



Life and Structured Settlement Underwriting

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Life and Structured Settlement Underwriting

- The Basics
- Comparative Data
- Income Effect
- Underwriting Approaches and Results

Definitions

- **Life Settlement:** The sale of an individual life insurance policy to an investor in the secondary (or tertiary) market
- **Structured Settlement:** An annuity given to an individual who has suffered damages (injury, wrongful death of a spouse, etc.) through a court proceeding
- **Secondary Structured Settlement Transaction:** The conversion of a Structured Settlement annuity into a lump sum
- **Mortality Ratio:** An expression of a person's relative mortality versus a standard mortality distribution
- **Debits:** The quantification of the additional mortality associated with a person's medical and behavioral conditions, used to generate the Mortality Ratio

The Role of the Medical Underwriter

- To estimate the life expectancy of the individual whose life insurance policy is being sold in a Life Settlement or whose Structured Settlement is being converted to a lump sum
- Most often, life expectancy is estimated by assigning debits associated with the individual's medical and behavioral conditions; adding those debits to generate a Mortality Ratio; and applying that Mortality Ratio to an appropriate Mortality Table.
- Because these are competitive markets and to avoid blatant anti-selection, individual life expectancy evaluations are necessary. We can't rely on population data.
- Nevertheless, population/demographic information is important in establishing the underwriting parameters for our life expectancy estimates.
- We measure our performance with independent analyses of Actual to Expected performance

Comparative Data

- Policy Data
- Population Demographics
- Impairments/Debiting

Comparative Policy Data

	Life Settlements	Structured Settlements
Median Face Amount	\$1,218,413	\$217,400
Median Gross Mortality Ratio*	173%	325%

Source: Fasano Database, Jan-Dec 2018

*Excludes Clinical Judgements

Comparative Population Demographics

	Life Settlements	Structured Settlements
Median Age	76	44
Male (%)	74%	56%
Smokers (%)	3%	40%

Source: Fasano Database, Jan-Dec 2018

The Income Effect

- Less related to health insurance disparities than previously believed
- Gets to behavioral issues
- Affects underwriting approach

Healthcare and Income Differentials

	U.S.	Norway
Availability of Healthcare	Uneven	Universal
OECD Income Inequality Ranking	4 th of 35	31 st of 35
Income Inequality	Top 1% get 20% of income	Top 1% get 8% of income

Source: OECD

Do Healthcare/Income Differentials Affect LE?

