Swiss Re

Swiss Reinsurance Company Consolidated

Half-Year Report 2017

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Income statement

For the six months ended 30 June

USD millions	Note	2016	2017
Revenues			
Gross premiums written	4	18 102	**15 879**
Net premiums written	4	17 057	**14 819**
Change in unearned premiums		–3 058	**–1 095**
Premiums earned	3	13 999	**13 724**
Fee income from policyholders	3	69	**33**
Net investment income – non-participating business	7	1 372	**998**
Net realised investment gains/losses – non-participating business[1]	7	1 000	**291**
Net investment result – unit-linked business	7	–137	**37**
Other revenues		23	**19**
Total revenues		16 326	**15 102**
Expenses			
Claims and claim adjustment expenses	3	–5 034	**–5 100**
Life and health benefits	3	–4 659	**–4 540**
Return credited to policyholders		–32	**–55**
Acquisition costs	3	–3 412	**–3 085**
Operating expenses		–1 109	**–1 151**
Total expenses before interest expenses		–14 246	**–13 931**
Income before interest and income tax expense		2 080	**1 171**
Interest expenses		–295	**–284**
Income before income tax expense		1 785	**887**
Income tax expense		–323	**–246**
Net income before attribution of non-controlling interests		1 462	**641**
Income/loss attributable to non-controlling interests		–11	**–16**
Net income after attribution of non-controlling interests		1 451	**625**
Interest on contingent capital instruments, net of tax		–34	**–34**
Net income attributable to common shareholder		1 417	**591**

[1] Total impairments for the six months ended 30 June of USD 44 million in 2016 and USD 21 million in 2017, respectively, were fully recognised in earnings.

The accompanying notes are an integral part of the Group financial statements.

Statement of comprehensive income

For the six months ended 30 June

USD millions	2016	**2017**
Net income before attribution of non-controlling interests	1 462	**641**
Other comprehensive income, net of tax:		
Change in unrealised investment gains/losses	2 431	**294**
Change in other-than-temporary impairment	5	**2**
Change in foreign currency translation	34	**168**
Change in adjustment for pension benefits	26	**14**
Other comprehensive income attributable to non-controlling interests	36	**8**
Total comprehensive income before attribution of non-controlling interests	3 994	**1 127**
Interest on contingent capital instruments	–34	**–34**
Comprehensive income attributable to non-controlling interests	–47	**–24**
Total comprehensive income attributable to common shareholder	3 913	**1 069**

Reclassification out of accumulated other comprehensive income

For the six months ended 30 June

2016 USD millions	Unrealised investment gains/losses[1]	Other-than-temporary impairment[1]	Foreign currency translation	Adjustment from pension benefits[2]	Accumulated other comprehensive income
Balance as of 1 January	1 619	–10	–5 137	–953	–4 481
Change during the period	3 797	5	–14	5	3 793
Amounts reclassified out of accumulated other comprehensive income	–444	2		31	–411
Tax	–922	–2	48	–10	–886
Balance as of period end	4 050	–5	–5 103	–927	–1 985

2017 USD millions	Unrealised investment gains/losses[1]	Other-than-temporary impairment[1]	Foreign currency translation	Adjustment from pension benefits[2]	**Accumulated other comprehensive income**
Balance as of 1 January	2 070	–5	–5 262	–999	**–4 196**
Change during the period	1 142	4	74	–22	**1 198**
Amounts reclassified out of accumulated other comprehensive income	–751			39	**–712**
Tax	–97	–2	94	–3	**–8**
Balance as of period end	**2 364**	**–3**	**–5 094**	**–985**	**–3 718**

[1] Reclassification adjustment included in net income is presented in "Net realised investment gains/losses – non-participating business".
[2] Reclassification adjustment included in net income is presented in "Operating expenses".

The accompanying notes are an integral part of the Group financial statements.

Balance sheet

Assets

USD millions	Note	31.12.2016	30.06.2017
Investments	7,8,9		
Fixed income securities:			
Available-for-sale (including 9 056 in 2016 and 9 506 in 2017 subject to securities lending and repurchase agreements) (amortised cost: 2016: 60 490; 2017: 62 613)		63 250	**65 845**
Trading (including 1 871 in 2016 and 2 746 in 2017 subject to securities lending and repurchase agreements)		2 695	**3 824**
Equity securities:			
Available-for-sale (including 19 in 2016 and 122 in 2017 subject to securities lending and repurchase agreements) (cost: 2016: 2 063; 2017: 2 525)		2 258	**2 654**
Trading		60	**2**
Policy loans, mortgages and other loans		4 618	**3 867**
Investment real estate		1 711	**1 744**
Short-term investments (including 1 798 in 2016 and 618 in 2017 subject to securities lending and repurchase agreements)		7 527	**4 865**
Other invested assets		7 217	**9 146**
Investments for unit-linked business (including equity securities trading: 548 in 2016 and 585 in 2017)		548	**585**
Total investments		89 884	**92 532**
Cash and cash equivalents (including 747 in 2016 and 280 in 2017 subject to securities lending)		5 830	**3 569**
Accrued investment income		657	**651**
Premiums and other receivables		10 987	**12 531**
Reinsurance recoverable on unpaid claims and policy benefits		4 083	**9 959**
Funds held by ceding companies		8 854	**9 663**
Deferred acquisition costs	6	5 756	**5 666**
Acquired present value of future profits	6	1 543	**956**
Goodwill		3 663	**3 755**
Income taxes recoverable		125	**95**
Deferred tax assets		4 922	**5 145**
Other assets		2 307	**3 395**
Total assets		138 611	**147 917**

The accompanying notes are an integral part of the Group financial statements.

Liabilities and equity

USD millions	Note	31.12.2016	30.06.2017
Liabilities			
Unpaid claims and claim adjustment expenses	5	51 073	**53 084**
Liabilities for life and health policy benefits	8	17 629	**16 203**
Policyholder account balances		5 653	**5 757**
Unearned premiums		8 653	**10 282**
Funds held under reinsurance treaties		2 315	**8 365**
Reinsurance balances payable		1 774	**2 254**
Income taxes payable		452	**321**
Deferred and other non-current tax liabilities		6 631	**6 688**
Short-term debt	10	3 697	**4 453**
Accrued expenses and other liabilities		10 315	**11 637**
Long-term debt	10	7 805	**8 016**
Total liabilities		115 997	**127 060**
Equity			
Contingent capital instruments		1 102	**1 102**
Common shares, CHF 0.10 par value 2016: 344 052 565; 2017: 344 052 565 shares authorised and issued		32	**32**
Additional paid-in capital		8 695	**8 677**
Shares in Swiss Re Ltd, net of tax		–19	**–12**
Accumulated other comprehensive income:			
Net unrealised investment gains/losses, net of tax		2 070	**2 364**
Other-than-temporary impairment, net of tax		–5	**–3**
Foreign currency translation, net of tax		–5 262	**–5 094**
Adjustment for pension and other post-retirement benefits, net of tax		–999	**–985**
Total accumulated other comprehensive income		–4 196	**–3 718**
Retained earnings		15 339	**12 891**
Shareholder's equity		20 953	**18 972**
Non-controlling interests		1 661	**1 885**
Total equity		22 614	**20 857**
Total liabilities and equity		138 611	**147 917**

The accompanying notes are an integral part of the Group financial statements.

Statement of shareholder's equity

For the twelve months ended 31 December and the six months ended 30 June

USD millions	2016	2017
Contingent capital instruments		
Balance as of 1 January	1 102	**1 102**
Issued		
Balance as of period end	1 102	**1 102**
Common shares		
Balance as of 1 January	32	**32**
Issue of common shares		
Balance as of period end	32	**32**
Additional paid-in capital		
Balance as of 1 January	8 730	**8 695**
Share-based compensation	–55	**–14**
Realised gains/losses on treasury shares	20	**–4**
Balance as of period end	8 695	**8 677**
Shares in Swiss Re Ltd, net of tax		
Balance as of 1 January	–21	**–19**
Change of shares in Swiss Re Ltd	2	**7**
Balance as of period end	–19	**–12**
Net unrealised investment gains/losses, net of tax		
Balance as of 1 January	1 619	**2 070**
Change in group structure[1]		**–23**
Changes during the period	451	**317**
Balance as of period end	2 070	**2 364**
Other-than-temporary impairment, net of tax		
Balance as of 1 January	–10	**–5**
Changes during the period	5	**2**
Balance as of period end	–5	**–3**
Foreign currency translation, net of tax		
Balance as of 1 January	–5 137	**–5 262**
Change in group structure[1]		**12**
Changes during the period	–125	**156**
Balance as of period end	–5 262	**–5 094**
Adjustment for pension and other post-retirement benefits, net of tax		
Balance as of 1 January	–953	**–999**
Changes during the period	–46	**14**
Balance as of period end	–999	**–985**
Retained earnings		
Balance as of 1 January	15 222	**15 339**
Change in group structure[1]		**–45**
Transactions under common control		**–394**
Net income after attribution of non-controlling interests	3 179	**625**
Interest on contingent capital instruments, net of tax	–68	**–34**
Dividends on common shares	–2 994	**–2 600**
Balance as of period end	15 339	**12 891**
Shareholder's equity	20 953	**18 972**

USD millions	2016	2017
Non-controlling interests		
Balance as of 1 January	23	**1 661**
Changes during the period	866	
Transactions with non-controlling interests	751	**200**
Income attributable to non-controlling interests	18	**16**
Comprehensive income	3	**8**
Balance as of period end	1 661	**1 885**
Total equity	22 614	**20 857**

[1] In January 2017, the Group sold three primary life and health insurance carriers to Swiss Re Life Capital Group.

The accompanying notes are an integral part of the Group financial statements.

Statement of cash flows

For the six months ended 30 June

USD millions	2016	2017
Cash flows from operating activities		
Net income attributable to common shareholder	1 417	**591**
Add net income attributable to non-controlling interests	11	**16**
Adjustments to reconcile net income to net cash provided/used by operating activities:		
Depreciation, amortisation and other non-cash items	213	**138**
Net realised investment gains/losses	–860	**–327**
Income from equity-accounted investees, net of dividends received	46	**46**
Change in:		
Technical provisions and other reinsurance assets and liabilities, net	1 213	**556**
Funds held by ceding companies and under reinsurance treaties	1 214	**–427**
Reinsurance recoverable on unpaid claims and policy benefits	171	**157**
Other assets and liabilities, net	–19	**–239**
Income taxes payable/recoverable	–8	**–170**
Trading positions, net	269	**198**
Net cash provided/used by operating activities	3 667	**539**
Cash flows from investing activities		
Fixed income securities:		
Sales	17 429	**21 023**
Maturities	1 371	**2 161**
Purchases	–20 794	**–25 199**
Net purchases/sales/maturities of short-term investments	–1 722	**2 840**
Equity securities:		
Sales	1 124	**1 768**
Purchases	–552	**–1 926**
Securities purchased/sold under agreement to resell/repurchase, net	1 293	**–2 158**
Cash paid/received for acquisitions/disposals and reinsurance transactions, net		**53**
Net purchases/sales/maturities of other investments	460	**310**
Net purchases/sales/maturities of investments held for unit-linked	138	**26**
Net cash provided/used by investing activities	–1 253	**–1 102**
Cash flows from financing activities		
Policyholder account balances, unit-linked business:		
Deposits	11	**4**
Withdrawals	–135	**–32**
Issuance/repayment of long-term debt	–52	**–60**
Issuance/repayment of short-term debt	–476	**676**
Purchase/sale of treasury shares	7	**7**
Transactions with non-controlling interests	133	**200**
Dividends paid to parent	–3 004	**–2 600**
Net cash provided/used by financing activities	–3 516	**–1 805**
Total net cash provided/used	–1 102	**–2 368**
Effect of foreign currency translation	95	**107**
Change in cash and cash equivalents	–1 007	**–2 261**
Cash and cash equivalents as of 1 January	5 398	**5 830**
Cash and cash equivalents as of 30 June	4 391	**3 569**

Interest paid was USD 227 million and USD 210 million (thereof USD 26 million and USD 25 million for letter of credit fees) for the six months ended 30 June 2016 and 2017, respectively.
Tax paid was USD 322 million and USD 408 million for the six months ended 30 June 2016 and 2017, respectively.
The accompanying notes are an integral part of the Group financial statements.

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Notes to the Group financial statements

1 Organisation and summary of significant accounting policies

Nature of operations

The Swiss Reinsurance Company Group, which is headquartered in Zurich, Switzerland, comprises Swiss Reinsurance Company Ltd (the parent company, referred to as "SRZ") and its subsidiaries (collectively, the "Group"). The Group is a wholesale provider of reinsurance, insurance and other insurance-based forms of risk transfer. Working through brokers and a network of offices around the globe, the Group serves a client base made up of insurance companies and public sector clients.

SRZ is a wholly owned subsidiary of Swiss Re Ltd. Swiss Re Ltd is the ultimate parent company of the Swiss Re Group, which consists of four business segments: Property & Casualty Reinsurance, Life & Health Reinsurance, Corporate Solutions and Life Capital. The presentation of each segment's balance sheet is closely aligned with the segment legal entity structure.

Basis of presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (US GAAP). All significant intra-group transactions and balances have been eliminated on consolidation. The year-end balance sheet data presented was derived from audited financial statements. These interim financial statements do not include all disclosures that US GAAP requires on an annual basis and therefore they should be read in conjunction with the Group's audited financial statements for the year ended 31 December 2016.

Use of estimates in the preparation of financial statements

The preparation of financial statements requires management to make significant estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses as well as the related disclosures, including contingent assets and liabilities. The Group's liabilities for unpaid claims and claim adjustment expenses and policy benefits for life and health include estimates for premium, claim and benefit data not received from ceding companies at the date of the financial statements. In addition, the Group uses certain financial instruments and invests in securities of certain entities for which exchange trading does not exist. The Group determines these estimates based on historical information, actuarial analysis, financial modelling and other analytical techniques. Actual results could differ significantly from the estimates described above.

Valuation of financial assets

The fair value of the majority of the Group's financial instruments is based on quoted prices in active markets or observable inputs. These instruments include government and agency securities, commercial paper, most investment-grade corporate debt, most high-yield debt securities, exchange-traded derivative instruments, most mortgage- and asset-backed securities and listed equity securities. In markets with reduced or no liquidity, spreads between bid and offer prices are normally wider compared to spreads in highly liquid markets. Such market conditions affect the valuation of certain asset classes of the Group, such as some asset-backed securities as well as certain derivative structures referencing such asset classes.

The Group considers both the credit risk of its counterparties and own risk of non-performance in the valuation of derivative instruments and other over-the-counter financial assets. In determining the fair value of these financial instruments, the assessment of the Group's exposure to the credit risk of its counterparties incorporates consideration of existing collateral and netting arrangements entered into with each counterparty. The measure of the counterparty credit risk is estimated with incorporation of the observable credit spreads, where available, or credit spread estimates derived based on the benchmarking techniques where market data is not available. The impact of the Group's own risk of non-performance is analysed in the manner consistent with the aforementioned approach, with consideration of the Group's observable credit spreads. The value representing such risk is incorporated into the fair value of the financial instruments (primarily derivatives), in a liability position as of the measurement date. The change in this adjustment from period to period is reflected in realised gains and losses in the income statement.

For assets or derivative structures at fair value, the Group uses market prices or inputs derived from market prices. A separate internal price verification process, independent of the trading function, provides an additional control over the market prices or market input used to determine the fair values of such assets. Although management considers that appropriate values have been ascribed to such assets, there is always a level of uncertainty and judgement over these valuations. Subsequent valuations could differ significantly from the results of the process described above. The Group may become aware of counterparty valuations, either directly through the exchange of information or indirectly, for example, through collateral demands. Any implied differences are considered in the independent price verification process and may result in adjustments to initially indicated valuations. As of 30 June 2017, the Group has not provided any collateral on financial instruments in excess of its own market value estimates.

Subsequent events

Subsequent events for the current reporting period have been evaluated up to 3 August 2017. This is the date on which the financial statements are available to be issued.

