



Business School

Never Stand Still

Business School

Risk and Actuarial Studies

# Impact of actuarial work

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1 December 2016

# Agenda

Vocation - our social role

The major actuarial challenges

Some examples of impact beyond standard actuarial work

# Vocation – our social role

## The Capability Framework

- Contribution to Business Strategy
- Leadership
- Actuarial Approach to Problem Solving
  - Modelling, analysis of surplus, equitable responses
- Valuing Uncertain Future Cash Flows
  - Valuation, simulation, capital calculations
- Risk Management
  - Quantification, governance, processes
- Professional Governance
  - Professional standards and guidance
- Product Development Management and Pricing
- Investment Advice and Governance

Actuaries Institute (2012) “Actuarial Capabilities for the Future”  
<http://www.actuaries.asn.au/Library/Education/Other%20Education/2012/ActuarialCapabilitiesForTheFuture.pdf>

Credo: The social function of the actuarial profession is to meet people’s need for financial security

# The Structure of the Financial Sector

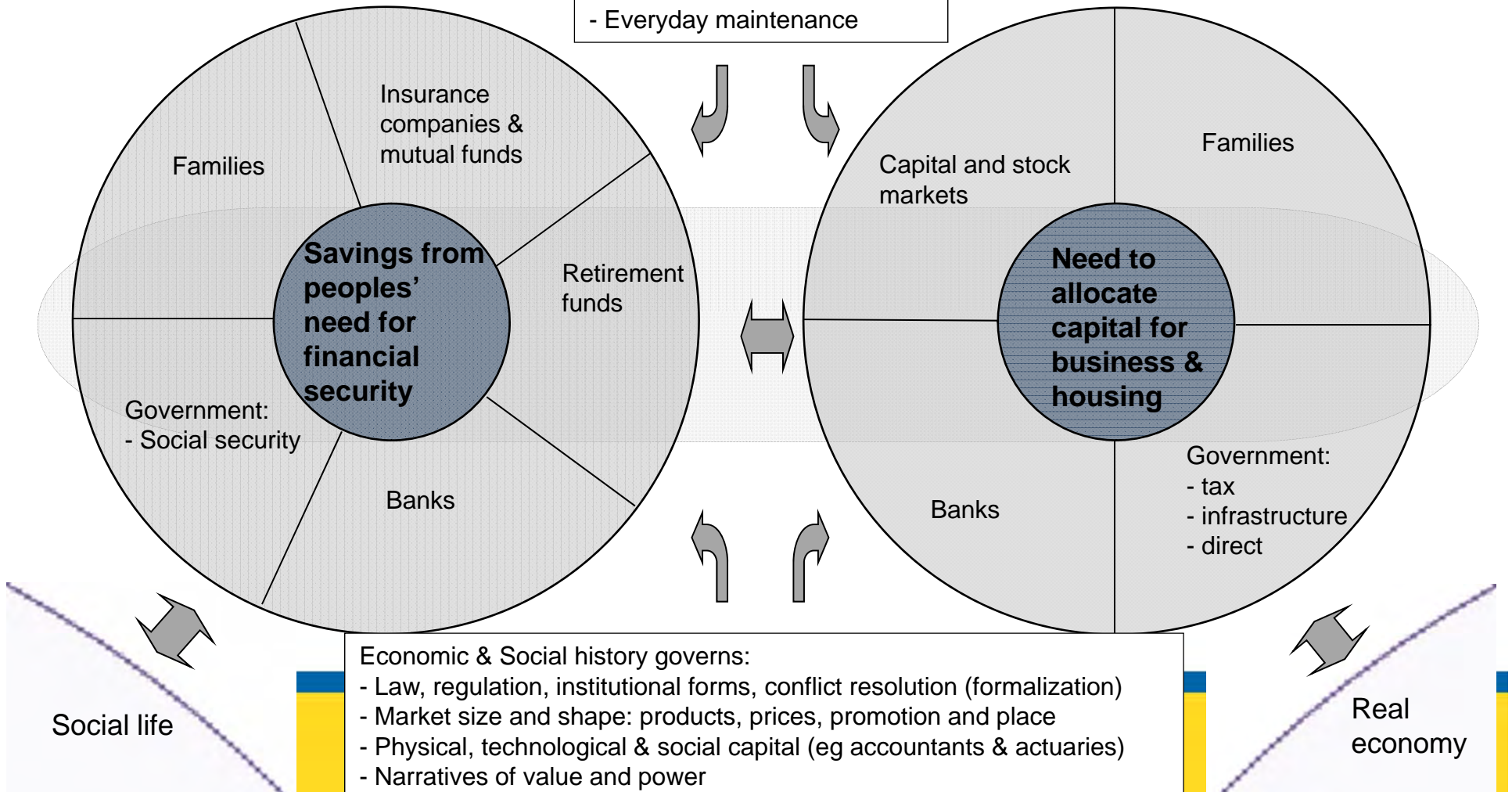
## Standards:

- Just: freedom & equality
- Effective & efficient
- Robust

## Systematic risks:

- Economic (Oil, China ...)
- Societal (Families, war ...)
- Physical (Global warming ...)

Personal initiatives:  
 - Entrepreneurial  
 - Ethical  
 - Everyday maintenance



# Benefits offered by a flourishing financial sector

Financial security – from biblical times at least

- Pure religion ... is this: to help widows and orphans in their distress (Jas 1<sup>16</sup>)
- Let a widow be enrolled when she is 60 years old

Supports economic specialization/growth (Chapter 1 of Adam Smith)

- Facilitates payments
- Provides short term finance
- Insures trade and capital goods
- Allows some risk diversification so people can concentrate on specializations
- Accumulates capital for large projects

Normal actuarial work has significant social impact

# Costs of a dysfunctional financial sector

## Overserving and overcharging

- Easy money, for the unscrupulous, diverts energy and resources
- Concentrates wealth in the hands of an undeserving few

## Proliferates unnecessary and complex products

- Creates financial uncertainty (by making unsustainable promises such as some insurance guarantees and bank liquidity)
- Wastes energies

## Fails to develop useful innovations and stable structures

- Well governed investment markets that limit gearing
- MECE insurance (to cover all risks in a mutually exclusive and comprehensively exhaustive way – i.e. no gaps and overlaps)

# The major actuarial challenges

[http://www.actuaries.asn.au/Library/2005\\_05\\_The\\_Major\\_Actuarial\\_Challenges.pdf](http://www.actuaries.asn.au/Library/2005_05_The_Major_Actuarial_Challenges.pdf)

# CHALLENGE 1: Enhancing income

- Insurance
  - Death, disability
  - Unemployment?
- Enhance labour markets
  - Provide labour market information
    - For education
    - For workers training and retraining
  - Improve housing mobility
  - Enhance employee benefits
- Income contingent financing for housing



# CHALLENGE 1a: Caribbean (3<sup>rd</sup> World) context

High under-employment and crime

- Socialise young men
  - Keep families together
    - Housing near workplaces
    - Make fathers pay
  - Provide male role models at schools (especially maths teachers)  
<http://www.icsu.org/icsu-latin-america/publications/reports-and-reviews/mathematics-education/mathematics-education-in-latin-america-and-the-caribbean-a-reality-to-be-transformed-1>
  - Make workplaces more robust (to cope with testosterone)
- Develop formal job opportunities
  - Informal sector does not allow delegation, or easy dispute resolution
  - Use realistic discount rates
  - Identify comparative advantage
    - Tourism
    - Age care
  - Be creative in finding international investors
  - Be creative in creating local credit

See Asher, A (2001) "The Fight against Poverty: Social Security, Job Creation... and Responsibility." in *Defining a New Citizenship for South Africa and the Fundamental Values That Will Shape It*, 63-70. [http://www.kas.de/wf/doc/kas\\_4869-544-2-30.pdf](http://www.kas.de/wf/doc/kas_4869-544-2-30.pdf)

# CHALLENGE 2: Funding Retirement

- Acknowledge liquidity constraints in earlier life
- Enhance annuitization
  - Provides longevity insurance
  - Reduces dementia risks
  - Should insure some disability (impaired lives)
- Reverse mortgages
- *Small non-contributory social pensions*
  - *Reduce incentive to have children to support old age*
  - *Encourage respect for the elderly*
  - *Add to food security for many poor households*

# CHALLENGE 3: Idiosyncratic costs

- Education
  - Rights, commerce and community
- Medical expenses
  - Rights and commerce
  - Budgeting
- Frail care

# CHALLENGE 4: Redistribution

*How do we divide the pie?*

- Justice
  - Desert, Equality, Need, Freedom and Efficiency
- Pensioners, children and disabled
- Executives, civil servants, landowners
- Distribution of common goods (land, water ...)
- Tax policy
  - Salaries, Investment income, Pensions
  - Subsidies (normally wrong)

# CHALLENGE 5: Financial markets

*How do we find and apply capital?*

Formal markets allow for diversification

Creating new tradeable assets?

