



NETWORK OF
CONSULTING
ACTUARIES

DEALING IN UNCERTAINTY

INSURANCE IN THE AGE OF
FINANCE

ARJEN VAN DER HEIDE

Dealing in Uncertainty: Insurance in the age of Finance

Arjen van der Heide

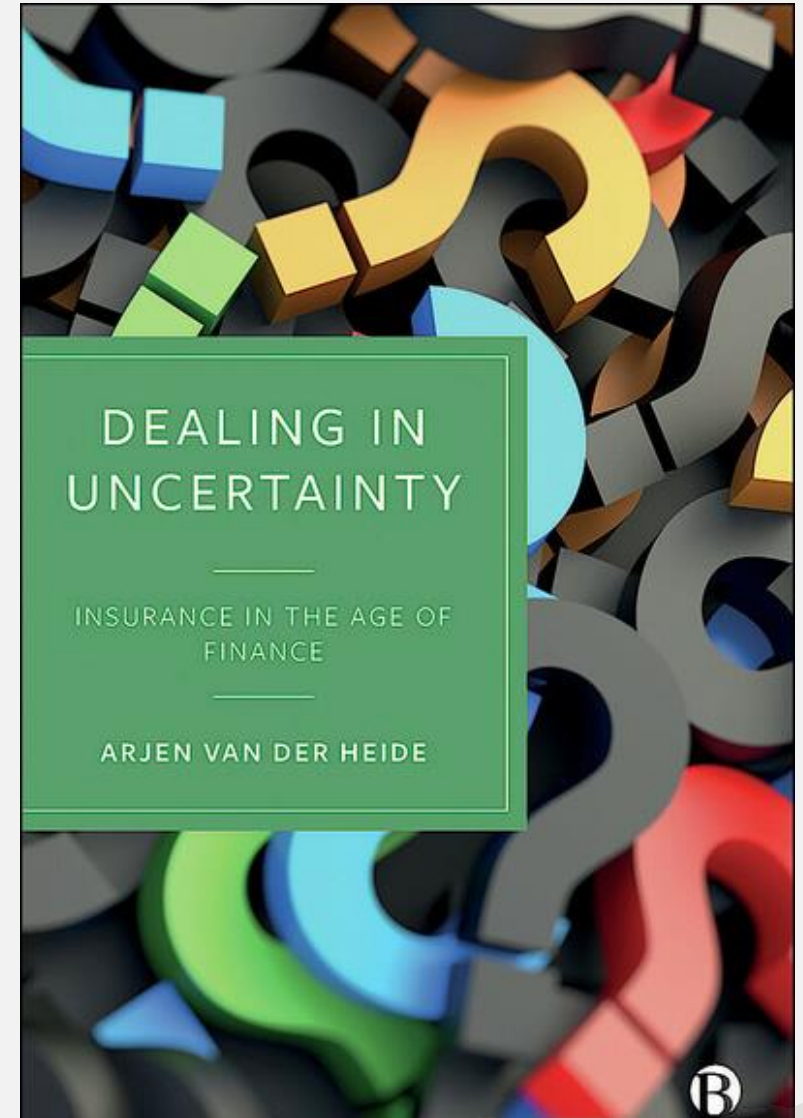
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Main point of the book

- Studying the introduction of modern finance theory in the life insurance business from a social science perspective
- Intellectual background: “social studies of science”
 - Scientific progress doesn’t just follow internal logic, but also shaped by circumstances in which scientific work takes place;
- This book: linking changes in life insurers’ knowledge practices to changing nature of the insurance business itself