Recent accounting guidance

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2014-09, "Revenue from Contracts with Customers", which creates topic 606, "Revenue from Contracts with Customers". ASU 2014-09 outlines the principles that an entity should follow to provide useful information about the amount, timing and uncertainty of revenue and cash flows arising from contracts with its customers. The standard requires an entity to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. Insurance contracts and financial instruments are not in the scope of the new standard. The new requirements are effective for annual and interim periods beginning after 15 December 2017, and may be applied retrospectively to each prior period presented or with a cumulative effect adjustment to retained earnings as of the date of initial application. The Group is currently assessing the impact of the new requirements.

In May 2015, the FASB issued ASU 2015-09, "Disclosures about Short-Duration Contracts", an update to topic 944, "Financial Services — Insurance". ASU 2015-09 requires an insurance entity to provide additional information about insurance liabilities, including information on the nature, amount, timing, and uncertainty of future cash flows related to insurance liabilities and the effect of those cash flows on the statement of comprehensive income. Requirements include disaggregated incurred and paid claims development information by accident year, on a net basis after risk mitigation, for at least the most recent 10 years with the periods preceding the current period considered required supplementary information. In addition, for each accident year presented in the claims development tables, an insurer has to provide disaggregated information about claim frequency (unless impracticable) and the amounts of incurred but not reported (IBNR) liabilities plus the expected development on reported claims. Required disclosures also include a description of the methods for determining both IBNR and expected development on reported claims as well as information about any significant changes in methods and assumptions used in the computation of the liability for unpaid claims and claim adjustment expenses, including reasons for the changes and the impact of the changes on the most recent reporting period in the financial statements. All aforementioned disclosures have to be provided on an annual basis. In addition, insurance entities must disclose the roll-forward of the liability for unpaid claims and claims adjustment expenses in both interim and annual periods. The Group adopted the annual disclosure requirements as of 31 December 2016. The Group adopted the interim disclosure requirements for the half-year ending on 30 June 2017. The disclosures are provided in Note 5 Unpaid claims and claim adjustment expenses.

In January 2016, the FASB issued ASU 2016-01, "Recognition and Measurement of Financial Assets and Financial Liabilities", an update to subtopic 825-10, "Financial Instruments – Overall". The ASU requires an entity to carry investments in equity securities, including other ownership interests and limited liability companies at fair value through net income, with the exception of equity method investments, investments that result in consolidation or investments for which the entity has elected the practicability exception to fair value measurement. The practicability exception can only be applied by certain entities and only to equity investments without a readily determinable fair value. Investments under the practicability exception will be subject to an indicator-based impairment test. For financial liabilities to which the fair value option has been applied, the ASU also requires an entity to separately present the change in fair value attributable to instrument-specific credit risk in other comprehensive income rather than in net income. Specific exceptions apply to this requirement. In addition, the ASU requires an entity to assess whether a valuation allowance is needed on a deferred tax asset (DTA) related to fixed income securities AFS in combination with the entity's other DTAs rather than separately from other DTAs. The ASU also introduces changes to disclosure requirements for financial instruments not measured at fair value and introduces new requirements for equity instruments where the practicability exception to fair value measurement is applied. The new requirements are effective for annual and interim periods beginning after 15 December 2017 with early adoption permitted for requirements relating to the presentation of the impact of instrument-specific credit risk on qualifying financial liabilities in other comprehensive income. The Group is currently assessing the impact of the new requirements.

In February 2016, the FASB issued ASU 2016-02 "Leases", which creates topic 842, "Leases". The core principle of topic 842 is that a lessee should recognise the assets and liabilities that arise from leases. A lessee should recognise in the statement of financial position a liability to make lease payments (the lease liability) and a right-of-use asset representing the right to use the underlying asset for the lease term. This accounting treatment applies to finance leases and operating leases. The accounting applied by a lessor is largely unchanged from that applied under the current guidance. The new requirements are effective for annual and interim periods beginning after 15 December 2018. Early application of the ASU is permitted. The Group is currently assessing the impact of the new requirements.

In March 2016, the FASB issued ASU 2016-05, "Effect of Derivative Contract Novations on Existing Hedge Accounting Relationships", an update to topic 815, "Derivatives and Hedging". The amendments in this ASU clarify that a change in the counterparty to a derivative instrument that has been designated as the hedging instrument under topic 815 does not require dedesignation of that hedging relationship provided that all other hedge accounting criteria continue to be met. The Group adopted ASU 2016-05 on 1 January 2017. The adoption did not have an impact on the Group's financial statements.

In March 2016, the FASB issued ASU 2016-06, "Contingent Put and Call Options in Debt Instruments", an update to topic 815, "Derivatives and Hedging". This ASU clarifies the requirements for assessing whether contingent call or put options that can accelerate the payment of principal on debt instruments are clearly and closely related to their debt hosts. An entity performing the assessment under the amendments in this update is required to assess the embedded call or put options solely in accordance with the four-step decision sequence as defined in the implementation guidance issued by the Derivatives Implementation Group (DIG). The Group adopted ASU 2016-06 on 1 January 2017. The adoption did not have an impact on the Group's financial statements.

In March 2016, the FASB issued ASU 2016-07, "Simplifying the Transition to the Equity Method of Accounting", an update to topic 323, "Investments – Equity Method and Joint Ventures". The amendments in this update eliminate the requirement to retroactively adopt the equity method of accounting when an investment qualifies for use of the equity method as a result of an increase in the level of ownership interest or degree of influence. Instead, the amendments require that the equity method investor adds the cost of acquiring the additional interest in the investee to the current basis of the investor's previously held interest and adopts the equity method of accounting as of the date the investment qualifies for equity method accounting.The Group adopted ASU 2016-07 on 1 January 2017. The adoption did not have an impact on the Group's financial statements.

In March 2016, the FASB issued ASU 2016-09, "Improvements to Employee Share-Based Payment Accounting", an update to topic 718, "Compensation – Stock Compensation". This ASU is part of the Board's Simplification Initiative and the areas for simplification in this update involve several aspects of accounting for share-based payment transactions, including income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The Group adopted ASU 2016-09 on 1 January 2017. The adoption did not have a material effect on the Group's financial statements.

In June 2016, the FASB issued ASU 2016-13, "Measurement of Credit Losses", an update to topic 326, "Financial Instruments – Credit Losses". ASU 2016-13 replaces the incurred loss impairment methodology in current US GAAP with a methodology that reflects expected credit losses. For financial instruments that are measured at amortised cost and available-for-sale debt securities, the standard requires that an entity recognises its estimate of expected credit losses as an allowance. The ASU is effective for annual and interim periods beginning after 15 December 2020. Early adoption for interim and annual periods after 15 December 2018 is permitted. The Group is currently assessing the impact of the new requirements.

In October 2016, the FASB issued ASU 2016-16, "Intra-Entity Transfers of Assets Other Than Inventory", an update to topic 740, "Income Taxes". This ASU amends the current guidance which prohibits the recognition of current and deferred income taxes for an intra-entity asset transfer until the asset has been sold to an outside party. This new standard requires that an entity should recognise the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. The new requirements are effective for annual and interim periods beginning after 15 December 2017. The Group is currently assessing the impact of the new requirements.

In October 2016, the FASB issued ASU 2016-17, "Interests Held through Related Parties That Are under Common Control", an update to topic 810, "Consolidation". This ASU amends the consolidation guidance on how a reporting entity that is the single decision maker of a variable interest entity (VIE) should treat indirect interests in the entity held through related parties that are under common control with the reporting entity when determining whether it is the primary beneficiary of that VIE. Under the amendments, a single decision maker is not required to consider indirect interests held through related parties that are under common control with the single decision maker to be the equivalent of direct interests in their entirety. Instead, a single decision maker is required to include those interests on a proportionate basis consistent with indirect interests held through other related parties. The Group adopted ASU 2016-17 on 1 January 2017. The adoption did not have an impact on the Group's financial statements.

In January 2017, the FASB issued ASU 2017-04, "Simplifying the Test for Goodwill Impairment", an update to topic 350, "Intangibles – Goodwill and Other". This ASU simplifies the subsequent measurement of goodwill and eliminates Step 2 from the goodwill impairment test. In computing the implied fair value of goodwill under Step 2, an entity has to perform procedures to determine the fair value at the impairment testing date of its assets and liabilities (including unrecognized assets and liabilities) following the procedure that would be required in determining the fair value of assets acquired and liabilities assumed in a

business combination. Instead, under the amendments in this update, an entity should perform its regular goodwill impairment test by comparing the fair value of a reporting unit with its carrying amount. An entity should recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. The new requirements are effective for goodwill impairment tests in annual and interim periods beginning after 15 December 2020. Early application of the ASU is permitted. The Group is currently assessing the impact of the new requirements.

2 Information on business segments

The Group provides reinsurance and insurance throughout the world through its business segments. The business segments are determined by the organisational structure and by the way in which management reviews the operating performance of the Group.

The Group presents two core operating business segments: Property & Casualty Reinsurance and Life & Health Reinsurance. The presentation of each segment's balance sheet is closely aligned to the segment legal entity structure. The assignment of assets and liabilities for entities that span more than one segment is determined by considering local statutory requirements, legal and other constraints, the economic view of duration and currency requirements of the reinsurance business written, and the capacity of the segments to absorb risks. Interest expense is based on the segment's capital funding position. The tax impact of a segment is derived from the legal entity tax obligations and the segmentation of the pre-tax result. While most of the tax items can be directly attributed to individual segments, the tax which impacts two or more segments is allocated to the segments on a reasonable basis. Property & Casualty Reinsurance and Life & Health Reinsurance share the same year-to-date effective tax rate as both business segments belong to the Reinsurance Business Unit.

Accounting policies applied by the business segments are in line with those described in the summary of significant accounting policies (please refer to Note 1).

The Group operating segments are outlined below.

Property & Casualty Reinsurance and Life & Health Reinsurance
Reinsurance consists of two segments, Property & Casualty and Life & Health. The Reinsurance business operates globally, both through brokers and directly with clients, and provides a large range of solutions for risk and capital management. Clients include stock and mutual insurance companies as well as public sector and governmental entities. As well as traditional reinsurance solutions, the business unit offers insurance linked securities and other insurance related capital market products in both Property & Casualty and Life & Health.

Property & Casualty includes the business lines property, casualty (including motor), and specialty. Life & Health includes the life and health lines of business.

Other
Items not allocated to the business segments are included in the "Other" column which encompasses non-core activities. The "Other" column includes mainly certain costs not allocated to the Reinsurance business segments, certain Treasury activities, the primary life and health insurance business, as well as the remaining non-core activities which have been in run-off since November 2007.

Consolidation
Segment information is presented net of external and internal retrocession and other intra-group arrangements. The Group total is obtained after elimination of intra-group transactions in the "Consolidation" column. In the periods presented, significant intra-group transactions related to intra-group reinsurance arrangements and certain treasury-related activities are included.

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a) Business segments – income statement

For the six months ended 30 June

2016 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Consolidation	Total
Revenues					
Gross premiums written	11 133	6 586	614	–231	18 102
Net premiums written	10 883	5 895	279		17 057
Change in unearned premiums	–2 791	–224	–43		–3 058
Premiums earned	8 092	5 671	236		13 999
Fee income from policyholders		24	45		69
Net investment income – non-participating business	515	662	207	–12	1 372
Net realised investment gains/losses – non-participating business	482	197	321		1 000
Net investment result – unit-linked business		–137			–137
Other revenues	21	5		–3	23
Total revenues	9 110	6 422	809	–15	16 326
Expenses					
Claims and claim adjustment expenses	–5 037		3		–5 034
Life and health benefits		–4 381	–278		–4 659
Return credited to policyholders		129	–161		–32
Acquisition costs	–2 257	–1 134	–21		–3 412
Operating expenses	–575	–332	–202		–1 109
Total expenses before interest expenses	–7 869	–5 718	–659	0	–14 246
Income before interest and income tax expense	1 241	704	150	–15	2 080
Interest expenses	–146	–154	–10	15	–295
Income before income tax expense	1 095	550	140	0	1 785
Income tax expense	–215	–108			–323
Net income before attribution of non-controlling interests	880	442	140	0	1 462
Income/loss attributable to non-controlling interests	–1		–10		–11
Net income after attribution of non-controlling interests	879	442	130	0	1 451
Interest on contingent capital instruments, net of tax	–9	–25			–34
Net income attributable to common shareholder	870	417	130	0	1 417
Claims ratio in %	62.2				
Expense ratio in %	35.0				
Combined ratio in %	97.2				
Management expense ratio in %		5.2			
Net operating margin in %	13.6	10.7	18.5		12.6

Business segments – income statement

For the six months ended 30 June

2017 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Consolidation	Total
Revenues					
Gross premiums written	9 418	6 399	62		15 879
Net premiums written	9 076	5 732	11		14 819
Change in unearned premiums	–1 098	4	–1		–1 095
Premiums earned	7 978	5 736	10		13 724
Fee income from policyholders		33			33
Net investment income – non-participating business	463	625	–71	–19	998
Net realised investment gains/losses – non-participating business	170	252	–131		291
Net investment result – unit-linked business		37			37
Other revenues	18	1	2	–2	19
Total revenues	**8 629**	**6 684**	**–190**	**–21**	**15 102**
Expenses					
Claims and claim adjustment expenses	–5 102		2		–5 100
Life and health benefits		–4 540			–4 540
Return credited to policyholders		–54	–1		–55
Acquisition costs	–2 113	–973	1		–3 085
Operating expenses	–552	–374	–225		–1 151
Total expenses before interest expenses	**–7 767**	**–5 941**	**–223**	**0**	**–13 931**
Income/loss before interest and income tax expense	**862**	**743**	**–413**	**–21**	**1 171**
Interest expenses	–142	–151	–12	21	–284
Income/loss before income tax expense/benefit	**720**	**592**	**–425**	**0**	**887**
Income tax expense/benefit	–165	–135	54		–246
Net income/loss before attribution of non-controlling interests	**555**	**457**	**–371**	**0**	**641**
Income/loss attributable to non-controlling interests			–16		–16
Net income/loss after attribution of non-controlling interests	**555**	**457**	**–387**	**0**	**625**
Interest on contingent capital instruments, net of tax	–9	–25			–34
Net income/loss attributable to common shareholder	**546**	**432**	**–387**	**0**	**591**
Claims ratio in %	64.0				
Expense ratio in %	33.4				
Combined ratio in %	97.4				
Management expense ratio in %		5.8			
Net operating margin in %	10.0	11.2			7.8

Business segments – balance sheet
As of 31 December

2016 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Consolidation	Total
Total assets	79 263	55 957	14 029	–10 638	138 611

As of 30 June

2017 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Consolidation	Total
Total assets	**84 302**	**57 541**	**17 770**	**–11 696**	**147 917**

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b) Property & Casualty Reinsurance business segment – by line of business

For the six months ended 30 June

2016 USD millions	Property	Casualty	Specialty	Unallocated	Total
Revenues					
Gross premiums written	4 371	5 230	1 532		11 133
Net premiums written	4 151	5 215	1 517		10 883
Change in unearned premiums	–1 065	–1 384	–342		–2 791
Premiums earned	3 086	3 831	1 175		8 092
Net investment income				515	515
Net realised investment gains/losses				482	482
Other revenues				21	21
Total revenues	3 086	3 831	1 175	1 018	9 110
Expenses					
Claims and claim adjustment expenses	–1 872	–2 639	–526		–5 037
Acquisition costs	–709	–1 229	–319		–2 257
Operating expenses	–324	–179	–72		–575
Total expenses before interest expenses	–2 905	–4 047	–917	0	–7 869
Income/loss before interest and income tax expense	181	–216	258	1 018	1 241
Interest expenses				–146	–146
Income/loss before income tax expense	181	–216	258	872	1 095
Claims ratio in %	60.6	68.8	44.7		62.2
Expense ratio in %	33.5	36.8	33.3		35.0
Combined ratio in %	94.1	105.6	78.0		97.2

Property & Casualty Reinsurance business segment – by line of business
For the six months ended 30 June

2017 USD millions	Property	Casualty	Specialty	Unallocated	Total
Revenues					
Gross premiums written	3 876	4 104	1 438		9 418
Net premiums written	3 598	4 080	1 398		9 076
Change in unearned premiums	–894	49	–253		–1 098
Premiums earned	2 704	4 129	1 145		7 978
Net investment income				463	463
Net realised investment gains/losses				170	170
Other revenues				18	18
Total revenues	**2 704**	**4 129**	**1 145**	**651**	**8 629**
Expenses					
Claims and claim adjustment expenses	–1 531	–2 973	–598		–5 102
Acquisition costs	–568	–1 244	–301		–2 113
Operating expenses	–299	–168	–85		–552
Total expenses before interest expenses	**–2 398**	**–4 385**	**–984**	**0**	**–7 767**
Income/loss before interest and income tax expense	**306**	**–256**	**161**	**651**	**862**
Interest expenses				–142	–142
Income/loss before income tax expense	**306**	**–256**	**161**	**509**	**720**
Claims ratio in %	56.6	72.0	52.2		64.0
Expense ratio in %	32.1	34.2	33.7		33.4
Combined ratio in %	88.7	106.2	85.9		97.4

c) Life & Health Reinsurance business segment – by line of business

For the six months ended 30 June

2016 USD millions	Life	Health	Unallocated	Total
Revenues				
Gross premiums written	4 454	2 132		6 586
Net premiums written	3 809	2 086		5 895
Change in unearned premiums	–44	–180		–224
Premiums earned	3 765	1 906		5 671
Fee income from policyholders	24			24
Net investment income – non-participating business	425	237		662
Net realised investment gains/losses – non-participating business	30	–2	169	197
Net investment result – unit-linked business	–137			–137
Other revenues	5			5
Total revenues	4 112	2 141	169	6 422
Expenses				
Life and health benefits	–2 949	–1 432		–4 381
Return credited to policyholders	129			129
Acquisition costs	–770	–364		–1 134
Operating expenses	–235	–97		–332
Total expenses before interest expenses	–3 825	–1 893	0	–5 718
Income before interest and income tax expense	287	248	169	704
Interest expenses			–154	–154
Income before income tax expense	287	248	15	550
Management expense ratio in %	5.6	4.5		5.2
Net operating margin[1] in %	6.8	11.6		10.7

[1] Net operating margin is calculated as "Income before interest and income tax expense" divided by "Total revenues" excluding "Net investment result – unit-linked business".