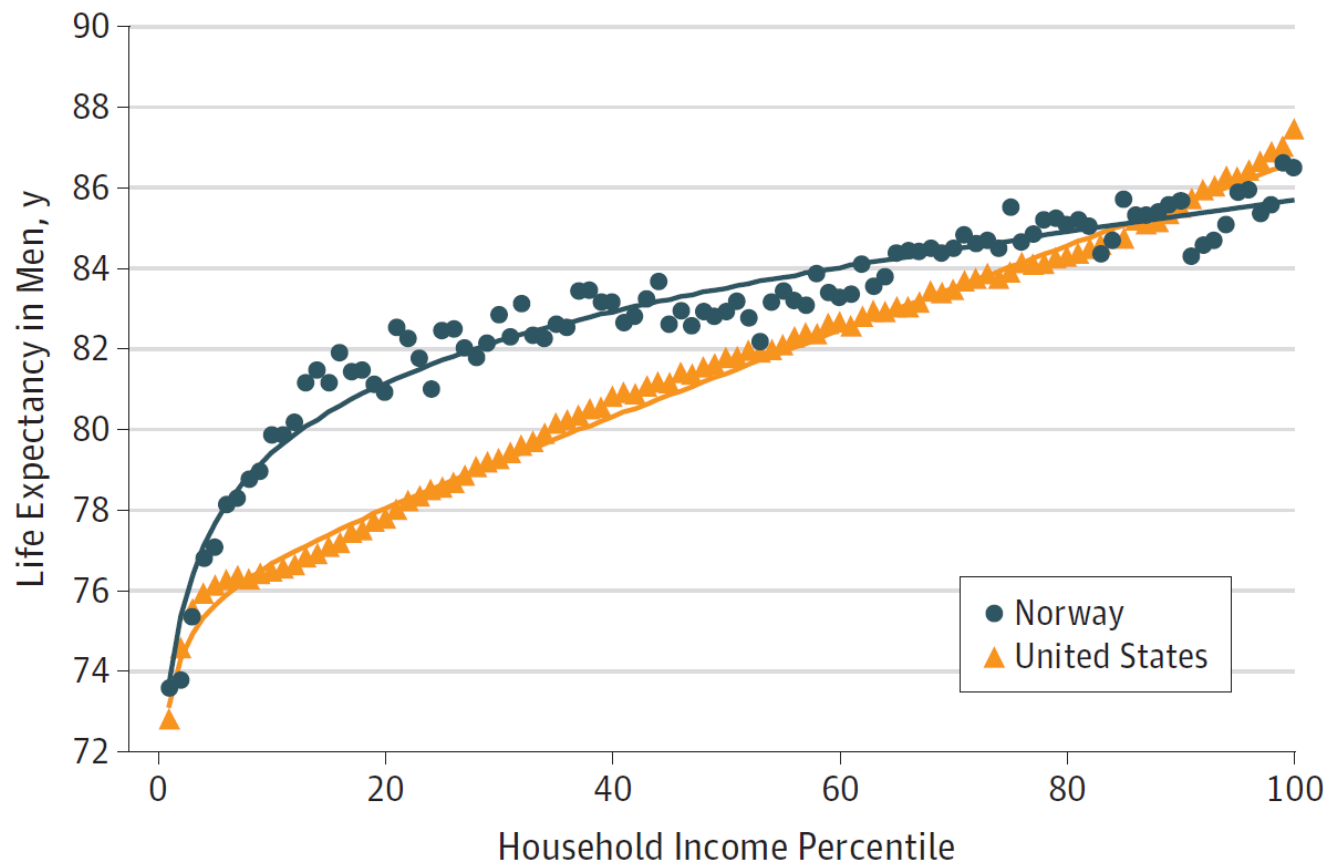
Income Percentile:	Male Life Expectancy		Female Life Expectancy	
	U.S.*	Norway**	U.S.*	Norway**
Top 1%	87.3	84.4	88.9	86.4
Bottom 1%	72.7	70.6	78.8	78.9
Difference	14.6	13.8	10.1	7.5

*LE in years, at age 40; Source: *JAMA*. 2016; 315(16): 1750-1766

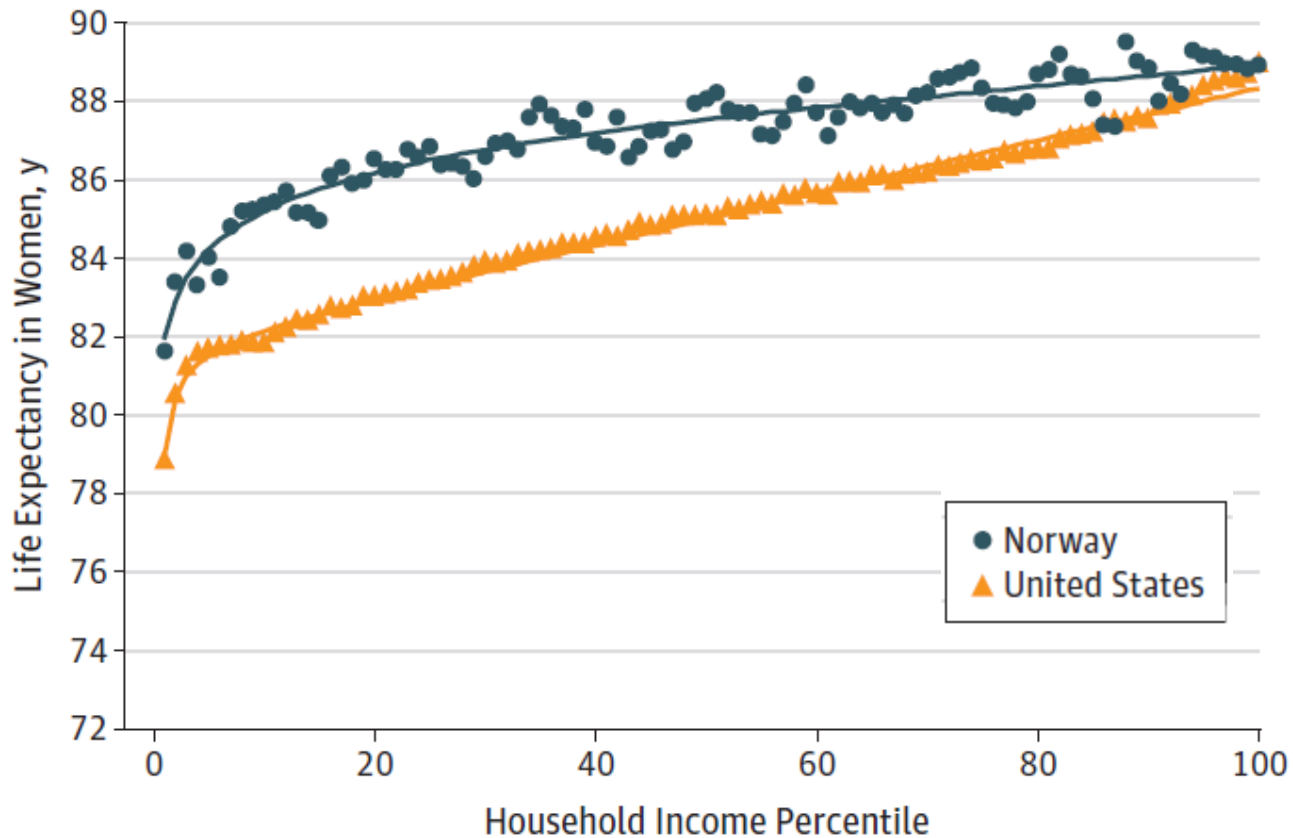
**LE in years, at least age 40; Source: *JAMA*. 2019; 321(19): 1916-1925

