Life Settlements

Brian Forman
Actuaries Club of the Southwest
June 10, 2010

ACTUARIAL RISK MANAGEMENT

Life Settlements Presentation

- History
- Sale of Policies
- Mathematics of Life Settlements
- Pricing of Life Settlements
- Current Marketplace
- Legal Issues

ACTUARIAL RISK MANAGEMENT

Question

■ What is a Life Settlement?

ACTUARIAL RISK MANAGEMENT

Life Settlement

■ Sale of policy by insured who is NOT terminally ill
■ Sale usually to unrelated party – no insurable interest
■ Sale for more than existing cash value

ACTUARIAL RISK MANAGEMENT

Reasons for Sale of Life Policy

- Premium no longer affordable
- Need for insurance has changed
- More pressing needs for funds
- Business reason no longer exists
- Key employee leaves

ACTUARIAL RISK MANAGEMENT

History of Life Settlements

- Viatical Settlements – late 1980s
- Medical Advances – 1990s
- Reduced returns on older Viatical Settlements
- Start to purchase policies that do not involve terminal conditions
- Viatical Settlement organization morphs to Life Insurance Settlement Assn (LISA) in 2004

ACTUARIAL RISK MANAGEMENT

Thoughts from Life Companies

- Don't like settlements
- Reduced Lapse rates
- Keep substandard policies that may have lapsed otherwise
- Lack of insurable interest

ACTUARIAL RISK MANAGEMENT

Selling a Life Insurance Policy

- Advisor or broker for a quote
- Life Settlement provider obtains information
- Offer
- Ownership transfer
- Funds released from escrow
- New owner pays premiums

ACTUARIAL RISK MANAGEMENT

Life Settlement Provider

- Medical records release – HIPPA form
- APS – no medical exams
- Obtain Life Expectancy estimate
- Disclosures
- Contracts and closing documents

ACTUARIAL RISK MANAGEMENT

Mathematics of Life Settlements

- LE – Life Expectancy
- Actuarial calculation of average future lifetime
- NOT the remaining lifetime
- Roughly when 50% of original group remains

ACTUARIAL RISK MANAGEMENT

Polling Question #1

- If the Life Expectancy of an individual is 100 months, what is the LE 12 months later?

ACTUARIAL RISK MANAGEMENT

Polling Question #2

- If the Life Expectancy of an individual is 100 months, and health does not change, what is the LE 12 months later?
  - □ Still 100 months
  - □ 100 – 12 = 88 months
  - □ More than 88 months
  - □ Less than 88 months

ACTUARIAL RISK MANAGEMENT

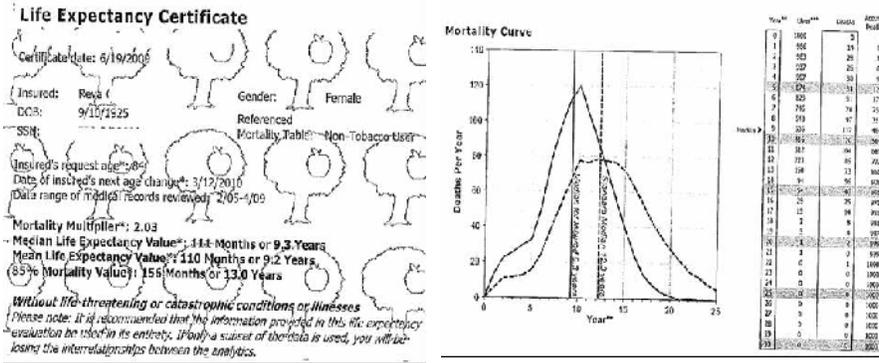# Life Expectancy Underwriters

- Key step in settlement process
- Concentrate on older lives
- 6 possible companies
  - Major: AVS and 21st Century
  - Fasano, ISC, EMSI and Midwest

ACTUARIAL RISK MANAGEMENT

Life Expectancy Underwriter Process

- Start with underwriting company standard table
- Determine underwriting multiple
- Company applies multiple to generate LE
- Sample LE report

ACTUARIAL RISK MANAGEMENT

Sample LE Report

Life Expectancy Underwriters

- Most use some version of 2008 VBT
- Actual standard table used not published
- Often major differences in results on a life from two underwriters
- Some general comparisons, but 2008 VBT changes have made that difficult

ACTUARIAL RISK MANAGEMENT

Numerical Examples

ACTUARIAL RISK MANAGEMENT

Pricing of Life Settlement Policies

- Actuarial PV of Expected Cash Flows
  - □ Death Benefits
  - □ Less required premiums
  - □ Less required expenses
- LE is single, most important input
- How to translate LE into death benefits?
- Reflect differing LE estimates

ACTUARIAL RISK MANAGEMENT

Pricing of Life Settlement Policies

- Three pricing methods discussed
  - ☐ Deterministic
  - ☐ Probabilistic
  - ☐ Stochastic
- Pricing single policy, or block of policies?