Life & Health Reinsurance business segment – by line of business

For the six months ended 30 June

2017 USD millions	Life	Health	Unallocated	Total
Revenues				
Gross premiums written	4 607	1 792		6 399
Net premiums written	3 985	1 747		5 732
Change in unearned premiums	44	–40		4
Premiums earned	4 029	1 707		5 736
Fee income from policyholders	33			33
Net investment income – non-participating business	442	183		625
Net realised investment gains/losses – non-participating business	16	–2	238	252
Net investment result – unit-linked business	37			37
Other revenues	1			1
Total revenues	**4 558**	**1 888**	**238**	**6 684**
Expenses				
Life and health benefits	–3 214	–1 326		–4 540
Return credited to policyholders	–54			–54
Acquisition costs	–669	–304		–973
Operating expenses	–264	–110		–374
Total expenses before interest expenses	**–4 201**	**–1 740**	**0**	**–5 941**
Income before interest and income tax expense	**357**	**148**	**238**	**743**
Interest expenses			–151	–151
Income before income tax expense	**357**	**148**	**87**	**592**
Management expense ratio in %	5.9	5.8		5.8
Net operating margin[1] in %	7.9	7.8		11.2

[1] Net operating margin is calculated as "Income before interest and income tax expense" divided by "Total revenues" excluding "Net investment result – unit-linked business".

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3 Insurance information

Premiums earned and fees assessed against policyholders

For the six months ended 30 June

2016 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Total
Premiums earned, thereof:				
Direct		21	401	422
Reinsurance	8 271	6 151	67	14 489
Intra-group transactions (assumed and ceded)		193	–193	0
Premiums earned before retrocession to external parties	8 271	6 365	275	14 911
Retrocession to external parties	–179	–694	–39	–912
Net premiums earned	8 092	5 671	236	13 999
Fee income from policyholders, thereof:				
Direct				0
Reinsurance		24	45	69
Gross fee income before retrocession to external parties		24	45	69
Retrocession to external parties				0
Net fee income	0	24	45	69

2017 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Total
Premiums earned, thereof:				
Direct		25		25
Reinsurance	8 172	6 379	61	14 612
Intra-group transactions (assumed and ceded)				0
Premiums earned before retrocession to external parties	8 172	6 404	61	14 637
Retrocession to external parties	–194	–668	–51	–913
Net premiums earned	**7 978**	**5 736**	**10**	**13 724**
Fee income from policyholders, thereof:				
Direct				0
Reinsurance		33	48	81
Gross fee income before retrocession to external parties		33	48	81
Retrocession to external parties			–48	–48
Net fee income	**0**	**33**	**0**	**33**

Claims and claim adjustment expenses

For the six months ended 30 June

2016 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Total
Claims paid, thereof:				
Gross claims paid to external parties	–4 729	–5 527	–428	–10 684
Intra-group transactions (assumed and ceded)		–139	139	0
Claims before receivables from retrocession to external parties	–4 729	–5 666	–289	–10 684
Retrocession to external parties	252	656	10	918
Net claims paid	–4 477	–5 010	–279	–9 766
Change in unpaid claims and claim adjustment expenses; life and health benefits, thereof:				
Gross – with external parties	–350	624	–46	228
Intra-group transactions (assumed and ceded)		–26	26	0
Unpaid claims and claim adjustment expenses; life and health benefits before impact of retrocession to external parties	–350	598	–20	228
Retrocession to external parties	–210	31	24	–155
Net unpaid claims and claim adjustment expenses; life and health benefits	–560	629	4	73
Claims and claim adjustment expenses; life and health benefits	–5 037	–4 381	–275	–9 693

Acquisition costs

For the six months ended 30 June

2016 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Total
Acquisition costs, thereof:				
Gross acquisition costs with external parties	–2 299	–1 216	–59	–3 574
Intra-group transactions (assumed and ceded)		–33	33	0
Acquisition costs before impact of retrocession to external parties	–2 299	–1 249	–26	–3 574
Retrocession to external parties	42	115	5	162
Net acquisition costs	–2 257	–1 134	–21	–3 412

Claims and claim adjustment expenses

For the six months ended 30 June

2017 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Total
Claims paid, thereof:				
Gross claims paid to external parties	–4 752	–4 778	–148	–9 678
Intra-group transactions (assumed and ceded)				0
Claims before receivables from retrocession to external parties	–4 752	–4 778	–148	–9 678
Retrocession to external parties	195	578	149	922
Net claims paid	**–4 557**	**–4 200**	**1**	**–8 756**
Change in unpaid claims and claim adjustment expenses; life and health benefits, thereof:				
Gross – with external parties	–386	–335	42	–679
Intra-group transactions (assumed and ceded)				0
Unpaid claims and claim adjustment expenses; life and health benefits before impact of retrocession to external parties	–386	–335	42	–679
Retrocession to external parties	–159	–5	–41	–205
Net unpaid claims and claim adjustment expenses; life and health benefits	**–545**	**–340**	**1**	**–884**
Claims and claim adjustment expenses; life and health benefits	**–5 102**	**–4 540**	**2**	**–9 640**

Acquisition costs

For the six months ended 30 June

2017 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Total
Acquisition costs, thereof:				
Gross acquisition costs with external parties	–2 169	–1 079	–14	–3 262
Intra-group transactions (assumed and ceded)				0
Acquisition costs before impact of retrocession to external parties	–2 169	–1 079	–14	–3 262
Retrocession to external parties	56	106	15	177
Net acquisition costs	**–2 113**	**–973**	**1**	**–3 085**

Reinsurance assets and liabilities

The reinsurance assets and liabilities as of 31 December 2016 and 30 June 2017 were as follows:

2016 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Consolidation	Total
Assets					
Reinsurance recoverable on unpaid claims and policy benefits	2 449	1 580	264	–210	4 083
Deferred acquisition costs	2 280	3 465	11		5 756
Liabilities					
Unpaid claims and claim adjustment expenses	39 753	10 288	1 240	–208	51 073
Liabilities for life and health policy benefits		15 431	2 202	–4	17 629
Policyholder account balances		1 566	4 087		5 653

2017 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Consolidation	Total
Assets					
Reinsurance recoverable on unpaid claims and policy benefits	2 362	1 565	6 045	–13	9 959
Deferred acquisition costs	2 251	3 415			5 666
Liabilities					
Unpaid claims and claim adjustment expenses	41 362	10 914	822	–14	53 084
Liabilities for life and health policy benefits		15 047	1 157	–1	16 203
Policyholder account balances		1 615	4 142		5 757

Reinsurance receivables

Reinsurance receivables as of 31 December 2016 and 30 June 2017 were as follows:

USD millions	2016	2017
Premium receivables invoiced	1 204	931
Receivables invoiced from ceded re/insurance business	103	160
Assets arising from the application of the deposit method of accounting and meeting the definition of financing receivables	137	123
Recognised allowance	–35	–40

4 Premiums written

For the six months ended 30 June

2016 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Consolidation	Total
Gross premiums written, thereof:					
Direct		21	547		568
Reinsurance	11 133	6 334	67		17 534
Intra-group transactions (assumed)		231		–231	0
Gross premiums written	11 133	6 586	614	–231	18 102
Intra-group transactions (ceded)			–231	231	0
Gross premiums written before retrocession to external parties	11 133	6 586	383		18 102
Retrocession to external parties	–250	–691	–104		–1 045
Net premiums written	10 883	5 895	279	0	17 057

2017 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Consolidation	Total
Gross premiums written, thereof:					
Direct		25			25
Reinsurance	9 418	6 374	62		15 854
Intra-group transactions (assumed)					0
Gross premiums written	9 418	6 399	62		15 879
Intra-group transactions (ceded)					0
Gross premiums written before retrocession to external parties	9 418	6 399	62		15 879
Retrocession to external parties	–342	–667	–51		–1 060
Net premiums written	**9 076**	**5 732**	**11**	**0**	**14 819**

5 Unpaid claims and claim adjustment expenses

A reconciliation of the opening and closing reserve balances for unpaid claims and claim adjustment expenses as of 31 December 2016 and 30 June 2017 is presented as follows:

USD millions	2016	**2017**
Balance as of 1 January	49 718	51 073
Reinsurance recoverable	–3 202	–2 837
Deferred expense on retroactive reinsurance	–340	–211
Net balance as of 1 January	46 176	**48 025**
Change in group structure[1]		–281
Net balance as of 1 January after effect of change in group structure	46 176	**47 744**
Incurred related to:		
Current year	21 622	9 748
Prior year	–842	–278
Amortisation of deferred expense on retroactive reinsurance and impact of commutations	–26	–27
Total incurred	20 754	9 443
Paid related to:		
Current year	–7 265	–2 074
Prior year	–11 433	–6 682
Total paid	–18 698	–8 756
Foreign exchange	–1 265	1 494
Effect of acquisitions, disposals, new retroactive reinsurance and other items	1 058	–595
Net balance as of period end	48 025	**49 330**
Reinsurance recoverable	2 837	3 503
Deferred expense on retroactive reinsurance	211	251
Closing balance	51 073	**53 084**

[1] In January 2017, the Group sold three primary life and health insurance carriers to the Swiss Re Life Capital Group.

Prior-year development

Non-life claims development in the first six months of 2017 on prior years continued to be driven by favourable experience on most lines of business. Property includes favourable development driven by favourable claims experience. Casualty prior year claims development is favourable on all lines of business, except for an adverse development in motor, which is offset by favourable development in liability and accident & health lines of business. Specialty is driven by favourable reported claims experience.

For life and health lines of business, claims development on prior year business is adverse. Small positive claims development in Continental Europe was offset by UK Critical Illness and minor adverse developments in other markets. Claims development related to prior years also includes an element of interest accretion for unpaid claims reported at the estimated present value.

A summary of prior-year net claims and claim adjustment expenses development by lines of business as of 31 December 2016 and 30 June 2017 is shown below:

USD millions	2016	**2017**
Line of business:		
Property	–231	–202
Casualty	–370	–80
Specialty	–362	–86
Life and health	121	90
Total	–842	**–278**

6 Deferred acquisition costs (DAC) and acquired present value of future profits (PVFP)

As of 31 December 2016 and 30 June 2017, the DAC were as follows:

2016 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Total
Opening balance as of 1 January	2 051	3 020	13	5 084
Deferred	4 629	893	34	5 556
Amortisation	–4 379	–312	–36	–4 727
Effect of foreign currency translation and other changes	–21	–136		–157
Closing balance	2 280	3 465	11	5 756

2017 USD millions	Property & Casualty Reinsurance	Life & Health Reinsurance	Other	Total
Opening balance as of 1 January	2 280	3 465	11	5 756
Change in group structure[1]			–11	–11
Deferred	2 046	226		2 272
Amortisation	–2 113	–170		–2 283
Effect of foreign currency translation and other changes	38	–106		–68
Closing balance	**2 251**	**3 415**	**0**	**5 666**

[1] In January 2017, the Group sold three primary life and health insurance carriers to the Swiss Re Life Capital Group.

Retroceded DAC may arise on retrocession of reinsurance portfolios, including reinsurance undertaken as part of a securitisation. The associated potential retrocession recoveries are determined by the nature of the retrocession agreements and by the terms of the securitisation.

As of 31 December 2016 and 30 June 2017, the PVFP was as follows:

			2016			**2017**
USD millions	Life & Health Reinsurance	Other	Total	Life & Health Reinsurance	Other	Total
Opening balance as of 1 January	1 134	587	1 721	966	577	1 543
Effect of acquisitions/disposals and retrocessions			0		–564	–564
Amortisation	–132	–45	–177	–57	–9	–66
Interest accrued on unamortised PVFP	36	34	70	15	11	26
Effect of change in unrealised gains/losses		1	1		–3	–3
Effect of foreign currency translation	–72		–72	20		20
Closing balance	966	577	1 543	**944**	**12**	**956**

Retroceded PVFP may arise on retrocession of reinsurance portfolios, including reinsurance undertaken as part of a securitisation. The associated potential retrocession recoveries are determined by the nature of the retrocession agreements and by the terms of the securitisation.

7 Investments

Investment income

Net investment income by source (excluding unit-linked business) for the six months ended 30 June was as follows:

USD millions	2016	**2017**
Fixed income securities	946	924
Equity securities	39	31
Policy loans, mortgages and other loans	72	66
Investment real estate	89	96
Short-term investments	25	28
Other current investments	40	–9
Share in earnings of equity-accounted investees	1	20
Cash and cash equivalents	11	9
Net result from deposit-accounted contracts	67	40
Deposits with ceding companies	234	234
Gross investment income	1 524	**1 439**
Investment expenses	–150	–150
Interest charged for funds held	–2	–291
Net investment income – non-participating business	1 372	**998**

Dividends received from investments accounted for using the equity method were USD 47 million and USD 66 million for the six months ended 30 June 2016 and 2017, respectively.

Share in earnings of equity-accounted investees included an impairment of the carrying amount of an equity-accounted investee of USD 5 million for the six months ended 30 June 2017.

Realised gains and losses

Realised gains and losses for fixed income, equity securities and other investments (excluding unit-linked business) for the six months ended 30 June were as follows:

USD millions	2016	**2017**
Fixed income securities available-for-sale:		
Gross realised gains	437	174
Gross realised losses	–129	–76
Equity securities available-for-sale:		
Gross realised gains	119	297
Gross realised losses	–61	–11
Other-than-temporary impairments	–44	–16
Net realised investment gains/losses on trading securities	116	9
Change in net unrealised investment gains/losses on trading securities	98	–31
Net realised/unrealised gains/losses on other investments	–56	99
Net realised/unrealised gains/losses on insurance-related activities	6	30
Foreign exchange gains/losses	514	–184
Net realised investment gains/losses – non-participating business	1 000	**291**

Investment result – unit-linked business

The net investment result on unit-linked business credited to policyholders amounted to losses of USD 137 million and to gains of USD 37 million for the six months ended 30 June 2016 and 2017, respectively, mainly originating from gains/losses on equity securities.