LE Differential Most Dramatic in Bottom 5% to 15% Percentiles

A Life expectancy



LE Differential Most Dramatic in Bottom 5% to 15% Percentiles



Low Income LE Differential is a Function of Behavioral Differences

Relative Cause Specific Mortality-Norway: Below vs Above Median Income

	Men	Women
All Deaths	1.59	1.51
Substance Abuse	4.07	2.60
Respiratory	2.79	2.58

Source: JAMA. 2019; 321(19): 1916-1925

Underwriting Approaches

- Underwriting Tools
- Life Settlement Underwriting
- Structured Settlement Underwriting

Underwriting Tools

- Paramedical Exams with Related Lab Work
- Medical Records
- Prescription Drug Reports
- Crime/Motor Vehicle Reports
- Questionnaires
- Telephone Interviews

Life Settlement Underwriting

- Mostly a higher income, well educated demographic
- They go to the doctor
- Unlike structured settlements, policy sellers have nothing to hide
- They want a short life expectancy

Life Settlement Underwriting: What Works?

Medical records are the gold standard

- Typically includes all the information that paramedical exams and prescription reports would generate
- Plus clinical context

Structured Settlement Underwriting

- Low Income, poorly educated demographic
- 52% are unemployed
- Most medical treatment is via ER or walk-in clinics
- Concealing conditions is to their benefit
- Behavioral issues, like criminal history and drug abuse, are as important as medical issues

Structured Settlement Underwriting: What Works?

- Medical Records are not revealing for this demographic and do not capture behavioral issues
- Targeted questionnaire can expose some of the behavioral issues
- Must be corroborated & supplemented with prescription and crime reports, and telephone interviews
- Reviews for prior clients helps to keep the applicant honest

Personnel

- Life Settlements
 - Physician based analytics
 - Peer review process
- Structured Settlements
 - For secondary trades, more behavioral
 - Medical underwriters better suited than physicians

