

Swiss Re ReAssure Ltd

Half-Year 2019 Report

Financial highlights

For the six months ended 30 June

USD millions, unless otherwise stated	2018	2019	Change in %
Net income attributable to common shareholder	90	134	49
Premiums earned and fee income	278	288	4
Dividends on common shares	1 077	994	-8
Shareholder's equity (31.12.2018/30.06.2019)	4 350	3 913	-10
Return on equity in % ¹	3.3	6.5	
Gross cash generation ²	662	572	-14

¹ Return on equity is calculated by dividing annualised net income attributable to common shareholder by average common shareholder's equity.

² Gross cash generation is the estimated net cash arising from business activity within the Group during the reporting period, taking into account both surplus development and certain capital actions. It is calculated gross across both the Group and MS&AD's interest in ReAssure.

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Income statement

For the six months ended 30 June

USD millions	Note	2018	2019
Revenues			
Gross premiums written	3	252	233
Net premiums written	3	106	95
Change in unearned premiums		-5	2
Premiums earned	3	101	97
Fee income from policyholders		177	191
Net investment income – non-participating business	5	412	374
Net realised investment gains/losses – non-participating business	5	51	109
Net investment result – unit-linked and with-profit business	5	394	3 428
Total revenues		1 135	4 199
Expenses			
Life and health benefits	3	-452	-717
Return credited to policyholders		-353	-3 007
Acquisition costs	3	-82	-73
Operating expenses		-127	-164
Total expenses before interest expenses		-1 014	-3 961
Income before interest and income tax expense		121	238
Interest expenses		-19	-20
Income before income tax expense		102	218
Income tax expense		-12	-84
Net income attributable to common shareholder		90	134

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	2018	2019
Net income attributable to common shareholder	90	134
Other comprehensive income, net of tax:		
Change in net unrealised investment gains/losses	-587	707
Change in cash flow hedges	12	1
Change in foreign currency translation	-100	33
Change in adjustment for pension benefits	5	2
Impact of sale to non-controlling shareholder		-359
Other comprehensive income attributable to non-controlling interests		359
Total comprehensive income/loss before attribution of non-controlling interests	-580	877
Comprehensive income attributable to non-controlling interests		-359
Total comprehensive income/loss attributable to common shareholders	-580	518

Reclassification out of accumulated other comprehensive income

For the six months ended 30 June

2018 USD millions	Net unrealised investment gains/losses ¹	Cash flow hedges ¹	Foreign currency translation	Adjustment from pension benefits ²	Accumulated other comprehensive income
Balance as of 1 January	2 171	-10	-340	-83	1 738
Change during the period	-609	9	-99	2	-697
Amounts reclassified out of accumulated other comprehensive income	-57	3		4	-50
Tax	79		-1	-1	77
Balance as of period end	1 584	2	-440	-78	1 068

2019 USD millions	Net unrealised investment gains/losses ¹	Cash flow hedges ¹	Foreign currency translation	Adjustment from pension benefits ²	Accumulated other comprehensive income
Balance as of 1 January	1 286	7	-550	-71	672
Impact of sale to non-controlling shareholder	-516		140	17	-359
Change during the period	1 008	-2	33	1	1 040
Amounts reclassified out of accumulated other comprehensive income	-145	3		1	-141
Tax	-156				-156
Balance as of period end	1 477	8	-377	-52	1 056

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	31.12.2018	30.06.2019
Investments	5,6,7		
Fixed income securities available-for-sale (amortised cost: 2018: 17 702; 2019: 18 006)		19 334	20 501
Policy loans, mortgages and other loans		922	1 117
Investment real estate		170	152
Short-term investments		894	402
Other invested assets		542	622
Investments for unit-linked and with-profit business (including fixed income securities trading: 4 938 in 2018 and 4 506 in 2019, equity securities at fair value through earnings: 22 698 in 2018 and 25 450 in 2019)		29 122	31 214
Total investments		50 984	54 008
Cash and cash equivalents		1 158	1 967
Accrued investment income		362	333
Premiums and other receivables		112	146
Reinsurance recoverable on unpaid claims and policy benefits		1 847	1 810
Deferred acquisition costs	4	721	676
Acquired present value of future profits	4	503	488
Goodwill		134	134
Income taxes recoverable		46	63
Deferred tax assets		420	563
Other assets		188	438
Total assets		56 475	60 626

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

Liabilities and equity

USD millions	Note	31.12.2018	30.06.2019
Liabilities			
Unpaid claims and claim adjustment expenses		352	357
Liabilities for life and health policy benefits		21 715	21 470
Policyholder account balances		26 364	28 154
Unearned premiums		136	134
Funds held under reinsurance treaties		133	133
Reinsurance balances payable		62	48
Income taxes payable		21	88
Deferred and other non-current tax liabilities		880	1 201
Short-term debt	8	217	1 170
Accrued expenses and other liabilities		796	945
Long-term debt	8	1 449	1 480
Total liabilities		52 125	55 180
Equity			
Common shares, GBP 1 par value 2018: 2 738 045; 2019: 2 738 045 registered shares		4	4
Additional paid-in capital		5 174	5 216
Accumulated other comprehensive income:			
Net unrealised investment gains/losses, net of tax		1 286	1 477
Cash flow hedges, net of tax		7	8
Foreign currency translation, net of tax		-550	-377
Adjustment for pension and other post-retirement benefits, net of tax		-71	-52
Total accumulated other comprehensive income		672	1 056
Retained earnings		-1 500	-2 363
Shareholder's equity		4 350	3 913
Non-controlling interests			1 533
Total equity		4 350	5 446
Total liabilities and equity		56 475	60 626

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	2018	2019
Common shares		
Balance as of 1 January	4	4
Changes during the period		
Balance as of period end	4	4
Additional paid-in capital		
Balance as of 1 January	5 061	5 174
Impact of sale to non-controlling shareholder ¹		42
Capital contribution	113	
Balance as of period end	5 174	5 216
Net unrealised investment gains/losses, net of tax		
Balance as of 1 January	2 171	1 286
Impact of sale to non-controlling shareholder ¹		-516
Changes during the period	-885	707
Balance as of period end	1 286	1 477
Cash flow hedges, net of tax		
Balance as of 1 January	-10	7
Changes during the period	17	1
Balance as of period end	7	8
Foreign currency translation, net of tax		
Balance as of 1 January	-340	-550
Impact of sale to non-controlling shareholder ¹		140
Changes during the period	-210	33
Balance as of period end	-550	-377
Adjustment for pension and other post-retirement benefits, net of tax		
Balance as of 1 January	-83	-71
Impact of sale to non-controlling shareholder ¹		17
Changes during the period	12	2
Balance as of period end	-71	-52
Retained earnings		
Balance as of 1 January	-605	-1 500
Net income attributable to common shareholder	182	134
Dividends on common shares	-1 077	-994
Transactions under common control ²		-3
Balance as of period end	-1 500	-2 363
Shareholder's equity	4 350	3 913
Non-controlling interests		
Balance as of 1 January	0	0
Transactions with non-controlling interests		1 174
Other comprehensive income attributable to non-controlling interests		
Change in unrealised investment gains/losses		516
Change in foreign currency translation		-140
Other		-17
Balance as of period end	0	1 533
Total equity	4 350	5 446

¹ In June 2019, MS&AD Insurance Group Holdings Inc acquired a 25% non-controlling interest in ReAssure Group plc, a subsidiary of the Group.

² This includes a business transfer to an entity outside of the SRRL 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	2018	2019
Cash flows from operating activities		
Net income attributable to common shareholder	90	134
Adjustments to reconcile net income to net cash provided/used by operating activities:		
Depreciation, amortisation and other non-cash items	84	73
Net realised investment gains/losses	96	-2 995
Change in:		
Technical provisions and other reinsurance assets and liabilities, net	-1 166	2 723
Funds held by ceding companies and under reinsurance treaties	-6	1
Reinsurance recoverable on unpaid claims and policy benefits	24	35
Other assets and liabilities, net	39	46
Income taxes payable/recoverable	-227	82
Trading positions, net	3	-44
Net cash provided/used by operating activities	-1 063	55
Cash flows from investing activities		
Fixed income securities:		
Sales	2 451	486
Maturities	299	304
Purchases	-1 051	-1 006
Net purchases/sales/maturities of short-term investments	215	502
Net purchases/sales/maturities of other investments	39	-226
Net purchases/sales/maturities of investments held for unit-linked and with-profit business	259	542
Net cash provided/used by investing activities	2 212	602
Cash flows from financing activities		
Policyholder account balances, unit-linked and with-profit business:		
Deposits	296	249
Withdrawals	-1 474	-1 307
Issuance/repayment of long-term debt	-9	645
Issuance/repayment of short-term debt	-207	355
Capital contribution received from parent	113	
Dividends paid to parent	-1 077	-994
Transactions with non-controlling interests		1 216
Net cash provided/used by financing activities	-2 358	164
Total net cash provided/used	-1 209	821
Effect of foreign currency translation	-52	-12
Change in cash and cash equivalents	-1 261	809
Cash and cash equivalents as of 1 January	2 543	1 158
Cash and cash equivalents as of 30 June	1 282	1 967

Interest paid was USD 20 million and USD 17 million for the six months ended 30 June 2018 and 2019, respectively. Tax paid was USD 239 million and USD 2 million for the six months ended 30 June 2018 and 2019, respectively.