Impairment on fixed income securities related to credit losses

Other-than-temporary impairments for debt securities are bifurcated between credit and non-credit components, with the credit component recognised through earnings and the non-credit component recognised in other comprehensive income. The credit component of other-than-temporary impairments is defined as the difference between a security's amortised cost basis and the present value of expected cash flows. Methodologies for measuring the credit component of impairment are aligned to market observer forecasts of credit performance drivers. Management believes that these forecasts are representative of median market expectations.

For securitised products, cash flow projection analysis is conducted by integrating forward-looking evaluation of collateral performance drivers, including default rates, prepayment rates and loss severities, and deal-level features, such as credit enhancement and prioritisation among tranches for payments of principal and interest. Analytics are differentiated by asset class, product type and security-level differences in historical and expected performance. For corporate bonds and hybrid debt instruments, an expected loss approach based on default probabilities and loss severities expected in the current and forecasted economic environment is used for securities identified as credit-impaired to project probability-weighted cash flows. Expected cash flows resulting from these analyses are discounted, and the present value is compared to the amortised cost basis to determine the credit component of other-than-temporary impairments.

A reconciliation of other-than-temporary impairments related to credit losses recognised in earnings for the six months ended 30 June was as follows:

USD millions	2016	**2017**
Balance as of 1 January	129	94
Credit losses for which an other-than-temporary impairment was not previously recognised	12	2
Reductions for securities sold during the period	–28	–10
Increase of credit losses for which an other-than-temporary impairment has been recognised previously, when the Group does not intend to sell, or more likely than not will not be required to sell before recovery	7	1
Impact of increase in cash flows expected to be collected	–4	–2
Impact of foreign exchange movements	–2	2
Balance as of 30 June	114	**87**

Investments available-for-sale

Amortised cost or cost, estimated fair values and other-than-temporary impairments of fixed income securities classified as available-for-sale as of 31 December 2016 and 30 June 2017 were as follows:

2016 USD millions	Amortised cost or cost	Gross unrealised gains	Gross unrealised losses	Other-than-temporary impairments recognised in other comprehensive income	Estimated fair value
Debt securities issued by governments and government agencies:					
US Treasury and other US government corporations and agencies	11 409	381	–183		11 607
US Agency securitised products	3 298	21	–52		3 267
States of the United States and political subdivisions of the states	993	48	–14		1 027
United Kingdom	3 815	662	–77		4 400
Canada	3 729	515	–24		4 220
Germany	2 849	324	–15		3 158
France	1 804	240	–10		2 034
Australia	1 905	18	–4		1 919
Other	5 607	202	–89		5 720
Total	35 409	2 411	–468		37 352
Corporate debt securities	21 130	938	–158		21 910
Mortgage- and asset-backed securities	3 951	68	–26	–5	3 988
Fixed income securities available-for-sale	60 490	3 417	–652	–5	63 250
Equity securities available-for-sale	2 063	276	–81		2 258

2017 USD millions	Amortised cost or cost	Gross unrealised gains	Gross unrealised losses	Other-than-temporary impairments recognised in other comprehensive income	Estimated fair value
Debt securities issued by governments and government agencies:					
US Treasury and other US government corporations and agencies	11 871	432	–110		12 193
US Agency securitised products	3 709	22	–37		3 694
States of the United States and political subdivisions of the states	1 090	66	–8		1 148
United Kingdom	3 840	669	–46		4 463
Canada	3 822	606	–17		4 411
Germany	2 760	254	–25		2 989
France	1 587	206	–9		1 784
Australia	1 835	19	–2		1 852
Other	6 286	194	–67		6 413
Total	36 800	2 468	–321		38 947
Corporate debt securities	22 526	1 106	–87		23 545
Mortgage- and asset-backed securities	3 287	79	–12	–1	3 353
Fixed income securities available-for-sale	**62 613**	**3 653**	**–420**	**–1**	**65 845**
Equity securities available-for-sale	**2 525**	**172**	**–43**		**2 654**

The "Other-than-temporary impairments recognised in other comprehensive income" column includes only securities with a credit-related loss recognised in earnings. Subsequent recovery in fair value of securities previously impaired in other comprehensive income is also presented in the "Other-than-temporary impairments recognised in other comprehensive income" column.

Investments trading

The carrying amounts of fixed income securities and equity securities classified as trading (excluding unit-linked business) as of 31 December 2016 and 30 June 2017 were as follows:

USD millions	2016	2017
Debt securities issued by governments and government agencies	2 538	3 683
Corporate debt securities	45	43
Mortgage- and asset-backed securities	112	98
Fixed income securities trading – non-participating business	2 695	**3 824**
Equity securities trading – non-participating business	60	**2**

Investments held for unit-linked business

The carrying amounts of investments held for unit-linked business consist of equity securities trading. As of 31 December 2016 and 30 June 2017, these amounted to USD 548 million and USD 585 million, respectively.

Maturity of fixed income securities available-for-sale

The amortised cost or cost and estimated fair values of investments in fixed income securities available-for-sale by remaining maturity are shown below. Fixed maturity investments are assumed not to be called for redemption prior to the stated maturity date. As of 31 December 2016 and 30 June 2017, USD 11 913 million and USD 12 763 million, respectively, of fixed income securities available-for-sale were callable.

		2016		2017
USD millions	Amortised cost or cost	Estimated fair value	Amortised cost or cost	Estimated fair value
Due in one year or less	4 879	4 920	5 012	5 022
Due after one year through five years	14 951	15 223	17 498	17 754
Due after five years through ten years	14 009	14 448	13 966	14 537
Due after ten years	23 020	24 994	23 167	25 497
Mortgage- and asset-backed securities with no fixed maturity	3 631	3 665	2 970	3 035
Total fixed income securities available-for-sale	60 490	63 250	**62 613**	**65 845**

Assets pledged

As of 30 June 2017, investments with a carrying value of USD 6 642 million were on deposit with regulatory agencies in accordance with local requirements, and investments with a carrying value of USD 10 919 million were placed on deposit or pledged to secure certain reinsurance liabilities, including pledged investments in subsidiaries.

As of 31 December 2016 and 30 June 2017, securities of USD 13 491 million and USD 13 272 million, respectively, were transferred to third parties under securities lending transactions and repurchase agreements on a fully collateralised basis. Corresponding liabilities of USD 1 010 million and USD 1 144 million, respectively, were recognised in accrued expenses and other liabilities for the obligation to return collateral that the Group has the right to sell or repledge.

As of 30 June 2017, a real estate portfolio with a carrying value of USD 228 million serves as collateral for a credit facility allowing the Group to withdraw funds up to CHF 650 million.

Collateral accepted which the Group has the right to sell or repledge

As of 31 December 2016 and 30 June 2017, the fair value of the equity securities, government and corporate debt securities received as collateral was USD 11 453 million and USD 12 569 million, respectively. Of this, the amount that was sold or repledged as of 31 December 2016 and 30 June 2017 was USD 7 255 million and USD 7 657 million, respectively. The sources of the collateral are securities borrowing, reverse repurchase agreements and derivative transactions.

Offsetting of derivatives, financial assets and financial liabilities

Offsetting of derivatives, financial assets and financial liabilities as of 31 December 2016 and 30 June 2017 was as follows:

2016 USD millions	Gross amounts of recognised financial assets	Collateral set-off in the balance sheet	Net amounts of financial assets presented in the balance sheet	Related financial instruments not set-off in the balance sheet	Net amount
Derivative financial instruments – assets	2 640	–1 580	1 060		1 060
Reverse repurchase agreements	7 023	–3 986	3 037	–3 037	0
Securities borrowing	483	–314	169	–169	0
Total	10 146	–5 880	4 266	–3 206	1 060

2016 USD millions	Gross amounts of recognised financial liabilities	Collateral set-off in the balance sheet	Net amounts of financial liabilities presented in the balance sheet	Related financial instruments not set-off in the balance sheet	Net amount
Derivative financial instruments – liabilities	–2 348	1 568	–780	8	–772
Repurchase agreements	–3 991	3 461	–530	527	–3
Securities lending	–1 319	839	–480	454	–26
Total	–7 658	5 868	–1 790	989	–801

2017 USD millions	Gross amounts of recognised financial assets	Collateral set-off in the balance sheet	Net amounts of financial assets presented in the balance sheet	Related financial instruments not set-off in the balance sheet	Net amount
Derivative financial instruments – assets	2 308	–1 642	666	–67	**599**
Reverse repurchase agreements	7 402	–2 904	4 498	–4 492	**6**
Securities borrowing	1 661	–925	736	–736	**0**
Total	**11 371**	**–5 471**	**5 900**	**–5 295**	**605**

2017 USD millions	Gross amounts of recognised financial liabilities	Collateral set-off in the balance sheet	Net amounts of financial liabilities presented in the balance sheet	Related financial instruments not set-off in the balance sheet	Net amount
Derivative financial instruments – liabilities	–2 197	1 595	–602	72	**–530**
Repurchase agreements	–2 656	2 379	–277	275	**–2**
Securities lending	–2 317	1 450	–867	821	**–46**
Total	**–7 170**	**5 424**	**–1 746**	**1 168**	**–578**

Collateral pledged or received between two counterparties with a master netting arrangement in place, but not subject to balance sheet netting is disclosed at fair value. The fair values represent the gross carrying value amounts at the reporting date for each financial instrument received or pledged by the Group. Management believes that master netting agreements provide for legally enforceable set-off in the event of default, which substantially reduces credit exposure. Upon occurrence of an event of default the non-defaulting party may set off the obligation against collateral received regardless if it has been offset on balance sheet prior to the defaulting event. The net amounts of the financial assets and liabilities presented on the balance sheet were recognised in "Other invested assets" and "Accrued expenses and other liabilities", respectively.

Recognised gross liability for the obligation to return collateral that the Group has the right to sell or repledge
As of 31 December 2016 and 30 June 2017, the gross amounts of liabilities related to repurchase agreements and securities lending by the class of securities transferred to third parties and by the remaining maturity are shown below. The liabilities are recognised for the obligation to return collateral that the Group has the right to sell or repledge.

2016 USD millions	Remaining contractual maturity of the agreements Overnight and continuous	Up to 30 days	30 – 90 days	Greater than 90 days	Total
Repurchase agreements					
Debt securities issued by governments and government agencies	219	3 023	415	334	3 991
Total repurchase agreements	219	3 023	415	334	3 991
Securities lending					
Debt securities issued by governments and government agencies	237	367	258	426	1 288
Corporate debt securities	13				13
Equity securities	18				18
Total securities lending	268	367	258	426	1 319
Gross amount of recognised liabilities for repurchase agreements and securities lending					5 310

2017 USD millions	Remaining contractual maturity of the agreements Overnight and continuous	Up to 30 days	30 – 90 days	Greater than 90 days	Total
Repurchase agreements					
Debt securities issued by governments and government agencies	8	1 916	179	534	2 637
Corporate debt securities	19				19
Total repurchase agreements	**27**	**1 916**	**179**	**534**	**2 656**
Securities lending					
Debt securities issued by governments and government agencies	449	925	345	431	2 150
Corporate debt securities	5				5
Equity securities	162				162
Total securities lending	**616**	**925**	**345**	**431**	**2 317**
Gross amount of recognised liabilities for repurchase agreements and securities lending					4 973

The programme is structured in a conservative manner within a clearly defined risk framework. Yield enhancement is conducted on a non-cash basis, thereby taking no re-investment risk.

Unrealised losses on securities available-for-sale

The following table shows the fair value and unrealised losses of the Group's fixed income securities, aggregated by investment category and length of time that individual securities were in a continuous unrealised loss position as of 31 December 2016 and 30 June 2017. As of 31 December 2016 and 30 June 2017, USD 44 million and USD 27 million, respectively, of the gross unrealised loss on equity securities available-for-sale relates to declines in value for less than 12 months and USD 37 million and USD 16 million, respectively, to declines in value for more than 12 months.

2016 USD millions	Less than 12 months Fair value	Less than 12 months Unrealised losses	12 months or more Fair value	12 months or more Unrealised losses	Total Fair value	Total Unrealised losses
Debt securities issued by governments and government agencies:						
US Treasury and other US government corporations and agencies	5 570	183			5 570	183
US Agency securitised products	2 490	52	14	0	2 504	52
States of the United States and political subdivisions of the states	332	12	8	2	340	14
United Kingdom	1 331	67	56	10	1 387	77
Canada	1 637	22	6	2	1 643	24
Germany	1 321	15	100	0	1 421	15
France	703	10			703	10
Australia	442	2	123	2	565	4
Other	2 509	73	236	16	2 745	89
Total	16 335	436	543	32	16 878	468
Corporate debt securities	5 773	134	316	24	6 089	158
Mortgage- and asset-backed securities	1 391	21	170	10	1 561	31
Total	23 499	591	1 029	66	24 528	657

2017 USD millions	Less than 12 months Fair value	Less than 12 months Unrealised losses	12 months or more Fair value	12 months or more Unrealised losses	Total Fair value	Total Unrealised losses
Debt securities issued by governments and government agencies:						
US Treasury and other US government corporations and agencies	6 741	110			6 741	110
US Agency securitised products	2 616	37			2 616	37
States of the United States and political subdivisions of the states	283	8			283	8
United Kingdom	1 139	38	59	8	1 198	46
Canada	1 796	15	65	2	1 861	17
Germany	634	25			634	25
France	157	8	10	1	167	9
Australia	280	2			280	2
Other	2 718	60	128	7	2 846	67
Total	16 364	303	262	18	16 626	321
Corporate debt securities	4 715	77	130	10	4 845	87
Mortgage- and asset-backed securities	1 117	11	87	2	1 204	13
Total	**22 196**	**391**	**479**	**30**	**22 675**	**421**

Mortgages, loans and real estate

As of 31 December 2016 and 30 June 2017, the carrying values of investments in mortgages, policy and other loans, and real estate (excluding unit-linked business) were as follows:

USD millions	2016	**2017**
Policy loans	86	86
Mortgage loans	1 947	1 548
Other loans	2 585	2 233
Investment real estate	1 711	1 744

The fair value of mortgage loans as of 31 December 2016 and 30 June 2017 was USD 1 950 million and USD 1 563 million, respectively. The fair value of other loans as of 31 December 2016 and 30 June 2017 was USD 2 596 million and USD 2 244 million, respectively. The fair value of the real estate as of 31 December 2016 and 30 June 2017 was USD 3 362 million and USD 3 540 million, respectively. The carrying value of policy loans approximates fair value.

Depreciation expense related to income-producing properties was USD 20 million and USD 23 million for the six months ended 30 June 2016 and 2017, respectively. Accumulated depreciation on investment real estate totalled USD 525 million and USD 581 million as of 31 December 2016 and 30 June 2017, respectively.

Substantially all mortgages, policy loans and other loan receivables are secured by buildings, land or the underlying policies.

8 Fair value disclosures

Fair value, as defined by the Fair Value Measurements and Disclosures Topic, is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The Fair Value Measurements and Disclosures Topic requires all assets and liabilities that are measured at fair value to be categorised within the fair value hierarchy. This three-level hierarchy is based on the observability of the inputs used in the fair value measurement. The levels of the fair value hierarchy are defined as follows:

Level 1 inputs are quoted prices in active markets for identical assets or liabilities that the Group has the ability to access. Level 1 inputs are the most persuasive evidence of fair value and are to be used whenever possible.

Level 2 inputs are market-based inputs that are directly or indirectly observable, but not considered level 1 quoted prices. Level 2 inputs consist of (i) quoted prices for similar assets or liabilities in active markets; (ii) quoted prices for identical assets or liabilities in non-active markets (e.g. markets which have few transactions and where prices are not current or price quotations vary substantially); (iii) inputs other than quoted prices that are observable (e.g. interest rates, yield curves, volatilities, prepayment speeds, credit risks and default rates); and (iv) inputs derived from, or corroborated by, observable market data.

Level 3 inputs are unobservable inputs. These inputs reflect the Group's own assumptions about market pricing using the best internal and external information available.

The types of instruments valued, based on unadjusted quoted market prices in active markets, include most US government and sovereign obligations, active listed equities and most money market securities. Such instruments are generally classified within level 1 of the fair value hierarchy.

The types of instruments that trade in markets that are not considered to be active, but are valued based on quoted market prices, broker or dealer quotations, or alternative pricing sources with reasonable levels of price transparency, include most government agency securities, investment-grade corporate bonds, certain mortgage- and asset-backed products, less liquid listed equities, and state, municipal and provincial obligations. Such instruments are generally classified within level 2 of the fair value hierarchy.