- Housing
- Smaller companies
- International participation

# CHALLENGE 6: Feast or famine

*How do we manage universal market and consumption risks?*

- Smoothing short term fluctuations
- Sharing long term prosperity and pain
- New products and institutions
  - Smoothing
  - Profit and productivity sharing
- Ecological disasters?

# CHALLENGE 7: Market failures

*Can we contribute to financial market stability*

Asset price bubbles

- Demand / supply imbalances
- Superstition and statistical education
- Market paradox: ineffective faith (have to believe that they are inefficient for them to be efficient)

Manage international cash flows

Prospective accounting for all cash flows

# CHALLENGE 8: Capital governance

*How do we control capital?*

## Agency risks

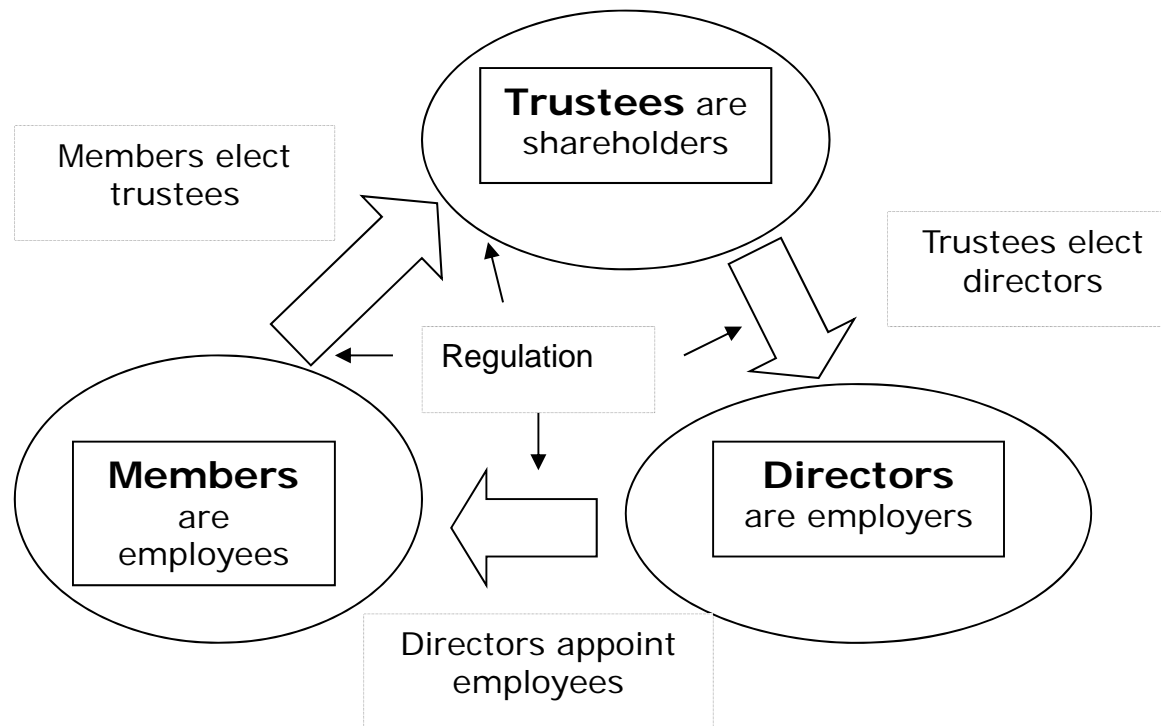
- Government
- Professional managers
- Trustees

## Structures of accountability

- Capital requirements
- Actuarial control cycle



# CIRCLE OF ACCOUNTABILITY



# CHALLENGE 9: Professional education

## Formation of virtues

- Wisdom, justice, self-control, courage
- Proliferation of junk food, junk media

## Development of professional judgement

- Deep understanding of threshold concepts  
— and transformation of identity
- Proliferation of junk data, junk reading

