Risk Factors:

- **Interest rates** - Interest rate risk for insurance companies is a significant factor in determining profitability. Changes in interest rates can affect the assets and the liabilities of an insurance company. Insurance companies have substantial investments in interest-sensitive assets, such as bonds, as well as market interest rate-sensitive products for their customers, such as pension products. As such, an insurer's profitability rises and falls in concert with interest rate increases or decreases. Drops in interest rates can decrease an insurance company's liabilities by decreasing its future obligations to policyholders. The net impact on the company's profitability is determined by whether the decrease in liabilities is greater or less than any reduction in assets that is experienced. While the precise effect of interest rate changes on a specific insurance company may be uncertain, historical analysis shows that the overall trend is for the profitability of the insurance sector to increase in an environment of rising interest rates. Overall price-to-earnings (P/E) ratios for insurance company stocks usually increase in fairly direct proportion to increases in interest rates.

- **Yield on high quality corporate bonds -** Pension scheme risk exposes the firm to demographic risks that are similar to the underwriting risks run by the firm. A particular example of strong correlations would be where a firm’s insurance business exposes it to longevity risk. Where pension schemes are valued on the Solvency II balance sheet under IAS19, insurers use the yield on high-quality corporate bonds for the valuation of the liabilities. Unfortunately, we were unable to retrieve data on a yield curve from the set of UK listed high quality corporate bonds rated AAA, AA, or A that accurately represent the high quality corporate bond market. Therefore, we used market performance data from the FTSE100 index as we would be able to infer high quality corporate bond performance from this. The FTSE100 index’s relationship with bond prices and yields tends to work as follows:

  When the cost of borrowing money(interest) is low (which is usually met with low bond yields) it tends to stimulate business growth. Business Growth means stocks go up. When the economy is expanding and stock prices are rising, there is increasing demand for borrowed money. When all of these factors are increasing in value at the same time, it causes inflation. When there’s inflation, lenders charge higher rates of interest to offset the effects of inflation. This means that new bonds will have higher interest rates. In order to remain competitive, the prices of existing bonds will drop, which causes their yield to rise.

- **Risk free rate** - The risk-free rate is the rate of return of an investment with no risk of loss. Most often long-term government bond yields are used as the risk-free rate. Non-life (indicating general insurance) underwriting risk continues to be the greatest risk for the insurers with around two-thirds identifying it as such. As such, Aviva's most material risk changed from market to non-life underwriting in 2018. This followed a slight reduction in the level of market risk whilst non-life underwriting risk is broadly unchanged since 2017. On an aggregate basis, it was found that 63% of insurers' assets at the 2018 year end were held in either corporate or government bonds (see graph 1). Furthermore, general liability insurers, in aggregate, were noted as holding a greater proportion of their investments in government and corporate bonds than property insurers (78% versus 33%). This may reflect the longer-tailed nature of the liabilities of general liability insurers, compared to property insurers, meaning longer duration assets are required (see graph 2).

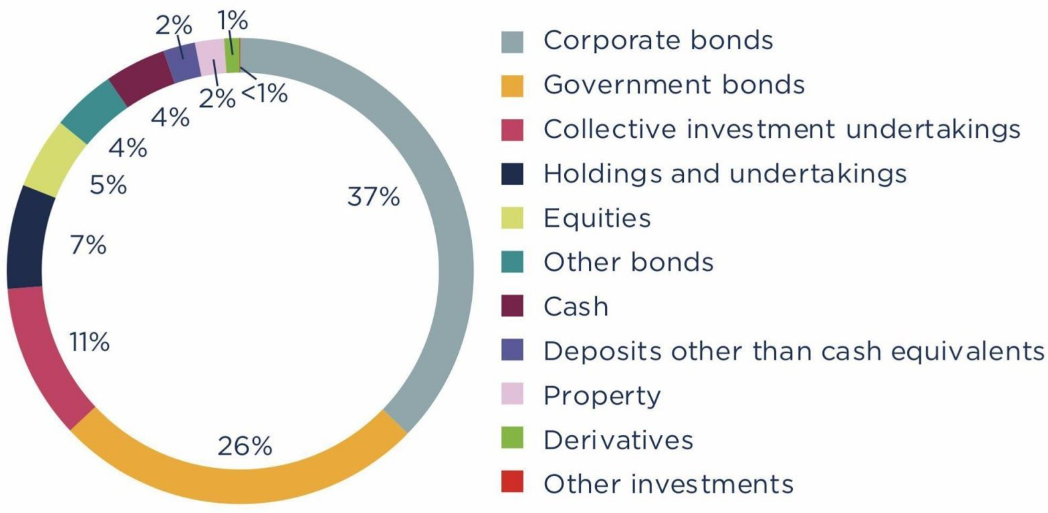
- **Inflation -** inflation impacts insurers' claims and general expenses, the value of liabilities and, less directly, the value of assets. Inflation affects life and non-life insurers in different ways. For non-life insurers, unanticipated inflation leads to higher claims costs, thereby eroding profitability. Extended periods of accelerating inflation are especially problematic for long-tail casualty lines of business. For life insurers, both inflation and deflation are risks. Inflation is often accompanied by rising interest rates, which reduce the value of return guarantees. In the case of deflation, or if very low inflation persists, interest rates tend to fall. This makes it more difficult for life insurers with large portfolios of minimum interest rate guarantee savings products to earn the appropriate asset returns. Insurers that are concerned about inflation risk can mitigate this risk in several ways.

- **Gross Domestic Product** - Insurance companies generate income by investing premium payments, the economy can greatly impact an insurance business. Insurance companies invest premiums in dividend-paying stocks, mortgage-backed securities, real estate and financial institutions, such as banks, all of which can be vulnerable to economic changes. When the economy is doing well, investment returns will increase and insurance companies may be more likely to accept a claim.
  With a slow economy, however, the returns will decrease. Insurance companies will need to recover the invested money somehow. They will do this by taking a loan themselves, or by challenging their existing operations, especially the significant ones like claims. Settling claims efficiently is the solution.

Graph 1

The following chart sets out the aggregated allocation across each type of asset

Aggregate investment holdings



Graph 2

Aggregate investment holdings by type of insurer