Exchange-traded derivative instruments typically fall within level 1 or level 2 of the fair value hierarchy depending on whether they are considered to be actively traded or not.

Certain financial instruments are classified within level 3 of the fair value hierarchy because they trade infrequently and therefore have little or no price transparency. Such instruments include private equity, less liquid corporate debt securities and certain asset-backed securities. Certain over-the-counter (OTC) derivatives trade in less liquid markets with limited pricing information, and the determination of fair value for these derivatives is inherently more difficult. Such instruments are classified within level 3 of the fair value hierarchy. Pursuant to the election of the fair value option, the Group classifies certain liabilities for life and health policy benefits in level 3 of the fair value hierarchy. When appropriate, valuations are adjusted for various factors such as liquidity, bid/offer spreads, and credit considerations. Such adjustments are generally based on available market evidence. In the absence of such evidence, management's best estimate is used.

The fair values of assets are adjusted to incorporate the counterparty risk of non-performance. Similarly, the fair values of liabilities reflect the risk of non-performance of the Group, captured by the Group's credit spread. These valuation adjustments from assets and liabilities measured at fair value using significant unobservable inputs are recognised in net realised gains and losses. For the six months ended 30 June 2017, these adjustments were not material. Whenever the underlying assets or liabilities are reported in a specific business segment, the valuation adjustment is allocated accordingly. Valuation adjustments not attributable to any business segment are reported in Other.

In certain situations, the Group uses inputs to measure the fair value of asset or liability positions that fall into different levels of the fair value hierarchy. In these situations, the Group will determine the appropriate level based on the lowest level input that is significant to the determination of the fair value.

Valuation techniques

US government securities typically have quoted market prices in active markets and are categorised as level 1 instruments in the fair value hierarchy. Non-US government holdings are generally classified as level 2 instruments and are valued on the basis of the quotes provided by pricing services, which are subject to the Group's pricing validation reviews and pricing vendor challenge process. Valuations provided by pricing vendors are generally based on the actual trade information as substantially all of the Group's non-US government holdings are traded in a transparent and liquid market.

Corporate debt securities mainly include US and European investment-grade positions, which are priced on the basis of quotes provided by third-party pricing vendors and first utilise valuation inputs from actively traded securities, such as bid prices, bid spreads to Treasury securities, Treasury curves, and same or comparable issuer curves and spreads. Issuer spreads are determined from actual quotes and traded prices and incorporate considerations of credit/default, sector composition, and liquidity and call features. Where market data is not available, valuations are developed based on the modelling techniques that utilise observable inputs and option-adjusted spreads and incorporate considerations of the security's seniority, maturity and the issuer's corporate structure.

Values of mortgage- and asset-backed securities are obtained both from third-party pricing vendors and through quoted prices, some of which may be based on the prices of comparable securities with similar structural and collateral features. Values of certain asset-backed securities (ABS) for which there are no significant observable inputs are developed using benchmarks to similar transactions or indices. For both residential mortgage-backed securities (RMBS) and commercial mortgage-backed securities (CMBS), cash flows are derived based on the transaction-specific information, which incorporates priority in the capital structure, and are generally adjusted to reflect benchmark yields, market prepayment data, collateral performance (default rates and loss severity) for specific vintage and geography, credit enhancements, and ratings. For certain RMBS and CMBS with low levels of market liquidity, judgements may be required to determine comparable securities based on the loan type and deal-specific performance. CMBS terms may also incorporate lock-out periods that restrict borrowers from prepaying the loans or provide disincentives to prepay and therefore reduce prepayment risk of these securities, compared to RMBS. The factors specifically considered in valuation of CMBS include borrower-specific statistics in a specific region, such as debt service coverage and loan-to-value ratios, as well as the type of commercial property. Mortgage- and asset-backed securities also includes debt securitised by credit card, student loan and auto loan receivables. Pricing inputs for these securities also focus on capturing, where relevant, collateral quality and performance, payment patterns, and delinquencies.

The Group uses third-party pricing vendor data to value agency securitised products, which mainly include collateralised mortgage obligations (CMO) and mortgage-backed government agency securities. The valuations generally utilise observable inputs consistent with those noted above for RMBS and CMBS.

Equity securities held by the Group for proprietary investment purposes are mainly classified in level 1. Securities classified in level 1 are traded on public stock exchanges for which quoted prices are readily available.

The category "Other invested assets" includes the Group's private equity and hedge fund investments which are made directly or via ownership of funds. Valuation of direct private equity investments requires significant management judgement due to the absence of quoted market prices and the lack of liquidity. Initial valuation is based on the acquisition cost, and is further refined based on the available market information for the public companies that are considered comparable to the Group's holdings in the private companies being valued, and the private company-specific performance indicators; both historic and projected. Subsequent valuations also reflect business or asset appraisals, as well as market transaction data for private and public benchmark companies and the actual companies being valued, such as financing rounds and mergers and acquisitions activity. The Group's holdings in private equity and hedge funds are generally valued utilising net asset values (NAV), subject to adjustments, as deemed necessary, for restrictions on redemption (lock-up periods and amount limitations on redemptions). These investments are included under investments measured at net asset value as a practical expedient.

The Group holds both exchange-traded and OTC interest rate, foreign exchange and equity derivative contracts for hedging and trading purposes. The fair values of exchange-traded derivatives measured using observable exchange prices are classified in level 1. Long-dated contracts may require adjustments to the exchange-traded prices which would trigger reclassification to level 2 in the fair value hierarchy. OTC derivatives are generally valued by the Group based on the internal models, which are consistent with industry standards and practices, and use both observable (dealer, broker or market consensus prices, spot and forward rates, interest rate and credit curves and volatility indices) and unobservable inputs (adjustments for liquidity, inputs derived from the observable data based on the Group's judgements and assumptions).

The Group's OTC interest rate derivatives primarily include interest rate swaps, futures, options, caps and floors, and are valued based on the cash flow discounting models which generally utilise as inputs observable market yield curves and volatility assumptions.

The Group's OTC foreign exchange derivatives primarily include forward, spot and option contracts and are generally valued based on the cash flow discounting models, utilising as main inputs observable foreign exchange forward curves.

The Group's investments in equity derivatives primarily include OTC equity option contracts on single or baskets of market indices and equity options on individual or baskets of equity securities, which are valued using internally developed models (such as the Black-Scholes type option pricing model and various simulation models) calibrated with the inputs, which include underlying spot prices, dividend curves, volatility surfaces, yield curves, and correlations between underlying assets.

The Group's OTC credit derivatives can include index and single-name credit default swaps, as well as more complex structured credit derivatives. Plain vanilla credit derivatives, such as index and single-name credit default swaps, are valued by the Group based on the models consistent with the industry valuation standards for these credit contracts, and primarily utilise observable inputs published by market data sources, such as credit spreads and recovery rates. These valuation techniques warrant classification of plain vanilla OTC derivatives as level 2 financial instruments in the fair value hierarchy.

Governance around level 3 fair valuation

The Asset Valuation Committee, endorsed by the Swiss Re Group Executive Committee, has a primary responsibility for governing and overseeing all of Group's asset and derivative valuation policies and operating parameters (including level 3 measurements). The Asset Valuation Committee delegates the responsibility for implementation and oversight of consistent application of the Group's pricing and valuation policies to the Pricing and Valuation Committee.

The Pricing and Valuation Committee, which is a joint Risk Management & Finance management control committee, is responsible for the implementation and consistent application of the pricing and valuation policies. Key functions of the Pricing and Valuation Committee include: oversight over the entire valuation process, approval of internal valuation methodologies, approval of external pricing vendors, monitoring of the independent price verification (IPV) process and resolution of significant or complex valuation issues.

A formal IPV process is undertaken monthly by members of the Valuation Risk Management team within a Financial Risk Management function. The process includes monitoring and in-depth analyses of approved pricing methodologies and valuations of the Group's financial instruments aimed at identifying and resolving pricing discrepancies.

The Risk Management function is responsible for independent validation and ongoing review of the Group's valuation models. The Product Control group within Finance is tasked with reporting of fair values through the vendor- and model-based valuations, the results of which are also subject to the IPV process.

Assets and liabilities measured at fair value on a recurring basis

As of 31 December 2016 and 30 June 2017, the fair values of assets and liabilities measured on a recurring basis by level of input were as follows:

2016 USD millions	Quoted prices in active markets for identical assets and liabilities (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Impact of netting[1]	Investments measured at net asset value as practical expedient	Total
Assets						
Fixed income securities held for proprietary investment purposes	11 332	54 265	348			65 945
Debt securities issued by US government and government agencies	11 332	1 542				12 874
US Agency securitised products		3 307				3 307
Debt securities issued by non-US governments and government agencies		23 709				23 709
Corporate debt securities		21 614	341			21 955
Mortgage- and asset-backed securities		4 093	7			4 100
Equity securities held for proprietary investment purposes	2 317		1			2 318
Equity securities backing unit-linked business	548					548
Short-term investments held for proprietary investment purposes	3 742	3 785				7 527
Derivative financial instruments	18	2 163	459	–1 580		1 060
Interest rate contracts	14	964				978
Foreign exchange contracts		766				766
Equity contracts	4	433	341			778
Other contracts			118			118
Other invested assets	266	183	160		727	1 336
Funds held by ceding companies		225				225
Total assets at fair value	18 223	60 621	968	–1 580	727	78 959
Liabilities						
Derivative financial instruments	–3	–1 905	–440	1 568		–780
Interest rate contracts	–3	–685				–688
Foreign exchange contracts		–651				–651
Equity contracts		–569	–39			–608
Other contracts			–401			–401
Liabilities for life and health policy benefits			–144			–144
Accrued expenses and other liabilities	–384	–4 084	–1 236			–5 704
Total liabilities at fair value	–387	–5 989	–1 820	1 568		–6 628

[1] The netting of derivative receivables and derivative payables is permitted when a legally enforceable master netting agreement exists between two counterparties. A master netting agreement provides for the net settlement of all contracts, as well as cash collateral, through a single payment, in a single currency, in the event of default or on the termination of any one contract.

2017 USD millions	Quoted prices in active markets for identical assets and liabilities (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Impact of netting[1]	Investments measured at net asset value as practical expedient	Total
Assets						
Fixed income securities held for proprietary investment purposes	12 742	56 573	354			69 669
Debt securities issued by US government and government agencies	12 742	1 625				14 367
US Agency securitised products		3 814				3 814
Debt securities issued by non-US governments and government agencies		24 449				24 449
Corporate debt securities		23 250	338			23 588
Mortgage- and asset-backed securities		3 435	16			3 451
Equity securities held for proprietary investment purposes	2 656					2 656
Equity securities backing unit-linked business	585					585
Short-term investments held for proprietary investment purposes	1 536	3 329				4 865
Derivative financial instruments	35	1 906	367	–1 642		666
Interest rate contracts	2	788				790
Foreign exchange contracts		694				694
Equity contracts	33	424	311			768
Other contracts			56			56
Other invested assets	748	100	171		711	1 730
Funds held by ceding companies		223				223
Total assets at fair value	**18 302**	**62 131**	**892**	**–1 642**	**711**	**80 394**
Liabilities						
Derivative financial instruments	–14	–1 855	–328	1 595		–602
Interest rate contracts	–1	–548				–549
Foreign exchange contracts		–715				–715
Equity contracts	–13	–577	–34			–624
Credit contracts		–15				–15
Other contracts			–294			–294
Liabilities for life and health policy benefits			–129			–129
Funds held under reinsurance treaties	–110	–1 445				–1 555
Accrued expenses and other liabilities	–764	–4 191	–1 299			–6 254
Total liabilities at fair value	**–888**	**–7 491**	**–1 756**	**1 595**		**–8 540**

[1] The netting of derivative receivables and derivative payables is permitted when a legally enforceable master netting agreement exists between two counterparties. A master netting agreement provides for the net settlement of all contracts, as well as cash collateral, through a single payment, in a single currency, in the event of default or on the termination of any one contract.

Assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (level 3)

As of 31 December 2016 and 30 June 2017, the reconciliation of the fair values of assets and liabilities measured on a recurring basis using significant unobservable inputs was as follows:

2016 USD millions	Fixed income securities	Equity securities	Derivative assets	Other invested assets	Total assets	Derivative liabilities	Liabilities for life and health policy benefits	Accrued expenses and other liabilities	Total liabilities
Assets and liabilities									
Balance as of 1 January	338	11	464	1 013	1 826	−497	−165	−1 474	−2 136
Impact of Accounting Standards Updates[1]				−895	−895				0
Realised/unrealised gains/losses:									
Included in net income	3		18	−18	3	199	20		219
Included in other comprehensive income	−5		1	6	2				0
Purchases	115		5	42	162				0
Issuances					0	−81			−81
Sales	−36		−20	−2	−58	20			20
Settlements	−55		−15		−70	−76			−76
Transfers into level 3[2]			6	10	16	−5			−5
Transfers out of level 3[2]	−6	−10			−16				0
Impact of foreign exchange movements	−6			4	−2		1	238	239
Closing balance as of 31 December	348	1	459	160	968	−440	−144	−1 236	−1 820

[1] Impact of ASU 2015-07.
[2] Transfers are recognised at the date of the event or change in circumstances that caused the transfer.

2017 USD millions	Fixed income securities	Equity securities	Derivative assets	Other invested assets	**Total assets**	Derivative liabilities	Liabilities for life and health policy benefits	Accrued expenses and other liabilities	**Total liabilities**
Assets and liabilities									
Balance as of 1 January	348	1	459	160	**968**	−440	−144	−1 236	**−1 820**
Realised/unrealised gains/losses:									
Included in net income	1		−22	−2	**−23**	116	15		**131**
Included in other comprehensive income	−3			19	**16**				**0**
Purchases	22		1		**23**				**0**
Issuances					**0**	−8			**−8**
Sales	−7				**−7**				**0**
Settlements	−13		−70	−6	**−89**	4			**4**
Transfers into level 3[1]					**0**				**0**
Transfers out of level 3[1]		−1			**−1**				**0**
Impact of foreign exchange movements	6		−1		**5**			−63	**−63**
Closing balance as of 30 June	**354**	**0**	**367**	**171**	**892**	**−328**	**−129**	**−1 299**	**−1 756**

[1] Transfers are recognised at the date of the event or change in circumstances that caused the transfer.

Gains and losses on assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (level 3)

The gains and losses relating to the assets and liabilities measured at fair value using significant unobservable inputs (level 3) for the six months ended 30 June were as follows:

USD millions	2016	**2017**
Gains/losses included in net income for the period	–144	108
Whereof change in unrealised gains/losses relating to assets and liabilities still held at the reporting date	–207	84

Quantitative information about level 3 fair value measurements

Unobservable inputs for major level 3 assets and liabilities as of 31 December 2016 and 30 June 2017 were as follows:

USD millions	2016 Fair value	**2017** Fair value	Valuation technique	Unobservable input	Range (weighted average)
Assets					
Corporate debt securities	341	**338**			
Private placement corporate debt	177	158	Corporate Spread Matrix	Credit spread	46 bps–452 bps (149 bps)
Infrastructure loans	116	131	Discounted Cash Flow Model	Valuation spread	89 bps–232 bps (152 bps)
Private placement credit tenant leases	48	48	Discounted Cash Flow Model	Illiquidity premium	75 bps–175 bps (133 bps)
Derivative equity contracts	341	**311**			
OTC equity option referencing correlated equity indices	341	311	Proprietary Option Model	Correlation	–45%–100% (27.5%)[1]
Liabilities					
Derivative equity contracts	–39	**–34**			
OTC equity option referencing correlated equity indices	–39	–34	Proprietary Option Model	Correlation	–45%–100% (27.5%)[1]
Other derivative contracts and liabilities for life and health policy benefits	–545	**–423**			
Variable annuity and fair valued GMDB contracts	–500	–398	Discounted Cash Flow Model	Risk margin	4% (n.a.)
				Volatility	4%–42%
				Lapse	0.5%–33%
				Mortality adjustment	–10%–0%
				Withdrawal rate	0%–90%

[1] Represents average input value for the reporting period.