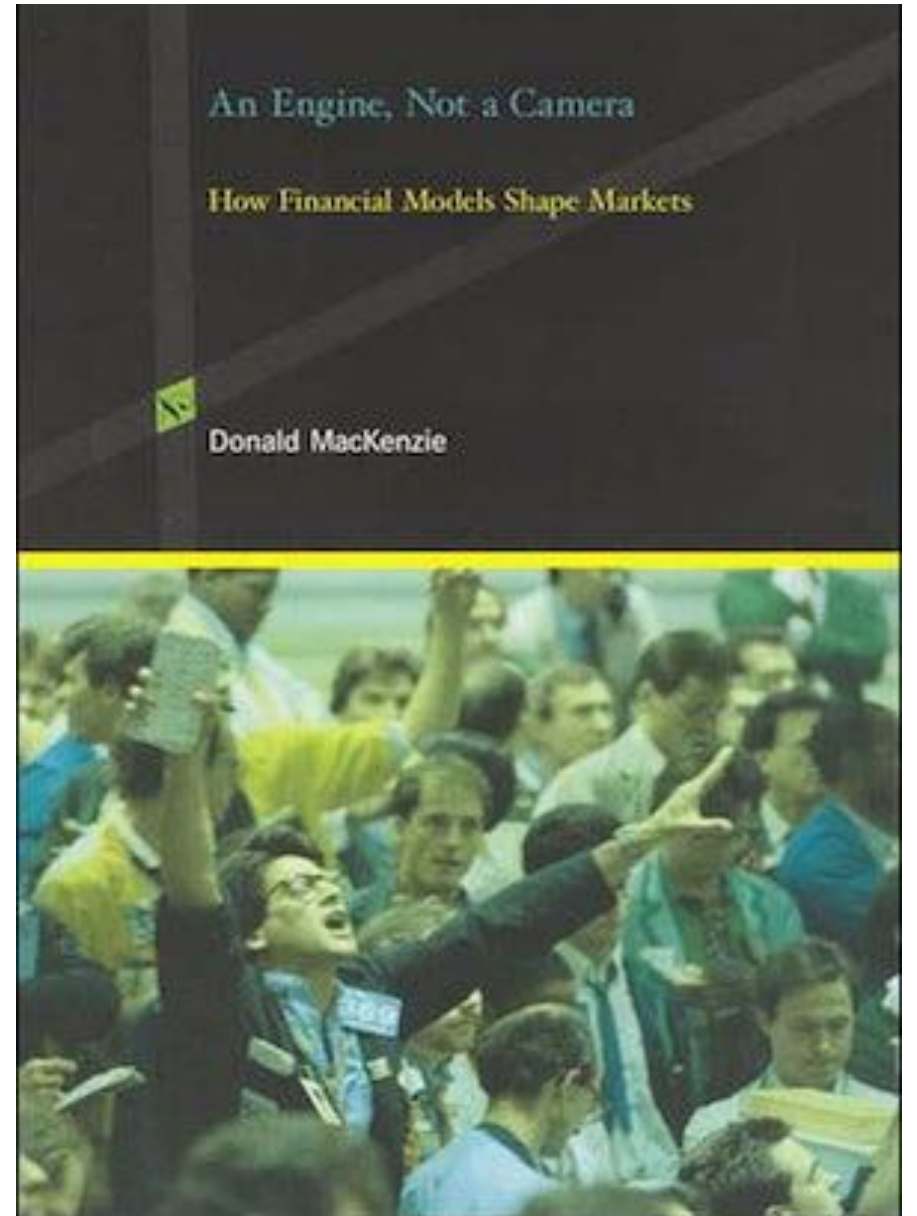
Outline

1. Background and motivations for the study
2. What I have done (by way of methodology)
3. Explaining the paradigm shift
4. Implications (by way of conclusion)