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

Notes to the Group financial statements

1 Organisation and summary of significant accounting policies

Nature of operations

The Swiss Re ReAssure Group, which is headquartered in Jersey, comprises Swiss Re ReAssure Limited (the parent company, referred to as "SRRL") and its subsidiaries (collectively, the "Group"). The Group acquires individual closed blocks of in-force long-term life, pensions and health business through reinsurance, legal transfers of books of business to the Group, the acquisition of life insurance companies or a combination thereof. The principal products administered are long-term life and pension products, permanent health insurance, critical illness products and retirement annuities.

SRRL is a wholly owned subsidiary of Swiss Re Life Capital Ltd, which is wholly owned by 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, which includes SRRL and its subsidiaries. SRRL and its subsidiaries manage the closed book business of the Life Capital segment in the United Kingdom and Republic of Ireland.

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 2018.

On 30 June 2019, MS&AD Insurance Group Holdings Inc as holder of 25% of the outstanding shares of ReAssure Jersey One Ltd (RJOL), which holds 100% of the shares of SRRL and is a subsidiary of Swiss Re Life Capital Ltd, exchanged its shares in RJOL against a 25% share in ReAssure Group Plc., a subsidiary of the SRRL Group. The resulting non-controlling interests in equity can be found in the statement of shareholder's equity.

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 2019, 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 7 August 2019. This is the date on which the financial statements are available to be issued.

Adoption of new accounting standards

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 former lease guidance. The ASU also requires that for qualifying sale-leaseback transactions the seller recognises any gain or loss (based on the estimated fair value of the asset at the time of sale) when control of the asset is transferred instead of amortising it over the lease period. The Group adopted ASU 2016-02 on 1 January 2019 together with the following related ASUs on topic 842, “Leases”: ASU 2018-01, ASU 2018-10, ASU 2018-11, ASU 2018-20 and ASU 2019-01. In line with the adoption method provided by ASU 2018-11 “Targeted Improvements”, the Group applied the new leases standard to its leases on the adoption date. The Group elected a package of practical expedients under the transition guidance within the new standard, which among other things allowed to carry forward the historical lease classification of existing leases. The adoption did not have a material impact on the Group’s financial statements.

In March 2017, the FASB issued ASU 2017-08, “Premium Amortization on Purchased Callable Debt Securities”, an update to subtopic 310-20, “Receivables – Nonrefundable Fees and Other Costs”. The update applies to certain purchased callable debt securities held at a premium. The ASU requires that those premiums should be amortised to the earliest call date and not to the maturity date. The Group adopted ASU 2017-08 on a modified retrospective basis on 1 January 2019. The adoption did not have a material impact on the Group’s financial statements.

In July 2017, the FASB issued ASU 2017-11, “Accounting for Certain Financial Instruments with Down Round Features”, an update to topic 260, “Earnings Per Share”, topic 480, “Distinguishing Liabilities from Equity” and topic 815, “Derivatives and Hedging”. A down round feature is a provision in an equity-linked financial instrument (or embedded features) that reduces the exercise price if the entity later sells stock for a lower price or issues an equity-linked instrument with a lower exercise price than the instrument’s original exercise price. The amendments in this update change the classification analysis of certain equity-linked financial instruments (or embedded features) with down round features and require that a down round feature no longer precludes equity classification when assessing whether the instrument is indexed to an entity’s own stock. The Group adopted ASU 2017-11 on 1 January 2019. The adoption did not have an impact on the Group’s financial statements.

In August 2017, the FASB issued ASU 2017-12, “Targeted Improvements to Accounting for Hedging Activities”, an update to topic 815, “Derivatives and Hedging”. The update expands and refines hedge accounting for both nonfinancial and financial risk components and aligns the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements. The ASU eliminates the requirement to separately measure and report hedge ineffectiveness and requires presentation of all items that affect earnings in the same income statement line as the hedged item. The new standard also provides alternatives for applying hedge accounting to additional hedging strategies and for measuring the hedged item in fair value hedges of interest rate risk. Further, the standard reduces the cost and complexity of applying hedge accounting by easing the requirements for effectiveness testing, hedge documentation and application of the critical terms match method. The Group adopted ASU 2017-12 on 1 January 2019. The adoption did not have a material impact on the Group’s financial statements.

In June 2018, the FASB issued ASU 2018-07, “Improvements to Nonemployee Share-Based Payment Accounting”, an update to topic 718, “Compensation – Stock Compensation”. The update expands the scope of topic 718 to include share-based payment transactions for acquiring goods and services from nonemployees. The Group adopted ASU 2018-07 on 1 January 2019. The adoption did not have an impact on the Group’s financial statements.

In June 2018, the FASB issued ASU 2018-08, "Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made", an update to topic 958, "Not-for-Profit Entities". The amendments in this update clarify and improve the former guidance about whether a transfer of assets (or the reduction, settlement, or cancellation of liabilities) is a contribution or an exchange transaction. The Group adopted ASU 2018-08 on a modified prospective basis on 1 January 2019. The adoption did not have an impact on the Group's financial statements.

In October 2018, the FASB issued ASU 2018-16, "Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes", an update to topic 815, "Derivatives and Hedging". The amendments in this update permit the use of the OIS rate based on SOFR as a US benchmark interest rate in order to facilitate the LIBOR to SOFR transition. The Group adopted ASU 2018-16 on 1 January 2019. The adoption did not have an impact on the Group's financial statements.

Future adoption of new accounting standards

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. The standard is applicable to all financial assets such as financial instruments that are measured at amortised cost, available-for-sale debt securities and reinsurance recoverables. The objective of the expected credit loss model is that a reporting entity recognises its estimate of expected credit losses incorporating forward-looking information in a valuation allowance for financial assets in scope. The ASU is effective for annual and interim periods beginning after 15 December 2020. For most affected financial assets, the ASU must be adopted using a modified retrospective approach, with a cumulative effect adjustment recorded to opening retained earnings on the adoption date. The Group is currently assessing the impact of the new requirements.

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 unrecognised 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 recognise an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognised 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 adoption of the ASU is permitted. The Group is currently assessing the impact of the new requirements.

In August 2018, the FASB issued ASU 2018-12, "Targeted Improvements to the Accounting for Long-Duration Contracts", an update to topic 944, "Financial Services—Insurance". This ASU requires that the cash flows and net premium ratio will be updated for changes in insurance assumptions (eg mortality, morbidity, terminations) when measuring the liability for future policy benefits for non-participating traditional and limited-payment insurance and reinsurance contracts. The effect of updating cash flow assumptions will be measured on a retrospective catch-up basis and presented separately from the ongoing policyholder benefit expense in the statement of operations in the period the update is made. There will no longer be a provision for adverse deviation. In addition, the discount rate used to reflect the time value of money in the calculation of the liability for future policy benefits will be standardised. An upper-medium-grade fixed-income instrument yield will be required, which differs from the current requirement to use a discount rate reflecting expected investment yields. Further, a locked-in rate will be used in the periodic calculation of the net premium ratio and accretion of interest on the liability for income statement purposes. For balance sheet remeasurement purposes, the discount rate will be updated at each reporting date, with the effect of discount rate changes on the liability recorded immediately in other comprehensive income (OCI). The ASU requires deferred acquisition costs (DAC) relating to most long-duration contracts to be amortised on a constant basis over the expected term of the contract, and the resulting amortisation amount should not be a function of revenue or profit. The new standard also introduces a new category called market risk benefits, which are features that protect the contract holder from capital market risk and expose the insurer to that risk. These features have to be measured at fair value, with changes in own credit risk recognised in OCI, and presented separately in the primary financial statements. The ASU also requires significant additional disclosures, including disaggregated roll forwards of the liability for future policy benefits, policyholder account balances, market risk benefits and DAC. The ASU is effective for annual and interim periods beginning after 15 December 2020. Early adoption of the amendments is permitted. The new guidance relating to measurement of the traditional and limited-payment contract liabilities and DAC amortisation has to be adopted under a modified retrospective transition approach, with an option to elect a full retrospective transition if certain criteria are met. Under the modified retrospective approach, for contracts in force at the transition date, an entity would continue to use the existing locked-in

investment yield interest rate assumptions to calculate the net premium ratio. However, for balance sheet measurement purposes, policyholder liabilities are discounted at the upper-medium-grade fixed-income instrument yield at the transition date, with the impact of the change recognised against accumulated OCI. The Group is currently assessing the impact of the new requirements.

2 Information on business segments

The Group acquires closed blocks of in-force life and health insurance business, either through reinsurance, by the purchase of shares of a life insurance company or the transfer of its business to the Group or a combination thereof, and typically assumes responsibility for administering the underlying policies. The administration of the business may be managed directly or, where appropriate, in partnership with a third party.

