

# Special Report Risk

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## Multi-stakeholder risk management

### Commentary

**Bart Oldenkamp** and **Herman Bril** argue that strategic risk management is the most important policy tool for defined benefit pension funds

An ageing population is like a creeping landslide with very destructive powers that threaten the sustainability of DB pension schemes. The tension within the system is increasing and shocks like the recent financial crisis clearly show the fundamental vulnerability of the underlying system.

Attacking this DB challenge not only involves recognising the various stakeholders in the pension deal, but also requires ongoing management of the objectives, risks and returns of the stakeholders in the plan. Risk management, rather than asset management, is the key to a sustainable outcome for all stakeholders involved.

#### The decade of pension payouts

In the 1970s, funding shortfalls were not a big issue. The population of pension fund participants was very young and funds were operating on positive cash flow (contribution inflow much bigger than pension payments). Contributions were still a powerful steering instrument; even mild increases led to improvement of the funding level. In other words: human capital exceeded financial capital in the system.

Nowadays the situation is completely different. Pension funds are moving towards the payout phase as a result of the greying society. The share of active participants in DB schemes is shrinking, even more in the UK because of the closure of DB funds for new participants and the shift to DC pension schemes.

As a result, many funds are operating in or moving in the direction of a negative cash flow environment and raising contributions has become an ineffective and unacceptable instrument, both from the sponsor and employee points of view. In addition, conditional indexation in the Netherlands has become largely ineffective as indexation levels have already reached zero. For the decades to come, large (compared

with the sponsor) maturing pension funds in a serious underfunded position will face the risk of the poverty trap. Even long-term investing in equity is no longer the Holy Grail.

Figures 1 and 2 show the impact of the maturing of pension funds. Figure 1 reveals how an immature, underfunded pension fund in 1970 could easily recover and how a shock after 10 years could simply be absorbed by the system. The contemporary situation in figure 2 shows how difficult it is to recover, even with a healthy risk premium on investments. Any shock in the payment phase (say 10 years from now) will reveal that pension funds are no longer able to recover at all.

#### Rising tension

Big companies are offloading their pension risk as much as possible onto employees and retirees because under IFRS accounting rules their balance sheets cannot absorb the volatility of their massive and mature pension liabilities. Conditional indexation in the Netherlands is another example of shifting the burden from employers to beneficiaries. But also within the system tension is rising and conflicts of interest between stakeholders are increasingly emerging. Retired employees demand their full pension payments, active senior employers can't bear to pay higher contributions and the younger working population is facing a potential pension wallet with a big hole. So what can be done?

The DB pension deal is an occupational incomplete (social) contract. It is fuzzy, riddled with potential conflict of interest issues, with only some of the stakeholders around the negotiation table. As a result, DB based-pension contracts unfairly favour current generations at the expense of future generations. Pension contracts are not well defined in terms of ownership of the potential surplus and who exactly bears what

downside risks.

Besides these flaws, it is also difficult for trustees to ensure the required implementation of the desired strategy by the various service providers due to lack of co-ordination, conflicts of interest, or governance issues. Last but not least, managing these huge financial institutions requires necessary knowledge and experience to cope with the extreme complexity and diversity from the trustees.

#### Learn from the big thinkers

There is a similarity between the world and design of innovative risk management solutions for retirement benefits and the work of some big thinkers like, for example, the famous Scottish philosopher David Hume and his metaphor: "A social contract holds together like a masonry arch. Each stone supports and is supported by its neighbours, without any need for cement or glue." In other words, many of our rules of social behaviour are no more solidly founded than the convention we use to select equilibrium.

How do we create a sustainable pension contract? Game theory and the Nash equilibrium which is used in the concept of mechanism design can help us to find a fair system of regulations and incentives to motivate the agents within the system. The ingredients for sustainability for DB pension funds are therefore:

- **Stability:** the (social) pension deal needs to be stable (equilibrium) to survive. So the short and long term are like Siamese twins – active steering and explicit risk management is a must in maturing pension funds to avoid the poverty trap.
- **Fairness:** the interests of all stakeholders are predetermined ex ante and agreed in a risk contract. This results in clear fundamental goals and principles for the fund, to mitigate tensions. The cohesion of a coalition depends on the extent to which it succeeds in satisfying the aspiration of its individual members, as Hume taught us.
- **Efficiency:** collectivity and risk-sharing (in a not-for-profit vehicle) is without doubt the best pension system, but implementation by consultants and pension delivery organisation(s) need to go hand in hand with the strategy.

Together, these ingredients form the foundation of success.

#### Implementing a strategic risk management framework

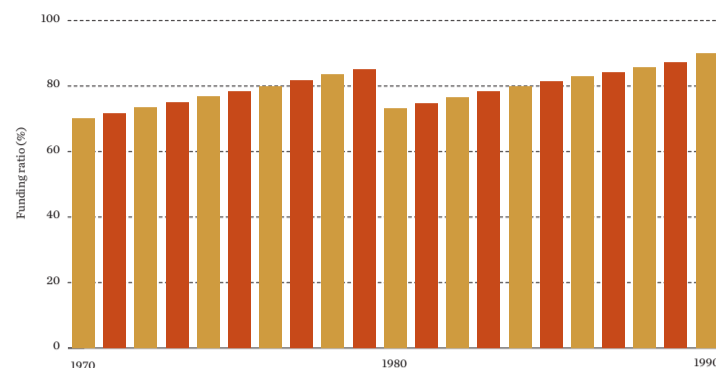
While many trustees will recognise that stability, fairness and efficiency are key ingredients for a sustainable DB plan, many plans do struggle in

the execution phase. In the current age of outsourcing, it is important to align the plan's objectives with the assignments mandated to service providers such as consultants and fund managers. It is vital to refrain from resorting to all sorts of derived objectives, such as performance objectives relative to asset class benchmarks. Strategic risk management, instead, is about properly managing and aligning the joint set of objectives, which involves the following steps:

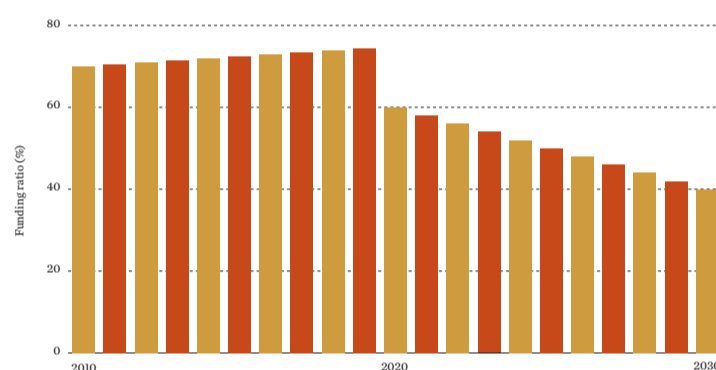
**Only the risk contract counts.** Multi-stakeholder challenges such as DB plans can only be managed successfully if the objectives are defined explicitly in a risk contract. More importantly, every single decision in managing the plan should be evaluated in the light of this contract. The fund's ambition in terms of, for example, real and nominal funding levels and the corridors around the ambition levels which are deemed acceptable must be defined. Determine how much a sponsor can sensibly contribute in adverse conditions. Only once we have explicitly defined our objectives, we may hope for a DB plan which is stable and efficient to implement.

**Robust risk management.** In the reigning asset management paradigm, risk is typically defined in terms of funding level risk or portfolio tracking error using historical evidence from mostly normal markets. While a lot of time is typically spent on this risk assessment, less attention is paid to the consequences of adverse conditions in terms of the various fund objectives. Even if the probability of a negative event is low, are we sure we are comfortable with the potential consequences? Who will make up for potential deficits? In Peter Bernstein's words: "Consequences are more important than probabilities." Risk management, therefore, also involves robustness checks to guarantee the system's stability – through analysing the outcomes in case the economy looks markedly different from today. Will the fund still do well if, for example, inflation picks up, or if another serious recession hits our economy? Can we bear the consequences of

### 1. An underfunded pension fund in 1970 recovered well as it had no net cash outflow



### 2. A similarly underfunded pension fund in 2010 cannot recover anymore as it suffers from material net cash outflow



these situations, irrespective of their (unknown) probabilities?

Knowing the consequences of unanticipated events in terms of the risk contract leads to crucial insights which help managing the fund: When the continuity of the plan is at stake, we better design a strategy which ex ante excludes

consequences the fund cannot digest. Derivatives, such as interest rate and inflation swaps, swaptions and equity options, are therefore likely to become an integral part of the fund's overall investment strategy. Again, solutions which are more stable in both the short and long run will be the result.

### Risk management meets asset management

While the previous steps are mainly about managing the risk, we fall short of the fund's objectives. We still need to take rewarded risks to realise the required long-term funding level growth. This is where asset management meets risk management – choosing exposures to risks which deliver growth for the long run, while ensuring our objectives remain realistic in both the short and the long run. Acknowledging that derivative overlays, active and passive investments, traditional and alternative assets have common elements – their exposure to key risks such as rates, inflation and equities – is essential to manage the assets and overlays against the risk contract.

### The challenge

Embracing the principles of strategic risk management will not be the biggest challenge to the industry. Partly as a result of the economic crisis, trustees' awareness of the importance of risk management has increased significantly. The devil will be in the detail: implementation is key. Strategic risk management is not business as usual for pension funds, their advisers and asset managers. Sustainable plans can only exist if all service providers take delegated responsibility for implementing the strategy, as defined by the trustees in the risk contract, and manage the plan on an ongoing basis accordingly. Big surprises and failures in implementation in case of a market event can no longer be absorbed in the maturing stage the pension funds are facing this new decade.

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# Extreme risks

## Commentary

**Tim Hodgson** takes a qualitative approach to ranking extreme risks and assessing their interconnectedness

The events of the last two years have demonstrated that risk management cannot afford to stop at the 95th percentile (VaR95). We need to find a way to include unlikely, but potentially high impact, events. Dividing these extreme risks as financial, economic or political, we start with the qualitative understanding – 'What could cause this event?', 'Is it plausible?' and 'Assuming this event occurred, what would be the consequences?'

Financial extreme risks revolve around sol-

veny. The interconnected nature of the modern financial system and high levels of leverage mean that insolvency for one institution can quickly become a systemic problem. The primary triggers are falling asset prices and incomes. Financial risks can be self-generated (falling asset prices) and transmitted to the real economy, or generated by a recession in the real economy which reduces incomes and transmits to the financial sector through loan defaults. With public sectors

increasing their leverage (debt to GDP ratios) we believe the risk of excessive debt will persist for a number of years.

Economic extreme risks are less homogenous, ranging from a deflationary depression to hyperinflation and a return to a gold standard. The deflationary depression risk appears to have been reduced through policy action, but remains a potential hazard, in that it may not be possible for governments to counteract any future drop in demand. There has been an extended period of over-consumption (Western economies) meaning that businesses have built productive capacity to satisfy a level of demand unlikely to be reached for a number of years, as households increase their savings rate. The primary consequence of a depression is a sharp, and prolonged, increase in unemployment, with effects including a drop in consumption, restriction of credit, shrinking output, investment and numerous bankruptcies. This would be bad for asset prices and it is likely that there would be a flight to the safety of sovereign (nominal) bonds.

The other economic risks essentially assume that government actions are successful, but at a price. A currency crisis – the breaking of a fixed