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Agenda

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Weathering the storm: should pension funds switch to low-risk assets?

Pension funds that have suffered from losses in equity markets amid the ongoing financial crisis may be tempted to move to investments in lower-risk assets such as corporate or sovereign bonds. What does economics have to say about asset accumulation by pension funds, and about whether switching from equity to bonds is a wise move for a long-term investor?

The financial crisis and economic downturn continue to have a significant negative impact on European equity markets. In September 2011, in a single day, the German stock market suffered a loss of €23 billion in the market value of Dax 30 stocks, while French CAC 40 and UK FTSE 100 stocks lost €28 billion and £64 billion respectively.[1] Although these amounts are staggering, the losses were short-lived—within three days, all three indices had recovered from their multi-billion losses.

Amid capital market volatility, pension funds have faced pressure to invest in lower-risk assets such as corporate or sovereign bonds in order to limit the losses suffered in response to falling asset values. In particular, there is concern that the current volatility of pension fund returns leads to inequitable outcomes for some pension scheme holders who retire at a point in time when returns are particularly depressed. However, distributional concerns may lead to unintended outcomes if pension funds switch to safer assets and generate lower returns that reduce retirement wealth for all of their investors. This article considers the economics of asset accumulation by pension funds—in particular, the long-term impact of a change in asset allocation.[2]

The move away from equities in response to the crisis

There is evidence that pension funds have altered their asset allocations in response to the crisis. In Europe, pension funds reduced their weightings for equities to an average of 32% in 2011 (down from 44% in 2006), while fixed-income holdings increased to 54% from 47.8% in the same period.[3] Market evidence suggests that the move to bonds is deliberate, rather than a passive outcome of the reduction in the market value of equity assets. For example, in a survey in the second quarter of 2011, 23% of European funds responded that they planned to reduce their exposure to domestic equities, and 20% of all funds planned to increase their exposure to domestic government bonds and/or non-traditional asset classes.[4]

Why would pension funds increase their holdings of bonds at the expense of equity investments? There are a number of possible explanations.

- **Regulatory changes**. There may be regulatory pressures at play that drive increased investment in bonds. In its 2010 pensions Green Paper, the European Commission stated that it would consider whether it would be suitable to apply Solvency II to pension funds.[5] This raised immediate concern among pension funds, with, for example, the Belgian Association of Pension Institutions estimating that European pension funds would have to sell as much as €1.5 trillion in equities should Solvency II apply to the sector.[6] It is possible that some of the shift to bonds has been driven by pre-emptive concerns over solvency regulation.
- **Accounting changes**. For funded pension schemes, accounting changes may have encouraged investment in bonds. With the adoption of International Financial Reporting Standards in Europe from 2005,[7] any volatility in a scheme's funding position has an impact on its sponsor's balance sheet. This has promoted the adoption of a liability-driven approach, under which firms attempt to reduce maturity mismatch by investing in long-lived bonds. Under a planned revision to the accounting standard IAS 19, whereby additional investments in

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equities (rather than bonds) by the pension scheme will no longer attract a higher projected return, the immediate advantage to the sponsor company of additional equity investment is removed.[8] Specifically, future returns from pension fund assets will be included in sponsors' profits at the rates of return on AA rated corporate bonds. The relative attractiveness of investing in equity is, therefore, likely to decrease from the perspective of pension funds.

- **Market movements**. Another plausible explanation for an increased reliance on bonds is that pension funds that have seen the value of their pension assets fall considerably due to equity market exposure in the crisis have switched to less risky investments in order to reduce the (short-term) volatility of these assets. In particular, amid uncertainty about the future path of inflation, inflation-protected bonds have enjoyed a surge in popularity.