The Group currently operates in the United Kingdom and the Republic of Ireland, which are also the two core operating business segments.

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's operating segments are outlined below.

United Kingdom

The United Kingdom segment is the consolidated ReAssure business operating within the United Kingdom. This segment acquires individual closed blocks of in-force long-term life, pensions and health business. The segment administers the policies until they reach maturity, are surrendered, or an insured event occurs. The main products administered are long-term life and pension products, permanent health insurance and critical illness products and retirement annuities. This segment includes unit-linked and with-profit business as well as non-participating business.

A unit-linked fund is a collection of assets that many individuals can invest in. Investing in such a fund allows for a much larger range of investments than could normally be achieved by one individual. The policyholder bears the underlying investment risk. The Group invests the assets in accordance with the stated objectives for the particular fund, which the policyholder has selected, and earns fees from the management of these assets. The investment performance, net of fees, is earned by the individual contract holder.

With-profit business is designed to provide long-term growth in the invested money of policyholders, some certainty of the amount which can be received on certain dates and some protection against stock market fluctuations. The Group invests the assets in a diverse portfolio covering a wide range of asset classes and geographical regions in order to manage market risk, and aims to distribute a part of its profit to the with-profits policyholders in the form of a bonus.

The non-participating business contains other insurance products such as term assurance or annuities. Policyholder benefits are determined by the terms of the products at inception. The investment risk is borne by the Group, not the policyholder.

Republic of Ireland

The Republic of Ireland segment reflects the operations of Ark Life Designated Activity Company (dac), which is based in Dublin. The principal activity of this segment relates to the administration of unit-linked and non-participating blocks of closed book life assurance and pension business.

Group items and consolidation

Items not allocated to the business segments are included in the "Group items and consolidation" column, which encompasses SRRL, the holding company of the Group, and Swiss Re ReAssure Midco Limited. The purpose of these companies is to provide funding of investments and acquisitions in the Group companies and to operate as the financing entities of the Group. Additionally, the column includes consolidated items as segment information is presented net of intragroup arrangements. Such elimination of intra-group transactions includes mainly intersegmental funding.

a) Business segments – income statement

For the six months ended 30 June

2018 USD millions	United Kingdom	Republic of Ireland	Group items and consolidation	Total
Revenues				
Gross premiums written	215	37		252
Net premiums written	96	10		106
Change in unearned premiums	-5			-5
Premiums earned	91	10		101
Fee income from policyholders	164	13		177
Net investment income – non-participating business	439	-1	-26	412
Net realised investment gains/losses – non-participating business	51			51
Net investment result – unit-linked and with-profit business	359	35		394
Total revenues	1 104	57	-26	1 135
Expenses				
Life and health benefits	-449	-3		-452
Return credited to policyholders	-321	-32		-353
Acquisition costs	-84	2		-82
Operating expenses	-118	-9		-127
Total expenses before interest expenses	-972	-42		-1 014
Income/loss before interest and income tax expense	132	15	-26	121
Interest expenses			-19	-19
Income/loss before income tax expense/benefit	132	15	-45	102
Income tax expense/benefit	-17	-1	6	-12
Net income/loss attributable to common shareholder	115	14	-39	90

2019 USD millions	United Kingdom	Republic of Ireland	Group items and consolidation	Total
Revenues				
Gross premiums written	201	32		233
Net premiums written	87	8		95
Change in unearned premiums	2			2
Premiums earned	89	8		97
Fee income from policyholders	179	12		191
Net investment income – non-participating business	376	-1	-1	374
Net realised investment gains/losses – non-participating business	96		13	109
Net investment result – unit-linked and with-profit business	3 195	233		3 428
Total revenues	3 935	252	12	4 199
Expenses				
Life and health benefits	-715	-2		-717
Return credited to policyholders	-2 782	-225		-3 007
Acquisition costs	-75	2		-73
Operating expenses	-156	-8		-164
Total expenses before interest expenses	-3 728	-233		-3 961
Income before interest and income tax expense	207	19	12	238
Interest expenses	-3		-17	-20
Income/loss before income tax expense/benefit	204	19	-5	218
Income tax expense	-78	-6		-84
Net income/loss attributable to common shareholder	126	13	-5	134

Business segments – balance sheet

As of 31 December 2018 and 30 June 2019

2018 USD millions	United Kingdom	Republic of Ireland	Group items and consolidation	Total
Total assets	53 961	2 609	–95	56 475

2019 USD millions	United Kingdom	Republic of Ireland	Group items and consolidation	Total
Total assets	56 967	2 772	887	60 626

3 Insurance information

For the six months ended 30 June

Premiums written and premiums earned

USD millions	2018	2019
Premiums written, thereof:		
Direct	252	233
Ceded	-146	-138
Net premiums written	106	95
Premiums earned, thereof:		
Direct	247	235
Ceded	-146	-138
Net premiums earned	101	97

Life and health benefits

USD millions	2018	2019
Life and health benefits paid, thereof:		
Gross	-1 074	-972
Ceded	237	181
Net life and health benefits paid	-837	-791
Change in life and health benefits, thereof:		
Gross	409	109
Ceded	-24	-35
Net change in life and health benefits	385	74
Life and health benefits	-452	-717

Acquisition costs

USD millions	2018	2019
Acquisition costs, thereof:		
Gross	-82	-73
Ceded		
Net acquisition costs	-82	-73

Insurance receivables

As of 31 December 2018 and 30 June 2019, the Group had receivables invoices from ceded insurance business of USD 26 million and USD 28 million, respectively, and premium receivables invoices from assumed business of USD 86 million and USD 117 million, respectively.

Policyholder dividends

Policyholder dividends are recognised as an element of policyholder benefits. In the six months ended 30 June 2018 and 2019, the relative percentage of participating insurance of the life and health policy benefits was 18% and 18%, respectively. The amount of policyholder dividend expense for the six months ended 30 June 2018 and 2019 was USD 137 million and USD 67 million, respectively.

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

As of and for the year ended 31 December 2018 and as of 30 June 2019, the DAC were as follows:

USD millions	2018	2019
Opening balance as of 1 January	0	721
Deferred	869	
Amortisation	-112	-45
Effect of foreign currency translation	-36	
Closing balance	721	676

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 2018 and 30 June 2019, the PVFP was as follows:

2018 USD millions	Positive PVFP	Negative PVFP	Total
Opening balance as of 1 January	1 101	-544	557
Amortisation	-113	40	-73
Interest accrued on unamortised PVFP	68	-17	51
Effect of foreign currency translation	-62	30	-32
Closing balance	994	-491	503

2019 USD millions	Positive PVFP	Negative PVFP	Total
Opening balance as of 1 January	994	-491	503
Amortisation	-63	25	-38
Interest accrued on unamortised PVFP	31	-8	23
Effect of foreign currency translation			
Closing balance	962	-474	488

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.

5 Investments

Investment income

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

USD millions	2018	2019
Fixed income securities	362	317
Policy loans, mortgages and other loans	14	18
Other current investments	2	3
Net result from deposit-accounted contracts	64	73
Gross investment income	442	411
Investment expenses	-26	-34
Interest charged for funds held	-4	-3
Net investment income – non-participating business	412	374

Realised gains and losses

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

USD millions	2018	2019
Fixed income securities available-for-sale:		
Gross realised gains	68	143
Gross realised losses	-11	-1
Net realised/unrealised gains/losses on other investments	3	-30
Net realised/unrealised gains/losses on insurance-related activities	1	-1
Foreign exchange gains/losses	-10	-2
Net realised investment gains/losses – non-participating business	51	109

Investment result – unit-linked and with-profit business

For unit-linked contracts, the investment risk is borne by the policyholder. For with-profit contracts, the majority of the investment risk is also borne by the policyholder, although there are certain guarantees that limit the downside risk for the policyholder, and a certain proportion of the returns may be retained by the Group (typically 10%).

Net investment result on unit-linked and with-profit business credited to policyholders for the six months ended 30 June was as follows:

USD millions	2018		2019	
	Unit-linked	With-profit	Unit-linked	With-profit
Investment income – fixed income securities	34	63	30	52
Investment income – equity securities	400	32	410	35
Investment income – other	6	6	9	6
Total investment income – unit-linked and with-profit business	440	101	449	93
Realised gains/losses – fixed income securities	–31	–83	77	111
Realised gains/losses – equity securities	–58	16	2 468	220
Realised gains/losses – other	4	5	21	–11
Total realised gains/losses – unit-linked and with-profit business	–85	–62	2 566	320
Total net investment result – unit-linked and with-profit business	355	39	3 015	413

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.