Asher, A (2015) *Working Ethically in Finance: Clarifying Our Vocation*, Business Expert Press, New York

Asher, A (Forthcoming) "Explicitly incorporating virtues into actuarial education", *Annals of Actuarial Science*

Asher, A (2015) (2015) *Virtue Theory and Actuarial Judgement* <http://www.actuaries.asn.au/Library/Events/SUM/2015/AsherVirtueTheoryPaper.pdf>

# CHALLENGE 10:

***WHAT DO YOU WANT TO BE  
REMEMBERED FOR?***

# Examples of impact over and above standard actuarial work

# Adrian Gore, Founder Discovery Group

Q Was the social impact of your work (from changing the nature of medical insurance to your Vitality program) a prominent reason, or was it rather all part and parcel of a broader objective?

A Discovery's Core Purpose is to "Make people healthier and enhance and protect their lives" and is the foundation of the Vitality Shared-Value Insurance model, the mechanism through which we incentivize healthier behavior funded through the actuarial surplus created by it.

Q Where there particular skills or approaches that you had as an actuary, that you think were particularly valuable in making a social impact?

A In 1994, the health insurance landscape was inefficient, unsustainable and on track to becoming unaffordable – and an actuarial foundation, and a non-traditional approach focusing on wellness and prevention, was crucial to finding an alternative.

Q Is there anything you would say to a group of actuaries considering how to increase their social impact?

A I am a strong advocate of shared value, where the business model and social need are integrated and aligned – what is good for the business is good for society and the benefit is shared between all stakeholders

# Hugh Miller, Taylor Fry Government Analytics

Q Was the social impact of your work a prominent reason in your motivation, or was it rather all part and parcel of a broader objective.

A The rationale is two-pronged; the fiscal conservatives see the approach as a way of managing down long-term costs by early intervention. Others see it as a genuine way of improving the lives of needy, with a side benefit of being able to justify it economically.

Q Where there particular skills or approaches that you had as an actuary, that you think were particularly valuable in making a social impact?

A Our models tend to be more individual and event focused – we first model how a person transitions in and out of welfare, and then add the cost. This is a bit different from some aggregate approaches that gloss over the underlying events.

Q Is there anything you would say to a group of actuaries considering how to increase their social impact?

A There seems to be genuinely high interest in measuring the effect of social programs and ensuring practices are evidence-based. Actuaries are well placed to help.

# One example of impact investors

**L**eapFrog invests capital, people and knowledge in purpose-driven businesses, helping them to grow, to be profitable and to have real social impact.

This is how we achieve top-tier returns for our investors. And how we enable striving emerging consumers to propel themselves into prosperity and security. This is a synergy, not a trade-off.

We aim to open the gates of the capital markets for high growth businesses – bringing large-scale capital to drive rapid impact on billions of lives. We are interested in both scale and diversification. We like building big businesses that succeed and endure.

We think of ourselves always as co-owners – alongside our investors, co-investors, management and local communities. We work hard to have a deep relationship with all these partners.



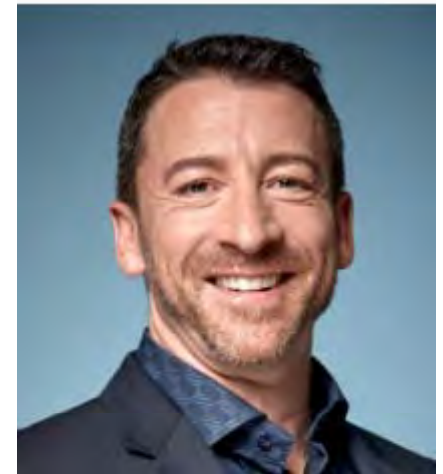
# Dominic Liber

SENIOR ADVISOR

**D**ominic works with LeapFrog in the capacity of Senior Advisor, and was one of the founding Partners at LeapFrog. Dominic sourced and co-led the investment in South African insurer AllLife, and led the company's investment in Nigerian insurer ARM Life.

He co-designed LeapFrog's leading profit with purpose measurement framework. Earlier, Dominic was the MD of Quindiem Consulting, a firm of actuaries, statisticians and insurance consultants at the forefront of microinsurance.