Sensitivity of recurring level 3 measurements to changes in unobservable inputs

The significant unobservable input used in the fair value measurement of the Group's private placement corporate debt securities is credit spread. A significant increase (decrease) in this input in isolation would result in a significantly lower (higher) fair value measurement. The significant unobservable input used in the fair value measurement of the Group's private placement credit tenant leases is illiquidity premium. A significant increase (decrease) in this input in isolation would result in a significantly lower (higher) fair value measurement. The significant unobservable input used in the fair value measurement of the Group's infrastructure loans is valuation spread. A significant increase (decrease) in this input in isolation would result in a significantly lower (higher) fair value measurement.

The significant unobservable input used in the fair value measurement of the Group's OTC equity option referencing correlated equity indices is correlation. Where the Group is long correlation risk, a significant increase (decrease) in this input in isolation would result in a significantly higher (lower) fair value measurement. Where the Group is short correlation risk, a significant increase (decrease) in this input in isolation would result in a significantly lower (higher) fair value measurement.

The significant unobservable inputs used in the fair value measurement of the Group's variable annuity and fair valued guaranteed minimum death benefit (GMDB) contracts are: risk margin, volatility, lapse, mortality adjustment rate and withdrawal rate. A significant increase (decrease) in isolation in each of the following inputs: risk margin, volatility and withdrawal rate would result in a significantly higher (lower) fair value of the Group's obligation. A significant increase (decrease) in isolation in a lapse rate for in-the-money contracts would result in a significantly lower (higher) fair value of the Group's obligation, whereas for out-of-the-money contracts, an isolated increase (decrease) in a lapse assumption would increase (decrease) fair value of the Group's obligation. Changes in the mortality adjustment rate impact the fair value of the Group's obligation differently for living-benefit products, compared to death-benefit products. For the former, a significant increase (decrease) in the mortality adjustment rate (i.e. increase (decrease) in mortality, respectively) in isolation would result in a decrease (increase) in fair value of the Group's liability. For the latter, a significant increase (decrease) in the mortality adjustment rate in isolation would result in an increase (decrease) in fair value of the Group's liability.

Other invested assets measured at net asset value

Other invested assets measured at net asset value as of 31 December 2016 and 30 June 2017, respectively, were as follows:

USD millions	2016 Fair value	**2017** Fair value	Unfunded commitments	Redemption frequency (if currently eligible)	Redemption notice period
Private equity funds	431	419	81	non-redeemable	n.a.
Hedge funds	106	109		redeemable[1]	45–95 days[2]
Private equity direct	1	1		non-redeemable	n.a.
Real estate funds	189	182	45	non-redeemable	n.a.
Total	727	**711**	**126**		

[1] The redemption frequency varies by position.
[2] Cash distribution can be delayed for an extended period depending on the sale of the underlyings.

The hedge fund investments employ a variety of strategies, including global macro, relative value, event-driven and long/short equity across various asset classes.

The private equity direct portfolio consists of equity and equity-like investments directly in other companies. These investments have no contractual term and are generally held based on financial or strategic intent.

Private equity and real estate funds generally have limitations imposed on the amount of redemptions from the fund during the redemption period due to illiquidity of the underlying investments. Fees may apply for redemptions or transferring of interest to other parties. Distributions are expected to be received from these funds as the underlying assets are liquidated over the life of the fund, which is generally from 10 to 12 years.

The redemption frequency of hedge funds varies depending on the manager as well as the nature of the underlying product. Additionally, certain funds may impose lock-up periods and redemption gates as defined in the terms of the individual investment agreement.

Fair value option

The fair value option under the Financial Instruments Topic permits the choice to measure specified financial assets and liabilities at fair value on an instrument-by-instrument basis. The Group elected the fair value option for positions in the following line items:

Other invested assets

The Group elected the fair value option for certain investments classified as equity method investees within other invested assets in the balance sheet. The Group applied the fair value option, as the investments are managed on a fair value basis. The changes in fair value of these elected investments are recorded in earnings.

Funds held by ceding companies

For operational efficiencies, the Group elected the fair value option for funds held by the cedent under three of its reinsurance agreements. The assets are carried at fair value and changes in fair value are reported as a component of earnings.

Liabilities for life and health policy benefits

The Group elected the fair value option for existing GMDB reserves related to certain variable annuity contracts which are classified as universal life-type contracts. The Group has applied the fair value option, as the equity risk associated with those contracts is managed on a fair value basis and it is economically hedged with derivative options in the market.

Funds held under reinsurance treaties

For operational efficiencies, the Group elected the fair value option for funds held under reinsurance treaties under some of its reinsurance agreements. The liabilities are carried at fair value and changes in fair value are reported as a component of earnings.

Assets and liabilities measured at fair value pursuant to election of the fair value option

Pursuant to the election of the fair value option for the items described, the balances as of 31 December 2016 and 30 June 2017 were as follows:

USD millions	2016	2017
Assets		
Other invested assets	7 217	9 146
of which at fair value pursuant to the fair value option	108	108
Funds held by ceding companies	8 854	9 663
of which at fair value pursuant to the fair value option	225	223
Liabilities		
Liabilities for life and health policy benefits	–17 629	–16 203
of which at fair value pursuant to the fair value option	–144	–129
Funds held under reinsurance treaties		–8 365
of which at fair value pursuant to the fair value option		–1 555

Changes in fair values for items measured at fair value pursuant to election of the fair value option

Gains/losses included in earnings for items measured at fair value pursuant to election of the fair value option including foreign exchange impact for the six months ended 30 June were as follows:

USD millions	2016	2017
Other invested assets	–12	
Funds held by ceding companies	3	–2
Liabilities for life and health policy benefits	–12	15
Funds held under reinsurance treaties		–43
Total	–21	**–30**

Fair value changes from other invested assets, funds held by ceding companies and funds held under reinsurance treaties are reported in "Net investment income - non-participating business". Fair value changes from the GMDB reserves are shown in "Life and health benefits".

Assets and liabilities not measured at fair value but for which the fair value is disclosed

Assets and liabilities not measured at fair value but for which the fair value is disclosed as of 31 December 2016 and 30 June 2017 were as follows:

2016 USD millions	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Total
Assets			
Policy loans		86	86
Mortgage loans		1 950	1 950
Other loans		2 596	2 596
Investment real estate		3 362	3 362
Total assets	0	7 994	7 994
Liabilities			
Debt	–6 900	–6 370	–13 270
Total liabilities	–6 900	–6 370	–13 270

2017 USD millions	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	Total
Assets			
Policy loans		86	86
Mortgage loans		1 563	1 563
Other loans		2 244	2 244
Investment real estate		3 540	3 540
Total assets	**0**	**7 433**	**7 433**
Liabilities			
Debt	–6 715	–7 635	–14 350
Total liabilities	**–6 715**	**–7 635**	**–14 350**

Policy loans, other loans and certain mortgage loans are classified as level 3 measurements, as they do not have an active exit market. Some of these positions need to be assessed in conjunction with the corresponding insurance business, whilst the fair value of some other positions do not differ materially from the carrying amount. Considering these circumstances for these positions, the Group presents the carrying amount as an approximation for the fair value. For certain commercial mortgage loans and infrastructure loans, which are included in mortgage loans and other loans respectively, the fair value can be estimated using discounted cash flow models which are based on discount curves and spread inputs that require management's judgement.

Investments in real estate are fair valued primarily by external appraisers based on proprietary discounted cash flow models that incorporate applicable risk premium adjustments to discount yields and projected market rental income streams based on market-specific data. These fair value measurements are classified in level 3 in the fair value hierarchy.

Debt positions, which are fair valued based on executable broker quotes or based on the discounted cash flow method using observable inputs, are classified as level 2 measurements. Fair value of the majority of the Group's level 3 debt positions is judged to approximate carrying value due to the highly tailored nature of the obligation and short-notice termination provisions.

9 Derivative financial instruments

The Group uses a variety of derivative financial instruments including swaps, options, forwards, credit derivatives and exchange-traded financial futures in its trading and hedging strategies, in line with the Group's overall risk management strategy. The objectives include managing exposure to price, foreign currency and/or interest rate risk on planned or anticipated investment purchases, existing assets or liabilities, as well as locking in attractive investment conditions for future available funds.

The fair values represent the gross carrying value amounts at the reporting date for each class of derivative contract held or issued by the Group. The gross fair values are not an indication of credit risk, as many over-the-counter transactions are contracted and documented under ISDA master agreements or their equivalent. Management believes that such agreements provide for legally enforceable set-off in the event of default, which substantially reduces credit exposure.

Fair values and notional amounts of derivative financial instruments

As of 31 December 2016 and 30 June 2017, the fair values and notional amounts of the derivatives outstanding were as follows:

2016 USD millions	Notional amount assets/liabilities	Fair value assets	Fair value liabilities	Carrying value assets/liabilities
Derivatives not designated as hedging instruments				
Interest rate contracts	43 013	978	–688	290
Foreign exchange contracts	19 542	348	–572	–224
Equity contracts	12 333	778	–608	170
Credit contracts				
Other contracts	15 822	118	–401	–283
Total	90 710	2 222	–2 269	–47
Derivatives designated as hedging instruments				
Foreign exchange contracts	10 019	418	–79	339
Total	10 019	418	–79	339
Total derivative financial instruments	100 729	2 640	–2 348	292
Amount offset				
Where a right of set-off exists		–1 122	1 122	
Due to cash collateral		–458	446	
Total net amount of derivative financial instruments		1 060	–780	280

2017 USD millions	Notional amount assets/liabilities	Fair value assets	Fair value liabilities	Carrying value assets/liabilities
Derivatives not designated as hedging instruments				
Interest rate contracts	75 539	790	–549	241
Foreign exchange contracts	24 369	571	–278	293
Equity contracts	16 413	768	–624	144
Credit contracts	800		–15	–15
Other contracts	12 663	56	–294	–238
Total	**129 784**	**2 185**	**–1 760**	**425**
Derivatives designated as hedging instruments				
Foreign exchange contracts	11 095	123	–437	–314
Total	**11 095**	**123**	**–437**	**–314**
Total derivative financial instruments	**140 879**	**2 308**	**–2 197**	**111**
Amount offset				
Where a right of set-off exists		–1 151	1 151	
Due to cash collateral		–491	444	
Total net amount of derivative financial instruments		**666**	**–602**	**64**

The notional amounts of derivative financial instruments give an indication of the Group's volume of derivative activity. The fair value assets are included in "Other invested assets" and the fair value liabilities are included in "Accrued expenses and other liabilities". The fair value amounts that were not offset were nil as of 31 December 2016 and 30 June 2017.

Non-hedging activities

The Group primarily uses derivative financial instruments for risk management and trading strategies. Gains and losses of derivative financial instruments not designated as hedging instruments are recorded in "Net realised investment gains/losses — non participating business" in the income statement. For the six months ended 30 June, the gains and losses of derivative financial instruments not designated as hedging instruments were as follows:

USD millions	2016	**2017**
Derivatives not designated as hedging instruments		
Interest rate contracts	241	88
Foreign exchange contracts	42	362
Equity contracts	–39	–90
Credit contracts	2	–1
Other contracts	–218	115
Total gains/losses recognised in income	28	**474**

Hedging activities

The Group designates certain derivative financial instruments as hedging instruments. The designation of derivative financial instruments is primarily used for overall portfolio and risk management strategies. As of 30 June 2016 and 2017, the following hedging relationships were outstanding:

Fair value hedges

The Group enters into foreign exchange swaps to reduce the exposure to foreign exchange volatility for certain fixed income securities. These derivative instruments are designated as hedging instruments in qualifying fair value hedges. Gains and losses on derivative financial instruments designated as fair value hedging instruments are recorded in "Net realised investment gains/losses — non-participating business" in the income statement. For the six months ended 30 June, the gains and losses attributable to the hedged risks were as follows:

		2016		**2017**
USD millions	Gains/losses on derivatives	Gains/losses on hedged items	Gains/losses on derivatives	Gains/losses on hedged items
Fair value hedging relationships				
Foreign exchange contracts	46	–46	–324	324
Total gains/losses recognised in income	46	–46	**–324**	**324**

Hedges of the net investment in foreign operations

The Group designates derivative and non-derivative monetary financial instruments as hedging the foreign currency exposure of its net investment in certain foreign operations.

For the year ended 31 December 2016 and the six months ended 30 June 2017, the Group recorded an accumulated net unrealised foreign currency remeasurement gain of USD 1 311 million and a gain of USD 942 million, respectively, in shareholder's equity. These offset translation gains and losses on the hedged net investment.

Maximum potential loss

In consideration of the rights of set-off and the qualifying master netting arrangements with various counterparties, the maximum potential loss as of 31 December 2016 and 30 June 2017 was approximately USD 1 518 million and USD 1 157 million, respectively. The maximum potential loss is based on the positive market replacement cost assuming non-performance of all counterparties, excluding cash collateral.

Credit risk-related contingent features

Certain derivative instruments held by the Group contain provisions that require its debt to maintain an investment-grade credit rating. If the Group's credit rating were downgraded or no longer rated, the counterparties could request immediate payment, guarantee or an ongoing full overnight collateralisation on derivative instruments in net liability positions.

The total fair value of derivative financial instruments containing credit risk-related contingent features amounted to USD 79 million and USD 86 million as of 31 December 2016 and 30 June 2017, respectively. For derivative financial instruments containing credit risk-related contingent features, the Group posted collateral of nil as of 31 December 2016 and 30 June 2017, respectively. In the event of a reduction of the Group's credit rating to below investment grade, a fair value of USD 86 million additional collateral would have had to be posted as of 30 June 2017. The total equals the amount needed to settle the instruments immediately as of 30 June 2017.

10 Debt and contingent capital instruments

The Group enters into long- and short-term debt arrangements to obtain funds for general corporate use and specific transaction financing. The Group defines short-term debt as debt having a maturity at the balance sheet date of not greater than one year and long-term debt as having a maturity of greater than one year. For subordinated debt positions, maturity is defined as the first optional redemption date (notwithstanding that optional redemption could be subject to regulatory consent). Interest expense is classified accordingly.

The Group's debt as of 31 December 2016 and 30 June 2017 was as follows:

USD millions	2016	**2017**
Senior financial debt	2 734	4 011
Senior operational debt	420	442
Subordinated financial debt	543	
Short-term debt – financial and operational debt	3 697	**4 453**
Senior financial debt	2 249	2 266
Senior operational debt	423	428
Subordinated financial debt	2 884	3 021
Subordinated operational debt	2 249	2 301
Long-term debt – financial and operational debt	7 805	**8 016**
Total carrying value	11 502	**12 469**
Total fair value	13 270	**14 350**

Interest expense on long-term debt and contingent capital instruments

Interest expense on long-term debt for the periods ended 30 June was as follows:

USD millions	2016	**2017**
Senior financial debt	52	45
Senior operational debt	5	6
Subordinated financial debt	85	70
Subordinated operational debt	64	55
Total	206	**176**

In addition to the above, interest expense on contingent capital instruments classified as equity was USD 34 million and USD 34 million for the six months ended 30 June 2016 and 2017, respectively.

Long-term debt issued in 2017

No long-term debt was issued in the first half of 2017.

11 Benefit plans

Net periodic benefit cost
Pension and post-retirement cost for the six months ended 30 June 2016 and 2017 were USD 55 million and USD 69 million, respectively.

Employer's contribution for 2017
For the six months ended 30 June 2017, the Group contributed USD 91 million to its defined benefit pension plans and USD 9 million to other post-retirement plans, compared to USD 91 million and USD 8 million, respectively, in the same period of 2016.

The expected 2017 contributions to the defined benefit pension plans and to the post-retirement benefit plans, revised as of 30 June 2017 for the latest information, amount to USD 153 million and USD 18 million, respectively.

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12 Variable interest entities

The Group enters into arrangements with VIEs in the normal course of business. The involvement ranges from being a passive investor to designing, structuring and managing the VIEs. The variable interests held by the Group arise primarily as a result of the Group's involvement in certain insurance-linked securitisations, life and health funding transactions, swaps in trusts, debt financing, investment, senior commercial mortgage and infrastructure loans as well as other entities, which meet the definition of a VIE.

