SOCIETY OF ACTUARIES

On models, measurement, risk and Cubism

A discussion of “Fundamentals of Cost and Risk that Matter to Pension Savers and Life Annuitants” and “Accounting and Actuarial Smoothing of Retirement Payouts in Participating Life Annuities”

2015 Pension Research Council Conference

Emily Kessler, FSA

Actuaries
Risk is Opportunity.

Value of multiple perspectives, recognizing

- Evaluation of risk
- Limitations of models
- Needs of institutions (and their stakeholders) vs. individuals

Dominant perspective

- Market value: settlement price
  - Unbiased
  - Consensus
- In economics, realism = market value
- Market values aren’t scientific
  - Subject to distortion: bubbles

Limitations of market perspective

- “Pension” (institutional or individual) isn’t being settled – and likely won’t be
  - Assets may be held to maturity
  - Obligations shift over time
- Foolish overreliance on market values could lead to counterproductive actions
- Maurer et al argue in favor of some non-settlement measurements
  - Better outcomes for individuals, insurers

Evaluation of risk

- Cannot properly evaluate risk without knowing settlement value
  - Anchor to understanding risk
  - Starting point for discussions on cost and risk
- Institutionally, best approach is to disclose multiple values
  - Statutory (regulator – solvency)
  - Accounting (shareholder – settlement)

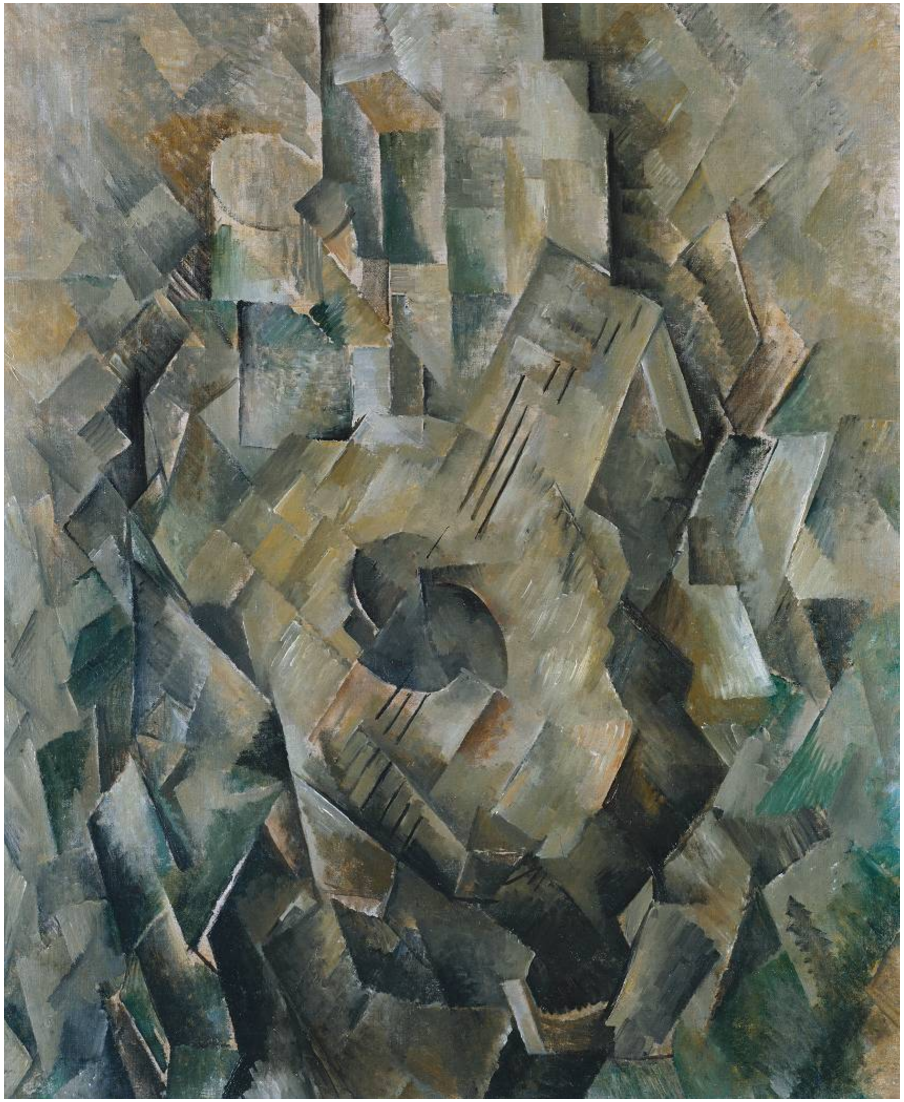
Model risk

- Donnelly et al model an investor with lower and upper bounds constrained
- Usual caveats on “models”
  - Individuals don’t live 1,000 lifetimes simultaneously
  - Each retirement cohort experiences the same economic conditions
  - Downsides & fat tail problems
  - Downsides and upsides occur within economic scenarios with real life implications