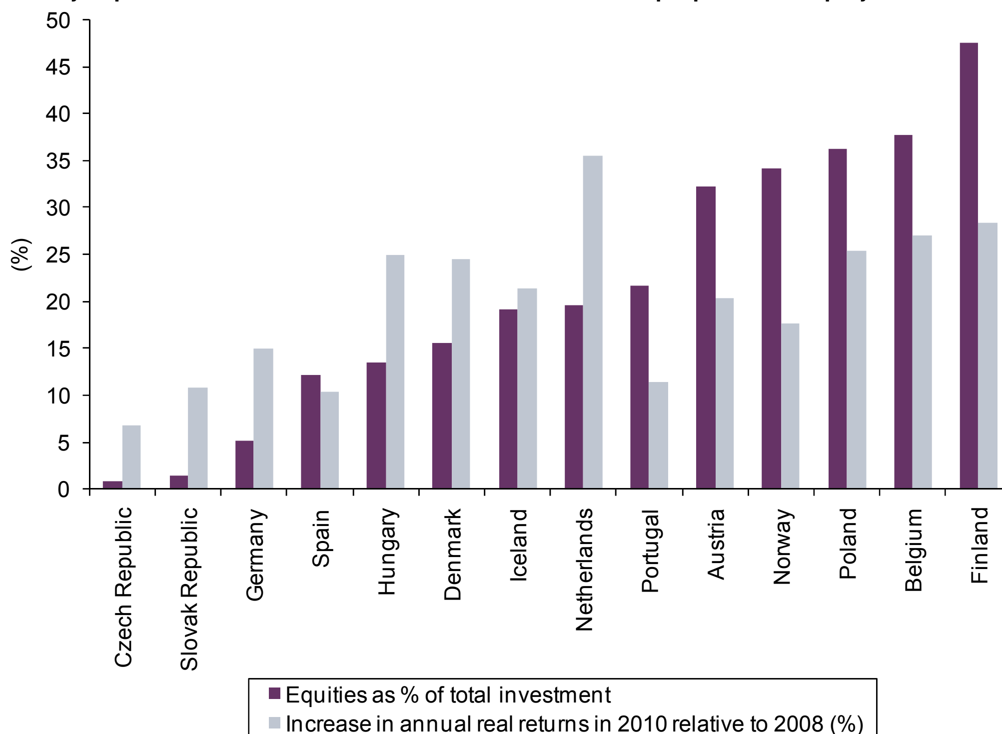
Would these explanations justify a persistently higher weight for bonds in pension funds' asset portfolios? Regulatory and accounting changes are likely to be long-lived, so these would be compelling forces in influencing asset allocation choices. However, to the extent that European regulation in the aftermath of the crisis has so far left the pension fund industry largely unaffected—notably, with exemptions from the Alternative Investment Fund Managers (AIFM) Directive[9]—it may be premature to cite regulatory pressures as a significant driver of observed industry change. As to accounting changes, these tend to affect funded schemes, which are increasingly scarce, so the impact of accounting changes on the long-term performance of pension funds may also arguably be muted.

As for capital market uncertainty as a possible driver of the shift from equities, it can be argued that a long-term investor has paid too much heed to short-term volatility if pension funds have been driven out of equity investments by market volatility. For example, the current declines in the stock market are not unprecedented—European stock markets fell by as much as 50% in the mid-1970s and recovered within a few years.[10] Also, as shown by evidence presented later in this article, switching to bond investments to limit the impact of short-term volatility may come at the expense of lower average long-term returns.

Assessing the shift from equities by a long-term investor

There is some evidence to suggest that, over the last two years, pension funds that hold greater amounts of equity have recovered from losses at the height of the crisis faster than their counterparts that hold less equity, as illustrated in Figure 1 below. For example, in the Czech Republic equities account for less than

Figure 1 Recovery in pension funds' annual real returns relative to the proportion of equity assets held



Note: Data is not available for all European countries. Data for equities as a percentage of total investment is as at 2010. Recovery is estimated as the real net rate of investment returns on pension funds in 2010 (%) minus real investment returns in 2008 (%).
Source: Oxera analysis based on data from OECD (2011), 'Pension Markets in Focus', no. 8, July, and OECD (2009), 'Pensions at a Glance 2009', Figure 1.3.

1% of total investments, and there has been a depressed recovery in real returns (rising from –7.2% in 2008 to –0.4% in 2010). On the other hand, in Finland, where equities make up 48% of total investments, annual returns have bounced back from –19.5% (2008) to 8.9% (2010). While this pattern is not necessarily observed across the board, overall, there is a positive correlation between the proportion of equities in pension funds' portfolios and the increase in annual returns between 2008 and 2010.

