

# 2nd Seminar on Finance & Investment

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### **Investment Actuarial Profession – International Perspective**

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# Who is an Actuary?



## International Actuarial Association (IAA) Says:

*Actuaries apply unique skills and professional approach to solving complex problems, advising on future risks, opportunities and options, across diverse fields and industries*

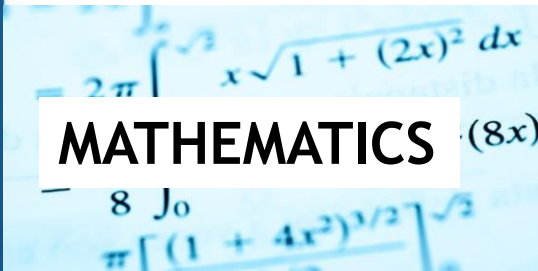
## In Layman terms

*An actuary is a professional person who applies mathematical skills to financial, business and social problems, especially those which involve uncertain future events...*

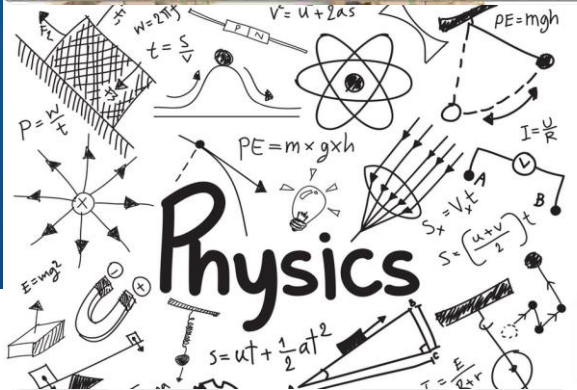


# What is Actuarial Science

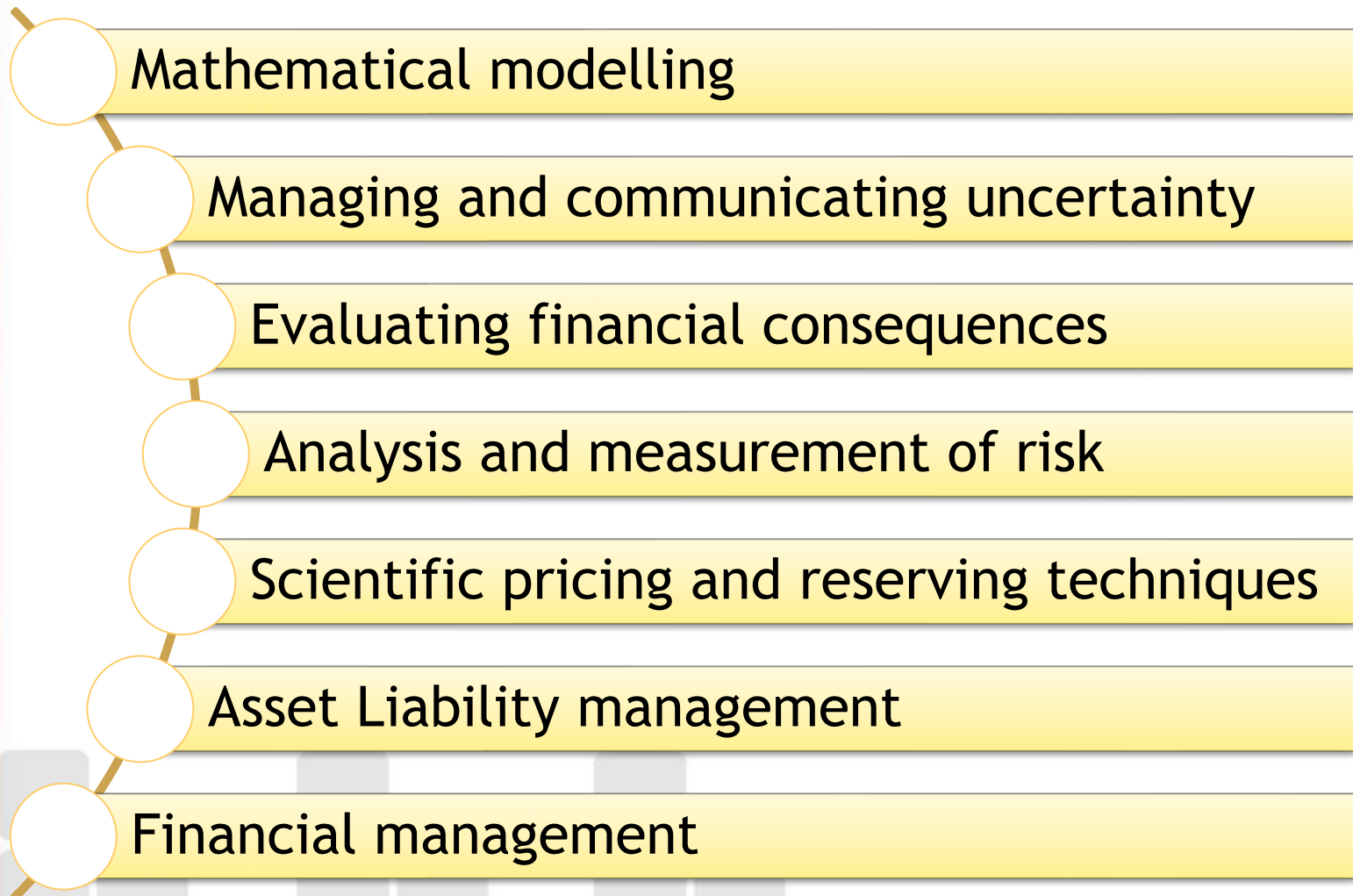
## *A Multidisciplinary Subject*



**MODELLING & PROGRAMMING**



# Actuarial Skillset



# Where do Actuaries Work



Traditional Areas	Non - Traditional Areas
Life Insurance	Banking
Pensions & Benefits	Environmental Finance
General Insurance	Data Science
Asset Management	Infrastructure
Government	Health Care
Consulting	Asset Management
	Energy
	FinTech
	<i>Many more...</i>

# Finance & Investments



- Asset Management / Funds Management
- Banking
- Investment Banking
- Corporate Finance
- Infrastructure Finance
- Derivatives
- Environment Finance / Climate Change
- FinTech / RegTech
- Alternate Assets / Venture Capital
- Wealth Management



# Asset Management



- Financial Modeling & Valuation
- Equity Research
- Portfolio Management & Analytics
- Asset Liability Modelling and Management
- Strategic Asset Allocation

# Investment Banking

- Mergers & Acquisition
- Derivatives structuring and sales (sell side) and buy side analysis and execution
- Credit risk analysis and credit derivatives
- Hedging strategies
- Securitization of insurance risk
- Investment and trading strategies



# Banking

- Basel 3 & IFRS 9
- Credit risk modelling and scorecard development