Investments available-for-sale

Amortised cost or cost and estimated fair values of fixed income securities classified as available-for-sale as of 31 December 2018 and 30 June 2019 were as follows:

2018 USD millions	Amortised cost or cost	Gross unrealised gains	Gross unrealised losses	Estimated fair value
Debt securities issued by governments and government agencies:				
US Treasury and other US government corporations and agencies	92	21		113
United Kingdom	4 040	510	-17	4 533
France	121	36		157
Netherlands	83	17		100
Other	308	31		339
Total	4 644	615	-17	5 242
Corporate debt securities	12 603	1 068	-97	13 574
Mortgage- and asset-backed securities	455	64	-1	518
Fixed income securities available-for-sale	17 702	1 747	-115	19 334

2019 USD millions	Amortised cost or cost	Gross unrealised gains	Gross unrealised losses	Estimated fair value
Debt securities issued by governments and government agencies:				
US Treasury and other US government corporations and agencies	92	25		117
United Kingdom	4 554	657	-2	5 209
France	160	41		201
Netherlands	104	20		124
Other	349	39		388
Total	5 259	782	-2	6 039
Corporate debt securities	12 410	1 695	-30	14 075
Mortgage- and asset-backed securities	337	50		387
Fixed income securities available-for-sale	18 006	2 527	-32	20 501

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 2018 and 30 June 2019.

2018 USD millions	Less than 12 months		12 months or more		Total	
	Fair value	Unrealised losses	Fair value	Unrealised losses	Fair value	Unrealised losses
Debt securities issued by governments and government agencies:						
United Kingdom	381	5	195	12	576	17
Other			3	0	3	0
Total	381	5	198	12	579	17
Corporate debt securities	1 231	41	662	56	1 893	97
Mortgage- and asset-backed securities	2	0	9	1	11	1
Total	1 614	46	869	69	2 483	115

2019 USD millions	Less than 12 months		12 months or more		Total	
	Fair value	Unrealised losses	Fair value	Unrealised losses	Fair value	Unrealised losses
Debt securities issued by governments and government agencies:						
United Kingdom	545	2	-7	0	538	2
Other	16	0	3	0	19	0
Total	561	2	-4	0	557	2
Corporate debt securities	240	4	583	26	823	30
Mortgage- and asset-backed securities			9	0	9	0
Total	801	6	588	26	1 389	32

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 2018 and 30 June 2019, USD 839 million and USD 847 million, respectively, of fixed income securities available-for-sale were callable.

USD millions	Amortised cost or cost	2018	Amortised cost or cost	2019
		Estimated fair value		Estimated fair value
Due in one year or less	586	590	867	872
Due after one year through five years	2 638	2 726	2 753	2 897
Due after five years through ten years	3 289	3 528	3 020	3 333
Due after ten years	10 734	11 972	11 029	13 012
Mortgage- and asset-backed securities with no fixed maturity	455	518	337	387
Total fixed income securities available-for-sale	17 702	19 334	18 006	20 501

Assets pledged

As of 31 December 2018 and 30 June 2019, investments with a carrying value of USD 62 million and USD 72 million were placed on deposit or pledged to secure certain reinsurance liabilities.

Investments held for unit-linked and with-profit business

The carrying amounts of investments held for unit-linked and with-profit business as of 31 December 2018 and 30 June 2019 were as follows:

USD millions	2018		2019	
	Unit-linked	With-profit	Unit-linked	With-profit
Fixed income securities trading	2 253	2 685	1 842	2 664
Equity securities at fair value through earnings	20 902	1 796	23 474	1 976
Investment real estate	537	230	511	218
Other	702	17	523	6
Total investments for unit-linked and with-profit business	24 394	4 728	26 350	4 864

Mortgage, policy and other loans, and investment real estate

As of 31 December 2018 and 30 June 2019 the carrying and respective fair values of investments in mortgage, policy and other loans and investment real estate (excluding unit-linked and with-profit business) were as follows:

USD millions	2018		2019	
	Carrying value	Fair value	Carrying value	Fair value
Policy loans	6	6	6	6
Mortgage loans	597	601	634	644
Other loans	319	329	477	497
Investment real estate	170	170	152	152

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

Other financial assets and liabilities by measurement category

As of 31 December 2018 and 30 June 2019

2018 USD millions	Fair Value	Amortised Cost or cost	Not in scope ¹	Total
Other invested assets				
Derivative financial instruments	131			131
Other		411		411
Other invested assets	131	411	0	542
Accrued expenses and other liabilities				
Derivative financial instruments	144			144
Other		437	215	652
Accrued expenses and other liabilities	144	437	215	796

2019 USD millions	Fair Value	Amortised Cost or cost	Not in scope ¹	Total
Other invested assets				
Derivative financial instruments	128			128
Other		494		494
Other invested assets	128	494	0	622
Accrued expenses and other liabilities				
Derivative financial instruments	153			153
Other		531	260	791
Accrued expenses and other liabilities	153	531	260	944

¹Amounts do not relate to financial assets or liabilities.

6 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 (eg 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 (eg 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 less liquid corporate debt 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. 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 2019, these adjustments were not material.

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 and 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 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 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. The factors specifically considered in the 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.

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 CMBS.

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.

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 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 2018 and 30 June 2019, the fair values of assets and liabilities measured on a recurring basis by level of input were as follows:

2018 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)	Total
Assets				
Fixed income securities held for proprietary investment purposes		18 424	910	19 334
Debt securities issued by US government and government agencies		113		113
Debt securities issued by non-US governments and government agencies		5 126	3	5 129
Corporate debt securities		12 667	907	13 574
Mortgage- and asset-backed securities		518		518
Fixed income securities backing unit-linked and with-profit business		4 938		4 938
Equity securities backing unit-linked and with-profit business	22 686	12		22 698
Short-term investments held for proprietary investment purposes		894		894
Short-term investments backing unit-linked and with-profit business		11		11
Derivative financial instruments	3	136		139
Interest rate contracts		6		6
Foreign exchange contracts		123		123
Equity contracts	1	2		3
Contracts backing unit-linked and with-profit business	2	5		7
Investment real estate			166	166
Total assets at fair value	22 689	24 415	1 076	48 180
Liabilities				
Derivative financial instruments	-3	-14	-127	-144
Interest rate contracts		-12		-12
Foreign exchange contracts				0
Other contracts			-127	-127
Contracts backing unit-linked and with-profit business	-3	-2		-5
Total liabilities at fair value	-3	-14	-127	-144

2019 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)	Total
Assets				
Fixed income securities held for proprietary investment purposes		19 673	828	20 501
Debt securities issued by US government and government agencies		116		116
Debt securities issued by non-US governments and government agencies		5 920	3	5 923
Corporate debt securities		13 250	825	14 075
Mortgage- and asset-backed securities		387		387
Fixed income securities backing unit-linked and with-profit business		4 506		4 506
Equity securities backing unit-linked and with-profit business	25 437	13		25 450
Short-term investments held for proprietary investment purposes		402		402
Short-term investments backing unit-linked and with-profit business				0
Derivative financial instruments	2	135		137
Interest rate contracts		4		4
Foreign exchange contracts		124		124
Equity contracts		1		1
Contracts backing unit-linked and with-profit business	2	6		8
Investment real estate			149	149
Total assets at fair value	25 439	24 729	977	51 145
Liabilities				
Derivative financial instruments		-39	-114	-153
Interest rate contracts		-24		-24
Foreign exchange contracts		-2		-2
Other contracts		-1	-114	-115
Contracts backing unit-linked and with-profit business		-12		-12
Total liabilities at fair value		-39	-114	-153

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

As of 31 December 2018 and 30 June 2019, the reconciliation of the fair values of assets and liabilities measured on a recurring basis using significant unobservable inputs was as follows:

2018 USD millions	Fixed income securities	Investment real estate	Total assets	Derivative liabilities	Total liabilities
Assets and liabilities					
Balance as of 1 January	969	198	1 167	-150	-150
Realised/unrealised gains/losses:					
Included in net income		13	13	-11	-11
Included in other comprehensive income	-28		-28		0
Purchases	35		35		0
Sales	-1	-33	-34	1	1
Settlements	-9		-9	24	24
Transfers into level 3 ¹	1		1		0
Transfers out of level 3 ¹	-1		-1		0
Impact of foreign exchange movements	-56	-12	-68	9	9
Closing balance as of 31 December	910	166	1 076	-127	-127

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

2019 USD millions	Fixed income securities	Investment real estate	Total assets	Derivative liabilities	Total liabilities
Assets and liabilities					
Balance as of 1 January	910	166	1 076	-127	-127
Realised/unrealised gains/losses:					
Included in net income	3	-2	1	13	13
Included in other comprehensive income	37		37		0
Purchases			0		0
Sales		-15	-15		0
Settlements	-58		-58		0
Transfers into level 3 ¹			0		0
Transfers out of level 3 ¹	-64		-64		0
Impact of foreign exchange movements			0		0
Closing balance as of 30 June	828	149	977	-114	-114

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	2018	2019
Gains/losses included in net income for the period	1	14
Whereof change in unrealised gains/losses relating to assets and liabilities still held at the reporting date	-3	-11

Quantitative information about level 3 fair value measurements

Unobservable inputs for major level 3 assets and liabilities as of 31 December 2018 and 30 June 2019 were as follows:

USD millions	2018	2019		Range (weighted average)
	Fair value	Fair value	Valuation technique / Unobservable input	
Assets				
Corporate debt securities	907	825		
Infrastructure loans	561	523	Discounted Cash Flow Model / Valuation spread	123 bps–213 bps (182 bps)
Private placement corporate debt	285	302	Corporate Spread Matrix / Credit spread	94 bps–363 bps (232 bps)
Investment real estate	166	149	Discounted Cash Flow Model / Discount rate	5% per annum
Liabilities				
Other derivative contracts	-127	-114		
Swap liability referencing real estate investments	-127	-114	Discounted Cash Flow Model / Discount rate	5% per annum

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 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 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 investment real estate and swap liability referencing real estate investment is the rate used to discount future cash flows from property sales. A significant increase (decrease) in this input in isolation would result in a significantly lower (higher) fair value measurement.