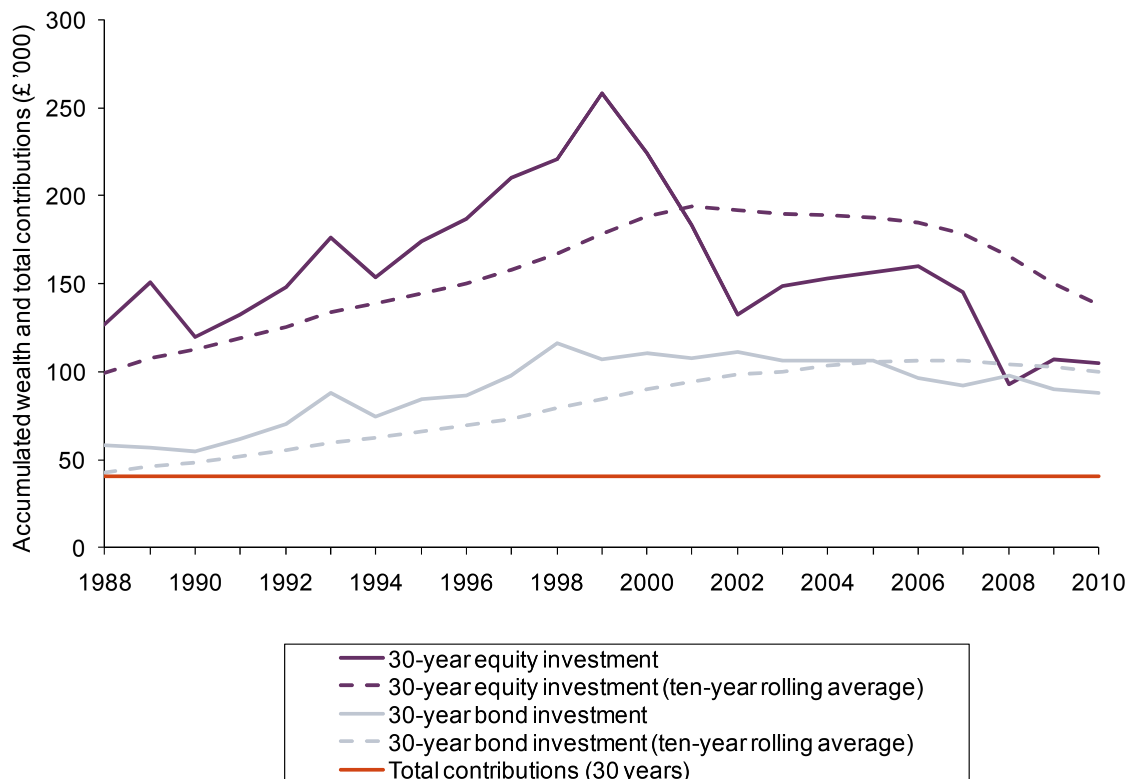
In addition, short-term volatility is not detrimental to long-run returns. In fact, given that there is a trade-off between risk and return, in the long run an equity investor would expect to receive higher compensation due to the stock market volatility observed in the current crisis.

What will be the longer-term impact of switching to fixed income?

The results of a simulation exercise undertaken by Oxera illustrate the impact on long-term returns of 100% equity, relative to 100% bond, allocation strategies. Based on historical data, it can be illustrated that holding a significant proportion of equity can result in significantly higher average retirement wealth for a policy-holder, with a comparatively small increase in the risk of receiving very low levels of retirement wealth, given the long investment horizon over which pensions accumulate. This applies even more so in looking at performance for a pension fund, because the investment horizon is not constrained by an individual policy-holder's retirement age.

Figure 2 below simulates the accumulated pension wealth for equity and bond investment using actual return series since 1950, relative to total contributions paid, for different hypothetical cohorts who make exactly the same contributions to a pension scheme in the last 30 years of their working lives, but who retire in different years—the last year being 2010. Individuals who invested everything in the stock market and who retired in 2009 would be significantly worse off than similar individuals retiring in 1999. However, it is also apparent that, based on historical asset return data, investment in equity has never delivered negative overall returns, irrespective of when accumulation started or ended. Importantly, the 30-year return from equity investment has been significantly above the overall return on bond investment except for a very short period in 2008.

