

# IAA Publication in 2013

## Discount Rates in Financial Reporting: A Practical Guide

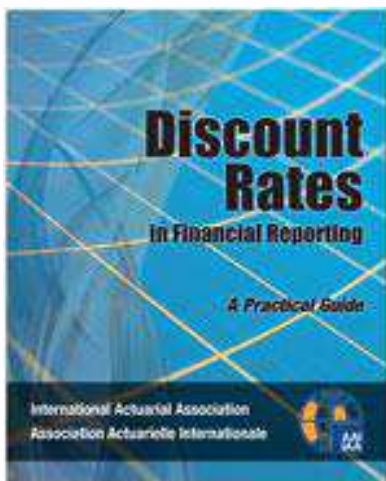
Andrew H. Dalton

1 April 2014

2014 ICA Conference, Washington, DC



# Introduction



This presentation and Q&A is not intended to be an actuarial opinion or advice, nor is it intended to be legal advice. Any statements made during the presentation and subsequent Q&A shall not be a representation of Milliman or its views or opinions.

## Today's Agenda

- Overview of the Book
- Purpose of the Book
- Target Audience
- Insights into development process
- Global Impact

## Overview of the Book

- Broadly split into two sections:
  - Methodology
  - Case Studies

## Overview of the Book

- Methodology section
  - Selected highlights include:
    - Risk-free rates
    - Decomposition of discount rates
    - Yield curve interpolation and extrapolation
    - Replicating portfolios
    - Credit, liquidity, currency, and sovereign risks
    - Inflation
    - Stochastic methods

## Overview of the Book

### ▪ Case Studies

– Thirteen case studies highlight application of techniques:

- Yield curve interpolation/extrapolation
- Economic value for unit-linked products
- Participating assurance and interest sensitive life business
- General perspectives on replicating portfolios
- Replicating portfolios from a North American perspective
- Illiquidity premium determination methods
- Currency risk
- Development of yield curves in markets with no and/or unreliable data
- Discounting non-life liabilities
- Eurozone IAS 19 example
- Discounting employee benefit cash flows
- Canadian pensions
- Sovereign Risk

## Purpose of the Book

- What the book is...
  - Educational resource for actuaries globally
  - Demonstrates selected practices and techniques used around the world
  
- And, what is it not...
  - Mathematical introduction to interest rate theory
  - Authoritative source for global standards, regulations or professional guidance

## Target Audience

- Actuaries
- Actuarial students
- Others involved in actuarial modeling
- Others involved in financial reporting for insurance or pensions
- All practice areas (life, non-life, pension)



## Insights into development process

- Global, educational perspective required careful consideration of many view points
- “Theory vs. Reality”... examples from a “risk-free” world

## Insights... risk-free rates

- Overview:
  - Definition of risk-free: Theory vs. Reality
  - Risk-free reference rates
  - Closed-form solutions
  - Replicating portfolios

## Insights... risk-free rates

- Definition of Risk-Free: Theory...



## Insights... risk-free rates

- Versus... Reality



## Insights... risk-free rates

- Risk-free reference rates

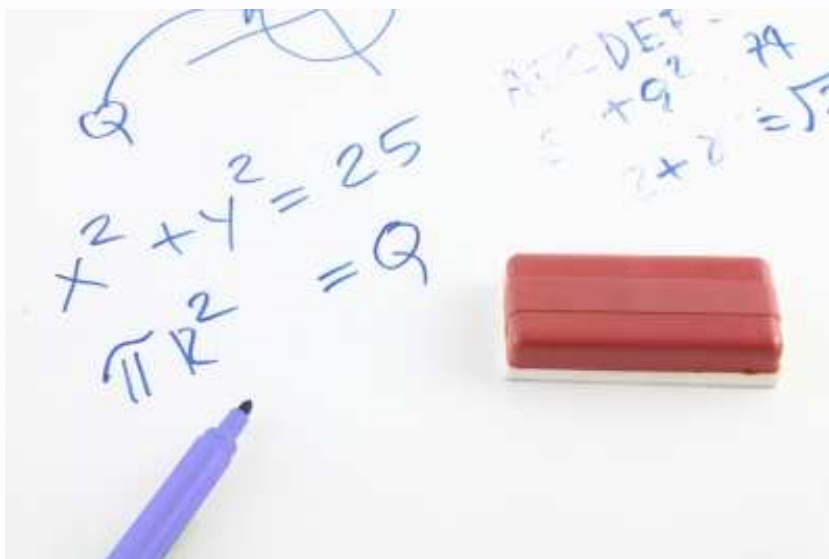


## Insights... risk-free rates

- Risk-free reference rates
  - What are the options?
  - Advantages/Disadvantages
  - No “one-size-fits-all” approach

## Insights... risk-free rates

- Closed-Form Solutions



## Insights... risk-free rates

- Replicating Portfolios
  - Optimization
  - Dynamic Replication



## Global Impact

- Published internationally by the International Actuarial Association
- Global team involved in development:
  - Contributions from Milliman consultants globally
  - Members of Ad Hoc Project Oversight Group representing:
    - US, Canada, United Kingdom, Netherlands, Germany
  - Funding from global actuarial organizations:
    - Actuaries Institute of Australia
    - Canadian Institute of Actuaries
    - Institute & Faculty of Actuaries UK
    - USA Actuarial Foundation
    - Casualty Actuarial Society
    - Society of Actuaries (US) Financial Reporting Section

## Global Impact

- Examples of international exposure:
  - 2013 Life & Annuity Symposium (Toronto, ON)
  - 2014 International Congress of Actuaries (Washington, DC)
  - Slovakia Society of Actuaries (Bratislava, Slovakia/April 2014)
  - European Actuarial Academy (Prague, Czech Republic/April 2014)
  - Presentation to International Insurance Regulators (Basel, Switzerland/ March 2014)
  
- More expected in the future...