national or US federal or state level financial regulation or the application thereof to Aegon, including the designation of Aegon by the Financial Stability Board as a Global Systemically Important Insurer (G-SII);

- Changes in customer behavior and public opinion in general related to, among other things, the type of products Aegon sells, including legal, regulatory or commercial necessity to meet changing customer expectations;
- Acts of God, acts of terrorism, acts of war and pandemics;
- Changes in the policies of central banks and/or governments;
- Lowering of one or more of Aegon's debt ratings issued by recognized rating organizations and the adverse impact such action may have on Aegon's ability to raise capital and on its liquidity and financial condition;
- Lowering of one or more of insurer financial strength ratings of Aegon's insurance subsidiaries and the adverse impact such action may have on the premium writings, policy retention, profitability and liquidity of its insurance subsidiaries;
- The effect of the European Union's Solvency II requirements and other regulations in other jurisdictions affecting the capital Aegon is required to maintain;
- Litigation or regulatory action that could require Aegon to pay significant damages or change the way Aegon does business;
- As Aegon's operations support complex transactions and are highly dependent on the proper functioning of information technology, a computer system failure or security breach may disrupt Aegon's business, damage its reputation and adversely affect its results of operations, financial condition and cash flows;
- Customer responsiveness to both new products and distribution channels;
- Competitive, legal, regulatory, or tax changes that affect profitability, the distribution cost of or demand for Aegon's products;
- Changes in accounting regulations and policies or a change by Aegon in applying such regulations and policies, voluntarily or otherwise, which may affect Aegon's reported results and shareholders' equity;
- Aegon's projected results are highly sensitive to complex mathematical models of financial markets, mortality, longevity, and other dynamic systems subject to shocks and unpredictable volatility. Should assumptions to these models later prove incorrect, or should errors in those models escape the controls in place to detect them, future performance will vary from projected results;
- The impact of acquisitions and divestitures, restructurings, product withdrawals and other unusual items, including Aegon's ability to integrate acquisitions and to obtain the anticipated results and synergies from acquisitions;
- Catastrophic events, either manmade or by nature, could result in material losses and significantly interrupt Aegon's business; Aegon's failure to achieve anticipated levels of earnings or operational efficiencies as well as other cost saving and excess cash and leverage ratio management initiatives; and
- Aegon's failure to achieve anticipated levels of earnings or operational efficiencies as well as other cost saving and excess cash and leverage ratio management initiatives.

This document contains information that qualifies, or may qualify, as inside information within the meaning of Article 7(1), 7(1)a and 7(4) of the EU Market Abuse Regulation (596/2014). Further details of potential risks and uncertainties affecting Aegon are described in its filings with the Netherlands Authority for the Financial Markets and the US Securities and Exchange Commission, including the Annual Report. These forward-looking statements speak only as of the date of this document. Except as required by any applicable law or regulation, Aegon expressly disclaims any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements contained herein to reflect any change in Aegon's expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

Non-audited information

PricewaterhouseCoopers Accounting N.V. is the external auditor of Aegon N.V.. The external auditor's mandate does not cover an audit on the information disclosed in this SFCR.

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