Figure 2 Illustration of accumulated returns by year of retirement, over a 30-year investment horizon



Note: Based on actual series of real government bond and equity returns for the UK from 1950 to 2010. The individual contributes £1,000 in the first year, and contributions then grow at a rate of 2% (real) over 30 years. There is no tax and management fee.
Source: Oxera modelling based on data from Barclays (2011), 'Equity Gilt Study 2011'.

For the pension fund, relative to individual policy-holders, there would be a lesser impact of yearly variations in accumulated returns. This is because a pension fund does not face the same constraints and would not be obliged to crystallise a reduction in accumulated returns by purchasing an annuity at the height of the crisis. The average returns over a ten-year rolling basis are therefore also represented in Figure 2, showing that the overall return from equity investment has consistently exceeded the overall return from a 100% bond investment strategy.

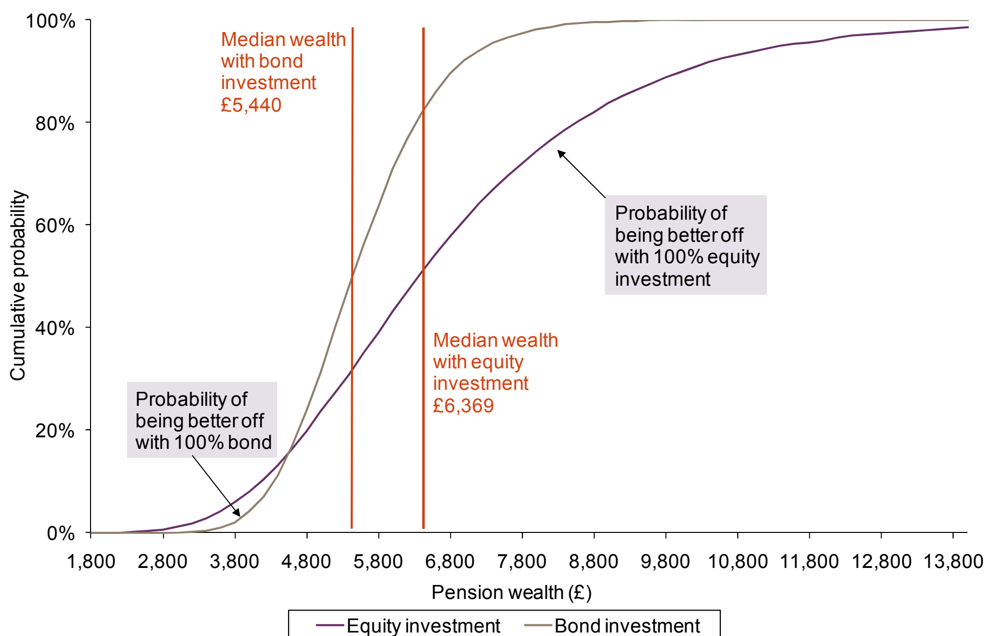
Similar conclusions hold for investments over shorter time horizons. Figure 3 below shows the distribution of retirement wealth outcomes under different asset allocation strategies over a five-year investment horizon, where asset returns are simulated using averages and volatility parameters of historical returns on equities and bonds. The simulation framework allows for a comparison of how many policy-holders would be better off under each asset allocation strategy. The simulations suggest that about 84% of policy-holders are better off over a five-year investment horizon if a 100% equity allocation strategy is adopted rather than a bonds-only strategy. The median wealth accumulated via equity investments over a five-year horizon is around £6,370, which is considerably higher than that accumulated via bond investments over the same period (£5,440).

The aim of this exercise is not to advocate a particular form of investment by pension funds—the simulations are, after all, based on a set of assumptions, including historical risk–return parameters that may not hold going forward. Rather, the point is a more general one: there is a trade-off between risk and return, and limiting risk usually comes at the cost of forgoing potential returns.

What does this imply for pension income?