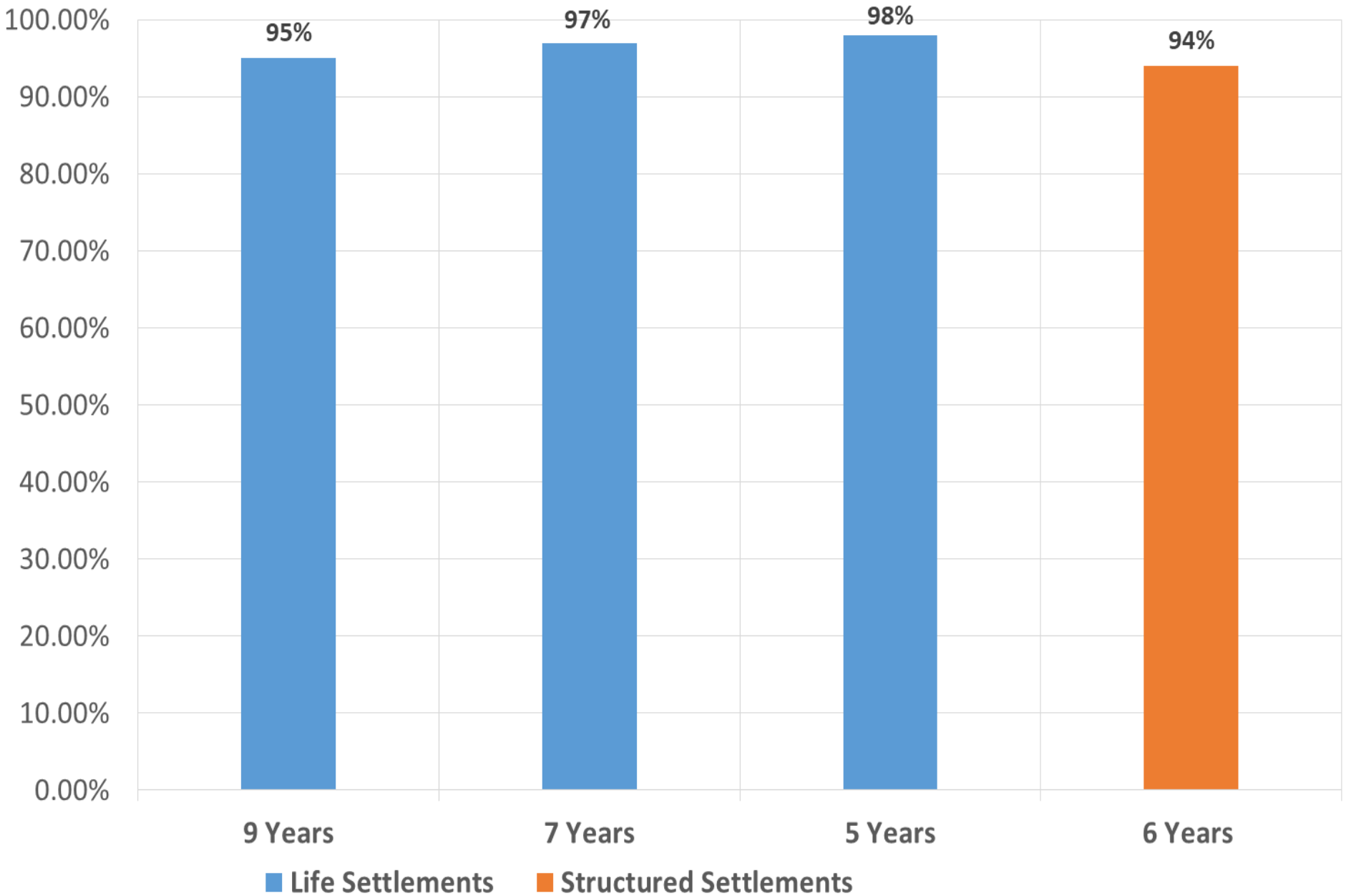
Actual to Expected Methodologies

- Mortality Distribution Approach
- DLE and Related

Mortality Distribution Approach

- Projected deaths based on mortality distribution embedded in Life Expectancy (LE) estimates
- Aggregate projected deaths for each LE estimate
- Compare to Actual Deaths to \rightarrow A/E ratio
- A good approach for portfolios of 3 to 12 years