When analysing whether the entity is a VIE, the Group mainly assesses if (1) the equity is sufficient to finance the entity's activities without additional subordinated financial support, (2) the equity holders have the right to make significant decisions affecting the entity's operations and (3) the holders of the voting rights substantively participate in the gains and losses of the entity.

When one of these criteria is not met, the entity is considered a VIE and is assessed for consolidation under the VIE section of the Consolidation Topic.

The party that has a controlling financial interest is called a primary beneficiary and consolidates the VIE. The party is deemed to have a controlling financial interest if it has both of the following:

- the power to direct the activities of the VIE that most significantly impact the entity's economic performance; and
- the obligation to absorb the entity's losses that could potentially be significant to the VIE or the right to receive benefits from the entity that could potentially be significant to the VIE.

For all its variable interests in VIEs, the Group assesses whether it has a controlling financial interest in these entities and, thus, is the primary beneficiary. The Group identifies the activities that most significantly impact the entity's performance and determines whether the Group has the power to direct those activities. In conducting the analysis, the Group considers the purpose, the design and the risks that the entity was designed to create and pass through to its variable interest holders. Additionally, the Group assesses if it has the obligation to absorb losses or if it has the right to receive benefits of the VIE that could potentially be significant to the entity. If both criteria are met, the Group has a controlling financial interest in the VIE and consolidates the entity.

The Group monitors changes to the facts and circumstances of the existing involvement with legal entities to determine whether they require reconsideration of the entity's designation as a VIE or voting interest entity. For VIEs, the Group reassesses regularly the primary beneficiary determination.

Insurance-linked securitisations
The insurance-linked securitisations transfer pre-existing insurance risk to investors through the issuance of insurance-linked securities. In insurance-linked securitisations, the securitisation vehicle assumes the insurance risk from a sponsor through insurance or derivative contracts. The securitisation vehicle generally retains the issuance proceeds as collateral, which consists of investment-grade securities. The Group does not have potentially significant variable interest in these vehicles and therefore is not a primary beneficiary.

Typically, the variable interests held by the Group arise through ownership of insurance-linked securities, in which case the Group's maximum loss equals the principal amount of the securities held by the Group.

Life and health funding vehicles
The Group participates in certain structured transactions that retrocede longevity and mortality risks to captive reinsurers with an aim to provide regulatory capital credit to a transaction sponsor through creation of funding notes by a separate funding vehicle which is generally considered a VIE. The Group's participation in these transactions is generally limited to providing contingent funding support via a financial contract with a funding vehicle, which represents a potentially significant variable interest in the funding vehicle. The Group does not have power to direct activities of the funding vehicles and therefore is not a primary beneficiary of the funding vehicles in these transactions. The Group's maximum exposure in these transactions equals either the total contract notional or outstanding balance of the funding notes issued by the vehicle, depending on the specific contractual arrangements.

Swaps in trusts

The Group provides interest rate and foreign exchange risk hedges to certain asset securitisation trusts which qualify as VIEs. As the Group's involvement is limited to interest rate and foreign exchange derivatives, it does not have power to direct any activities of the trusts and therefore does not qualify as primary beneficiary of any of these trusts. These activities are in run-off.

Debt financing vehicles

The Group consolidates a debt-financing vehicle created to collateralise reinsurance coverage provided by the Group. The Group manages the asset portfolio in the vehicle and absorbs the variability of the investment return of the vehicle's portfolio, thereby satisfying both criteria for a controlling financial interest: power over activities most significant to the vehicle's economic performance and significant economic interest.

Investment vehicles

The Group's variable interests in investment partnerships arise through ownership of the limited partner interests. Many investment partnerships are VIEs because the limited partners as a group lack kick-out or participating rights. The Group does not hold the general partner interest in the limited partnerships and therefore does not direct investment activities of the entity. Therefore, the Group lacks power over the relevant activities of the vehicles and, consequently, does not qualify as the primary beneficiary. The Group is exposed to losses when the values of the investments held by the investment vehicles decrease. The Group's maximum exposure to loss equals the Group's share of the investment.

The Group is a passive investor in structured securitisation vehicles issuing residential and commercial mortgage-backed securities (RMBS and CMBS, respectively) and other asset-backed securities (ABS). The Group's investments in RMBS, CMBS and other ABS are passive in nature and do not obligate the Group to provide any financial or other support to the issuer entities. By design, RMBS, CMBS and ABS securitisation entities are not adequately capitalised and therefore considered VIEs. The Group is not the primary beneficiary, because it does not have power to direct most significant activities. These investments are accounted for as available-for-sale as described in the investment note and not included in the tables below.

The Group consolidates an investment vehicle, because the Group holds the entire interest in the entity and makes investment decisions related to the entity. The investment vehicle is a VIE because it is structured as an umbrella company comprised of multiple sub-funds. The majority of the investments held in this vehicle are accounted for as available-for-sale and are disclosed in the investment note and not included in the tables below.

Investment vehicles for unit-linked business

Additionally, the Group invests on behalf of the policyholders as a passive investor in a variety of investment funds across various jurisdictions. By design, many of these funds meet a VIE definition. While the Group may have a potentially significant variable interest in some of these entities due to its share of the fund's total net assets, it never has power over the fund's investment decisions, or unilateral kick-out rights relative to the decision maker.

The Group is not exposed to losses in the aforementioned investment vehicles, as the investment risk is borne by the policyholder.

Senior commercial mortgage and infrastructure loans

The Group also invests in structured commercial mortgage and infrastructure loans, which are held for investment.

The commercial mortgage loans are made to non-recourse special purpose entities collateralised with commercial real estate. The entities are adequately capitalised and generally structured as voting interest entities. Occasionally, the borrower entities can be structured as limited partnerships where the limited partners do not have kick-out or participating rights, which results in the VIE designation.

The infrastructure loans are made to non-recourse special purpose entities collateralised with infrastructure project assets. Some borrower entities may have insufficient equity investment at risk, which results in the VIE designation.

The Group does not have power over the activities most significant to the aforementioned borrower entities designated as VIEs and therefore does not consolidate them.

The Group's maximum exposure to loss from its investments equals the loan outstanding amount.

Other

The Group consolidates a vehicle providing reinsurance to its members, because it serves as a decision maker over the entity's investment and underwriting activities, as well as provides retrocession for the majority of the vehicle's insurance risk and receives performance-based fees. Additionally, the Group is obligated to provide the vehicle with loans in case of a deficit. The vehicle is a VIE, primarily because its total equity investment at risk is insufficient and the members lack decision-making rights.

The Group did not provide financial or other support to any VIEs during 2017 that it was not previously contractually required to provide.

Consolidated VIEs

The following table shows the total assets and liabilities in the Group's balance sheet related to VIEs of which the Group is the primary beneficiary as of 31 December 2016 and 30 June 2017:

USD millions	2016	**2017**
Fixed-income securities available-for-sale	3 715	3 827
Short-term investments	128	38
Cash and cash equivalents	22	12
Accrued investment income	33	34
Premiums and other receivables	33	32
Deferred acquisition costs	9	10
Deferred tax assets	94	101
Other assets	8	11
Total assets	4 042	**4 065**
Unpaid claims and claim adjustment expenses	65	73
Unearned premiums	25	27
Reinsurance balances payable	6	11
Income taxes payable		1
Deferred and other non-current tax liabilities	213	227
Accrued expenses and other liabilities	14	16
Long-term debt	2 249	2 301
Total liabilities	2 572	**2 656**

The assets of the consolidated VIEs may only be used to settle obligations of these VIEs and to settle any investors' ownership liquidation requests. There is no recourse to the Group for the consolidated VIEs' liabilities. The assets of the consolidated VIEs are not available to the Group's creditors.

Non-consolidated VIEs

The following table shows the total assets and liabilities on the Group's balance sheet related to VIEs in which the Group held a variable interest but was not the primary beneficiary as of 31 December 2016 and 30 June 2017:

USD millions	2016	**2017**
Fixed income securities available-for-sale	415	401
Equity securities available-for-sale	466	516
Policy loans, mortgages and other loans	764	788
Other invested assets	1 419	1 270
Investments for unit-linked business	163	175
Total assets	3 227	**3 150**
Accrued expenses and other liabilities	78	87
Total liabilities	78	**87**

The following table shows the Group's assets, liabilities and maximum exposure to loss related to the VIEs in which the Group held a variable interest but was not the primary beneficiary as of 31 December 2016 and 30 June 2017:

			2016			**2017**
USD millions	Total assets	Total liabilities	Maximum exposure to loss[1]	Total assets	Total liabilities	Maximum exposure to loss[1]
Insurance-linked securitisations	336		331	318		316
Life and health funding vehicles	2	1	1 948	2	1	1 978
Swaps in trusts	164	77	–[2]	73	86	–[2]
Investment vehicles	1 728		1 729	1 717		1 718
Investment vehicles for unit-linked business	163		–	175		–
Senior commercial mortgage and infrastructure loans	834		834	865		865
Total	3 227	78	–[2]	**3 150**	**87**	**–[2]**

[1] Maximum exposure to loss is the loss the Group would absorb from a variable interest in a VIE in the event that all of the assets of the VIE are deemed worthless.
[2] The maximum exposure to loss for swaps in trusts cannot be meaningfully quantified due to their derivative character.

The assets and liabilities for the swaps in trusts represent the positive and negative fair values of the derivatives the Group has entered into with the trusts.

Cautionary note on forward-looking statements

Certain statements and illustrations contained herein are forward-looking. These statements (including as to plans, objectives, targets and trends) and illustrations provide current expectations of future events based on certain assumptions and include any statement that does not directly relate to a historical fact or current fact.

Forward-looking statements typically are identified by words or phrases such as "anticipate", "assume", "believe", "continue", "estimate", "expect", "foresee", "intend", "may increase" and "may fluctuate" and similar expressions or by future or conditional verbs such as "will", "should", "would" and "could". These forward-looking statements involve known and unknown risks, uncertainties and other factors, which may cause Swiss Re's actual results of operations, financial condition, solvency ratios, liquidity position or prospects to be materially different from any future results of operations, financial condition, solvency ratios, liquidity position or prospects expressed or implied by such statements or cause Swiss Re to not achieve its published targets.
Such factors include, among others:

- instability affecting the global financial system and developments related thereto;
- deterioration in global economic conditions;
- Swiss Re's ability to maintain sufficient liquidity and access to capital markets, including sufficient liquidity to cover potential recapture of reinsurance agreements, early calls of debt or debt-like arrangements and collateral calls due to actual or perceived deterioration of Swiss Re's financial strength or otherwise;
- the effect of market conditions, including the global equity and credit markets, and the level and volatility of equity prices, interest rates, credit spreads, currency values and other market indices, on Swiss Re's investment assets;
- changes in Swiss Re's investment result as a result of changes in its investment policy or the changed composition of its investment assets, and the impact of the timing of any such changes relative to changes in market conditions;
- uncertainties in valuing credit default swaps and other credit-related instruments;
- possible inability to realise amounts on sales of securities on Swiss Re's balance sheet equivalent to their mark-to-market values recorded for accounting purposes;
- the outcome of tax audits, the ability to realise tax loss carryforwards and the ability to realise deferred tax assets (including by reason of the mix of earnings in a jurisdiction or deemed change of control), which could negatively impact future earnings;
- the possibility that Swiss Re's hedging arrangements may not be effective;
- the lowering or loss of one of the financial strength or other ratings of one or more Swiss Re companies, and developments adversely affecting Swiss Re's ability to achieve improved ratings;
- the cyclicality of the reinsurance industry;
- uncertainties in estimating reserves;

- uncertainties in estimating future claims for purposes of financial reporting, particularly with respect to large natural catastrophes, as significant uncertainties may be involved in estimating losses from such events and preliminary estimates may be subject to change as new information becomes available;
- the frequency, severity and development of insured claim events;
- acts of terrorism and acts of war;
- mortality, morbidity and longevity experience;
- policy renewal and lapse rates;
- extraordinary events affecting Swiss Re's clients and other counterparties, such as bankruptcies, liquidations and other credit-related events;
- current, pending and future legislation and regulation affecting Swiss Re or its ceding companies and the interpretation of legislation or regulations by regulators;
- legal actions or regulatory investigations or actions, including those in respect of industry requirements or business conduct rules of general applicability;
- changes in accounting standards;
- significant investments, acquisitions or dispositions, and any delays, unexpected costs or other issues experienced in connection with any such transactions;
- changing levels of competition; and
- operational factors, including the efficacy of risk management and other internal procedures in managing the foregoing risks.

These factors are not exhaustive. Swiss Re operates in a continually changing environment and new risks emerge continually. Readers are cautioned not to place undue reliance on forward-looking statements. Swiss Re undertakes no obligation to publicly revise or update any forward-looking statements, whether as a result of new information, future events or otherwise.

This communication is not intended to be a recommendation to buy, sell or hold securities and does not constitute an offer for the sale of, or the solicitation of an offer to buy, securities in any jurisdiction, including the United States. Any such offer will only be made by means of a prospectus or offering memorandum, and in compliance with applicable securities laws.

Note on risk factors

General impact of adverse market conditions

The operations of Swiss Reinsurance Company Ltd ("Swiss Re") and its subsidiaries (collectively, the "Group") as well as its investment returns are subject to market volatility and macro-economic factors, which are outside of the Group's control and are often inter-related.

Market sentiment is dominated in large part by concerns over the trends exemplified by the outcome of the US presidential election and the UK referendum on European Union (EU) membership. Growth forecasts among the principal global economies remain uneven and uncertain in an environment of elevated political uncertainty. Stable, but uneven growth, in the Eurozone could suffer as a result of the potential impact of populism and anti-globalisation sentiments on upcoming elections in Germany, and potentially Italy, during 2017. The planned withdrawal of the United Kingdom from the EU has created uncertainty not only for the United Kingdom but for the rest of the EU, and negotiations over withdrawal will likely continue to contribute to volatility and pose significant challenges for the EU and the United Kingdom, while also calling into question the ability of the EU to address significant ongoing structural challenges. The long-term effects of a withdrawal of the United Kingdom from the EU will depend in part on any agreements the United Kingdom makes to retain access to the single market within the European Economic Area (EEA) following such withdrawal, the scope and nature of which currently remain highly uncertain. As China's economy undergoes structural changes, recent near-term growth stabilisation may be reversed. Growth in China remains heavily dependent on government stimulus and credit expansion; it continues to face significant capital outflows, reflecting concerns over foreign currency, and its banking sector could be adversely impacted by rising interest rates. The foregoing may be exacerbated by geopolitical tensions, fears over security and migration, and uncertainty created generally by the policy pronouncements that have been, and may in the coming months be, announced by the US administration on a range of trade, security, foreign policy, environmental protection and other issues having global implications, as well as by the consequences of the implementation of such policy pronouncements.

With fewer options available to policymakers and concerns generally over the absence of realistic confidence-building measures, and with heightened risk that volatility or depressed conditions in one sector, one market, one country or one region could have far broader implications, volatility can be expected to continue. Further adverse developments or the continuation of adverse trends that in turn have a negative impact on financial markets and economic conditions could limit the Group's ability to access the capital markets and bank funding markets, could adversely affect the ability of counterparties to meet their obligations to the Group and could adversely affect the confidence of the ultimate buyers of reinsurance.

Any of the foregoing factors, developments and trends could have an adverse effect on the Group's investment results, which in the current low interest rate environment and soft insurance cycle could have a material adverse effect on the Group's overall results, make it difficult to determine the value of certain assets in the Group's portfolio, make it more difficult to acquire suitable investments to meet its risk and return criteria and otherwise have a material adverse effect on its business and operations.

Regulatory changes

Swiss Re and its subsidiaries operate in a highly regulated environment. The regulatory regimes to which members of the Group are subject have changed significantly in recent years and are expected to continue to evolve. During this period, there has been a noticeable trend to extend the scope of reforms and oversight, which initially targeted banks, beyond such institutions to cover reinsurance operations.

While some regulation is national in scope, the global nature of the Group's business means that its operations are subject in effect to a patchwork of global, national and regional standards. Swiss Re and its subsidiaries are subject to applicable regulation in each of the jurisdictions in which they conduct business, particularly Switzerland, the United States, the United Kingdom, Luxembourg and Germany. In addition, the Group could be affected by regulatory changes or developments affecting the overall Swiss Re group, comprising Swiss Re Ltd ("SRL") and its consolidated subsidiaries, of which the Group is a part (the "Swiss Re Group").