Models need multiple perspectives

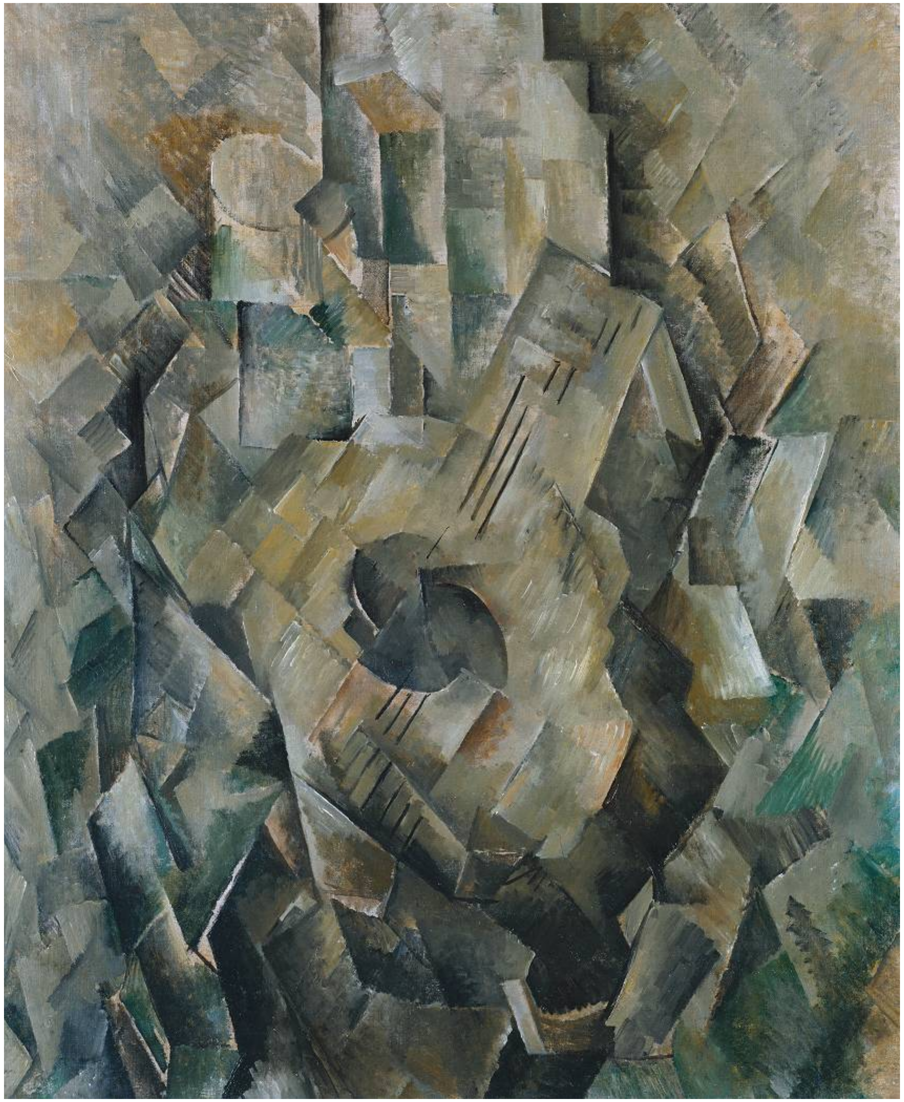
- Not just about investment strategy
  - Retirement age
  - Contribution levels
- Not "set it and forget it"
  - Real time adjustments can be made
- Must account for variations in economic cycles
- Why are we working with one bucket?
  - Needs have different risk profile than wants

Measurement perspectives



Multiple perspectives

"In Cubist artwork, objects are analyzed, broken up and reassembled in an abstracted form—instead of depicting objects from one viewpoint, the artist depicts the subject from a multitude of viewpoints to represent the subject in a greater context." [Wikipedia]



Georges Braque, 1909-1910 *La guitare (Mandora, La Mandore),* Tate Modern, London

Institutions vs. individuals

- Institutions have multiple stakeholders with different needs
  - Participants/Funders
  - Regulators
  - Investors
- Requires multiple measurements of the same obligation, asset

- Individuals are sole stakeholders but with a hierarchy of needs
  - Protect needs
  - Help me get wants, if possible
  - Protect against economic downturn
- Requires multiple buckets each taking a different “angle” on the problem

Thank you