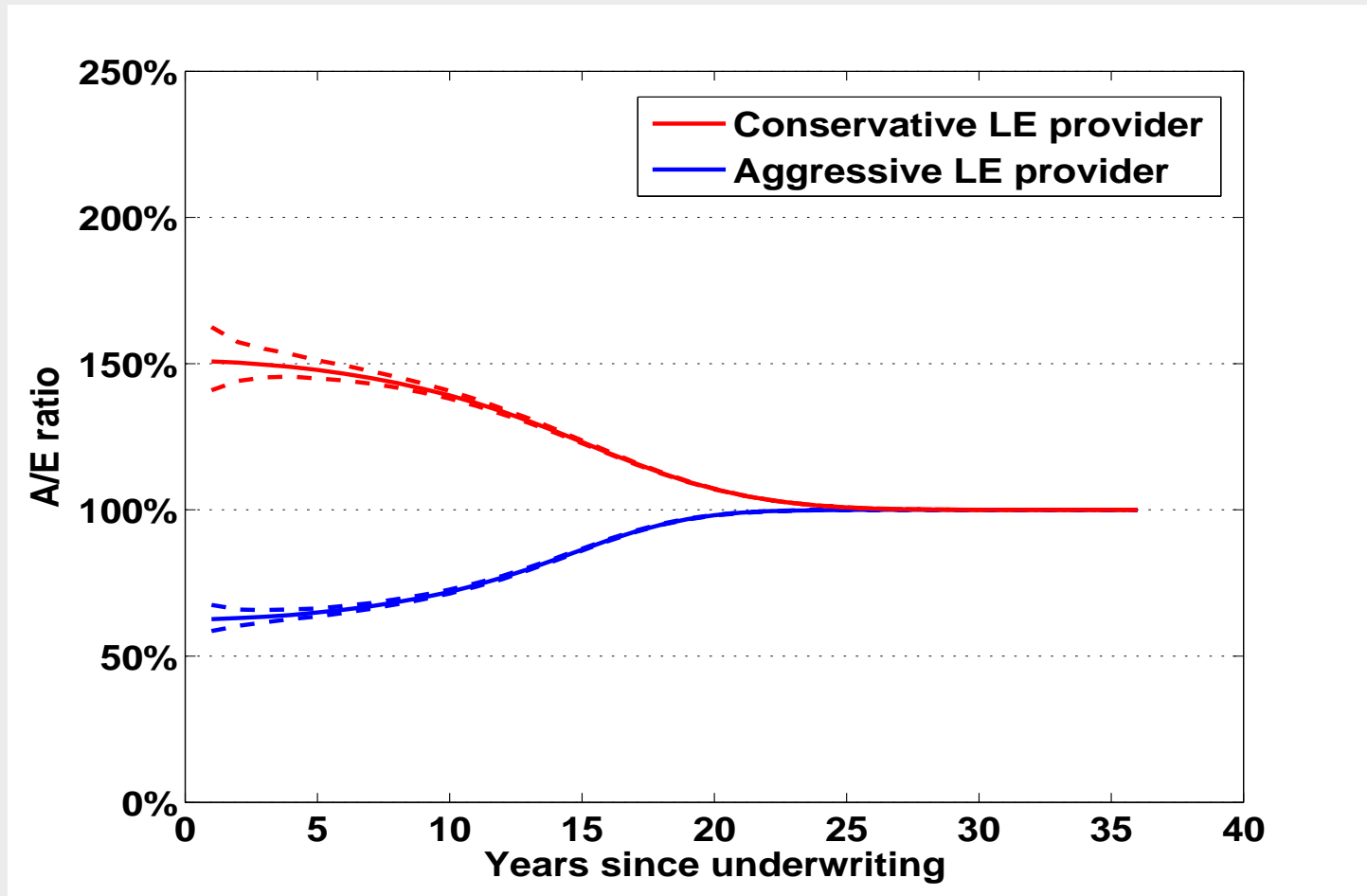
Actual to Expected Results



Shortcomings of Mortality Distribution Approach

- Relatively few deaths in early durations make results less reliable and more subject to slope assumptions of mortality curve
- As number of deaths approach 50% of portfolio, A/E starts to pull towards 100%

