Risk and risk management

Risk management is key to Aviva's success. We accept the risks inherent to our core business lines of life, health and general insurance and asset management. We diversify these risks through our scale, geographic spread, the variety of the products and services we offer and the channels through which we sell them.

We receive premiums which we invest to maximise risk-adjusted returns, so that we can fulfil our promises to customers while providing a return to our shareholders.

In doing so we have a preference for retaining those risks we believe we are capable of managing to generate a return.

Looking forward, these risks may be magnified or dampened by current and emerging external trends (for example, climate change, cyber crime and political risks, such as Brexit) which may impact our current and longer term profitability and viability, in particular our ability to write profitable new business.

This includes the risk of failing to adapt our business model to take advantage of these trends. The 'Principal risk trends and causal factors' table in this section describes these trends, their impact, future outlook and how we manage these risks.

How we manage risk

Rigorous and consistent risk management is embedded across the Group through our Risk Management Framework, comprising our systems of governance, risk management processes and risk appetite framework.

Our governance

This includes risk policies and business standards, risk oversight committees and roles and responsibilities. Line management in the business is accountable for risk management which, together with the risk function and internal audit, form our 'three lines of defence'. The roles and responsibilities of the Board Governance Committee[1], Audit and Risk Committees and management's Disclosure, Asset Liability and Operational Risk Committees in relation to the oversight of risk management and internal control is set out in the 'Directors' and corporate governance report' in the Annual report and accounts.

Our process

The processes we use to identify, measure, manage, monitor and report risks, including the use of our risk models, and stress and scenario testing, are designed to enable dynamic risk-based decision-making and effective day-to-day risk management. Having identified and measured the risks of our business, depending on our risk appetite, we either accept these risks or take action to reduce, transfer or mitigate them.

Our risk appetite framework

This refers to the risks that we select in pursuit of return on capital deployed, the risks we accept but seek to minimise and the risks we seek to avoid or transfer to third parties, including quantitative expressions of the level of risk we can support (e.g. the amount of capital we are prepared to put at risk).

Types of risk inherent to our business model

Risks customers transfer to us

- Life and health insurance risk includes longevity risk (annuity customers living longer than we expect), mortality risk (customers with life protection), critical illness risk, expense risk (the amount it costs us to administer policies) and persistency risk (customers lapsing or surrendering their policies).
- General insurance risk is the risk arising from loss events (fire, flooding, windstorms, accidents etc).

Risks arising from our investments

- Credit risks (actual defaults and market expectation of defaults) create uncertainty in our ability to offer a minimum investment return on our investments.
- Liquidity risk is the risk of not being able to make payments when they become due because there are insufficient assets in cash form.
- Market risks result from fluctuations in asset values, including equity prices, property prices, foreign exchange, inflation and interest rates.

Risks from our operations and other business risks

- Operational risk is the risk of direct or indirect loss, arising from inadequate or failed internal processes, people and systems, or external events including changes in the regulatory environment.
- Asset management risk is the risk of customers redeeming funds, not investing with us, or switching funds, resulting in reduced fee income.

1 From 1 January 2020 the Committee has become Customer, Conduct and Reputation Committee. Further details are available in the Governance Report in the Annual Report and Accounts

Principal risk types

The types of risk to which the Group is exposed have not changed significantly over the year and are described in the table below. All of the risks below, and in particular operational risks, may have an adverse impact on our brand and reputation.