ACTUARIAL RISK MANAGEMENT

Pricing of Life Settlement Policies

- Prospective formula:

$$PV = \sum_{n=1}^{\infty} DB \times {}_{n-1|}q_x^* \times v^n - \sum_{n=0}^{\infty} P_{n+1} \times {}_{n}p_x^* \times v^n$$

where

P_n – Premium payment at the beginning of the *n*-th period

DB – Death benefit

${}_{n-1|}q_x^*$ – Conditional death probability, probability that an individual age x dies between *x+n-1* and *x+n*.

${}_{n}p_x^*$ – Cumulative persistency probability, probability of surviving through the *n*-th period.

v^n – The discount factor for the *n*-th period.

ACTUARIAL RISK MANAGEMENT

Pricing LS – Deterministic Method

- Actuarial PV of cash flows assuming death occurs at exactly the LE date
- Premiums due before LE date must be paid
- Example
- Answer is actuarially incorrect and difference may be significant

ACTUARIAL RISK MANAGEMENT

Pricing LS – Deterministic Example

ACTUARIAL RISK MANAGEMENT

Pricing LS – Probabilistic Method

- Actuarial PV of cash flows, using mortality curve to predict death benefits
- Reflects survival probability that each premium must be paid
- Mortality-weighted cash flows
- What would happen within a group of similar policies
- Example

ACTUARIAL RISK MANAGEMENT

Pricing LS – Probabilistic Example

ACTUARIAL RISK MANAGEMENT
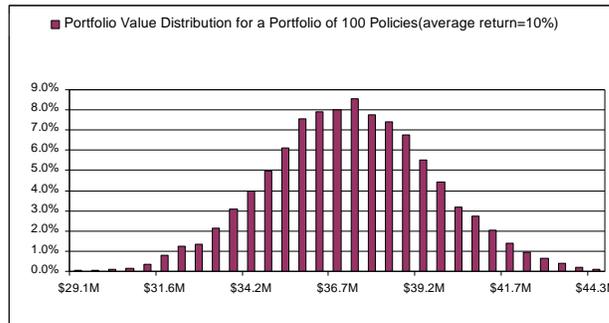
Pricing LS – Stochastic Method

- Actuarial PV of cash flows, using mortality curve plus Monte Carlo techniques
- For each policy for each year, determine whether insured lives or dies
- Collection of many deterministic-type results. Insured lives or dies each year
- Look at mean, median, mode or some percentile

ACTUARIAL RISK MANAGEMENT

Stochastic Example

Mean	**$37.2M**
Standard Deviation	**$2.4M**
Coefficient of Variation	**0.065**
Percentiles	
10%	**$34.1M**
20%	**$35.1M**
30%	**$35.9M**
40%	**$36.5M**
50%	**$37.2M**

Portfolio Value Distribution for a Portfolio of 100 Policies(average return=10%)

ACTUARIAL RISK MANAGEMENT

Pricing LS – Comparison

- From one technical paper
  - Deterministic $121,700
  - Probabilistic $152,200
  - Mean Stochastic $159,200

ACTUARIAL RISK MANAGEMENT

Pricing LS – Conclusions

- Longer LE leads to lower price. Death benefit receipt is further out and more premiums must be paid
- If death is earlier than expected, investor return is larger than assumed
- If insured lives longer than expected, investor rate of return is reduced

ACTUARIAL RISK MANAGEMENT

Life Settlement Marketplace

- Various reports
  - □ $15 billion sold during 2006
  - □ 11.7 billion inforce during 2009 – Conning
  - □ $12 billion sold in 2008 and $31 billion inforce in 2008 – WSJ 2010 article
- Information not shared

ACTUARIAL RISK MANAGEMENT

Life Settlement Marketplace

- Face Amounts
  - □ $250,000 absolute minimum
  - □ Average rising from $1-2 million towards $5 million
- Current ages usually above 65, target for many purchases is above 70 due to lower LE

ACTUARIAL RISK MANAGEMENT

Life Settlement Marketplace

- Life Expectancies
  - □ Few under 36 months
  - □ Average around 120 months
  - □ Clearly not terminally ill
- Packaging and institutional uses via tertiary market