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 a position in the following line item:

Other derivative liabilities

For operational efficiencies, the Group elected the fair value option on a hybrid financial instrument, where the host contract is a debt instrument and the embedded derivative is pegged to the performance of the fund's real estate portfolio. The liability is carried at fair value and changes in fair value are reported as a component of earnings. In the balance sheet and the following fair value disclosures, this item is included under "Accrued expenses and other liabilities".

Liabilities measured at fair value pursuant to election of the fair value option

Pursuant to the election of the fair value option for the item described, the balances as of 31 December 2018 and 30 June 2019 were as follows:

USD millions	2018	2019
Liabilities		
Accrued expenses and other liabilities	-796	-945
of which at fair value pursuant to the fair value option	-127	-114

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	2018	2019
Accrued expenses and other liabilities	-5	13
Total	-5	13

Fair value changes from accrued expenses and other liabilities are reported in "Net realised investment gains/ losses – non-participating business".

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 2018 and 30 June 2019 were as follows:

2018 USD millions	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Total
Assets			
Policy loans		6	6
Mortgage loans		601	601
Other loans		329	329
Investment real estate		4	4
Total assets	0	940	940
Liabilities			
Debt	-874	-813	-1 687
Total liabilities	-874	-813	-1 687

2019 USD millions	Significant other observable inputs (level 2)	Significant unobservable inputs (level 3)	Total
Assets			
Policy loans		6	6
Mortgage loans		644	644
Other loans		497	497
Investment real estate		3	3
Total assets	0	1 150	1 150
Liabilities			
Debt	-1 542	-1 168	-2 710
Total liabilities	-1 542	-1 168	-2 710

Policy loans, other loans and certain mortgage loans are classified as level 3 measurements, as they do not have an active exit market. The fair value of some 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, are classified as level 2 measurements. Fair value 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.

7 Derivative financial instruments

The Group uses a variety of derivative financial instruments including swaps, options, forwards 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 OTC 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 2018 and 30 June 2019, the fair values and notional amounts of the derivatives outstanding were as follows:

2018 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	2 682	11	-14	-3
Foreign exchange contracts	991	2		2
Equity contracts	529	5	-3	2
Other contracts	1		-127	-127
Total	4 203	18	-144	-126
Derivatives designated as hedging instruments				
Foreign exchange contracts	870	121		121
Total	870	121	0	121
Total derivative financial instruments	5 073	139	-144	-5

2019 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	3 496	10	-37	-27
Foreign exchange contracts	420		-1	-1
Equity contracts	514	3		3
Other contracts			-114	-114
Total	4 430	13	-152	-139
Derivatives designated as hedging instruments				
Foreign exchange contracts	867	124	-1	123
Total	867	124	-1	123
Total derivative financial instruments	5 297	137	-153	-16

The notional amounts of derivative financial instruments give an indication of the Group's volume of derivative activity and are presented without set-off. The fair value assets are included in "Other invested assets" and "Investments for unit-linked and with-profit business", and the fair value liabilities are included in "Accrued expenses and other liabilities".

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” and “Net investment result – unit-linked and with-profit 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	2018	2019
Derivatives not designated as hedging instruments		
Interest rate contracts	12	-6
Foreign exchange contracts	-5	3
Equity contracts		-12
Other contracts	-5	2
Total gains/losses recognised in income	2	-13

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 2019, the following hedging relationships were outstanding:

Cash flow hedges

The Group entered into cross-currency swaps to reduce the exposure to foreign exchange volatility for a long-term debt instrument issued in the second quarter of 2016 and a portfolio of foreign currency denominated corporate bonds. These derivative instruments are designated as cash flow hedging instruments.

For the six months ended 30 June 2019, the Group recorded a loss of USD 2 million on derivatives in accumulated other comprehensive income. For the six months ended 30 June 2019, the Group reclassified a loss of USD 3 million from accumulated other comprehensive income into income.

As of 30 June 2019, the maximum length of time over which the Group hedged its exposure to the variability in future cash flows for forecasted transactions, excluding those forecasted transactions related to the payment of variable interest on existing financial instruments, was seven years.

The Group believes that the net gains and losses associated with cash flow hedges expected to be reclassified from accumulated other comprehensive income within the next twelve months cannot be reasonably estimated as they relate to foreign exchange volatility.

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 2018 and the six months ended 30 June 2019, the Group recorded accumulated net unrealised foreign currency remeasurement losses of USD 21 million and USD 19 million, respectively, in shareholder's equity. These offset translation gains and losses on the hedged net investment.

Maximum potential loss

The maximum potential loss as of 31 December 2018 and 30 June 2019 was approximately USD 139 million and USD 137 million, respectively. The maximum potential loss is based on the positive market replacement cost assuming non-performance of all counterparties.

8 Debt

The Group's debt as of 31 December 2018 and 30 June 2019 was as follow:

USD millions	2018	2019
Senior financial debt	217	1 170
Short-term debt	217	1 170
Senior financial debt	1 449	850
Subordinated financial debt		630
Long-term debt	1 449	1 480
Total carrying value	1 666	2 650
Total fair value	1 687	2 710

Interest expense on long-term debt

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

USD millions	2018	2019
Senior financial debt	11	7
Subordinated financial debt		2
Total	11	9

Long-term debt issued in 2019

In June 2019, ReAssure Group plc issued Tier 2 subordinated notes due 2029. The notes have an aggregate face value of GBP 500 million, with a fixed coupon of 5.867% per annum.

9 Variable interest entities

The Group enters into arrangements with variable interest entities (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 investment vehicles as well as senior commercial mortgage and infrastructure loans, 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:

- 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 regularly reassesses the primary beneficiary determination.

Investment vehicles

The Group consolidates a real estate investment entity, which holds real estate backing annuities business. The Group is its primary beneficiary, because it has both power over the entity's investment decisions and a significant variable interest in the entity.

The Group is a passive investor in structured securitisation vehicles issuing commercial mortgage-backed securities (CMBS) and other asset-backed securities (ABS). The Group's investments in 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, 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.

Investment vehicles for unit-linked business

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.

The Group did not provide financial or other support to any VIEs during 2019 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 2018 and 30 June 2019:

USD millions	2018	2019
Investment real estate	166	149
Cash and cash equivalents		2
Total assets	166	151
Accrued expenses and other liabilities	129	115
Total liabilities	129	115

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 Group's assets related to VIEs in which the Group held a variable interest but was not the primary beneficiary as of 31 December 2018 and 30 June 2019:

USD millions	2018	2019
Fixed income securities available-for-sale	186	136
Policy loans, mortgages and other loans	252	231
Investments for unit-linked and with-profit business	5 858	6 903
Total assets	6 296	7 270

The following table shows the Group's assets 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 2018 and 30 June 2019:

USD millions	Total assets	2018 Maximum exposure to loss ¹	Total assets	2019 Maximum exposure to loss ¹
Investment vehicles for unit-linked business	5 858		6 903	
Senior commercial mortgage and infrastructure loans	438	438	367	367
Total	6 296	438	7 270	367

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.

10 Benefit plans

Employer's contribution for 2019

For the six months ended 30 June 2019, the Group contributed USD 2 million to its defined benefit pension plan, compared to USD 2 million in the same period of 2018.

The expected 2019 contributions to the defined benefit pension plan, revised as of 30 June 2019 for the latest information, amount to USD 3 million.

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Cautionary note on forward-looking statements

Certain statements contained herein are forward-looking. These statements (including as to plans, objectives, targets and trends) 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 that may cause our actual results of operations, financial condition, liquidity position or prospects to be materially different from any future results of operations, financial condition, liquidity position or prospects expressed or implied by such statements. Among the key factors that have a direct bearing on our results of operations, financial condition, liquidity position or prospects are:

- further instability affecting the global financial system and developments related thereto;
- further deterioration in economic conditions in the United Kingdom or, more broadly, in global economic conditions;
- the Group’s ability to maintain sufficient liquidity and access to capital and funding;
- the effect of market conditions, including the global equity and credit markets, and the level and volatility of interest rates, credit spreads, equity prices, currency values and other market indices, on the Group’s investment assets;
- changes in the Group’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;
- possible inability to realise amounts on sales of securities on the Group’s balance sheet equivalent to their market-to-market values recorded for accounting purposes;
- mortality, morbidity, longevity and persistency rates;
- policy renewal and lapse rates;
- uncertainties in estimating reserves;
- extraordinary events affecting the Group’s counterparties;
- current, pending and future legislation and regulation affecting the Group and the interpretation of legislation or regulations by regulators, particularly in respect of minimum capital requirements;
- 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 and, in particular, the Group’s ability to integrate Guardian successfully and obtain the expected operational, capital and asset management synergies, benefits of scale and other expected benefits of the Guardian acquisition;
- changing levels of competition, including from new entrants into the market; and
- operational factors, including the efficacy of risk management and other internal procedures in managing the foregoing risks.