Risk type	Risk preference	Mitigation
Credit risk • Credit spread[1] • Credit default	We take a balanced approach to credit and believe we have the expertise to manage it and the structural investment advantages conferred to insurers with long-dated, relatively illiquid liabilities that enables us to earn superior investment returns.	• Risk appetites set to limit overall level of credit risk • Credit limit framework imposes limits on credit concentration by issuer, sector and type of instrument • Investment restrictions on certain sovereign and corporate exposures • Credit risk hedging programme • Specific asset de-risking
Market risk • Equity price[1] • Property • Interest rate • Foreign exchange • Inflation	We actively seek some market risks as part of our investment and product strategy. We have a limited appetite for interest rate and property risks as we do not believe that these are adequately rewarded.	• Risk appetites set to limit exposures to key market risks • Active asset management and hedging in business units • Scalable Group-level equity and foreign exchange hedging programme • Pension fund active risk management • Asset and liability duration matching limits impact of interest rate changes and actions taken to manage guarantee risk, through product design
Life and health insurance risk • Longevity[1] • Persistency • Mortality and morbidity • Expenses	We take measured amounts of life insurance risk provided we have the appropriate core skills in underwriting and pricing.	• Risk selection and underwriting on acceptance of new business • Longevity swaps covering pensioner-in-payment scheme liabilities • Product design that ensures products and propositions meet customer needs • Use of reinsurance on longevity risk for our annuity business, including the bulk annuity buy-in transaction with Aviva staff pension scheme.
General insurance risk • Catastrophe • Reserving (latent and non-latent) • Underwriting • Expenses	We take general insurance risk in measured amounts for explicit reward, in line with our core skills in underwriting and pricing. We have a preference for those risks that we understand well, that are intrinsically well managed and where there is a spread of risks in the same category. General insurance risk diversifies well with our Life Insurance and other risks.	• Use of reinsurance to reduce the financial impact of a catastrophe and manage earnings volatility • Application of robust and consistent reserving framework to derive best estimate with results subject to internal and external review, including independent reviews and audit reviews • Extensive use of data, financial models and analysis to improve pricing and risk selection • Underwriting appetite framework linked to delegations of authority that govern underwriting decisions and underwriting limits • Product development and management framework that ensures products and propositions meet customer needs • Formal and documented claims management procedures
Liquidity risk[2]	The relatively illiquid nature of insurance liabilities is a potential source of additional investment return by allowing us to invest in higher yielding, but less liquid, assets such as commercial mortgages.	• Maintaining committed borrowing facilities (£1.65 billion at 31 December 2019) from banks • Asset liability matching methodology develops optimal asset portfolio maturity structures in our businesses to ensure cash flows are sufficient to meet liabilities • Commercial paper issuance • Use of our limit framework covering minimum liquidity cover ratio and minimum Group Centre liquidity • Contingency funding plan in place to address liquidity funding requirements in a significant stress scenario
Asset management risk • Fund liquidity • Performance and margin • Product • Retention risks	Risks specific to asset management should generally be reduced to as low a level as is commercially sensible, on the basis that taking on these risks will rarely provide us with an upside.	• Product development and review process • Investment performance and risk management oversight and review process • Propositions based on customer needs • Client relationship teams managing client retention risk

1 Top three risks ranked by diversified Solvency II Solvency Capital Requirement
2 Not quantifiable in terms of economic capital

Risk type	Risk preference	Mitigation
Operational risk • Conduct • Legal & regulatory • People • Process • Data security • Technology • Brand and Reputation	Operational risk should generally be reduced to as low a level as is commercially sensible. Operational risk will rarely provide us with an upside.	• Application of enhanced business standards covering key processes • Our Operational Risk & Control Management Framework which includes the tools, processes and standardised reporting necessary to identify, measure, manage, monitor and report on the operational risks and the controls in place to mitigate those risks within centrally set tolerances • Enhanced scenario-based approach to determine appropriate level of capital to be held in respect of operational risks • On-going investment in simplifying our technology estate to improve the resilience and reliability of our systems and in IT security to protect ours and our customers' data • During 2019 we transitioned IT services to new data centres bringing disaster recovery risk back into tolerance

Principal emerging trends and causal factors

This table describes the emerging trends and causal factors impacting our inherent risks, their impact, future outlook and how we take action to manage these risks:

Key trends and movement	Risk management	Outlook
Economic & credit cycle – uncertainty over prospects for future macroeconomic growth, credit and current low interest rates, and the response of Central Banks, could adversely impact the valuation of our investments or credit default experience as well as the level of the returns we can offer to customers going forwards and our ability to profitably meet our promises of the past. Trend: Increasing Risks impacted: Credit risk, Market risk, Liquidity risk	Over the last few years we have taken significant steps to reduce the sensitivity of our balance sheet to investment risks. While interest rate exposures are complex, we aim to closely duration-match assets and liabilities and take additional measures to limit interest rate risk. We hold substantial capital against market risks, and we protect our capital with a variety of hedging strategies to reduce our sensitivity to shocks. We regularly monitor our exposures and employ both formal and ad hoc processes to evaluate changing market conditions. Other actions taken in the past include reducing sales of products with guarantees and shifting our sales towards protection and unit-linked products.	During 2019, interest rates reached record lows in many eurozone economies, requiring further management action in our businesses in France and Italy. We expect rates to remain at low levels for some time to come and we continue to manage our key exposures, specifically in Italy, France and Asia. While asset returns had a strong run, a number of economists have warned we are approaching the end of this credit cycle. In addition, there continues to be significant geopolitical risks that will have knock on impacts to economies and financial markets, including Brexit and the threat of both trade wars and actual wars.
UK-EU relations (Free Trade Agreement uncertainty) – there remains considerable uncertainty over the outcome of negotiations over the UK's future relationship with the EU, and the implications for our operations, economic growth and productivity and in the longer term for financial services regulation, including Solvency II. Trend: Stable Risks impacted: Credit risk, Market risk, Operational risk	In preparing for the end of the transition period on 31 December 2020 under the UK-EU withdrawal agreement, we have already taken the operational measures necessary to ensure continuous service to our customers. This includes addressing the loss of our ability to passport business into the EU through insurance portfolio transfers to our business in Ireland and expansion of our business in Luxembourg to serve our EEA asset management clients and funds, and amending contractual terms for data sharing to allow continued uninterrupted flow of personal data between our EU businesses and the UK. We have contingency plans to restructure our businesses in case the UK is not considered Solvency II equivalent and restrictions to asset management delegation rights as a non-EU manager.	As 2020 progresses we expect greater clarity to emerge over the terms of any future UK-EU free trade agreement and other aspects of the future relationship and the extent, if at all, to which financial and other services are included. There is a risk that financial services are included in a way that leaves the UK as a "rule taker" of EU regulation, which would negatively impact on the ability for the UK to calibrate financial services rules for UK market needs. There is also a risk that negotiations fail to conclude by 31 December 2020, the end of the transition period under the withdrawal agreement, and without an extension to negotiations the UK may need to revert to trading on World Trade Organisation terms. Any agreement may require an implementation period after 2020. While the ultimate outcome remains uncertain, we expect UK financial markets to be volatile and macroeconomic growth subdued.

