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Book Review

Edited by Marco Micocci, Greg N. Gregoriou and Giovanni Batista Masala, *Pension Fund Risk Management Financial and Actuarial Modeling*, Chapman & Hall/CRC, 2010, 728pp. (hardback), £63.99. ISBN: 9781439817520

This book is a collection of 26 self-contained chapters covering a wide range of views on pension fund risk management. It looks at different risks, for different types of schemes, in different countries. As the editors note in their preface: "*Risk management is becoming highly complex both in public pension funds and in private pension plans, requiring the expertise of different specialists*…". This book reflects a wide range of specialist views on what risk management means for pension funds.

A strength of this approach is the variety of angles and insights which it provides – there were no shortage of ideas. The book says it provides technical tools for addressing pension risk from an integrated point of view. I found some of the non-UK examples particularly enlightening, as they showed how different regulatory approaches and history could lead to different outcomes. A weakness is that it left me struggling to glean a coherent narrative from the different strands. The book did not provide me with an obvious method with which to integrate the various aspects it covered. This book is perfect for those who would like a broad view of the current landscape or who have a question that is specifically tackled by one of the chapters but not if you are looking for help integrating the various approaches that are available into a holistic risk management framework.

The chapters are organised into four main sections:

- Financial risk management, which broadly covers asset allocation, asset and liability management, fund dynamics, risks and value-at-risk (VaR) methodology for both DB and DC schemes.
- Technical risk management, which looks at some specific case studies in greater detail, from longevity risk, to insuring DB plans in Germany.
- Regulatory and solvency topics, examining sponsors' risks, accounting, risk sharing (i.e. the Dutch approach), government backed pay-as-you-go approaches and individual risks with DC.
- Specific research in Italy, Spain, Greece and the UK.

Some of the ideas covered in the first section on financial risk management that I found most interesting were: empirical work showing that in countries where bonds are not available at the correct durations, or with inflation linkages, equities could provide a similar risk profile to match DB liabilities to the best matching bond portfolio; an alternative attribution for DB investment performance management that focuses on changes in surplus rather than separate chances in assets (relative to expectations) and liabilities (due to changes in investment or inflation assumptions); some approaches to maximising expected utility when a portfolio is subject to inflation risk; an analysis of the (market) value and owners of the risks embedded in a DB pension scheme; and, finally, the effects of taxation, risk sharing between the employer and employees, and default insurance on the 'optimal' asset allocation for a pension scheme.

I think three important themes from this section were firstly the importance of analysing a DB scheme from a particular stakeholder's perspective, secondly the linkage between the sponsor, the scheme's assets and liabilities in any integrated exploration of the scheme, and thirdly the relevance of economic measures and option valuing techniques for informing decision making.

Some of the ideas covered in the second section on technical risk management were: two chapters that covered longevity risk measurement (via Monte Carlo simulations based on the Lee-Carter model) and longevity risk management (via securitization using bonds or swaps); a risk management model for a benefit scheme that awards lump sums to employees under all decrements except when the employee resigns; and an empirical investigation into the major influences on retirement behaviour in the US using regression techniques. The last chapter in particular might provide food for thought for UK sponsors who are looking beyond financial risk management of pension schemes and considering the potential effects of the removal of the default retirement age.

The third section of the book covers a variety of solvency and regulatory topics. The papers consider the impact of (accounting) regulation on risk measurement, and the consequent attempts by sponsors to manage that risk through asset allocation. One chapter then considers the way that different pressure groups might try to influence the accounting standards themselves. A further chapter looks at different ways that national pay-as-you-go schemes can be managed to improve the chance of achieving desirable objectives such as fairness, transparency and solvency. The chapter on risk-based solvency regimes in the Netherlands was particularly enlightening, and perhaps shows one possible way forward for the UK that strikes a better balance than either DC or DB currently seem to. A final couple of chapters in this section sought to highlight the risks that members face in DC schemes in light of the financial crisis, and suggests that liability-driven investment approaches might better serve DC scheme members and that with the freezing (closure) of DB schemes with healthy sponsors, DB scheme members ought to view closure as a key additional risk they face in modern times.

The final section rounds up with a miscellaneous set of chapters which are focused on specific research in Italy, Spain, Greece and the UK. The chapter looking at Italian provision considers whether the joint approach to contribution levels, funding and investment strategy across their private and public sector DC schemes are 'optimal' from a risk management perspective using their model. The chapter on Greece argues strongly that the historic government limitation on their investment universe has materially worsened current scheme solvency. Unfortunately for Greece, it appears that a relaxation on the restrictions in equity investment has coincided with the generally lacklustre returns experienced over the past decade. The chapter examining the UK asks to what extent (underfunded) pension schemes are allowed for by shareholders in pricing companies' shares; and concludes that some, but not all information is allowed for (or alternatively one might argue, that shareholders believe there is not a transparent look through from the pension scheme to the company). Finally, the chapter on Spain looks at the impact of asset allocation on returns and finds consistent with previous work, that it explains about 90% of portfolio returns over time and about 100% of total returns.

Overall, this book covered a lot of interesting material and concepts, and had some impressive chapters. However, without an overriding narrative, it is not a must read, but has much that is well worth dipping in to.

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