A PROBLEM-SOLVING APPROACH TO PENSION FUNDING AND VALUATION by William H Aitken FSA, FCIA, EA

The introduction is brief and provides the basics of pension theory. The concept of defined benefit versus defined contribution, replacement ratios and broad risks in pension plans are introduced. It should be noted that the book assumes the reader has a basic knowledge of actuarial principles and notation.

Very quickly after the introduction, the book gets down into the detail. All the cost methods are described in detail, such as Traditional Unit credit, Projected Unit credit, different Entry Age methods and Aggregate methods.

Two aspects become clear early on whilst reading the book. Firstly, the textbook is North America centric. Most of the references are to unit based defined benefit plans such as $10 per month for each year of service. Whilst this may get repetitive, the simplicity of the design helps to easily follow worked examples, which makes it easier to focus on the particular concept. Secondly, the book has example after example throughout the chapters ensuring active learning as well as making the theory practical.

A special mention must be made to chapter 5, Experience Gains and Losses. This is the highlight of the book. The subject can be complex and very challenging to make practical. This chapter starts with a background of gains and losses and in true form of the book, quickly gets into details with a number of formulae and explanations. The chapter develops the theory of total gains and losses, followed by examples and explanations of breaking down the total gains/losses to separate components. Specific sections are outlined for investment, retirement (normal and early), leavers gain/losses (including any vesting impact), salary and mortality.

In most real life situations these items will cover most the gains/losses items commonly encountered. The chapter again has many worked examples and exercises. This chapter definitely has the type of explanation of this topic not commonly found and is very well explained.

Chapter 7 is another for special note as a good reference for valuing actuarial equivalence options in pension plans such as early retirement, commutations and forms of pension.

The last chapter rounds things up with more text and a summary of concepts and applications. Parts of this are only relevant to the USA, such as tax and regulations and the ST4 or SA4 notes would be more relevant as a learning guide for these wider concepts.

In summary, this book is a great introduction to pension funding mathematics and one of the few on the subject. I think the number of practical worked examples will ensure some thorough active learning as well as a useful reference for practitioners. Though much of the specifics in the book will not necessarily be currently applicable in India, it does cover all the elements needed to gain a higher understanding of the subject which will be very useful in years to come.