ACTUARIAL RISK MANAGEMENT

LS Marketplace – 2008 changes

- Most LE providers were using 2001 VBT
- 2008 VBT released in late 2008
- Providers began switching to 2008 VBT resulting in overnight reduction in LE estimates
- Should not have happened – may not if there was more actuarial involvement

ACTUARIAL RISK MANAGEMENT

LS Marketplace – 2008 changes

- Values of existing portfolios dropped overnight
- Recognition that early cash flow problems may not be temporary
- Scared new entrants due to loss in value
- Loss of liquidity for portfolios trying to sell policies to enhance cash flow

ACTUARIAL RISK MANAGEMENT

LS – Legal Issues

- Life Settlements Model Act – 1993
  - □ Geared towards viatical settlements
  - □ Limit discount rates, require licensing
- Legitimized transfer of policies for value to a person without insurable interest
- Moral need – help terminally ill victims with short-term cash needs

ACTUARIAL RISK MANAGEMENT

LS – Legal Issues

- 2001
  - ☐ Model modified to prohibit sale for 2 years after issue
  - ☐ 27 states adopted some type of legislation by 2006
- By 2005, with life settlements becoming popular, concerns about insured agreeing to a sale before issue

ACTUARIAL RISK MANAGEMENT

LS – Legal Issues

- Incontestability Period
  - ☐ Historically very absolute
  - ☐ Does it apply in the case of fraud?
  - ☐ What about cases where insured had no intention of holding the policy
- Insurable Interest
  - ☐ Morally important to limit wagering on lives

ACTUARIAL RISK MANAGEMENT

LS – Legal Issues

- Court Cases
  - Policy <u>issued</u> to person with no insurable interest is void from inception
  - Not rendered valid just because of incontestability clause
  - Policy obtained by fraud cannot be validated via incontestability clause
- High Profile case involving former chairman of Conseco

ACTUARIAL RISK MANAGEMENT

LS – Legal Issues

- Insurable Interest and Fraud
  - If insurer is just going to have to pay someone else, they don't have much incentive to challenge insurable interest
  - Must be able to use fraud as a defense
  - Even asking for void with no return of premiums

ACTUARIAL RISK MANAGEMENT

Question

■ What is STOLI?

ACTUARIAL RISK MANAGEMENT

LS – Legal Issues

■ STOLI
  □ Stranger Originated Life Insurance
  □ Purchase clearly allowable when legitimately purchased well after issue
  □ Concern over policies issued solely for purpose of being sold
  □ Additional concerns with premium financing

ACTUARIAL RISK MANAGEMENT

LS – Legal Issues

- NAIC Model Regulation
  - Modified in 2007 to 5 year restriction on sale unless
    - Premiums paid without financing
    - No initial guarantee for purchase after initial period
    - No evaluation for settlement during first 2 years
  - Licensing, disclosure, consumer protection
  - Fiduciary duties

ACTUARIAL RISK MANAGEMENT

LS – Legal Issues

- NCOIL Model Regulation
  - Attempts to define STOLI and make that illegal
    - Plan to issue for benefit of 3rd party with no insurable interest
    - Includes cases with future agreements to purchase
  - LISA supports this and not NAIC model because that creates doubts and possibly unwinds 2 year contestable period
- Numerous states have made STOLI a fraudulent act

ACTUARIAL RISK MANAGEMENT

Use of Life Settlements

- High yield, low risk investment
- Not correlated to other markets
- Packaged to obtain funds at low rates and invest at higher yields to fund a project
- Minimum of 300 lives needed to achieve average mortality

ACTUARIAL RISK MANAGEMENT

Parties in Managed Settlement Pool

- Collateral Manager – determine appropriate criteria, optimize premiums, optimum cash level
- Servicer – reporting, pay premiums, collect death claims

ACTUARIAL RISK MANAGEMENT

Life Settlement Risks

- Credit Risk
- Liquidity Risk
- Interest Rate Risk
- Longevity / Extension Risk
- Operational Risk

ACTUARIAL RISK MANAGEMENT

Life Settlement Taxation

- Ordinary income to company that buys and sells
- Sale of policy – IRS 2009-13 requires adjustment to basis for COI charges resulting in larger gain, part is ordinary
- Individual investment – purchase and later sale is capital gain, but purchase and death is ordinary income

ACTUARIAL RISK MANAGEMENT

Life Settlements

■ Who knows what a life settlement is?

ACTUARIAL RISK MANAGEMENT