These factors are not exhaustive. We operate in a continually changing environment and new risks emerge continually. Readers are cautioned not to place undue reliance on forward-looking statements. We undertake 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

Note

Swiss Re ReAssure Limited ("SRRL") is a holding company for ReAssure Group plc ("RGplc"). The proposed initial public offering (formally announced in June 2019) of RGplc would have resulted in the deconsolidation of RGplc, and SRRL would have had only a minority interest in RGplc. That initial public offering has been suspended. The Swiss Re Group has announced that it retains the objective of reducing its ownership in order to deconsolidate RGplc. In anticipation of the initial public offering, the interest of our 25% shareholder, MS&AD Insurance Group Holdings Inc. ("MS&AD"), was restructured such that the Swiss Re Group now holds a 100% interest in SRRL, and SRRL now holds a 75% interest, and MS&AD holds a 25% interest, in RGplc.

Risks relating to adverse economic and market conditions in the UK

The operations of Swiss Re ReAssure Limited and its consolidated subsidiaries (collectively, the "Group"), as well as its investment returns, are subject to general macroeconomic conditions, particularly in the United Kingdom, as well as volatility in the global economic and financial markets. These, in turn, could be influenced, for example, by a range of political, economic and other uncertainties, some of the more significant of which are inter-related, such as the planned withdrawal of the United Kingdom from the European Union ("Brexit") and significant uncertainty regarding the basis of that withdrawal and the future relationship between the United Kingdom and the European Union; the possible emergence of trade barriers and other protection policies across a range of economies, including a sustained trade war between the United States and China; geopolitical tensions more broadly; a prolonged slowdown in one or more of the principal global economies, particularly in China, and possible recession; continued challenges faced by the Eurozone; the tightening of monetary policy; sustained challenges to multilateral institutions and frameworks; the domestic political situation in the United States, various member states of the European Union and potentially other countries; and heightened scrutiny of technology companies. The extent of the Group's exposure to these conditions and volatility depends in part on the extent to which the net present value of its future obligations to policyholders are affected by the changes in the value of its assets.

Under the Group's unit-linked and with-profit policies, investment risks are typically borne, in whole or in part, by its policyholders in accordance with the terms of the relevant policies and, accordingly, the Group's exposure to change in the value of the relevant assets underlying these policies is reduced. The Group's exposure to risks relating to unit-linked policies primarily relates to the level of investment management fees it is entitled to charge. In the case of with-profit policies, the Group's exposure to these risks relates to its proportion of total with-profit bonus declarations for the relevant fund that the Group is entitled to receive (maximum of 10%). A decrease in with-profit bonus declarations could cause policyholders to lapse as policyholders seek to maximise their returns, which could lead to a fall in profits for the Group. Furthermore, if losses in the with-profit funds are substantial enough to cause the value of their assets to fall below the contractual commitments to policyholders, the Group would be required to contribute additional capital to meet those policyholder liabilities. In the case of non-linked products, the Group bears risk when the benefits are not aligned with the investment performance of the assets which support them. Under the Group's non-linked policyholder liabilities, which principally comprise annuities, the benefits due to the Group's policyholders are not dependent upon the performance of the Group's assets supporting these liabilities. Accordingly, substantial decreases in the value of assets supporting the Group's non-linked policies could lead to an increase in the amount of regulatory capital that the Group is required to hold to meet its policyholder liabilities.

The impact of market risks faced by the Group is uncertain and difficult to predict, in particular due to difficulties in predicting the rate at which any deterioration may occur and over what duration, and the fact that many of the related risks to the business are outside the control of the Group. In the event of adverse economic, financial or market conditions in relevant markets, the Group's business, results of operations, financial condition and prospects could be adversely affected, and the Group's regulatory capital requirements could increase. If actual economic, financial or market conditions vary materially from those conditions that were assumed by the Group, at any given time, the Group may need to recalibrate the methodology that it uses to calculate its assumptions in respect of market conditions, which could lead to higher regulatory capital requirements.

Risks relating to defaults or declines in market value of fixed income securities held by the Group

The Group has significant holdings of fixed income securities, which are primarily used to back the Group's non-linked policyholder liabilities and regulatory capital requirements. As part of its asset and liability management policy, the Group seeks to match these non-linked liabilities with fixed income securities of appropriate duration and currency such that cash flows are largely matched. The Group is exposed to the risk of default from issuers or borrowers whose securities it holds. If any of the counterparties were to default on an asset held to support non-linked policyholder liabilities, it would adversely affect the Group's investment income and increase the Group's regulatory capital requirements. The Group is also exposed to the risk of decline in the market value of its fixed income securities. Ratings downgrades affecting issuers or guarantors, or similar trends that could worsen their credit quality, movement in credit spreads or fluctuations in interest rates could adversely impact the value of the relevant fixed income securities in the Group's investment portfolio, which in aggregate could have a material adverse effect on the Group. In addition, any such downgrade or trend could increase the Group's regulatory capital requirements, depending on whether the asset is held within the Group's matching adjustment ("Matching Adjustment") and the extent to which the Matching Adjustment can be used to offset the impact of the Group's regulatory capital requirements. A fall in market value of the Group's fixed income securities, whether as a result of the foregoing or developments in the global economy as a whole and/or developments specific to the issuers of those securities, could have a material adverse effect on its business, results of operations, financial condition and prospects and could lead to higher regulatory capital requirements.

Risks related to changes in interest rates and inflation risks

Interest rate fluctuations, including movements in interest rate spreads, such as gilt-swap spreads, affect the Group's assets and liabilities. The Group's investment portfolio contains interest rate-sensitive instruments and its obligations to its policyholders and pension schemes vary as interest rates fluctuate due to the discount rate used. As a result, a reduction in long-term interest rates or negative interest rates increases the Group's liabilities. For example, non-linked products have benefit payments that are fixed at the inception of the contract, and the Group bears the risk that the interest income and capital redemption from the financial assets backing the liabilities are insufficient to fund the benefits payable. The Group's asset and liability management strategy is designed to limit the amount of any mismatch between assets and liabilities where interest rates fluctuate. However, to the extent that such asset to liability matching is not practicable or fully achieved, it could have a material adverse effect on the Group's business, results of operations, financial condition and prospects. It could also lead to higher regulatory capital requirements and affect the Group's ability to release capital to pay dividends to its shareholders. In addition, the planned phasing out of the London Interbank Offered Rate (LIBOR), as well as uncertainty about the future of the Euro Interbank Offered Rate (EURIBOR) and other benchmarks, could have an adverse effect on the Group's interest rate sensitive liabilities. Changes to inflation rates could also have an adverse impact on the Group primarily due to (i) an increase in liabilities that are linked to an inflation escalation rate in the Group's annuity portfolio, which varies with an underlying market inflation measure, (ii) an increase in the Group's pension scheme obligations and (iii) an

increase in the Group's expenses, such as higher employee benefit related costs due to increasing inflation.

The Group also uses financial instruments, such as interest rate swaps, and holds fixed interest asset investments of a similar duration to hedge interest rate risk associated with the movements in best estimate liabilities and risk margin, as the risk margin will increase significantly if there is a material fall in long-term interest rates. However, hedging transactions do not eliminate the interest rate risk entirely, and the remaining mismatch between assets and liabilities could have a material adverse effect on the Group's business, results of operations, financial condition and prospects. In addition, any such mismatch could result in an increase in the Group's regulatory capital requirement.

Risks relating to equity markets

The Group has exposure to the equity markets and currency fluctuations through its unit-linked products, with-profit products and defined benefit pension scheme investments. The majority of the assets underlying the Group's unit-linked products are invested in equity securities, and therefore, the Group could be adversely affected by any substantial declines in the values of any such investments through the reduction of investment management fees received in connection with those assets. Reductions in the value of equity securities could also adversely impact the Group's proportion of the total with-profit bonus declarations. A substantial fall in equity markets could lead to a reduction in the surplus in the Group's with-profit funds and thus reduce the Group's proportion of the total with-profit bonus declarations. If losses in the with-profit funds are substantial enough to cause the value of the assets to fall below the contractual commitments to policyholders, the Group would be required to contribute the additional capital to meet those liabilities and such losses could affect its ability to release capital to pay dividends to its shareholders.