It is not difficult to see that market crises and asset return collapses can have an impact on pension funds' returns, and on the value of any one pension pot when it is turned into a pension income. Significant short-term changes in the value of a portfolio of equities result in different outcomes for individuals who have behaved in exactly the same way (in terms of what investments they have made). If two individuals, A and B, have paid the same amounts over their lifetimes into the same pension fund, but A retires in a market boom and B retires in a recession, A's annuity will be of a higher value than B's. These differences can be seen as socially inequitable and the uncertainty surrounding what any particular investment pattern will deliver may itself be seen as a disadvantage for potential pensioners.

Figure 3 Distribution of pension wealth accumulated under different investment options, five-year investment horizon



Note: Simulations for 10,000 individual accounts, based on historical actual data for real government bond and equity returns for the UK from 1950 to 2010. The lines show the cumulative probability of accumulating the given amount of wealth or less—for example, around half of equity investors, but only 18% of bond investors, would accumulate more than £6,400. See also note to Figure 2.
Source: Oxera modelling based on data from Barclays Capital (2011), 'Equity Gilt Study 2011'.

If pension funds reduce volatility and uncertainty by investing in assets with relatively stable returns, this could be seen as delivering benefits, in so far as the short-term volatility in value is reduced. However, as pension funds are long-term investors, ultimately it is the distribution of returns over the long run that matters. If pension funds reduce their exposure to assets with short-term volatile returns, some policy-holders who retire in a market downturn may be less worse off than those who retire in an upturn. However, all policy-holders may be worse off if the pension funds generate lower returns overall due to lower-risk, lower-return asset allocation. So, in our example, the difference between the values of A's and B's annuities may be reduced if their pension fund is invested in assets with relatively stable returns. For both A and B, however, the value of the annuity is likely to be lower due to their pension fund investing in lower-risk, lower-return assets. As a hypothetical example, imagine that the pension fund invests in equity assets, and A retires in a market boom with an annuity of £300 while B retires in a recession with an annuity of £100. If the pension fund had invested in bonds instead, the socially inequitable differential between A and B would be reduced, but both would have lower annuity incomes: £90 for A and £75 for B. Thus, both would be worse off in absolute terms although B would be less worse off in relative terms. Therefore, switching pension investments to low-risk assets would be likely to reduce the difference between those retiring at different times, but is achieved by making everyone worse off.

Conclusion

The challenge for the financial services industry is to help to restore the confidence of consumers in capital markets—and to develop products that allow policy-holders to mitigate risks associated with short-term downturns—while pension funds continue to invest with a view to long-term return maximisation.

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[1] Oxera analysis based on Datastream.
[2] Similar analysis was undertaken in Oxera (2010), 'Balancing Act: Pension Investment and the Financial Crisis', *Agenda*, February.
[3] Research by Mercer, cited in Waki, N. (2011), 'Analysis – European Pension Funds Need Equities to Beat Inflation', Reuters, May 13th.
[4] Mercer (2011), 'Mercer Launches Annual European Asset Allocation Survey', press release, May 3rd.
[5] European Commission (2010), 'Green Paper: Towards Adequate, Sustainable and Safe European Pension Systems', COM(2010)365 final, July 7th, p. 15.
[6] Neyt, P. (2010), Speech, Eurofi Financial Forum, cited in IPE news (2010), 'Regulatory Pressure to Invest in Bonds could Kill Economy, says Belgium's Neyt', September 29th.
[7] See http://www.ifrs.org/Home.htm.
[8] IFRS (2011), 'IASB Introduces Improvements to the Accounting for Post-employment Benefits', press release, June 16th.
[9] European Commission (2009), 'Proposal for a Directive of the European Parliament and of the Council on Alternative Investment Fund Managers and Amending Directives 2004/39/EC and 2009/…/EC', COM(2009) 207 final, April 30th.
[10] The stock market in the UK, for instance, fell by 58% in 1974 and recovered within three years. Source: Barclays Capital (2011), 'Equity Gilt Study 2011', and Dimson, E., Marsh, P. and Staunton, M. (2011), 'Credit Suisse Global Investment Returns Sourcebook 2011'.

If you have any questions regarding the issues raised in this article, please contact the editor, Dr Gunnar Niels: tel +44 (0) 1865 253 000 or email g_niels@oxera.com

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