Actual to Expected Ratio Pulls Towards 100%



Source: Daniel Bauer et al, North American Actuarial Journal, 2017

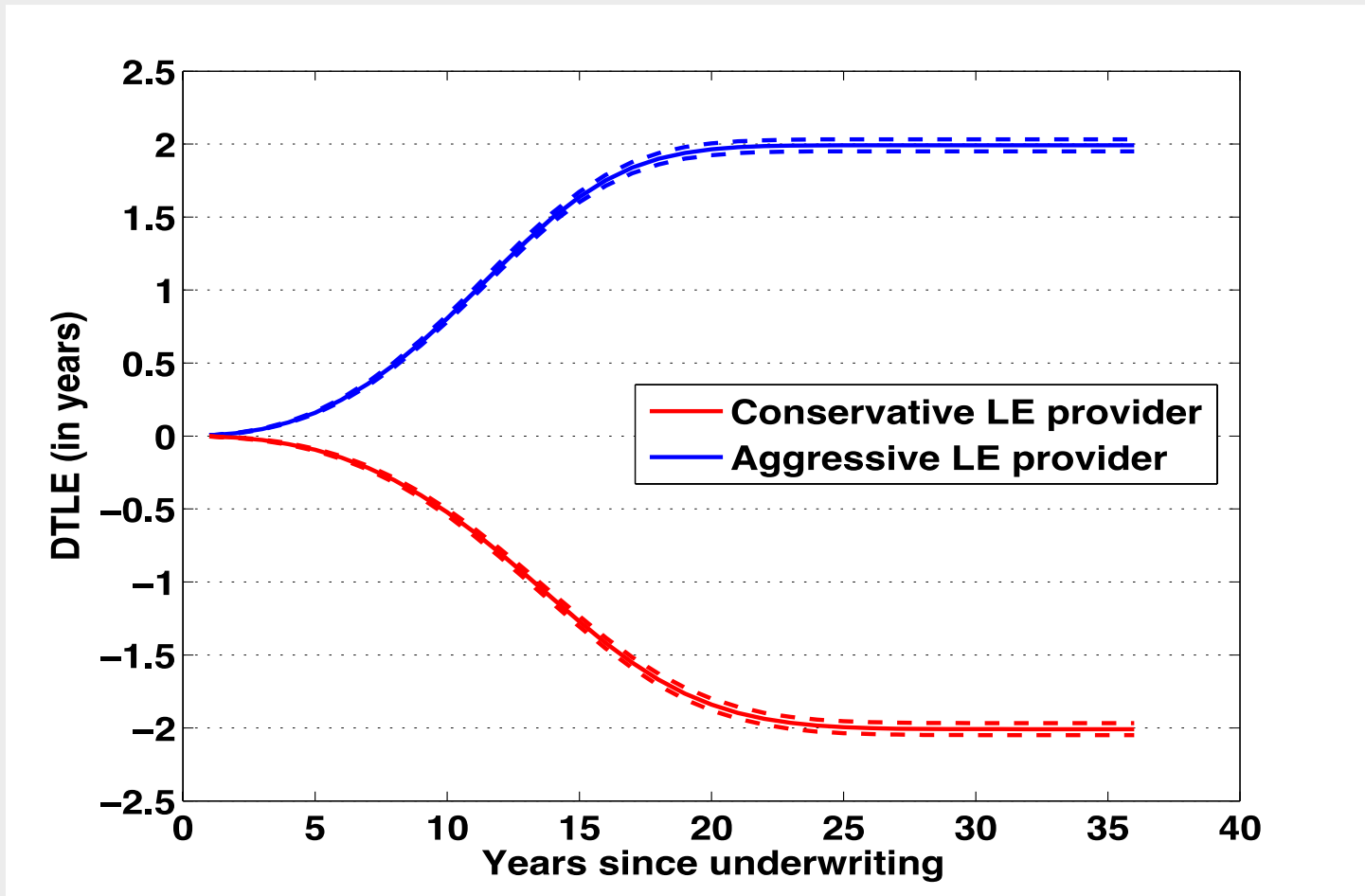
DLE: Difference in Life Expectancies

- DLE: Average difference in total Actual number of months lived versus total number of Expected months
- DTLE: DLE calculation taken before maturity of portfolio
- IDLE: Implied Difference in Life Expectancies (An estimate of DLE taken before portfolio maturity)