Risks relating to liquidity

The Group could be subject to liquidity requirements for a variety of reasons, including higher than expected policyholder payments and expenses, increased collateral required due to its derivative positions and other circumstances. The ability to meet these liquidity requirements (particularly if unexpected) could be adversely impacted by factors that the Group cannot control, such as financial and credit market dislocations or interruptions and the increased constraints on the availability of credit, adverse economic conditions, changes in interest rates, foreign exchange rates and credit spreads; or by perceptions among market participants of the extent of the Group's liquidity requirements.

Liquidity requirements could also require the Group to incur indebtedness. The Group may not be able to secure new sources of liquidity or funding, should projected or actual liquidity fall below levels it requires and market conditions constrain 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 it 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.

Further, the Group holds certain investments within its investment portfolios that may lack liquidity, such as privately placed fixed maturity securities, emerging market debt, private equity investments and unlisted equities, and intends to increase its exposures to illiquid credit assets. If significant amounts of liquidity are required on short notice in excess of expected cash requirements, it may be difficult to sell less liquid investments in a timely manner. If the Group were forced to sell certain assets, it may be unable to sell them for the prices at which they were purchased and may be forced to sell them at significantly lower prices. Any increases in liquidity requirements to which the Group is subject may increase its capital requirements.

Risks related to regulatory oversight

The extent and pace of change in governmental and regulatory policies have placed, and will continue to place, pressure on the Group's resource and increase compliance costs, as it responds to these changes and adapts to the changing environment.

The Group has been, and will continue to be, impacted by legal and regulatory developments, as well as fiscal or other policies and actions of various governmental and regulatory authorities, in particular in the United Kingdom and Ireland. The Group's business could further be impacted by general regulatory initiatives or regulatory initiatives directed specifically at its industry. For example, the Group's regulators might decide to impose a cap on ongoing fees that can be charged in respect to insurance policies. A reduction in such charges would reduce future fee income on existing policies. The Group could also be impacted by regulatory changes directed more broadly at financial services providers (for example, regarding employee misconduct and compliance with broader business conduct rules, including those in respect of market abuse, bribery, money laundering, trade sanctions, data protection and privacy) or regulatory changes prompted by political developments in the United Kingdom, Ireland and at the level of the European Union, including Brexit.

In recent years, the Prudential Regulatory Authority ("PRA"), the FCA ("Financial Conduct Authority") and the Central Bank of Ireland ("CBI") have each adopted an approach of intensive supervision in respect of the life and pensions sector covering all material facets of the Group's business. As a result of this and other recent regulatory initiatives, the increase in the level of regulatory oversight over the Group is likely to continue. The move to conduct-focused regulation may see a greater focus on customer outcomes, which may result in remediation exercises where the Group cannot demonstrate that it has met expected customer outcomes from the regulator's perspective. Such remediation could result in additional costs and reputational damage for the Group, which could have a material adverse effect on its business, results of operations, financial condition and prospects.

The Group cannot predict the exact nature, timing or scope of possible governmental initiatives, but future regulatory changes may potentially restrict its operations or mandate certain risks to be covered. The FCA, the PRA, the CBI and other regulators may also undertake regulatory interventions using their significant statutory powers, including through investigations, requests for data and analysis, interviews or reviews (including skilled persons reports), and may carry out formal "thematic reviews," which are sector-wide reviews or other informal sector-wide inquiries in respect of a theme or common issue or a particular type of product. For example, as a result of ongoing discussions with the PRA about the Group's treatment of expenses for future acquisitions in technical provisions, the Group changed its interpretation as previously reflected in its audited year-end Solvency II balance sheet, which required an increase in technical provisions on its Solvency II balance sheet as at 30 June 2019. Based on the discussions with the PRA, the Group believes that £100 million is a reasonable estimate of the likely level of additional technical provisions that will be required, although the additional provision may be higher or lower than that amount.

Regulatory intervention may lead to the FCA, the PRA and/or the CBI (and any other relevant regulators or bodies) requiring specific remediation in respect of historical practices (which could include compensating customers, fines or other penalties), changes going forward to the Group's practices, public censure and/or the loss or restriction of regulatory permissions necessary to carry on its business in the same manner as before. In addition, if any member of the Group were found to be in breach of any existing or new laws or regulations, such member could be subject to criminal, civil or administrative proceedings, as a result of which the Group's reputation could suffer and it could be fined or prohibited from engaging in some or all of its business activities, or the Group could be sued by counterparties and be forced to devote significant resources to defend itself.

Risks relating to regulatory requirements

The Group is required under Solvency II to maintain reserves of assets to match its best estimate liabilities. The Group maintains capital at target levels over and above its solvency capital requirement ("SCR") in accordance with its stated risk appetite. In order to calculate its SCR, the Group has availed itself of: (i) a partial internal model ("PIM") (since December 2018); (ii) a Matching Adjustment; (iii) a volatility adjustment ("Volatility Adjustment"); and (iv) Transitional Measures on Technical Provisions. The Group is exposed to the risk that existing Solvency II regulations may be amended in the future or new regulations with respect to capital adequacy may be implemented that do not favour UK insurers, particularly as a result of Brexit. These could, among other things, result in an increase in the regulatory capital requirements for the Group as well as the amendment to the calculation, or removal of certain Solvency II long-term guarantee measures that the Group currently applies to the calculation of its SCR, such as the application of a Matching Adjustment. The Group could face additional risks because Ark Life will remain subject (post-Brexit) to EU legislation and regulation.

The Group is also exposed to the risk that its regulators might withhold or withdraw certain of its regulatory approvals. For example, the Solvency II long-term guarantee measures that the Group uses to calculate SCR have been approved for use by the PRA. However, the Group could lose the benefit of their application, if it does not comply with the applicable rules relevant to their application. The withdrawal of PRA approval for the use of any of the measures used to calculate SCR could adversely impact the Group's regulatory capital position, which could restrict the ability of the Group to make required distributions to policyholders or affect its ability to release capital to pay dividends to its shareholders. In addition, if the Group were unable to meet an increase in regulatory capital requirements, the PRA and FCA would likely intervene and require the Group to take steps to safeguard the interests of policyholders and other customers with a view to restoring regulatory capital to acceptable levels within acceptable timescales.

The Group also has received PIM approval from the PRA, which includes an increased asset allocation to private debt assets. However, the PRA could impose restrictions on any further increases in asset allocation in private debt via the internal model change process, which could impact the ability of the Group to achieve its investment strategy.

Any change to applicable regulations or the withholding or rescinding of certain approvals could have a material adverse effect on its business, results of operations, financial condition and prospects and could lead to higher regulatory capital requirements.

Risks relating to legal and regulatory proceedings

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 contractual agreements and/or the Group's non-contractual rights and obligations arising at law. From time to time, the Group may institute, or be named as a defendant in, legal proceedings, and it may be a claimant or respondent in arbitration proceedings. These proceedings could involve coverage or other disputes with policyholders, disputes with parties to which the Group transfers risk under reinsurance arrangements, disputes with other counterparties or other matters. Additionally, disputes relating to financial services products, including insurance policies, are subject to the Pensions Ombudsman and Financial Ombudsman Services regime which exists to resolve disputes involving individual or small business policyholders. Any of the foregoing could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

Risks relating to growth strategy

As a consolidator of closed books, the Group relies on the acquisition of blocks of business and the replacement of policies as they run-off in order to continue to cover the fixed costs of its business model. In an effort to maintain and increase the Group's

cash flows and maintain economies of scale in its operations as its closed books run-off, the Group intends to continue to grow by selectively pursuing additional opportunities to build and enhance its franchise and product line in the UK market, predominantly by acquiring businesses that allow it to leverage its capabilities and build on its market-leading position as a consolidator of closed books. The Group may also consider acquisitions outside the United Kingdom that offer a strategic opportunity to further accelerate growth, namely in Europe.

The Group's ability to acquire closed books depends upon a number of factors, including its ability to identify acceptable acquisition candidates, consummate acquisitions, obtain regulatory consents from the PRA and other relevant regulatory authorities (such as for insurance business transfers under Part VII of the Financial Services and Markets Act) and internal fund mergers under Part VII, which may be made subject to restrictions as a condition of approval), obtain financing to support growth and maintain the Group's infrastructure to support its acquisition strategy and integrate acquired companies and portfolios successfully. Various external factors may influence sellers' decisions as to whether to dispose of their closed books and could also impact the Group's ability to make suitable acquisitions. The Group's ability to obtain regulatory consents could be affected by perceptions of its regulators regarding its ability to effectively and efficiently integrate acquired operations, as well as the financial implications of the acquisition and the impact of those financial implications on new and existing policyholders.

In order to fund future acquisitions, the Group will rely on the retention of surplus generated from its existing portfolio of policies, the capital markets for equity or debt funding or on bank funding. The availability of any such external funding will be dependent on a range of factors including market conditions and, in the case of debt capital markets and bank funding, on credit ratings.