Section 1: Background and motivation for the study

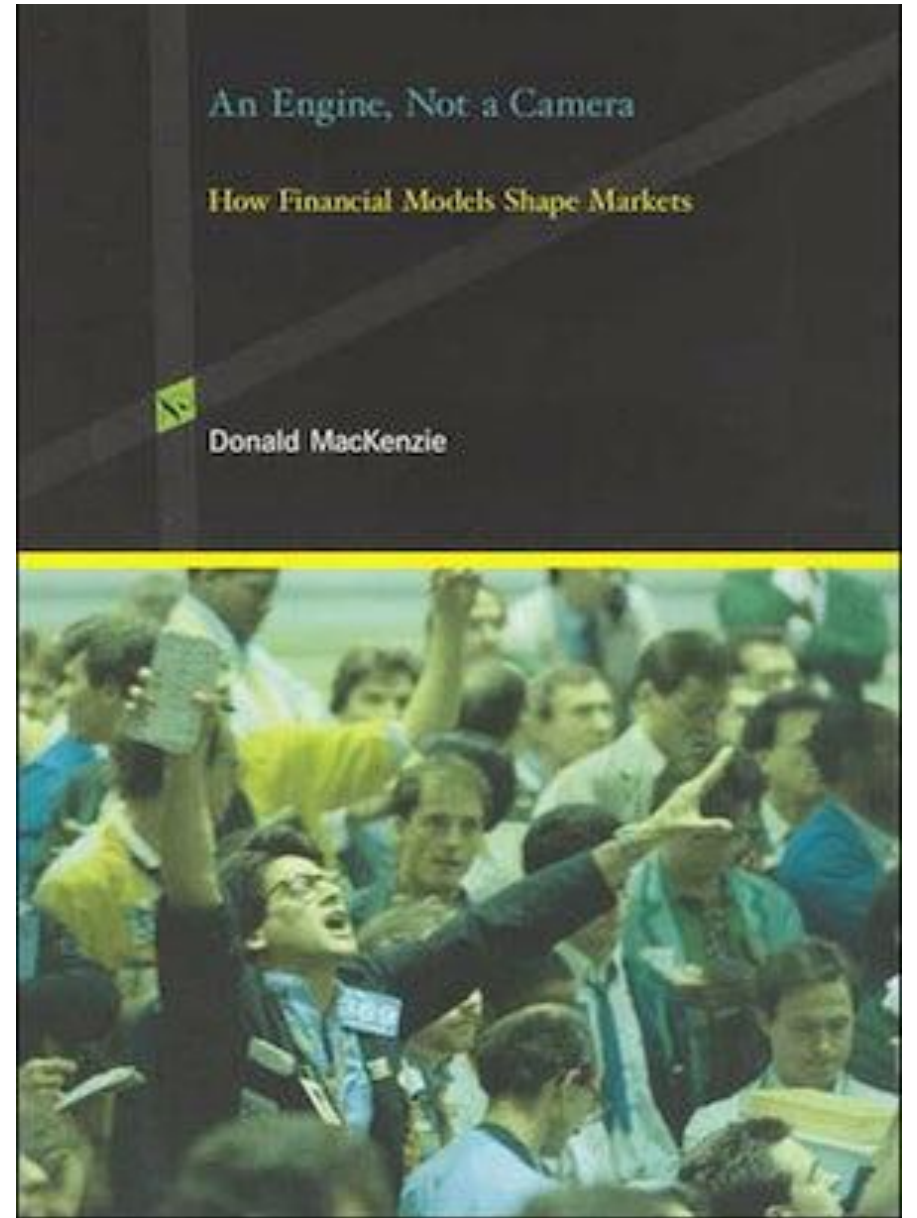
Source of inspiration

- “An engine, not a camera”



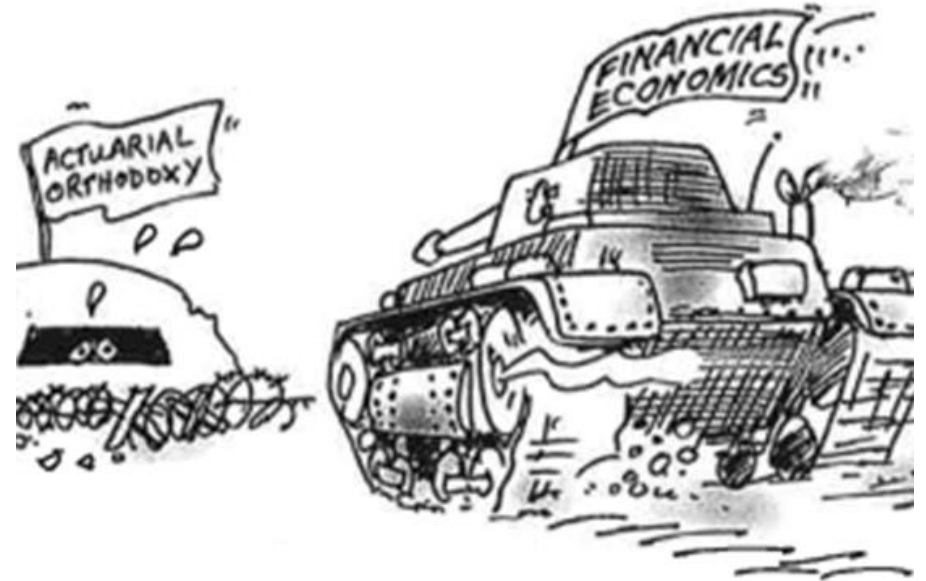
Source of inspiration

- “An engine, not a camera”