- Balance sheet management & Provisioning
- Customer analytics and value management
- Risk Management



**BANKING BUSINESS**

Risks involved  
in  
Banking Business

# Banking Actuaries - Role Models



**Michael Tichareva**

- Fellow of the Actuarial Society of South Africa
- Managing Director and Principal of National Standard Finance Africa
- Chairperson - International Actuarial Association - Banking Working Group



**Dick Rae**

- Fellow of Institute & Faculty of Actuaries
- Managing Director, BMO Global Asset Management
- Retail Banking Actuary
- Chairperson - Banking Member Interest Group - IFoA

# Alternate Assets

- Private Equity & Venture Capital Investment
- Behavioural Finance & Risk Monitoring
- Venture Capital Valuation
  - Bayesian Modelling Techniques
  - Real Options Analysis
- Risk Adjusted Return of Capital (RAROC)



# Alternate Assets - Success Stories

## Roelof Botha

- Fellow of Faculty of Actuaries
- MBA Stanford
- CFO of Paypal
- Director of Youtube
- Partner at Sequoia Capital US
- lead investments in Instagram, Evernote and Square



*“I get a thrill from watching companies thriving in the long-term, in the way that PayPal and YouTube have. I am inspired by the impact they have on the lives of hundreds of millions of people” - **Roelof Botha***

# Infrastructure Finance

- Risk Analysis and Management of Projects (*RAMP*)
  - *Actuaries and Civil Engineers*
- *Infrastructure Bonds*
  - *Hybrid Annuity Bonds in India (NHAI)*
- Risks in infrastructure projects
  - *Construction risks*
  - *Forecasting risks*
  - *Operating and revenue risks*
  - *Guarantor credit risks*
  - *Financing risks*
  - *Other risks*



# Environment Finance

- Weather Derivatives
- Energy Pricing
- The Actuaries Climate Index
- ESG Factors and Responsible investments
- Portfolio Decarbonization



# Environment Finance



- Fellow of Institute and Faculty of Actuaries
- Chair of Resource and Environment Board
- PhD in Computer Science
- MA - Mathematics
- Fellow of Royal Society of Art

