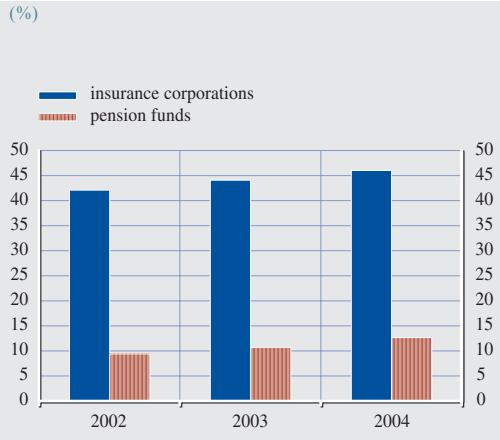
Box 17

LOW INTEREST RATES AND BALANCE SHEET VULNERABILITIES OF LIFE INSURANCE COMPANIES AND PENSION FUNDS

Owing to population ageing, the size of pension funds and insurance companies' balance sheets has been growing rapidly. In the euro area, the total assets-to-GDP ratio of these institutional investors reached 58.5% in 2004, up from 51.3% in 2002 (see Chart B17.1).The decline in long-term interest rates since the 1990s and their persistently low levels have weakened the balance sheets of these institutions.[1] The important share of bond holdings in their investment portfolios has weighed significantly on profitability over recent years, which has remained subdued (see Chart B17.2). However, the main negative impact of low yields has been on the assessment of liabilities and therefore on companies' net debt. In those countries where bond yields influence the choice of the discount rate used for reserves funding calculations, the

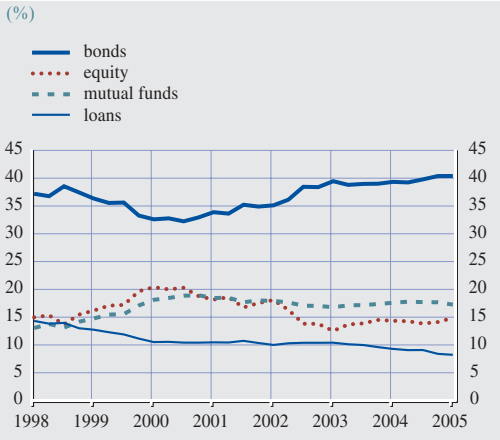
1 The non-life insurance sector does not provide a mixture of long-term saving and insurance in the same manner as life insurance companies and pension funds. It essentially faces insurance risks arising from highly uncertain flows of claims. Because of their specific risk and their shorter liability duration compared to the life insurance industry, these portfolios typically include a higher proportion of equities and a significant proportion of short-term assets with low price volatility. They are therefore less affected by the low level of long-term interest rates.

Chart B17.1 Assets-to-GDP ratios of euro area insurance companies and pension funds



Source: ECB.

Chart B17.2 Assets' composition of euro area insurance companies and pension funds



Source: ECB.

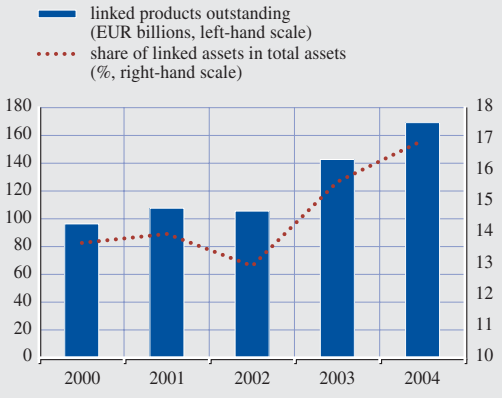
lower the market rates, the higher the present value of liabilities. Hence, any fall in long-term interest rates may lead to a significant funding gap in balance sheets, given the typically longer average duration of liabilities than of assets. This Box discusses some of the financial stability issues raised by the impact of the low level of long-term interest rates on life insurers' and pension funds' balance sheets.

In defined benefit pension funds, the long bull market for equities in the 1990s allowed contributions to be scaled back and even to be eliminated for several years. The resulting overfunding was furthermore amplified in some jurisdictions that had allowed constant or above-market discount rates to be used in the valuation of liabilities at a time of declining bond yields. The strong stock market performance in the 1990s also permitted life insurance companies, which sold traditional policies with high guaranteed returns, to record strong profits, even though profit margins were progressively eroded at the same time. Indeed, the difference between the yields earned on bond holdings on the assets side and the guaranteed rate to be paid to policyholders on the liabilities side continuously decreased, even becoming negative in some cases. For life insurance companies and pension funds alike, as annuity providers, the low yield context furthermore magnified the risks of underfunding owing to the increase in longevity beyond earlier actuarial projections. Indeed, when interest rates are low, any underestimation of longevity translates into a much larger funding gap, because the changes in the present value of liabilities are of a greater magnitude (see Box 16).