DLE: Pros & Cons

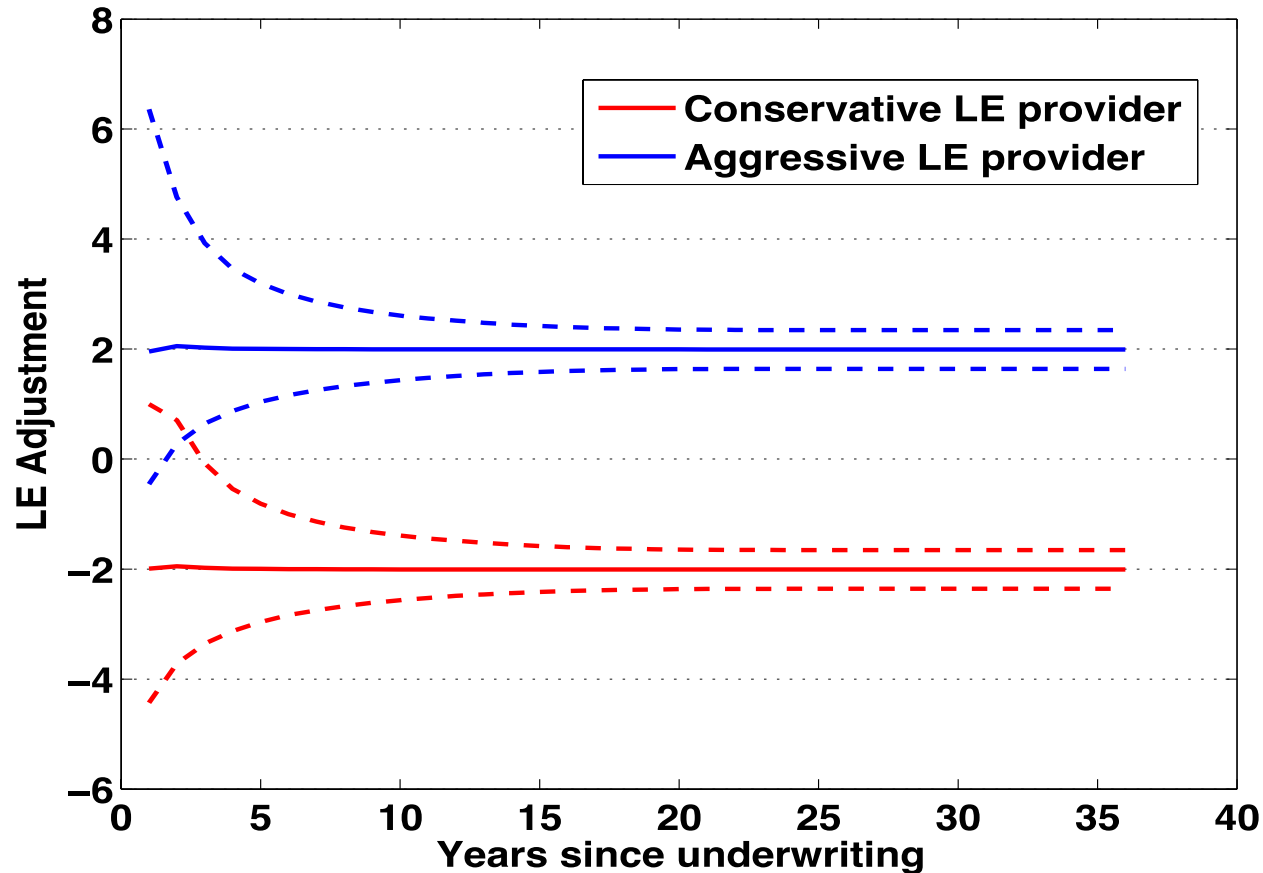
- DLE: The gold standard- but not available until all lives have died.
- DTLE: Based on experience to date. A good option that avoids the “pull to 100%” problem, but does not discriminate bad from good underwriting in early durations.
- IDLE: Takes DTLE and projects to ultimate maturity. Assumes survival pattern remains steady. A good alternative to DTLE, although with wide confidence bands in early durations.

DTLE: Discriminates Aggressive from Conservative Underwriting



Source: Daniel Bauer et al, North American Actuarial Journal, 2017

IDLE: Results Develop Sooner



Source: Daniel Bauer et al, North American Actuarial Journal, 2017

Fasano Life Settlement Results

	Entire Portfolio	Before 1/1/2006	After 1/1/2006
DTLE	1.7 months	5.1 months	-0.1 months
IDLE	7.5 months	12.4 months	-0.4 months
IDLE%	8.0%	12.5%	-0.4%

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November 4th, 2019

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