In seeking closed books, the Group operates in a highly competitive market, in which key factors for success include industry knowledge and infrastructure requirements, migration and operational capabilities, relationships with regulators, adaptability to change and financial wherewithal. The Group competes with other closed book consolidators as well as a number of other potential purchasers of closed books, including insurance and reinsurance companies, as alternative capital continues to flow into the closed book market. The nature of the Group's competitors depends heavily on the constitution of the book being considered. The Group competes largely on the basis of pricing, and prices paid to acquire closed books tend to fluctuate over time (including as a result of increased competition). The Group's ability to compete is also affected by changes in the regulatory and political landscape, and the competitive environment continues to vary depending upon the size of the transaction and the type of business involved. As part of its strategy, the Group may seek closed books in Europe where the competitive landscape may differ from the United Kingdom. If the Group is unable to acquire additional closed books in line with its strategy or if it is unable to complete acquisitions due to any of the factors discussed above, it could have a material adverse effect on the Group's business, results of operations, financial condition and prospects, particularly if it is unable to reduce fixed costs in line with a reduced portfolio size.

When deciding to make an acquisition, the Group makes certain assumptions and determinations based on its due diligence of the business to be acquired, as well as other information then available (including, without independent verification). However, these assumptions and determinations involve risks and uncertainties that may cause them to be incorrect. As a result, the Group may not realise the full benefits that it expects from an acquisition. Following an acquisition, the Group's Solvency II balance sheet is updated to reflect the impact of the acquisition (including any consideration paid). Many of the items in the Group's Solvency II balance sheet require long-term assumptions to be made that may need to be reassessed if the acquired business does not perform in line with expectations, resulting in an adverse impact on its excess of assets over liabilities and the Group's regulatory capital position. Should the Group be unable to secure cash flows from the closed books it acquires or should the value of any acquired business be less than the consideration

paid (including as a result of adverse developments affecting value), it could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

Risks relating to adverse experience or changes in expectations

The Group monitors its actual experience against the actuarial assumptions that it uses for reserving and applies the outcome of such monitoring to refine its long-term assumptions. Based on these assumptions, the Group makes asset and liability management decisions aimed at ensuring an appropriate duration of assets and liabilities relative to one another. However, due to the underlying risks inherent in actuarial assumptions, it is not possible to determine precisely the amounts that will ultimately be paid to meet policyholder liabilities, and actual liabilities may vary from estimates, especially when those liabilities do not occur until well into the future. The Group is constantly evaluating the assumptions used to establish its liabilities and its actual claims experience and to the extent that the variance is material, or expected to persist, it may prompt a change in the assumption regarding future experience, which may impact the regulatory capital the Group deems it prudent to hold.

Primary factors that affect the Group's actuarial assumptions and liability experience are longevity, lapses and expenses. Any variance of the actual experience from the actuarial assumption may lead to changes in the level of capital that is required to be maintained. If the variance is material, it could lead to the Group recalibrating the risk methodology that it uses to model its assumptions and recalculating its best estimate liabilities, which could lead to a further increase in regulatory capital requirements and affect its ability to release capital to pay dividends to its shareholders. If the Group's reserving and/or regulatory capital requirements are significantly increased, the amount of cash or other assets available for other business purposes may decline.

Risks relating to the Group's cost base

Insurance funds closed to new business are, by their nature, in long-term run-off. This means that the income and in-force value of such funds will decline in the long-term as policies mature and are not replenished by writing new policies. Thus, in order to protect the returns to the Group, it is necessary to optimise the costs of managing such closed books, at least in line with the run-off profile of the book. This is partly addressed through the use of outsourcing arrangements and seeking new acquisitions across which to spread the Group's fixed costs. The Group is exposed to expense risk, which could arise from three primary sources: (i) an increase in actual expenses paid by the Group in administering its policyholder obligations compared to the expected expenses allowed for within the actuarial reserves for the best estimate assessment of this risk; (ii) an unforeseen event that increases the expenses overall for the Group; and (iii) a failure of existing expenses to decrease. An unexpected increase or persistence of expenses could have a material adverse effect on the Group's business, results of operations, financial condition and prospects and could lead to higher regulatory capital requirements and affect its ability to release capital to pay dividends to its shareholders.

Operational risks

The potential for operational risk exposure exists throughout the Group's business and primarily arises from the complexity of its book of business, coupled with the continually evolving nature of the business due to its transactions or emerging industry change. Integral to the Group's performance is the continued efficacy of its technical systems (including its proprietary platform and other financial, accounting, data processing and other systems) and operational infrastructure (or those of third parties), relationships with third parties and employees and key executives in the Group's day-to-day and ongoing operations. Failure by any or all of these resources subjects the Group to risks that may vary in size, scale and scope and could disrupt its businesses, result in regulatory intervention, reputational damage and/or cause losses. These risks include, but are not limited to, maintaining and updating processes and systems to keep pace with changing business, customer or regulatory requirements, the migration and integration of acquired closed books businesses onto the Group's proprietary platform, operational or technical failures, outsourcing risks due to interruption in third-party support and services, unlawful interference with the

Group's technical systems, terrorist activities, and ineffectiveness or exposure due to interruption in third party support, as well as the loss of key individuals or failure on the part of the key individuals to perform properly.

The Group's operations rely on the secure processing, storage and transmission of confidential and other information in its IT systems and networks. Although the Group takes protective measures and develops its systems and networks as circumstances warrant, the Group's systems and its data stored on third-party servers or applications by means of "cloud computing," its systems, software and networks (or those of third parties with whom the Group interacts or outsources to) may be vulnerable to unauthorised access (from within the Group or by third parties). In addition, computer viruses or other malicious code, cyber threats and other events could have a security impact and result in the loss, theft or disclosure of confidential information relating to policyholders or employees. Cyber-attacks, in particular, have become far more prevalent in the past few years, leading potentially to the theft or manipulation of confidential and proprietary information or loss of access to, or destruction of, data on the Group's systems or those of third parties.

The occurrence of one or more of such events in respect of the Group's systems, its data (wherever stored), its software or its networks could jeopardize the Group's or its clients' confidential and other information processed and stored in, and transmitted through, the Group's IT systems and networks or third-party platforms, or otherwise cause interruptions or malfunctions in the Group's or the Group's clients' or third parties' operations, which could result in significant losses or reputational harm, third party liability, business interruption, reputational harm and sometimes physical damage. In addition, the Group updates its systems and infrastructure to support its operations and growth and to respond to changes in regulations and markets. This updating can create risks associated with implementing new systems and integrating them with existing ones. Moreover, in the context of operational failures, the Group could face litigation and be required to pay damages or penalties, such as fines imposed by governmental and other regulatory authorities, resulting in increased costs and loss of revenue.

The Group may be required to expend significant additional resources to modify or enhance its protective measures and investigate and remediate vulnerabilities or other exposures, and it may be subject to litigation and financial losses that are either not insured against or not fully covered through any insurance maintained by the Group. Regulators are increasingly focused on promoting the protection of customer/client information and the integrity of information technology systems of regulated firms, for example the EU General Data Protection Regulation. These initiatives increase the risk of potential liability and could lead potentially to more conservative approaches to sharing data, which in turn could impact assessments of risks. Increased regulatory activity may also include greater scrutiny of personal data processing within the broader industry, which may give rise to regulatory intervention and reputational harm. Failure to comply with applicable regulations would expose the Group to significant regulatory fines. Any resulting perception that the Group does not adequately protect the privacy of personal information could result in the loss of current or potential relationships with sellers, policyholders and third-party service providers.

Any failure, termination or constraint in respect of the Group's systems or those of third parties to which operations are outsourced could adversely affect its ability to manage its exposure to risk or expand its businesses, or result in financial loss or liability, impairment of its liquidity, disruption of its businesses, regulatory intervention or reputational damage. Despite the resiliency plans and facilities the Group has in place, its ability to conduct business may be adversely impacted by a disruption in the infrastructure that supports its businesses (particularly its proprietary platform) and the communities in which the Group is located, such as a disruption to electrical, communications, internet, transportation or other services used by the Group or third parties with which the Group conducts business. If third parties to which the Group outsources certain IT activities suffer disruptions to, or failures in, their operational

systems and infrastructure, it may be unable to find and retain alternative service providers, in a timely manner and/or at commercially acceptable rates.

Use of models; accounting matters

The Group is subject to risks relating to the preparation of estimates and assumptions that management uses, including 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.

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 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 such 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

The Group forms part of the Life Capital Business Unit, which is one of the four 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 solvency capital requirements. As part of the Swiss Re Group's focus on efficient capital allocation, the Group expects to be paying dividends to the ultimate parent company of the Swiss Re Group. 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's structure provides flexibility in the way in which it finances operations and the Swiss Re Group expects that its structure will continue to evolve over time. In 2017, the Swiss Re Group entered into a transaction with MS&AD pursuant to which MS&AD agreed to invest in the Swiss Re Group's Life Capital business. In the future, the Swiss Re Group may partner (for purposes of acquisitions or otherwise) with other investors in, or within, one or more of its business units or sub-groups within its business units (including within the Group), which, subject to applicable regulatory requirements, have the potential to alter its 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 and board composition at the relevant corporate level. The Group's structure could also change in connection with acquisitions or dispositions. To the extent it undertakes acquisitions, it is subject to the risks inherent in acquiring and integrating new operations.

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