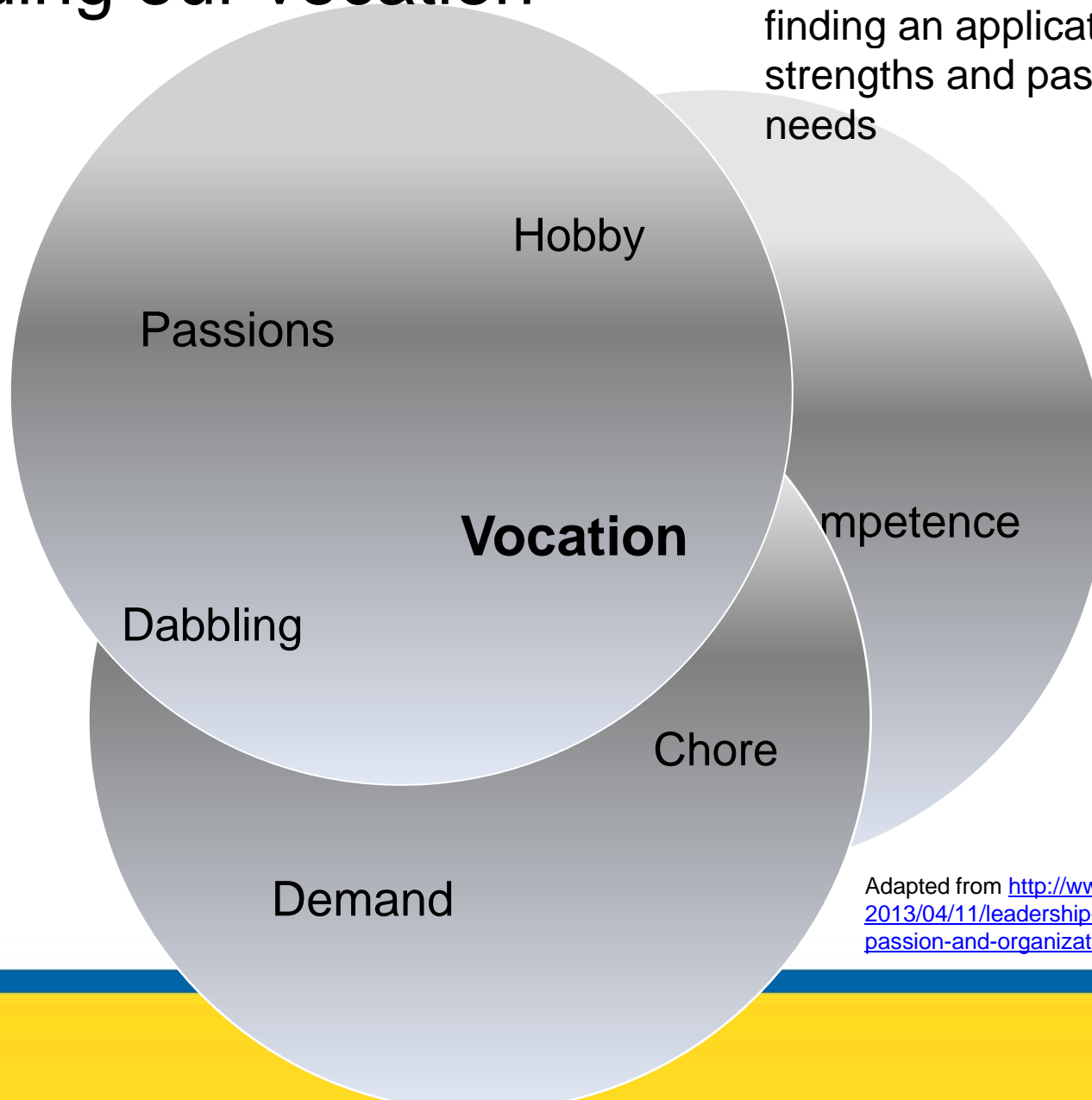
An actuary, Dominic has played a leading industry role in life and health insurance product design, reinsurance, and insurance company risk management and regulation. He led the development of supervisory guides for insurance regulators in Zambia, Namibia, Botswana and Kosovo, was Convenor of the AIDS Committee of the Actuarial Society of South Africa, and co-authored the 100 Country Landscape Report on Microinsurance.





# Finding our vocation

Clarifying our vocation means finding an application of our strengths and passions to real needs



Adapted from <http://www.clemmergroup.com/blog/2013/04/11/leadership-sweet-spot-strengths-passion-and-organizational-needs/>