Key trends and movement	Risk management	Outlook
Changes in public policy – any change in public policy (government or regulatory) could influence the demand for, and profitability of, our products. In some markets there are (or could be in the future) restrictions and controls on premium rates, rating factors and charges. Trend: Volatile Risks impacted: Operational risk	We actively engage with governments and regulators in the development of public policy and regulation. We do this to understand how public policy may change and to help ensure better outcomes for our customers and the Company. The Group's multi-channel distribution and product strategy and geographic diversification underpin the Group's adaptability to public policy risk, and often provides a hedge to the risk. For example, since the end of compulsory annuitisation in the UK, we have compensated for falling sales of individual annuities by increasing sales of other pension products – particularly bulk purchase annuities.	Following the decisive general election victory, the new UK government has a clear mandate on Brexit, and a relatively pro-business stance more generally. We believe that a relatively hard Brexit with minimal alignment to the EU is likely by the end of 2020. Within the domestic agenda there are potential risks around tax, pensions legislation and increasing regulatory intervention (particularly on GI pricing). In the EU there is a review of Solvency II, the key regulatory regime for EU insurers. A new EU Commission has an ambitious agenda for climate change and Artificial Intelligence/data regulation which may bring regulatory changes directly impacting on our businesses in the EU and in a post Brexit UK indirectly.
New technologies & data – failure to understand and react to the impact of new technology and its effect on customer behaviour and how we distribute products could potentially result in our business model becoming obsolete. Failure to keep pace with the use of data to price more accurately and to detect insurance fraud could lead to loss of competitive advantage and underwriting losses. Trend: Increasing Risks impacted: Operational risk	Our data science capabilities facilitate market leading innovation in the use of data analytics to significantly improve the customer journey, improve our understanding of how customers interact with us, and improve underwriting margins. Our Data Charter sets out our public commitment to use data responsibly and securely. Considerable work is going into modernising our legacy infrastructure.	Data creation is likely to continue to grow, while effective use of "Big data" through artificial intelligence and advanced analytics will increasingly become a critical driver of competitive advantage for insurers, and subject to increasing regulatory scrutiny. The competitive threat to traditional insurers is likely to increase with the potential for big technology companies and low cost innovative digital start-ups to enter the insurance market, where previously underwriting capability, risk selection and required capital have proven to be a sufficient barrier to entry.
Climate change – potentially resulting in higher than expected weather-related claims (including business continuity claims) and inaccurate pricing of general insurance risk, as well as adversely impacting economic growth and investment markets. Trend: Increasing Risks impacted: General insurance risk, Credit risk, Market risk	We are actively engaged in public policy debate on the risks and impacts of climate change to our business and customers. We use reinsurance to reduce the financial impact of catastrophic weather events. In the UK, our flood mapping analytics helps us identify properties most at risk and improve our risk selection. Our responsible investment strategy ensures climate change, as well as other environmental and social issues are integrated into our investment decisions. You can read more about the physical, transition and liability risks we face as an asset owner, insurer and asset manager in our 'Climate-related financial disclosure'.	Global average temperatures over the last five years have been the hottest on record. Despite the UNFCCC Paris agreement, the current trend of increasing CO_2e emissions is expected to continue, in the absence of radical action by governments, with global temperatures likely to exceed pre-industrial levels by at least 2°C and weather events (floods, droughts, windstorms) increasing in frequency and severity. Disclosure of potential impacts against various climate scenarios and time horizons will become increasingly common for all companies.
Cyber crime – criminals may attempt to access our IT systems to steal or utilise company and customer data, or plant malware viruses, in order to access customer or company funds, and/or damage our reputation and brand. Trend: Increasing Risks impacted: Operational risk	Aviva has invested significantly in Cyber security introducing additional automated controls to protect our data and critical IT services. This investment has enhanced our ability to identify, detect and prevent Cyber-attacks and we regularly test ourselves through our own 'white hat' hackers to test our Cyber defences and crisis management protocols. Aviva encourages a Cyber aware culture by regularly undertaking activities such as employee phishing exercises, computer-based training and more regular communications about specific Cyber threats.	In 2019 there continued to be high profile cyber security incidents for corporates in the UK and elsewhere and Cyber threat is expected to persist in 2020 from multiple sources, including cyber criminals and rogue states, with increasing levels of sophistication and industrialisation anticipated. Aviva continuously monitors the external threat environment to ensure that our Cyber investment remains appropriate to mitigate the continued and changing nature of the cyber threat.