This phase of strong profitability in the pension and insurance industry came to an abrupt end with the bursting of the stock market bubble. The bear equity market from March 2000 to March 2003 and the sharp fall in the level of interest rates started to put pressure not only on profitability, but also on solvency positions. On the profitability side, both life insurance companies and pension funds have been affected by persistently low and declining interest rates, as they typically hold a high proportion of bonds in their assets, the bulk of which are held until maturity and are therefore not marked-to-market in most euro area jurisdictions. Regarding the solvency assessment, one important aspect is related to the asset-liability match. In cases of a perfect match between asset and liability cash flows at any future date, the choice

of the discount rate would not matter. However, given the current balance sheet mismatches, the choice of discount rates in assessing solvency is extremely important. To manage their balance sheet risks, both pension funds and insurance companies use asset liability management techniques (ALM), whereby the long-term balance between assets and liabilities is maintained through the choice of an asset portfolio with similar return, risk, duration and convexity characteristics to liabilities.[2] Owing to the limited availability of long-dated bonds for life insurers and long index-linked bonds for pension funds, the duration of the liability remains higher than that of the assets. Hence, as the asset liability matching is not perfect, their balance sheet is usually not immunised against interest rate changes.

Chart B17.3 Linked products outstanding and as a share of total assets of euro area life insurance companies



Source: Bureau van Dijk (ISIS).

The decline in interest rates over the last decade widened this negative duration gap because of a larger increase in the present value of the liabilities than that of the assets. As a result, the sensitivity of balance sheets and especially of capital bases to interest rate risk has increased. In the pension fund industry, greater use has been made of market-related discount rates following the collapse of the equity market, which has boosted the present value of pension liabilities. As a result, large funding gaps have suddenly been reported in pension funds' balance sheets.[3] In the life insurance industry, the discount rate used to assess technical reserves depends on the cost of capital. Therefore, it is likely to reflect, to a certain extent, the evolution of market interest rates, although the new accounting rules for the valuation of liabilities are only scheduled for 2007. As a result, lower interest rates may lead to a deterioration of solvency positions of life insurers.

To restore capital bases or reduce funding gaps, pension funds and life insurance companies have undertaken several measures. These measures have also been favoured by the implementation of the new accounting standards and the Solvency II project whose introduction is currently scheduled by 2010. Among the risk mitigation actions, there has been a significant increase in both the share of bonds in total assets and the cutting back of equity, especially in the life insurance sector. Regarding pension funds, the magnitude of such risk rebalancing has been more modest, owing to the nature of their liabilities.[4] To deal with the problem of underfunding,

2 Modified duration is a yardstick of the sensitivity of a bond portfolio's value to a small change in interest rates. This relation is typically not proportional, and convexity measures this aspect of the price-yield relationship.

3 In accordance with IAS 19, pension funds may now be required to use a high-quality corporate bond yield – typically AA or equivalent – in some jurisdictions However, for the majority of European companies, whose average is triple B, using AA yield-based discount rate may lead to an overestimation of the true corporate pension deficit. In other countries, such as Germany, where the discount rate is fixed by the authorities and rarely changed, potential concerns in terms of underfunding may arise with the future implementation of new accounting standards in the pension fund industry.

4 The liabilities of life insurers have historically tended to be defined in nominal terms, owing to the offered guaranteed return that is fixed in money terms. Liabilities of pension funds, on the other hand, are denominated in real terms, as these grow in tandem with wage increases. Indeed, the replacement ratio is typically indexed on final earnings in defined benefit schemes. Defined benefit pension funds are therefore used to hold real assets such as property and equities to match liabilities of a higher proportion than that observed in life insurers' typical investment portfolios.

pension funds have adopted a variety of solutions, such as requiring higher contributions, reducing benefits, or ultimately accelerating the move towards defined contribution pension schemes or hybrid plans, thereby transferring (at least partially) financial and longevity risks to employees. In the life insurance industry, the persistently low yield environment has prompted the reduction of guaranteed return on traditional saving products. This has eased pressures on profitability, albeit to a small extent as this reduction only applies to new contracts sold; indeed the bulk of traditional products have continued to offer higher guaranteed rates. The low-yield environment has also made traditional saving products with reduced guaranteed returns less attractive. This has benefited a new type of instrument, the so-called unit or index-linked product (see Chart B17.3). Such products are typically indexed to stock indexes, and the investment risk is borne by the policyholders. In both cases, the low-yield environment has contributed to the continuous and increasing transfer of risk from the balance sheets of life insurance companies and pension funds to the household sector, although an ageing euro area population, together with lower expected returns from stock markets compared with the 1990s, remains the main factor in the straining of balance sheets of defined benefit pension schemes.