In addition, regulators in jurisdictions beyond those where the Group has core operations increasingly are playing a far greater oversight role, requiring more localised resources and, despite a predominantly local focus, also raise issues of a cross-border nature. Furthermore, evolving regulatory schemes and requirements may be inconsistent or may conflict with each other, thereby subjecting the Group, particularly in light of the increasing focus on legal entities in isolation, to higher compliance and legal costs, as well as the possibility of higher operational, capital and liquidity costs. The effect of these trends could be exacerbated to the extent that the current political environment results in a return to more bilateral, and less harmonised, cross-border regulatory efforts.

There is an evolving focus on classifying certain insurance companies as systemically important as well. The Group could be designated as a global systemically important financial institution ("SIFI") under the framework for SIFIs developed by the Financial Stability Board, or as a systemically important non-bank financial company by the Financial Stability Oversight Council ("FSOC") in the United States. Separately, the International Association of Insurance Supervisors, an international body that represents insurance regulators and supervisors, has published and since refined its methodology for identifying global systemically important insurers ("G-SIIs") and also published a framework for supervision of internationally active insurance groups. If and when reinsurers are included in the list of G-SIIs, the Group could be so designated. Were the Group to be designated as a G-SII, it could be subject to one or both of the resulting regimes, once implemented, including capital standards under both regimes (the basic capital requirement for G-SIIs and the insurance capital standard for internationally active insurance groups), which would have various implications for the Group, including additional compliance costs and reporting obligations as well as heightened regulatory scrutiny in various jurisdictions. In addition, the Group ultimately will be subject to oversight of its Swiss regulator in respect of recovery and resolution planning.

The Group cannot predict which legislative and/or regulatory initiatives will be enacted or promulgated, what the scope and content of these initiatives ultimately will be, when they will be effective and what the implications will be for the industry, in general, and for the Group, in particular. The Group may be subject to changes in views of its regulators in respect of the models that the Group uses for capital and

solvency purposes, and could be adversely affected if for example it is required to use standard models rather than internal models. Generally, legal and regulatory changes could have a material impact on the Group's business. Uncertainty triggered by the outcome of the UK referendum on EU membership could also impact the legislative and/or regulatory regimes to which the Group or the broader Swiss Re Group is subject, both in the United Kingdom and in the European Union.

In addition, regulatory changes could occur in areas of broader application, such as competition policy and tax laws. Changes in tax laws, for example, could increase the taxes the Group pays, the attractiveness of products offered by the Group, the Group's investment activities and the value of deferred tax assets. Any number of these changes could apply to the Group and its operations. These changes, or inconsistencies between the various regimes that apply to the Group, could increase the costs of doing business, reduce access to liquidity, limit the scope of current or future business or affect the competitive balance, or could make reinsurance less attractive to primary insurers.

Market risk

Volatility and disruption in the global financial markets could expose the Group to significant financial and capital markets risk, including changes in interest rates, credit spreads, equity prices and foreign currency exchange rates, which may adversely impact the Group's financial condition, results of operations, liquidity and capital position. The Group's exposure to interest rate risk is primarily related to the market price and cash flow variability associated with changes in interest rates. In general, a low interest rate environment, such as the one experienced in recent years, poses significant challenges to the insurance and reinsurance industries, with earnings capacity under stress unless lower investment returns from fixed income assets can be offset by lower combined ratios or higher returns from other asset classes. Economic weakness, fiscal tightening and monetary policies are keeping government yields low, which impacts investment yields and affects the profitability of life savings products with interest rate guarantees. Exposure to credit spreads primarily relates to market price and cash flow variability associated with changes in credit spreads. When credit spreads widen, the net unrealised loss position of the Group's investment portfolio can increase, as could other-than-temporary impairments.

The Group is exposed to changes in the level and volatility of equity prices, as they affect the value of equity securities themselves as well as the value of securities or instruments that derive their value from a particular equity security, a basket of equity securities or a stock index. The Group is also subject to equity price risk to the extent that the values of life-related benefits under certain products and life contracts, most notably variable annuity business, are tied to financial market values; to the extent market values fall, the financial exposure on guarantees related to these contracts would increase to the extent this exposure is not hedged. While the Group has an extensive hedging programme covering its existing variable annuity business that it believes is sufficient, certain risks cannot be hedged, including actuarial risks, basis risk and correlation risk. Exposure to foreign exchange risk arises from exposures to changes in spot prices and forward prices as well as to volatile movements in exchange rates.

These risks can have a significant effect on investment returns and market values of securities positions, which in turn may affect both the Group's results of operations and financial condition. The Group continues to focus on asset-liability management

for its investment portfolio, but pursuing even this strategy has its risks – including possible mismatch – that in turn can lead to reinvestment risk. The Group seeks to manage the risks inherent in its investment portfolio by repositioning the portfolio from time to time, as needed, and to reduce risk and fluctuations through the use of hedges and other risk management tools.

Credit risk

If the credit markets were again to deteriorate and further asset classes were to be impacted, the Group could experience losses. Changes in the market value of the underlying securities and other factors impacting their price could give rise to market value losses. If the credit markets were to deteriorate again, the Group could also face write-downs in other areas of its portfolio, including other structured instruments, and the Group and its counterparties could face difficulties in valuing credit-related instruments. Differences in opinion with respect to valuations of credit-related instruments could result in legal disputes among the Group and its counterparties as to their respective obligations, the outcomes of which are difficult to predict and could be material.

Liquidity risks

The Group's business requires, and its clients expect, that it has sufficient capital and sufficient liquidity to meet its re/insurance obligations, and that this would continue to be the case following the occurrence of any foreseeable event or series of events, including extreme catastrophes, that would trigger insurance or reinsurance coverage obligations. The Group's uses of funds include obligations arising in its reinsurance business (including claims and other payments as well as insurance provision repayments due to portfolio transfers, securitisations and commutations), which may include large and unpredictable claims (including catastrophe claims), funding of capital requirements and operating costs, payment of principal and interest on outstanding indebtedness and funding of acquisitions. The Group also has unfunded capital commitments in its private equity and hedge fund investments, which could result in funding obligations at a time when it is subject to liquidity constraints. In addition, the Group has potential collateral requirements in connection with a number of reinsurance arrangements, the amounts of which may be material and the meeting of which could require the Group to liquidate cash equivalents or other securities.

The Group manages liquidity and funding risks by focusing on the liquidity stress that is likely to result from extreme capital markets scenarios or from extreme loss events or combinations of the two. Generally, the ability to meet liquidity needs could be adversely impacted by factors that the Group cannot control, such as market dislocations or interruptions, adverse economic conditions, severe disruption in the financial and worldwide credit markets and the related increased constraints on the availability of credit; changes in interest rates, foreign exchange rates and credit spreads; or by perceptions among market participants of the extent of the Group's liquidity needs.

Unexpected liquidity needs (including to meet collateral calls) could require the Group to incur indebtedness or liquidate investments or other assets. The Group may not be able to secure new sources of liquidity or funding, should projected or actual liquidity fall below levels it requires. The ability to meet liquidity needs through asset sales may be constrained by market conditions and the related stress on valuations, and through third-party funding may be limited by constraints on the general availability of credit and willingness of lenders to lend. In addition, the Group's ability to meet liquidity

needs may also be constrained by regulatory requirements that require regulated entities to maintain or increase regulatory capital, or that restrict intra-group transactions, the timing of dividend payments from subsidiaries or the fact that certain assets may be encumbered or otherwise non-tradable. Failure to meet covenants in lending arrangements could give rise to collateral-posting or defaults, and further constrain access to liquidity. Finally, any adverse ratings action could trigger a need for further liquidity (for example, by triggering termination provisions or collateral delivery requirements in contracts to which the Group is a party) at a time when the Group's ability to obtain liquidity from external sources is limited by such ratings action.

Counterparty risks

The Group is exposed to the risk of defaults, or concerns about defaults, by its counterparties. Securities trading counterparties, counterparties under swaps and other derivative contracts, and financial intermediaries may default on their obligations due to bankruptcy, insolvency, lack of liquidity, adverse economic conditions, operational failure, fraud or other reasons, which could have a material adverse effect on the Group.

The Group could also be adversely affected by the insolvency of, or other credit constraints affecting, counterparties in its reinsurance operations. Moreover, the Group could be adversely affected by liquidity issues at ceding companies or at third parties to whom the Group has retroceded risk, and such risk could be exacerbated to the extent any such exposures are concentrated.

Risks relating to credit rating downgrades

Ratings are an important factor in establishing the competitive position of reinsurance companies. Third-party rating agencies assess and rate the financial strength of reinsurers and insurers. These ratings are intended to measure a company's ability to repay its obligations and are based upon criteria established by the rating agencies. Ratings may be revised downward or revoked at the sole discretion of the rating agencies.

The Group's ratings reflect the current opinion of the relevant rating agencies. One or more of its ratings could be downgraded or withdrawn in the future, and market conditions could increase the risk of downgrade. Rating agencies may increase the frequency and scope of ratings reviews, revise their criteria or take other actions that may negatively impact the Group's ratings. In addition, changes to the process or methodology of issuing ratings, or the occurrence of events or developments affecting the Group, could make it more difficult for the Group to achieve improved ratings which it would otherwise have expected.

As claims paying and financial strength ratings are key factors in establishing the competitive position of reinsurers, a decline in ratings alone could make reinsurance provided by the Group less attractive to clients relative to reinsurance from competitors with similar or stronger ratings. A decline in ratings could also cause the loss of clients who are required by policy or regulation to purchase reinsurance only from reinsurers with certain ratings. Certain larger reinsurance contracts contain terms that would allow the ceding companies to cancel the contract if the Group's ratings or those of its subsidiaries are downgraded beyond a certain threshold. Moreover, a decline in ratings could impact the availability and terms of unsecured financing and obligate the Group to provide collateral or other guarantees in the course of its reinsurance business or trigger early termination of funding

arrangements, potentially resulting in a need for additional liquidity. As a ratings decline could also have a material adverse impact on the Group's costs of borrowing or ability to access the capital markets, the adverse implications of a downgrade could be more severe.

Legal and regulatory risks

In the ordinary course of business, the Group is involved in lawsuits, arbitrations and other formal and informal dispute resolution procedures, the outcomes of which determine rights and obligations under insurance, reinsurance and other contractual agreements. From time to time, the Group may institute, or be named as a defendant in, legal proceedings, and the Group may be a claimant or respondent in arbitration proceedings. These proceedings could involve coverage or other disputes with ceding companies, disputes with parties to which the Group transfers risk under reinsurance arrangements, disputes with other counterparties or other matters. The Group cannot predict the outcome of any of the foregoing, which could be material for the Group.

The Group is also involved, from time to time, in investigations and regulatory proceedings, which could result in adverse judgements, settlements, fines and other outcomes. The number of these investigations and proceedings involving the financial services industry has increased in recent years, and the potential scope of these investigations and proceedings has also increased, not only in respect of matters covered by the Group's direct regulators, but also in respect of compliance with broader business conduct rules, including those in respect of anti-trust, market abuse, bribery, money laundering, trade sanctions and data protection and privacy. The Group also is subject to audits and challenges from time to time by tax authorities, which could result in increases in tax costs, changes to internal structures and interest and penalties. Tax authorities may also actively pursue additional taxes based on retroactive changes to tax laws. The Group could be subject to risks arising from alleged, or actual, violations of any of the foregoing, and could also be subject to risks arising from potential employee misconduct, including non-compliance with internal policies and procedures and malfeasance, such as undertaking or facilitating cyber attacks on internal systems. Substantial legal liability could materially adversely affect the Group's business, financial condition or results of operations or could cause significant reputational harm, which could seriously affect its business.

Insurance, operational and other risks

As part of the Group's ordinary course operations, the Group is subject to a variety of risks, including risks that reserves may not adequately cover future claims and benefits; risks that catastrophic events (including hurricanes, windstorms, floods, earthquakes, acts of terrorism, man-made disasters such as industrial accidents, explosions, and fires, and pandemics) may expose the Group to unexpected large losses (and related uncertainties in estimating future claims in respect of such events); changes in the insurance industry that affect ceding companies, particularly those that further increase their sensitivity to counterparty risk; competitive conditions (including as a result of consolidation and the availability of significant levels of alternative capacity); cyclicality of the industry; risks related to emerging claims and coverage issues (including, for example, trends to establish stricter building standards, which can lead to higher industry losses for earthquake cover based on higher replacement values); macro developments giving rise to emerging risks, such as climate change and technological developments (including greater exposure to cyber risks, which could have a range of consequences from operational disruption, to loss of proprietary or customer data, to greater regulatory burdens and potential liability);

risks arising from the Group's dependence on policies, procedures and expertise of ceding companies; risks related to investments in emerging markets; and risks related to the failure of, or attacks directed at, the Group's operational systems and infrastructure. Any of the foregoing, as well as the occurrence of future risks that the Group's risk management procedures fail to identify or anticipate, could have a material adverse effect on the Group, and could also give rise to reputational risk.

Use of models; accounting matters

The Group is subject to risks relating to the preparation of estimates and assumptions that management uses, for example, as part of its risk models as well as those that affect the reported amounts of assets, liabilities, revenues and expenses in the Group's financial statements, including assumed and ceded business. For example, the Group estimates premiums pending receipt of actual data from ceding companies, which actual data could deviate from the estimates. In addition, particularly with respect to large natural catastrophes, it may be difficult to estimate losses, and preliminary estimates may be subject to a high degree of uncertainty and change as new information becomes available.

Deterioration in market conditions could have an adverse impact on assumptions used for financial reporting purposes, which could affect possible impairment of present value of future profits, fair value of assets and liabilities, deferred acquisition costs or goodwill. Moreover, regulators could require the use of standard models instead of permitting the use of internal models. To the extent that management's estimates or assumptions prove to be incorrect, it could have a material impact on underwriting results (in the case of risk models) or on reported financial condition or results of operations, and such impact could be material.

The Group's results may be impacted by changes in accounting standards, or changes in the interpretation of accounting standards. Changes in accounting standards could impact future reported results or require restatement of past reported results. The Group's results may also be impacted if regulatory authorities take issue with any conclusions the Group may reach in respect of accounting matters.

The Group uses non-GAAP financial measures in its external reporting. These measures are not prepared in accordance with US GAAP or any other comprehensive set of accounting rules or principles, and should not be viewed as substitutes for measures prepared in accordance with US GAAP. Moreover, these may be different from, or otherwise inconsistent with, non-GAAP financial measures used by other companies. These measures have inherent limitations, are not required to be uniformly applied and are not audited.

Risks related to the Swiss Re corporate structure

Following the realignment of the corporate structure of SRL in 2012, the asset base, liquidity position, capital profile and other characteristics of the Group of relevance to its counterparties changed. Swiss Re is a wholly owned subsidiary of SRL, and the Group represents only two of the four principal operating segments of the Swiss Re Group. Capital, funding, reserve and cost allocations are made at the Swiss Re Group level across the four operating segments based principally on business plans as measured against US GAAP and economic value management metrics. Decisions at the Swiss Re Group level in respect of the broader Swiss Re Group could have an adverse impact on the Group's financial condition, including its capital and liquidity levels, as well as on its SST ratio. As part of the Swiss Re Group's focus on efficient

capital allocation, the Group expects to be paying dividends to SRL. Decisions on dividends payable by each of the operating segments, including the Group, are made at the Swiss Re Group level based on legal entity, regulatory, capital and liquidity considerations. The Swiss Re Group expects that, over time, its structure will continue to evolve, and while to date all of the Swiss Re Group's principal operations, including the Group, remain wholly owned, in the future the Swiss Re Group may elect to partner with minority investors in or within one or more of the Swiss Re Group's business units or sub-groups within its business units, which could alter historical approaches taken in respect of capital, liquidity, funding and/or dividends, as well as other governance matters, including strategy for such business unit or sub-group.

While further changes to the overall Swiss Re Group structure may not have a financial statement impact on a Swiss Re Group consolidated basis, they would impact the Group to the extent that operations are transferred into or from the Group, or as a result of intra-group transactions (from the perspective of the Swiss Re Group) to the extent the Group is a counterparty to any such transactions.

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