Key trends and movement	Risk management	Outlook
Medical advances and healthier lifestyles – these contribute to an increase in life expectancy of our annuity customers and thus future payments over their lifetime may be higher than we currently expect. Trend: Stable Risks impacted: Life insurance risk (longevity)	We monitor our own experience carefully and analyse external population data to identify emerging trends. Detailed analysis of the factors that influence mortality informs our pricing and reserving policies. We add qualitative medical expert inputs to our statistical analysis and analyse factors influencing mortality and trends in mortality by cause of death. We also use longevity swaps to hedge some of the longevity risk from the Aviva Staff Pension Scheme and longevity reinsurance for bulk purchase annuities and for some of our individual annuity business.	There is considerable uncertainty as to whether the improvements in life expectancy that have been experienced over the last 40 years will continue into the future. Despite continued medical advances emerging, dietary changes, increasing obesity and strains on public health services have begun to slow this trend, leading in the UK to some significant industry-wide longevity reserve releases in recent years. In the longer term this may even result in a reversal in the trend of increasing life expectancy. Although the latest analysis of population data indicates much lighter mortality in 2019 compared to 2018, which is a marked change to the experience seen during the past decade.
Changes in customer behaviour – will impact how customers wish to interact with us and the product offering they expect, including the exercise of options embedded in contracts already sold by us. Trend: Stable Risks impacted: Operational risk	We listen to our customers to ensure we meet their savings, retirement and insurance needs. We also seek to improve the way we serve our customers by simplifying our interactions with them, resolving queries at their first point of contact where appropriate and enhancing our digital capabilities.	We expect customers will be much more in control, expecting to self-service and self-solve. They will want to access data and insight and use it to guide their own decisions. However, we also expect regulatory scrutiny to increase to ensure we continue to serve and treat our existing customers fairly particularly those who are vulnerable and less digitally aware.
Outsourcing – we rely on a number of outsourcing providers for business processes, customer servicing, investment operations and IT support. The failure of a critical outsourcing provider could disrupt our operations. Trend: Stable Risks impacted: Operational risk	Our businesses are required to identify business critical outsourced functions (internal and external) and for each to have exit and termination plans, and business continuity and disaster recovery plans in place in the event of supplier failure, which are reviewed annually. We also carry out supplier financial stability reviews at least annually.	We expect regulatory scrutiny of outsourcing arrangements to remain following financial difficulties faced by some providers, as well as customer service issues following the migration of our third party provided IT platform in the UK.
Pandemic – in an increasingly globalised world, new or mutations of existing bacteria or viruses may be difficult for stretched healthcare systems to contain, disrupting national economies and affecting our operations and the health and mortality of our customers. Trend: Increasing Risk impacted: Market, Credit, Life Insurance risk (mortality, longevity, morbidity), General Insurance (business interruption, travel) and Operational risk.	We have taken significant steps to reduce the sensitivity of our balance sheet to market/credit risks and have contingency plans which are designed to reduce as far as possible the impact on operational service arising from mass staff absenteeism, travel restrictions and supply chain disruption caused by a pandemic. We reinsure much of the mortality risk arising from our Life Protection business and hold capital to cover the risk of a 1-in-200 year pandemic event. We model extreme pandemic scenarios such as a repeat of the 1918 Spanish Influenza pandemic. In the Group and commercial insurance business we limit our potential exposure through our policy wordings. As an investment manager and investor, we engage with companies to ensure the responsible use of antibiotics to reduce the risk that antimicrobial resistance negate the efficacy of medical treatment.	2020 has begun with the outbreak of a new strain of the Coronavirus in China. With confirmed cases in more than 50 countries including all of those in which Aviva has material businesses. There is a risk of a significant global pandemic and economic disruption. We have imposed travel restrictions on staff and a work-from-home self-quarantine regime for staff who have recently visited infected regions. In addition we have reviewed the exposure of our balance sheet, and are taking actions to further reduce our sensitivity to economic shocks. Notwithstanding our robust capital and liquidity position and the operational and financial actions that we are taking, a deterioration in the situation, and the consequent impacts on financial markets, our insurance exposures and our operations, would have adverse implications for our businesses. Going forward, increasing migration and international travel is expected to make the containment of future pandemics more challenging.