Programmer & Pension Actuary -  
*who transformed into a Climate Change Expert*

<https://www.louisepryor.com/biography/>

# Other Investment fields

- Credit Rating Agencies
- Derivatives
- Structured Finance
- Risk Banking
- Wealth Management





# How are Actuarial Associations Responding

## Institute and Faculty of Actuaries (IFoA)

- Finance & Investment Board
- Banking Member Interest Group
- Task Force on Climate Change
- Risk Alerts
- Global F & I Sub Committee
- Research Papers / Webinars
- Actively Engaging with Bank of England



# How are Actuarial Associations Responding

## Institute and Faculty of Actuaries (IFoA)

- Membership statistics in Finance & Investment

Members	Banking	Investment Banking	Asset Management
FIA/AIA	151	112	435
Students	157	81	142
Total	307	193	577

# How are Actuarial Associations Responding

## Institute of Actuaries of Australia (IAAust)

- Banking Practice Group

## Actuarial Society of South Africa

- Banking Practice Group
- Alternate Investment Group
- Asset Management Group

- Society of Actuaries

- Finance & Investment
- Entrepreneurial and Innovation



# How are Actuarial Associations Responding

International Actuarial Association working closely with Supranational Bodies

- *World Bank*
- *International Monetary Fund*
- *Banking International Standard*
- *Organization for Economic Co-operation and Development (OECD)*
- *International Accounting Standards Board*



# How are Actuarial Associations Responding

## Institute of Actuaries of India

- *Advisory Group on Banking Finance & Investment*
- *Dialogue with Regulators - RBI, SEBI, etc*
- *Research Initiatives*
- *Rebranding & Employer Engagement*
- *Member awareness campaigns*



# Challenges

- Mind Set
- High paying insurance sector
- Lack of clear cut path
- Lack of enough actuarial talent
- Initial struggle to establish
- No clear CPD
- Regulators Unaware of Key Actuarial applications
- Competition from other professionals - CA, CFA, FRM



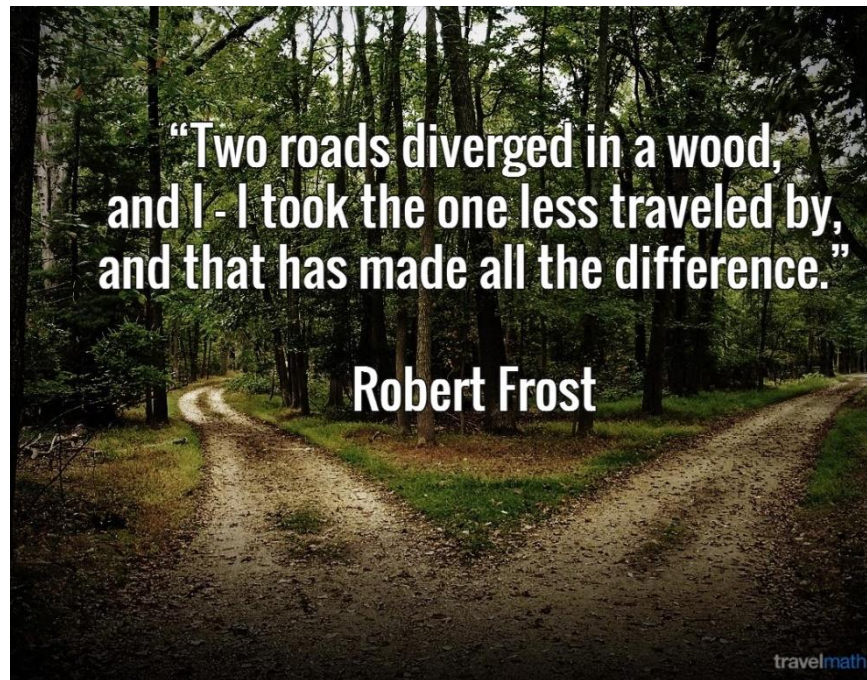
# Evolving Actuarial Profession



- Curriculum change bringing it closer to Broader Data Science skillset
  - CT Series transformed to Core Business, Core Statistics and Core Modeling
  - R programming integral part of syllabus across all the Actuarial Associations
- Introduction of various roles for Actuaries besides Fellowship
  - Chartered Actuary (for Associates as Generalists)
  - Chartered Enterprise Risk Actuary (CERA- risk related roles)
  - Certified Actuarial Analysts (CAA - at entry level)
  - ST/SA level papers on Banking, Finance and Investment



# The way forward - *New Roads for Actuaries*





# Questions



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