Relevance

- Context of discovery: Solvency II
- Context of justification: “Paradigm shift”
- Conflict!



Source: Dennett, 2004

A paradigm shift

Financial economics as a paradigm

- Paradigm as an 'exemplary problem solution'
 - A problem solution indicating how other problems may be solved
 - Black-Scholes-Merton as 'central paradigm... of financial economics' (MacKenzie, 2006, p. 139)
 - Through analogical extension, BSM was generalized to other valuation problems and more general expressions
- BSM as paradigm for valuation problems in insurance

When did the paradigm shift occur?

- 1980s: option pricing theory seemed 'to have serious practical disadvantages because it depends upon several underlying [and unrealistic] assumptions' (Ford et al, 1980, p 112).
- 2000s: modern finance theory became core part of actuarial toolkit

Section 3: What have I done?

By way of a methodology

Data collection

“Reconstructing” history, with...

...44 interviews

...archival research

...to describe the conditions and consequences of the paradigm shift;

Section 4: Explaining the paradigm shift

Key moments

- 1960s: emergence of unit-linked insurance as an alternative to with-profits insurance
- 1970s/80s: hybridization of insurance-linked and with-profits insurance
- Late 1990s
 - beginning of fundamental review of EU insurance regulation and Solvency II
 - Setting up of FSA
- Collapse of Equitable Life Assurance Society
- 2000s: “realistic balance sheet” and “Individual Capital Adequacy Standards”
- Solvency II
 - 2009: publication of Solvency II directive
 - 2014: publication of Omnibus II directive
 - 2016: implementation of Solvency II regime

Four factors important in explaining rise of modern finance theory

1. Changing “professional ecology” of the actuarial profession
2. From self-regulation to regulatory state
3. Actuarial discretion under scrutiny
4. Internationalizations

1. Changing professional ecology



Institute and Faculty
of Actuaries

- Actuaries moving into “wider fields”
 - Rise of consulting actuaries: 350 in 1984; 1,150 in 1994; 4,234 in 2016
 - Familiarity with new approaches to valuation ‘completely different from the way that actuaries did it’ (interviewee)

2. Rise of the regulatory state

- 1997: Securities and Investments Board turns into FSA
- Assumed more responsibilities for prudential regulation of insurance companies
 - “Demotion” of actuarial expertise
- Switched to realistic balance sheet and individual capital adequacy standards
- Modern finance theory as more objective



3. Actuarial discretion

- Collapse of Equitable Life Assurance Society raised questions about actuarial expertise
 - ‘regulatory returns and measures of solvency applied by the regulators did not keep pace with developments in the industry’ (Penrose Inquiry, 2004)
 - ‘The profession had been ‘too insular ... and has been slow to adopt new approaches and techniques’ (Morris review of the actuarial profession)



Lord Penrose

3. Actuarial discretion

'I see unit-linked assurance not as a vehicle for making the Actuary obsolete, but rather as an opportunity to use his unique qualities – through an opportunity for him to employ himself in weighing up complicated mathematical relationships, rather than to use his time attempting to resolve conflicts of interest of his own making or exercising social judgments which he is no more qualified to assess than a layman' (Weinberg, 1973, p 20)

4. Internationalization



- Rise of international accounting standards, including a project for insurance accounting
- European integration and the rise of the single market
 - Heterogeneity of evaluation practices as barrier to cross-border activity
 - Large insurance groups form coalition with European Commission to push harmonization agenda

Section 5: Implications

By way of conclusion

Implications

- Question: for whom do models work? And why?
- For whom do the evaluation practices work?
- Dealing *in* uncertainty rather than *with* uncertainty